Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**2,6-DICHLOROINDOPHENOL, SODIUM SALT**
Synonyms	DPIP / Dichloroindophenol

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: None required
Pictograms: No symbol required
Target organs: None known

GHS Classification: None required
GHS Label information: **Hazard statement:** None required
Precautionary statement: None required

Supplemental information:
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
2,6-Dichloroindophenol	620-45-1	min 99%	210-640-4

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Moisture and light sensitive. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
2,6-Dichloroindophenol	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Dark green powder.
Odor: No odor.
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: Data not available
Boiling point: Decomposes
Flash point: Not applicable

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Not applicable
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): >1
Solubility(ies): Soluble in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: $C_{12}H_6Cl_2NNaO_2$
Molecular weight: 290.08

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and heat. Avoid contact with moisture and light.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, nitrogen oxides, chlorine.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May cause respiratory irritation.
Ingestion: May be harmful if swallowed.
Skin: Contact with skin may cause irritation.
Eyes: Contact with eyes may cause irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: GU5495000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
2,6-Dichloroindophenol	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: January 9, 2014 **Supercedes:** September 17, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture ou de ménage.

Produit	**2,6-DICHLOROINDOPHÉNOL, SEL SODIQUE**
Synonymes	DPIP / Dichloroindophénol

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé comme dangereux à ce selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: Aucune requise
Pictogrammes: Aucun symbole n'est demandé
Les organes cibles: Aucun connu

Classification par le GHS: Aucune requise
Renseignements sur l'étiquette GHS: Mention de danger: Aucune requise
Déclarations de précaution: Aucune requise

Informations supplementaires:
Ne pas respirer les poussières. Ne pas mettre dans les yeux, la peau ou les vêtements. Porter des gants de protection / des vêtements de protection / protection des yeux / du visage. Se laver les mains après avoir manipulé. Consulter un médecin en cas de malaise.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
2,6-Dichloroindophénol	620-45-1	min 99%	210-640-4

Section 4 Mesures De Premiers Soins

INGESTION: Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: L'humidité et de la lumière sensible. Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
2,6-Dichloroindophénol	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Poudre vert foncé
Odeur: Aucun odeur
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: Données non disponibles
Point d'ébullition: Se décompose
Point d'éclair: Non applicable

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Non applicable
Limites d'explosivité: Bas / Max: Non applicable
Pression de vapeur (mm Hg): Négligeable
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): >1
Solubilité (s): Soluble dans l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles
Formule moléculaire: $C_{12}H_6Cl_2NNaO_2$
Poids moléculaire: 290.08

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives et la chaleur. Éviter tout contact avec l'humidité et de la lumière.

Matières incompatibles: Comburantes fortes.

Produits dangereux de décomposition: Les oxydes de carbone, oxydes d'azote, le chlore.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut irriter les voies respiratoires.
Ingestion: Peut être nocif en cas d'ingestion.
Peau: Le contact avec la peau peut provoquer une irritation.
Yeux: Le contact avec les yeux peut provoquer une irritation.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été à fond étudiées. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: GU5495000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
2,6-Dichloroindophénol	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 9 janvier, 2014 **Remplace:** 17 septembre, 2013

Section 1 Chemical Product and Company Information

80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**POLYVINYL ALCOHOL, 5% SOLUTION**
Synonyms	Polyvinyl Alcohol, Aqueous Solution

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: Not classified
Pictograms: No symbol required
Target organs: None known

GHS Classification: Not classified
GHS Label information: **Hazard statement:** Not classified
Precautionary statement: Not classified

Supplementary information:
Do not breathe mist/vapours/spray. Avoid contact with eyes. Wear protective gloves/ protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	94%	231-791-2
Polyvinyl alcohol	9002-89-5	5%	Not listed
Sodium benzoate	532-32-1	1%	208-534-8

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Polyvinyl alcohol	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Liquid. Clear, thick gel.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)
Boiling point: Approximately 100°C (212°F) (water)
Flash point: Data not available

Evaporation rate (Water = 1): <1
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 14 (water)
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): Approximately 1.0 (water)
Solubility(ies): Approximately 15, forms gel in water

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatible materials: Oxygen, peroxides, perchlorates, nitrates and other oxidizers, reactive metals (sodium, zinc, calcium, copper, etc.)

Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: >5,000 mg/kg ; Inhalation-rat LC50: >20.0 mg/L/1 hour [Polyvinyl alcohol]
Skin corrosion/irritation: Skin-rabbit - non-irritating [Polyvinyl alcohol]
Serious eye damage/irritation: Eyes-rabbit - slight irritant [Polyvinyl alcohol]
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC classified: Group 3: Not classifiable as to its carcinogenicity to humans.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May cause respiratory tract irritation. Symptoms include, nasal descharge, hoarseness, coughing, chest pain and breathing difficulty.
Ingestion: Essentially non-toxic. Symptoms include inflammation of mouth, throat, esophagus and/or stomach.
Skin: Essentially non-irritating.
Eyes: Contact may cause irritation. Symptoms include irritation or burning sensation.
Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: Not available

Section 12 Ecological Information

Toxicity to fish: Pimephales promelas (fish), LC50 = >40,000 ppm/96 hour [CAS # 25213-24-5]
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), LC50 = 8,300 ppm/48 hour [CAS # 25213-24-5]
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Polyvinyl alcohol	Not listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: September 5, 2014 **Supercedes:** December 12, 2013

MATERIAL SAFETY DATA SHEET

Date Printed: 17.04.2012
Date Updated: 27.03.2007
Version 1.4

Section 1 - Product and Company Information

Product Name	70% ETHANOL
Product Number	E7267
Brand	SIGMA
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
ETHANOL SOLUTION 70% IN WATER	None	No

Ingredient Name	CAS #	Percent	SARA 313
ETHYL ALCOHOL, NON-DENATURED, 200 PROOF	64-17-5	70	No
WATER	7732-18-5	30	No

Formula C2H6O

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Flammable. Irritant.
Irritating to eyes, respiratory system and skin.
Target organ(s): Nerves. Liver.

HMIS RATING
HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 0

NFPA RATING
HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS
Flammable Hazards: Yes

EXPLOSION HAZARDS
Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT
71,600 °F 22,000 °C Method: closed cup

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.
Specific Method(s) of Fire Fighting: Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is

complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance: Physical State: Clear liquid
Color: Colorless

Property	Value	At Temperature or Pressure
Molecular Weight	46,0700 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	71,600 °F	Method: closed cup

	22,000 °C
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.
Materials to Avoid: Alkali metals, Ammonia, Oxidizing agents, Peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Liver. Heart.

SIGNS AND SYMPTOMS OF EXPOSURE

Can cause CNS depression. Narcotic effect. Damage to the heart.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Ethanol [or] Ethyl alcohol [or] Ethanol solutions [or] Ethyl alcohol solutions
UN#: 1170
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Ethanol solution
IATA UN Number: 1170
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

R: 10
Risk Statements: Flammable.
S: 16
Safety Statements: Keep away from sources of ignition - no smoking.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable. Irritant.
Risk Statements: Irritating to eyes, respiratory system and skin.
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.
US Statements: Target organ(s): Nerves. Liver.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Acetic Acid

MSDS # □□□□

Section 1: Product and Company Identification

Acetic Acid

Synonyms/General Names: Acetic acid glacial, Ethanoic acid.
Product Use: For educational use only.
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Clear, colorless solution with a strong vinegar odor.

HMIS (0 to 4)

Health	3
Fire Hazard	2
Reactivity	0

DANGER! Extremely corrosive to all body tissue and may be fatal if swallowed or inhaled.
Combustible liquid, keep away from all ignition sources.
Target organs: Respiratory system, eyes, skin, teeth.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Acetic Acid (64-19-7), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. ***Do not induce vomiting***. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Class II Combustible Liquid. When heated to decomposition, emits acrid fumes
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all ignition sources and ventilate area. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage — White

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in Corrosive Area [White Storage] with other corrosive items. Store in a dedicated corrosive cabinet in a cool, dry, well-ventilated, locked store room away from incompatible materials. Shipped with a brown safety color code cap.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines: OSHA PEL: 25 mg/m^3 and ACGIH: 10 ppm TLV, 15 ppm as STEL.

Section 9: Physical and Chemical Properties

Molecular formula	CH_3COOH.	**Appearance**	Clear, colorless liquid.
Molecular weight	60.05.	**Odor**	vinegar.
Specific Gravity	1.05 g/mL @ 20°C.	**Odor Threshold**	0.48 ppm.
Vapor Density (air=1)	2.07.	**Solubility**	Completely soluble in water.
Melting Point	17°C.	**Evaporation rate**	0.97 *(Butyl acetate = 1).*
Boiling Point/Range	118°C.	**Partition Coefficient**	-0.2 *(log P_{OW}).*
Vapor Pressure (20°C)	11.7 mm Hg.	**pH**	2 (corrosive).
Flash Point:	39°C (102.2°F) CC.	**UEL**	5.4%.
Autoignition Temp.:	463°C (865°F).	**LEL**	16%.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Stability: Stable under normal conditions of use and storage. Avoid heat and ignition sources.
Incompatibility: Oxidizing agents, metals, soluble carbonates and phosphates, hydroxides, amines, and alcohols
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. ***Skin***: Redness, blistering, burning, itching, tissue destruction with slow healing. ***Ingestion***: Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. ***Inhalation***: Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.
Chronic Effects: Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.
Sensitization: none expected
Acetic acid: LD50 [oral, rat]; 3310 mg/kg; LC50 [rat]; >16000 (4 hour); LD50 Dermal [rabbit]; 1120 mg/kg
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): LD50 (48 hrs) ; 250 mg/L (*Leuciscus Idusmelanotue*).
EC50 (24 hours): 6000 mg/L (*Daphnia Magna*).□

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer disposal after being neutralized to pH 7.

Section 14: Transport Information

DOT Shipping Name:	Acetic Acid, glacial.	**Canada TDG:**	Acetic Acid, glacial.
DOT Hazard Class:	8(3), pg II.	**Hazard Class:**	8(3), pg II.
Identification Number:	UN2789.	**UN Number:**	UN2789.

Section 15: Regulatory Information

EINECS: Listed (200-580-7) .
TSCA: All components are listed or are exempt.
WHMIS Canada: CLASS B-3: Combustible; CLASS E: Corrosive liquid.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: September 21, 2012
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Safety Data Sheet

Acetone

Section 1: Identification of the material and supplier

Product name:	**Acetone**
Other names:	[illegible]
Product Codes/Trade Names:	[illegible]
Recommended use:	[illegible]
Supplier:	[illegible]
Address:	[illegible]
Telephone:	[illegible]
Email address:	[illegible]
Web site:	[illegible]
Facsimile:	[illegible]
Emergency phone number:	[illegible]

[illegible]

Section 2: Hazard identification

This material is hazardous according to criteria of Safe Work Australia.

Signal Word
Danger

Hazard Classification
Flammable Liquids – Category 2
Serious Eye Damage/Irritation – Category 2A
Specific Target Organ Toxicity (Single Exposure) – Category 3

Hazard Statement(s)
H225 Highly flammable liquid and vapour
H319 Causes serious eye irritation
H336 May cause drowsiness or dizziness

Hazard Statement(s) - Australia Only
AUH066 Repeated exposure may cause skin dryness or cracking

Prevention Precautionary Statement(s)
P102 Keep out of reach of children.
P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating, lighting and all other equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist, vapours or spray.
P264 Wash hands, face and all exposed skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective clothing, gloves, eye/face protection and suitable respirator.

Response Precautionary Statement(s)

P101	If medical advice is needed, have product container or label at hand.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use alcohol resistant foam, standard foam or dry agent for extinction.

Storage Precautionary Statement(s)

P405	Store locked up
P403+233	Store in a well ventilated place. Keep container tightly closed

Disposal Precautionary Statement(s)

P501 Dispose of contents/container in accordance with local, regional, national and international regulations

Poisons Schedule (Aust): S5

DANGEROUS GOODS CLASSIFICATION

Classified as Dangerous Goods by the criteria of the “Australian Code for the Transport of Dangerous Goods by Road & Rail” and the “New Zealand NZS5433: Transport of Dangerous Goods on Land”.

Class: 3 Flammable Liquid

Section 3: Composition / Information on ingredients

CHEMICAL ENTITY	CAS NO.	PROPORTION
Acetone	67-64-1	100%

Section 4: First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing laboured and patient cyanotic (blue), ensure airways are clear and have a qualified person give oxygen through a facemask. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage. Seek immediate medical advice.

Skin contact: For gross contamination, immediately drench with water and remove clothing. Continue to flush skin and hair with plenty of water (and soap if material is insoluble). For skin burns, cover with a clean, dry dressing until medical help is available. If blistering occurs, do NOT break blisters. If swelling, redness, blistering, or irritation occurs seek medical assistance.

Eye contact: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a Doctor; or for at least 15 minutes and transport to Doctor or Hospital.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

PPE for First Aiders: Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Notes to physician: Treat symptomatically.

Section 5: Fire fighting measures

Hazchem Code: •2YE

Suitable extinguishing media: If material is involved in a fire use alcohol resistant foam, water fog (or if unavailable fine water spray), foam or dry agent (carbon dioxide, dry chemical powder).

Specific hazards: Flammable liquid. May form flammable vapour mixtures with air. Flameproof equipment necessary in area where this chemical is being used. Nearby equipment must be earthed. Electrical requirements for work area should be assessed according to AS3000. Vapour may travel a considerable distance to source of ignition and flash back. Avoid all ignition sources. All potential sources of ignition (open flames, pilot lights, furnaces, spark producing switches and electrical equipment etc) must be eliminated both in and near the work area. Do NOT smoke.

Fire fighting further advice: If safe to do so, remove containers from path of fire. Keep containers cool with water spray. On burning may emit toxic fumes, including those of carbon dioxide and carbon monoxide. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

Section 6: Accidental release measures

Emergency Procedure: Shut off all possible sources of ignition. Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust or vapours. Work up wind or increase ventilation.

Containment Procedure: If safe to do so, isolate the leak. Small spills are allowed to evaporate provided there is adequate ventilation. Contain - prevent run off into drains and waterways. If contamination of sewers or waterways has occurred advise local emergency services.

Clean Up Procedure: Cover with damp absorbent (inert material, sand or soil). Collect and seal in properly labelled containers or drums for disposal. Use a spark-free shovel.

Dangerous Goods – Initial Emergency Response Guide No: 14

Section 7: Handling and storage

Handling: Avoid skin and eye contact and inhalation of vapour, mist or aerosols.

Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat or ignition. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a Dangerous Good Class 3 Flammable Liquid as per the criteria of the Australian Dangerous Goods Code and must be stored in accordance with the relevant regulations.

This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.

Section 8: Exposure controls / Personal protection

National occupational exposure limits: No value assigned for this specific material by Safe Work Australia or Department of Labour New Zealand.

However for:

	TWA		STEL		CARCINOGEN	NOTICES
	ppm	mg/m3	ppm	mg/m3	CATEGORY	
Acetone	500	1185	1000	2375	-	-

As published by the Safe Work Australia.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15-minute period, which should not be exceeded at any time during a normal eight-hour workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept too as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Biological Limit Values: As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

Engineering measures: Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

Personal protection equipment: OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from butyl rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid skin and eye contact and inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9: Physical and chemical properties

Appearance:	Clear, colourless liquid
Odour:	Pleasant, sweet, ketone-like odour
pH, at stated concentration:	Not Available
Vapour Pressure:	24 kPa @ 20°C
Vapour Density (air=1):	2.0
Boiling Point/range (°C):	56.2
Freezing/Melting Point (°C):	-95
Solubility:	Miscible
Specific Gravity:	0.792 @ 20°C/20°C
FLAMMABLE MATERIALS	
Flash Point (°C):	-9
Flash Point Method:	Tag closed cup
Flammable (Explosive) Limit - Upper:	13%
Flammable (Explosive) Limit - Lower:	2.15% (2.6%)
Autoignition Temperature (°C):	465
ADDITIONAL PROPERTIES	
Evaporation Rate:	7 (n-Butyl Acetate = 1)
Molecular Weight:	58.08
Volatile Organic Compounds Content (VOC): (as specified by the Green Building Council of Australia)	100%
% Volatiles:	100%

Section 10: Stability and reactivity

Reactivity: No reactivity hazards are known for the material.

Chemical stability: This material is thermally stable when stored and used as directed.

Hazardous reactions: No known hazardous reactions.

Conditions to avoid: Elevated temperatures and sources of ignition.

Incompatible materials: Oxidising agents.

Hazardous decomposition products: Carbon monoxide and carbon dioxide.

Section 11: Toxicological information

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

Inhalation: Material may be an irritant to mucous membranes and respiratory tract. Inhalation of high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness.

Skin contact: Contact with skin may result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis.

Ingestion: Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is uncoordinated there is greater likelihood of vomit entering the lungs and causing subsequent complications. Aspiration pneumonia (inflammation of the lung) may result.

Eye contact: An eye irritant.

Acute toxicity

Inhalation: This material has been classified as non-hazardous.
Acute toxicity estimate (based on ingredients): >20 mg/L

Skin contact: This material has been classified as non-hazardous.
Acute toxicity estimate (based on ingredients): >2,000 mg/Kg

Ingestion: This material has been classified as non-hazardous.
Acute toxicity estimate (based on ingredients): >2,000 mg/Kg

Corrosion / Irritancy: Eye: this material has been classified as a Category 2A Hazard (reversible effects to eyes).
Skin: this material has been classified as not corrosive or irritating to skin.

Sensitisation: Inhalation: this material has been classified as not a respiratory sensitiser.
Skin: this material has been classified as not a skin sensitiser.

Aspiration hazard: This material has been classified as non-hazardous.

Specific target organ toxicity (single exposure): This material has been classified as a Category 3 Hazard. Exposure via inhalation may result in depression of the central nervous system.

Chronic Toxicity

Mutagenicity: This material has been classified as non-hazardous.

Carcinogenicity: This material has been classified as non-hazardous.

Reproductive toxicity (including via lactation): This material has been classified as non-hazardous.

Specific target organ toxicity (repeat exposure): This material has been classified as non-hazardous.

Section 12: Ecological information

Avoid contaminating waterways.

Acute aquatic hazard: This material has been classified as non-hazardous.
Acute toxicity estimate (based on ingredients): >100 mg/L

Long-term aquatic hazard: This material has been classified as non-hazardous.
Acute toxicity estimate (based on ingredients): >100 mg/L

Ecotoxicity: No information available.

Persistence and degradability: No information available.

Bioaccumulative potential: No information available.

Mobility: No information available.

Section 13: Disposal considerations

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

Section 14: Transport information

ROAD AND RAIL TRANSPORT
Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

UN No:	1090
Dangerous Goods Class:	3 Flammable Liquid
Packing Group:	II
Hazchem Code:	•2YE
Emergency Response Guide No:	14

Proper Shipping Name: ACETONE

Segregation Dangerous Goods: Not to be loaded with explosives (Class 1), flammable gases (Class 2.1), if both are in bulk, toxic gases (Class 2.3), spontaneously combustible substances (Class 4.2), oxidising agents (Class 5.1), organic peroxides (Class 5.2) or radioactive substances (Class 7), however exemptions may apply.

MARINE TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No:	1090
Dangerous Goods Class:	3 Flammable Liquid
Packing Group:	II

Proper Shipping Name: ACETONE

Safety Data Sheet

AIR TRANSPORT
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No:	1090
Dangerous Goods Class:	3 Flammable Liquid
Packing Group:	II

Proper Shipping Name: ACETONE

Section 15: Regulatory information

HSNO Approval Number and/or Group Standard: Solvent (Flammable) Group Standard 2006, HSR002650

This material is not subject to the following international agreements:

Montreal Protocol (Ozone depleting substances)
The Stockholm Convention (Persistent Organic Pollutants)
The Rotterdam Convention (Prior Informed Consent)
International Convention for the Prevention of Pollution from Ships (MARPOL)

This material is subject to the following international agreements:

Basel Convention (Hazardous Waste)

- Organic solvents excluding halogenated solvents

This material/constituent(s) is covered by the following requirements:

- The Standard for the *Uniform Scheduling of Medicines and Poisons (SUSMP)* established under the *Therapeutic Goods Act (Commonwealth)*.
- All the constituents of this material are listed on the *Australian Inventory of Chemical Substances (AICS)*.

Section 16: Other information

For further information on this product, please contact:

Phone:
Fax:

Additional Information

Australian Standards References:

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Safety Data Sheet

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Other References:

Safe Work Australia. 10 August 2011.	Preparation of Safety Data Sheets for Hazardous Material, Code of Practice.
Safe Work Australia. 10 August 2011.	Labelling of Workplace Hazardous Chemicals, Code of Practice.
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Authorisation

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

END OF SDS

An ISO 9001:2000 Certified Company

THE POWER OF THREE³
PHARMCO-AAPER
AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

SECTION I
PRODUCT AND COMPANY IDENTIFICATION

Product: Agar-agar
This MSDS is valid for all grades and catalog #'s

Synonyms: Not available
Formula: Not available
Manufacturer: PHARMCO-AAPER
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 40065
Phone (502) 633-0650
Fax (502) 633-0685

Emergency Contact:
CHEMTREC 1-800-424-9300

SECTION II
COMPOSITION /INFORMATION ON INGREDIENTS

% by weight	Material	CAS #	TLV/PEL	LC50/LD50
100	Agar-agar	9002-18-0	Not Available	ORAL (LD50): Acute: 11000 gm/kg [Rat]

SECTION III
HAZARDS IDENTIFICATION

Potential Acute Health Effects: Slightly hazardous in case of eye contact (irritant), of ingestion, of inhalation.
Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to lungs. Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION IV
FIRST AID

Obtain medical attention for all cases of over-exposure.
Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Hazardous Skin Contact: Not Available
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Hazardous Inhalation: Not Available
Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Hazardous Ingestion: Not Available

SECTION V
FIRE FIGHTING MEASURES

Fire:
Flammability of the Product: May be combustible at high temperature.
Auto-Ignition temperature: Not Available.
Flash point: Not Available.
Flammable limits: Not Available.
Products of Combustion: Not Available.
Fire Hazards: Not available.
Explosion Hazards: Risks of explosion of the product in presence of mechanical impact: Not Available. Risks of explosion of the product in presence of static discharge: Not Available
Fire Extinguishing Media: Not available.
Special Information: Not available.

SECTION VI
SPILL/ACCIDENTAL RELEASE MEASURES

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

SECTION VII
HANDLING AND STORAGE

Precautions: Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all

equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label.
Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

SECTION VIII
EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection: Safety glasses. Lab coat.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits: Not Available.

SECTION IX
PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance: Solid
Molecular Weight: Not Available
Odor: Not Available
Taste: Not Available
Color: Not Available
pH (1% Solution in Water): Not Applicable
Boiling Point: Not Available
Melting Point: Decomposes.
Critical Temperature: Not Available
Specific Gravity: Not Available
Vapor Pressure (mm Hg): Not Applicable
Vapor Density (Air=1): Not Available
Volatility: Not Available
Odor Threshold: Not Available
Evaporation Rate: Not Available
Viscosity: Not Available
Water/Oil Dist. Coefficient: Not Available
Ionicity (in water): Not Available
Dispersion Properties: Not Available
Solubility: Insoluble in cold water.

SECTION X
STABILITY/REACTIVITY INFORMATION

Stability: The product is stable.
Instability Temperature: Not Available
Conditions of Instability: Not Available
Incompatibilities: Not Available
Corrosivity: Not Available
Special Information: Not Available

SECTION XI
TOXICOLOGICAL INFORMATION

Routes of Entry: Not Available
Toxicity to Animals: Acute oral toxicity (LD50): 11000 mg/kg [Rat].
Chronic Effects on Humans: Causes damage to the following organs: lungs.
Other Toxic Effects on Humans: Slightly hazardous in case of ingestion, of inhalation.
Special Information on Toxicity to Animals: Not Available
Special Information on Chronic Effects/Toxicity on Humans: Not Available

SECTION XII
ECOLOGICAL INFORMATION

Ecotoxicity: Not Available.
BOD5 and COD: Not Available.
Products of Biodegradation: Possibly hazardous short-term degradation products are not likely. However, long-term degradation products may arise.
Toxicity of the Products of Biodegradation: Not Available.
Special Information on Products of Biodegradation: Not Available.

SECTION XIII
DISPOSAL CONSIDERATIONS

Waste Disposal: Recycle to process, if possible. Consult your local or regional authorities.

SECTION XIV
TRANSPORTATION INFORMATION

DOT Classification: DOT Not a DOT controlled material (United States).
UN: Not Applicable.
Special Provisions for Transport: Not Applicable.

SECTION XV
REGULATORY INFORMATION

Federal and State Regulations: Superfund Amendments and Reauthorization Act of 1986 State (SARA) Title III requires emergency planning based on Regulations Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are: **NONE**
Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are: **NONE**
Pennsylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: **NONE**
Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: **NONE**
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: **NONE**
Other Classifications:
WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
DSCL (EEC): This product is not classified according tothe EU regulations.

Protective Equipment: Lab Coat. Wear appropriate respirator when ventilation is inadequate. Saftey glasses.
References: Not Available.
Other Special Considerations: Not Available.

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 29.00

Revision Date: February 6, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Albumin

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **N/A**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

Product should be treated as a chemical and is not for consumption as it has been stored with other nonfood-grade chemicals.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Albumin	9006-59-1	Unspecified	~45 kDa	
Synonyms: Ovalbumin; OVA; Dried egg whites				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
If on skin: Wash with plenty of water.
If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.
When heated to decomposition, may emit toxic fumes.
In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Wipe up the spill with a damp towel. Place in a sealed bag or container, and dispose. and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #2. Store with alcohols, glycols, amines and amides.
Store in a cool, dry place. Heat and moisture sensitive. Store in a Flinn Chem-Saf™ bag.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes. Wash hands thoroughly after handling.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

White to pale yellow powder. Slight musty odor.
Soluble: Water

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Fair to poor. Altered by heat and moisture. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: N.A.
Chronic effects: N.A.
Target organs: N.A.

ORL-MUS LD_{50}: >24 g/kg
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: February 6, 2014

Section 1 Chemical Product and Company Information

80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**ALUMINUM METAL**
Synonyms	Aluminum ; Aluminum Metal

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: Not classified
Pictograms: Not classified
Target organs: None known.

GHS Classification: Not classified
GHS Label information: **Hazard statement(s):** Not classified
Precautionary statement(s): Not classified

Supplementary information:
Do not inhale dust or fumes. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Nommé Chimique	# CAS	%	EINECS
Aluminum	7429-90-5	>99.5%	231-072-3

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Sand, dry chemical, or CO_2 should be used on surrounding fire. Do NOT use water on fire where molten metal is present.
Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear.
Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Reacts with some acids and caustic solutions to produce hydrogen. Molten aluminum may explode on contact with water. It may also react violently with rust, certain metal oxides (e.g. oxides of copper, iron and lead) and nitrates (e.g. ammonium nitrate and fertilizers containing ammonium nitrate).

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dust or fumes. Wash thoroughly after handling. Remove and wash clothing before reuse.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Aluminum, metal and insoluble compounds	TWA: 1 mg/m^3(A4) Respirable fraction	TWA: 5 mg/m^3 Respirable fraction	TWA: 5 mg/m^3 Respirable fraction

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Silver-grey metallic granules
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 660°C (1220°F)
Boiling point: Data not available
Flash point: Not applicable

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Not applicable
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): 0.95 - 0.113 lb/in^3
Relative density (Specific gravity): Data not available
Solubility(ies): Insoluble

Partition coefficient: Data not available
Auto-ignition temperature: Not applicable
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Al
Molecular weight: 26.98

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and heat.

Incompatibilities with other materials: Strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons, and water.

Hazardous decomposition products: Reacts with water (in molten form), acids or alkalies to generate hydrogen gas.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation of dust or fumes may irritate respiratory system.
Ingestion: May be harmful if swallowed.
Skin: May cause irritation.
Eyes: Contact with eyes may cause irritation.
Signs and symptoms of exposure: It has been reported that chronic exposure has been suspected of causing lung injury. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards. .
Additional information: RTECS #: BD0330000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Aluminum	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 44.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Aluminum Sulfate

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Skin corrosion or irritation (Category 2). Causes skin irritation (H315).

Hazard class: Serious eye damage or irritation (Category 1). Causes serious eye damage (H318).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Aluminum sulfate hydrate	17927-65-0	$Al_2(SO_4)_3 \bullet 18H_2O$	666.42	
Synonyms: Lake alum; Aluminum trisulfate				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** seek medical attention (P337+P313).
If on skin: Wash with plenty of water (P302). Take off contaminated clothing and wash before reuse (P362).
If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.
When heated to decomposition, may emit toxic fumes.
In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Wipe up the spill, place in a sealed bag or container, and dispose. Wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #2. Store with acetates, halides, sulfates, sulfites, thiosulfates and phosphates. Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264).Use exhaust ventilation to keep airborne concentrations low.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

White/tan powder. Odorless.
Soluble: Water (36.4%). Insoluble in alcohol.

Melting point: 770 ^{o}C
Specific gravity: 1.69

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers.
When heated to decomposition, emits toxic fumes of SOx.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: N.A.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD_{50}: 6207 mg/kg
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (233-135-0).

SECTION 16 — OTHER INFORMATION

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 21, 2014

MATERIAL SAFETY DATA SHEET

Product Name: Crystaltex Glazes (Lead free) Product Code: CTL Series - AP

Manufacturer's Name: American Art Clay Co. Inc.
6060 Guion Road
Indianapolis, IN 46254

Information Number: (800) 374-1600 Emergency Number: (800) 374 –1600

Section I – Product Identification

Product Name: Crystaltex Glaze (Lead free) Product Class: Ceramic Glaze Product Size: 16 oz.

CTL 1, 3, 9, 10, 11, 12,15, 22, 23, 30, 31, 32, 34, 35, 36, 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 52, 54, 61, 67, 69, 70, 71 and Class Pack

Section II – Hazardous Ingredients

Reportable Components	CAS#	Vapor Pressure Mm Hg @ Temp	Weight Percent
Water	7732-18-5		
Sodium Borosilicate Frit	65997-18-4		
Clay	1332-58-7		
Flint	14808-60-7		
Gum	9004-32-4		

No reportable quantities of hazardous ingredients are present.

This product carries the "AP" Seal. No hazardous ingredients. Labeling conforms to ASTM D4236.

Section III – Physical / Chemical Characteristics

Boiling Range: NA
Specific Gravity (H20=1): Less than 2
Vapor Density: Heavier than air.
Evaporation Rate: NA
Coating V.O.C.: NA
Material V.O.C.: NA
Appearance and Odor: Liquid

Section IV – Fire and Explosion Hazard Data

Flash Point: NA
Method Used: NA
Flammable Limits in Air BY Volume: NA – Lower
NA – Upper
Extinguishing Media: NA
Special Firefighting Procedures: No fire hazard.
Unusual Fire and Explosion Hazards: No fire hazard.

Section V – Reactivity Data

Stability: Stable
Conditions to Avoid: None
Incompatibility (Materials to Avoid): None
Hazardous Decomposition or Byproducts: Will not occur
Hazardous Polymerization: Will not occur.

Section VI – Health Hazard Data

Inhalation Health Risks and Symptoms: None

Skin and Eye Contact Health Risks and Symptoms of Exposure: Eye – rinse eyes with water for 15 minutes. If irritation persists contact physician. Skin – wash hands with soap and water after use.

Skin Absorption Health Risks and Symptoms of Exposure: None

Ingestion Health Risks and Symptoms of Exposure: No hazardous ingredients.

Health Hazards (Acute / Chronic): No hazardous ingredients.

Carcinogenicity: No – NTP Carcinogen No – IARC Monographs No – OSHA Regulated

Medical Conditions Generally Aggravated By Exposure: Unknown

Emergency and First Aid Procedures: Contact your local poison control for further health information.

Section VII – Precautions for Safe Handling and Use

Steps to be taken in case material is released or spilled: Specific steps not necessary.

Waste Disposal Method: Dispose of paper towels in trash and rinse sponge. In manufacturing, dispose of in accordance to Local, State or Federal regulations.

Precautions to be taken in handling and storing: Always keep lid tightly on jar of moist product while not in use or storage. Uncovered product will dry out.

Other Precautions: None

Section VIII – Control Measures

Respiratory Protection: Not needed.
Ventilation: Not needed.
Protective Gloves: Not needed.
Eye Protection: Not needed.
Other Protective Clothing or Equipment: Not needed.
Work / Hygienic Practices: Refer to AMACO Product Encyclopedia & Safety Manual.

Section IX – Disclaimer

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Since conditions of use are beyond our control we make no warranties, expressed or implied, except those that may be contained in our written acknowledgement.

Prepared by: L. Jenkins
1/2015

MATERIAL SAFETY DATA SHEET

Product: Lead Free Gloss Glazes PRODUCT CODE: LG Series - AP

Manufacturer's Name: American Art Clay CO., Inc.
Address: 6060 Guion Road
Indianapolis, IN 46254

Information Number: (800) 374-1600 Emergency Number: (800) 374-1600

Section 1- Product Identification

Product Name: Gloss Glazes Product Class: Ceramic Glazes Product Size: 16 oz., 1 lb., gal

LG. 1, 10, 11, 14, 20, 21, 23, 24, 30, 32, 34, 36, 40, 42, 44, 48, 50, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 65, 67, 68, 760, DC 10, DW-11, Bennett Clear , Brickyard Clear Gloss Glaze and Class Packs

Section II – Hazardous Ingredients

Reportable Components	CAS#	Vapor Pressure Mm Hg @ Temp	Weight Percent
Water	7732-18-5		
Sodium Borosilicate Frit	65997-18-4		
Clay	1332-58-7		
Inorganic Stains	Mixture		
Gum	9004-32-4		

No reportable quantities of hazardous ingredients are present.

No hazardous ingredients. This product carries the "AP" Seal. Labeling conforms to ASTM D4236.

Section III – Physical / Chemical Characteristics

Boiling Range: N/A
Specific Gravity (H20=1): Less than 2
Vapor Density: Heavier than air.
Evaporation Rate: N/A
Coating V.O.C.: N/A
Material V.O.C.: N/A
Appearance and Odor: Liquid / Dry

Section IV – Fire and Explosion Hazards Data

Flash Point: N/A
Method Used: N/A
Flammable limits In Air by Volume: NA - Lower
NA - Upper:
Extinguishing Media: N/A
Special Firefighting Procedures: No fire hazards.
Unusual Fire and Explosion Hazards: None.

Section V- Reactivity Data

Stability: Stable
Conditions to Avoid: None
Incompatibility (Materials to Avoid): None
Hazardous Decomposition or Byproducts: Will not occur.
Hazardous Polymerization: Will not occur.

Section VI – Health Hazard Data

Inhalation Health Risks and Symptoms of Exposure: None.

Skin and Eye Contact Health Risks and Symptoms of Exposure: Rinse eyes thoroughly with water for 15 minutes. If irritation persists contact physician. Skin - wash hands with soap and water.

Skin Absorption Health Risks and Symptoms of Exposure: None.

Ingestion Health Risks and Symptoms of Exposure: No hazardous ingredients.

Health Hazards (Acute / Chronic): No hazardous ingredients.

Carcinogenicity: No- NTP Carcinogen No - IARC Monographs No - OSHA Regulated

Medical Conditions Generally Aggravated by Exposure: Unknown.

Emergency and First Aid Procedures: Contact your local poison control for further health information.

Section VII – Precautions for Safe Handling and Use

Steps to be taken in case material released or spilled: Specific steps not necessary.

Waste Disposal Method: Dispose of paper towel in trash and rinse sponge. In manufacturing, dispose of in accordance to Local, State and Federal regulations.

Precautions to be taken in handling and storing. Always keep lid tightly on jar of moist product while not in use or storage. Uncovered product will dry out.

Other precautions: None.

Section VIII – Control Measures

Respiratory Protection: When spraying or mixing dry glaze use NIOSH certified mask for dust or mist. Not needed for brush, sponge or dipping application.

Ventilation: Not needed for brush application. If spraying glazes use spray booth.

Protective Gloves: Not needed.

Eye Protection: Not needed.

Other Protective Clothing or Equipment: Not needed.

Work /Hygienic Practices: Refer to AMACO Product Encyclopedia & Safety Manual.

Section IX – Disclaimer

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Since conditions of use are beyond our control we make no warranties, expressed or implied, except those that may be contained in our written acknowledgement.

Prepared By: L. Jenkins
1/2015

MATERIAL SAFETY DATA SHEET

Product Name: AMACO Enamels | Product Code: ARO & ART

Manufacturer's Name: American Art Clay Co. Inc.
6060Guion Road
Indianapolis, IN 46254

Information Number: (800) 374-1600 | Emergency Number: (800) 374-1600

Section I – Product Identification

Product Name: AMACO Enamels | Product Class: Ceramic Specialty | Product Size: 2 oz.

All colors in ARO & ART Series

Section II – Hazardous Ingredients

Reportable Components	CAS#	Vapor Pressure Mm Hg @ Temp	Weight Percent

No reportable quantities of hazardous ingredients are present.

Carries the "AP" Seal. Labeling conforms to ASTM D4236.

Section III – Physical / Chemical Characteristics

Boiling Range: NA
Specific Gravity (H20=1): Less than 2
Vapor Density: Heavier than air
Evaporation Rate: NA
Coating V.O.C.: NA
Material V.O.C.: NA
Appearance & Odor: Powders.

Section IV – Fire and Explosion Hazard Data

Flash Point: NA
Method Used: NA
Flammable Limits In Air By Volume: NA- Lower
NA – Upper
Extinguishing Media: NA
Special Firefighting Procedure: No fire hazard.
Unusual Fire and Explosion Hazards: No fire hazard.

Section V – Reactivity Data

Stability: Stable
Conditions to Avoid: None
Incompatibility (Materials to Avoid): None
Hazardous Decomposition or Byproducts: Will not occur.
Hazardous Polymerization: Will not occur.

Section VI – Health Hazard Data

Inhalation Health Risks and Symptoms of Exposure: None

Skin and Eye Contact Health Risks and Symptoms of Exposure: Eye: rinse eyes with water for 15 minutes. If irritation persists, contact physician. Skin – wash hands with soap and water after use.

Skin Absorption Health Risks and Symptoms of Exposure: None.

Ingestion Health Risks and Symptoms of Exposure: None.

Health Hazards (Acute / Chronic): None. No hazardous ingredients.

Carcinogenicity: No – NTP Carcinogens No – IARC Monographs No – OSHA Regulated

Medical Conditions Generally Aggravated by Exposure: Unknown.

Emergency and First Procedures: Contact your local poison control for further health information.

Section VII – Precautions for Safe Handling and Use

Steps to Be Taken In Case Material Released or Spilled: No specific steps necessary.
Waste Disposal Method: Dispose of paper towels in trash and rinse sponge. In manufacturing, dispose of in accordance to Local, State or Federal regulations.
Precautions To Be Taken In Handling and Storing: Keep in dry storage.
Other Precautions: None

Section VIII – Control Measures

Respiratory Protection: Not needed.
Ventilation: Not needed.
Protective Gloves: Not needed.
Eye Protection: Not needed.
Other Protective Clothing or Equipment: Not needed.
Work / Hygienic Practices: Refer to AMACO Product Encyclopedia & Safety Manual for further information. Manual available upon request.

Section IX – Disclaimer

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Since conditions of use are beyond our control we make no warranties, expressed or implied, except for those that may be contained in our written acknowledgement.

Prepared by: L. Jenkins
2005
DISCONTINUED PRODUCT

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: AA0210
Revision Date: September 6, 2013
Approved by: James A. Bertsch

MSDS No.: AA0210

Section 1 Chemical Product and Company Information

Product	**AMMONIA SOLUTION (HOUSEHOLD)**
Synonyms	Ammonium Hydroxide, Water Solution

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE BURNS.
Store in a cool place. Avoid inhalation of vapors. Avoid contact with skin, eyes and clothing. Target organs: Eyes, skin, mucous membranes.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	2
Fire	0
Reactivity	1
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Ammonium hydroxide (as Ammonia)	1336-21-6	~4%	25 ppm in air as ammonia
Water	7732-18-5	~96%	None established. (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Fires involving a small amount of combustibles may be smothered by dry chemical. In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.

Flash Point: N/A

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Remove all sources of ignition. Provide adequate ventilation. Recover for use if not contaminated. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Liquid.
Appearance: Clear, colorless.
Odor: Strong ammonia odor.
pH: N/A
Vapor pressure (mm Hg): 14 (water)
Vapor Density (Air = 1): 0.7 (water)
Evaporation rate (Water= 1): > 1
Viscosity: N/A
Boiling point: ~100°C (212°F)
Freezing / Melting point: ~0°C (32°F)
Decomposition temperature: N/A
Solubility: Complete.
Specific gravity (H_2O = 1): ~1.0
Percent volatile (%): 100%
Molecular formula: Mixture.
Molecular weight: Mixture.

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures.
Hazardous polymerization: Will not occur.

Incompatibilities with other materials: Acids, strong oxidizers, halogens, heavy metals.

Hazardous decomposition products: Decomposes to ammonia gas and above 450°C (842°F) to hydrogen gas and nitrogen oxides.

Section 11 Toxicological Information

Effects of overexposure: May cause severe irritation or burns to eyes, skin and mucous membranes. Highly toxic by oral and inhalation routes. Inhalation of ammonia fumes causes edema, spasm and asphyxia. Exercise appropriate procedures to minimize potential hazards.

ORL-RAT LD50: 350 mg/kg (ammonia)
IHL-RAT LC50: N/A
SKN-RBT LD50: N/A

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

Ammonia solution: TSCA-listed, EINECS-listed (215-647-6), RCRA code D002

Section 16 Additional Information

Section 1 Chemical Product and Company Identification

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

Boreal Science
399 Vansickle Road
St. Catherines, Ontario
L2S 3T4 Canada
Tel: (800) 387-9393

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**AMMONIUM CHLORIDE**
Synonyms	Ammonium Muriate ; Sal Ammoniac

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS07
Target organs: None known

GHS Classification:
Acute toxicity, oral (Category 4)
Eye irritation (Category 2A)

GHS Label information: **Hazard statement:**
H302: Harmful if swallowed.
H319: Causes serious eye irritation.

Precautionary statement:
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Ammonium chloride	12125-02-9	100%	235-186-4

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.
Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.
Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Reacts violently with ammonium nitrate and potassium chlorate. This generates fire and explosion hazard. Vaporizes at temperatures of about 335°C (653°F) evolving fumes of nitrogen oxides, chloride ions and ammonia gas.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Ammonium chloride fume	TWA: 10 mg/m^3 STEL: 20 mg/m^3	None established	TWA: 10 mg/m^3 STEL: 20 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid, white, crystalline powder
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 520°C (968°F)
Boiling point: Sublimes @ 340°C (644°F)
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: as NH_3 **Lower:** 15% **Upper:** 28%
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 1.527
Solubility(ies): Soluble in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: NH_4Cl
Molecular weight: 53.49

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Somewhat hygroscopic. Has an acid reaction in aqueous solution, solid tends to lose ammonia and become more acid on exposure and in storage.

Incompatible materials: Oxidizing agents, acids, bases, lead and silver salts.

Hazardous decomposition products: Ammonia and hydrogen chloride.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 1,650 mg/kg
Skin corrosion/irritation: Skin-rabbit - Slight irritant.
Serious eye damage/irritation: Eyes-rabbit - irritant.
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation of dust or fume from heating may cause upper respiratory tract irritation, coughing, and choking sensation.
Ingestion: Ingestion of large doses cause nausea, vomiting, acidosis, irritation of the mouth, esophagus and gastric system. Ingestion may result in low grade toxicity.
Skin: Contact with skin causes irritation and/or dermatitis.
Eyes: Contact with eyes causes irritation and/or visual impairment.
Signs and symptoms of exposure: See Potential health effects above. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: BP4550000

Section 12 Ecological Information

Toxicity to fish: Salmo clarki (fish, fresh water, marine), LC50 = 123.8 - 166.6 mg/L/96 hours
Toxicity to daphnia and other aquatic invertebrates: Artemia salina (Crustacea), EC50 = 28 mg/L/24 hours
Toxicity to algae: Dunaliella tertiolecta (Algae) EC40 = 21.3 mg/L/90 minutes
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2016 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Ammonium chloride	Listed	5000 lbs (2270 kg)	Not listed	Listed	Not listed

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

SAFETY DATA SHEET

Version 3.7
Revision Date 09/11/2014
Print Date 10/02/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Ammonium hydroxide solution
Product Number	:	318620
Brand	:	Fluka
Product Use	:	For laboratory research purposes.
Supplier	:	Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA
Telephone	:	+1 9058299500
Fax	:	+1 9058299292
Emergency Phone # (For both supplier and manufacturer)	:	1-800-424-9300
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
E	Corrosive Material	Corrosive to skin

GHS Classification

Skin corrosion/irritation (Category 2)
Serious eye damage/eye irritation (Category 1)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H315	Causes skin irritation.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 3
Flammability: 0
Physical hazards: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Ammonia aqueous
Ammonia water

Formula : H_5NO

CAS-No.	EC-No.	Index-No.	Concentration
Water			
7732-18-5	231-791-2	-	>= 95 %
Ammonium hydroxide			
1336-21-6	215-647-6	007-001-01-2	< 5 %

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NOx)

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls
Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	clear, liquid
Colour	colourless

Safety data

pH	No data available
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	No data available
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available

Upper explosion limit	No data available
Vapour pressure	No data available
Density	0.9 g/cm3 at 25 °C (77 °F) 0.995 g/cm3 at 25 °C (77 °F)
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
No data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NOx)
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
No data available

Inhalation LC50
No data available

Dermal LD50
No data available

Other information on acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes: No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

No data available

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Ammonium hydroxide)
Marine pollutant: Marine pollutant

IATA
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Ammonium hydroxide)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
E	Corrosive Material	Corrosive to skin

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Further information

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**AMMONIUM NITRATE**
Synonyms	Nitric Acid Ammonium Salt

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: GHS03 / GHS07
Target organs: Liver, Kidneys, Blood

GHS Classification:
Oxidizing solid (Category 3)
Acute toxicity, oral (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2A)

GHS Label information: **Hazard statement(s):**
H272: May intensify fire; oxidizer.
H303: May be harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.

Precautionary statement(s):
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep away from clothing/incompatible/combustible materials.
P221: Take any precaution to avoid mixing with combustibles/acids/oxidizers.
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P312: Call a POISON CENTER or doctor if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Ammonium nitrate	6484-52-2	100%	229-347-8

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam. **Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool. **Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Strong oxidizer. If heated under confinement, material may explode. Ammonium nitrate of any grade, including fertilizer, when contaminated with oil, charcoal or other organic materials should be considered an explosive capable of dentonation by combustion or by explosion of adjacent explosive materials. Combustion by-products include oxides of nitrogen and ammonia. Closed containers may rupture violently when heated.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 140)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particulates not otherwise classified/regulated	None established.	TWA: 5 mg/m^3 Respirable fraction	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Hygroscopic solid. White granules
Odor: No odor.
Odor threshold: Data not available.
pH: 5.4
Melting / Freezing point: 169°C (338°F)
Boiling point: Decomposes
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 1.73 @ 23°C
Solubility(ies): 118 g/100 g water @ 30°C

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: 210°C (410°F)
Viscosity: Data not available.
Molecular formula: NH_4NO_3
Molecular weight: 80.05

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and other sources of ignition. Combustible and organic materials.

Incompatible materials: Peroxides, strong oxidizers, reducing agents, organic materials.

Hazardous decomposition products: Nitrogen oxides.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 2217 mg/kg ; Inhalation-rat LC50: >88.8 mg/L/4 hours [Ammonium nitrate]
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
Ingestion: May cause gastroenteritis and abdominal pains. Purging and diuresis can be expected. Rare cases of nitrates being converted to the more toxic nitrites have been reported, mostly with infants.
Skin: Causes irritation to skin. Symptoms include redness, itching, and pain.
Eyes: Causes irritation, redness, and pain.
Signs and symptoms of exposure: Small repeated oral doses of nitrates may cause weakness, depression, headache, and mental impairment. Persons with stomach diseases and infants are much more sensitive to nitrate ion toxicity.
Additional information: RTECS #: BR9050000 [Ammonium nitrate]

Section 12 Ecological Information

Toxicity to fish: Cyprinus carpio (Fish, fresh water) LC50: 74 mg/L/48 hours
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea) EC50: 555 mg/L
Toxicity to algae: Scenedesmus quadricauda (Algae) EC50: 83 mg/L
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1942
Shipping name: Ammonium nitrate
Hazard class: 5.1
Packing group: III
Reportable Quantity: No
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 5 Kg
2012 ERG Guide # 140

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Ammonium nitrate	Listed	Not listed	Not listed	Listed	Not listed	C

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: February 26, 2013 **Supercedes:** November 22, 2011

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**NITRATE D'AMMONIUM**
Synonymes	Nitrique sel d'ammonium d'acide

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé comme dangereux à ce selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: AVERTISSEMENT
Pictogrammes: GHS03 / GHS07
Les organes cibles: Le foie, les reins, la sang

Classification par le GHS:
Oxidizing solid (Catégorie 3)
Acute toxicity, oral (Catégorie 5)
Skin irritation (Catégorie 2)
Eye irritation (Catégorie 2A)

Renseignements sur l'étiquette GHS: Mention de danger(s):
H272: Peut aggraver un incendie; comburant.
H303: Peut être nocif en cas d'ingestion.
H315: Provoque une irritation cutanée.
H319: Provoque une sévère irritation des yeux.

Déclarations de précaution(s):
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P220: Tenir à l'écart des vêtements / incompatibilités / matières combustibles.
P221: Prendre toutes précautions pour éviter de mélanger avec des matières combustibles / acides / oxydants.
P264: Se laver les mains soigneusement après manipulation.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P302+P352: EN CAS DE CONTACT AVEC LA PEAU: Laver abondamment à l'eau et du savon.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P332+P313: En cas d'irritation cutanée: Obtenir des soins médicaux.
P337+P313: Si l'irritation oculaire persiste: Obtenir des soins médicaux.
P362+P364: Enlever les vêtements contaminés et les laver avant réutilisation.
P370+P378: En cas d'incendie: Utiliser un produit chimique sec, mousse anti-alcool, dioxyde de carbone ou eau pulvérisée pour l'extinction.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Nitrate d'ammonium	6484-52-2	100%	229-347-8

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT PROVOQUER UNE IRRITATION LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: CAUSE L'IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool. **Actions de protection pour les sapeurs-pompiers:** En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés. **Dangers spécifiques:** En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Oxydant fort. Si de chauffage sous l'emprisonnement, le matériel peut éclater. Le nitrate d'ammonium de n'importe quelle catégorie, y compris l'engrais, une fois souillé avec de l'huile, charbon de bois ou d'autres matériaux organiques devrait être considéré un explosif capable du dentonation par la combustion ou par l'explosion des matériaux explosifs adjacents. Les sous-produits de combustion incluent des oxydes de l'azote et de l'ammoniaque. Les récipients fermés peuvent se rompre violemment une fois de chauffage.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 140)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:	Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Particules non classées / réglementé	Aucun établi	TWA: 5 mg/m^3 Fraction respirable	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Hygroscopic solid. White granules
Odeur: Aucun odeur
Seuil de l'odeur: Données non disponibles.
pH: 5.4
Point de fusion / congélation: 169°C (338°F)
Point d'ébullition: Se décompose
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 1.73 @ 23°C
Solubilité (s): 118 g/100 g water @ 30°C

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: 210°C (410°F)
Viscosité: Données non disponibles.
Formule moléculaire: NH_4NO_3
Poids moléculaire: 80.05

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives et d'autres sources d'allumage. Matières combustibles et inorganique.

Matières incompatibles: APeroxydes, comburante fortes, l'agents réducteurs, matériaux organiques.

Produits dangereux de décomposition: Oxydes d'azote.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 2217 mg/kg ; Inhalation-rat LC50: >88.8 mg/L/4 hours [Nitrate d'ammonium]
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Provoque une irritation des voies respiratoires. Les symptômes peuvent inclure la toux, de l'essoufflement.
Ingestion: Peut causer des douleurs abdominales et gastro-entérite. La purge et la diurèse peut être prévu. De rares cas de nitrates transformés en nitrites plus toxiques ont été rapportés, principalement chez les nourrissons.
Peau: Provoque une irritation de la peau. Les symptômes incluent des rougeurs, des démangeaisons et des douleurs.
Yeux: Provoque une irritation, des rougeurs et des douleurs.
Les signes et les symptômes de l'exposition: Les petites doses orales répétées de nitrates peut provoquer une faiblesse, dépression, maux de tête, et déficience mentale. Les personnes atteintes de maladies d'estomac et les nourrissons sont beaucoup plus sensibles à la toxicité d'ions nitrate.
Informations complémentaires: RTECS #: BR9050000 [Nitrate d'ammonium]

Section 12 L'Information Écologique

Toxicité pour les poissons: Cyprinus carpio (Fish, fresh water) LC50: 74 mg/L/48 hours
Toxicité pour les daphnies et autres invertébrés aquatiques: Daphnia magna (Crustacea) EC50: 555 mg/L
Toxicité pour les algues: Scenedesmus quadricauda (Algae) EC50: 83 mg/L
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: UN1942 **Nom d'expédition:** Nitrate d'ammonium
Classe de danger: 5.1 **Groupe d'emballage:** III **Quantité à déclarer:** No **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 Kg **2012 ERG Guide #:** 140

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Nitrate d'ammonium	Listed	Not listed	Not listed	Listed	Not listed	C

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 26 février, 2013 **Remplace:** 22 novembre, 2011

MATERIAL SAFETY DATA SHEET

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9503404 9503406 9509806
Effective Date: October 29, 2002

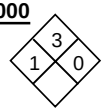
SECTION I NAME

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

Product	n-Amyl Alcohol
Chemical Synonyms	1-Pentanol; Pentyl Alcohol
Formula	$CH_3(CH_2)_3CH_2OH$
CAS No.	71-41-0

NFPA



Health	2
Flammability	2
Reactivity	1

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
n-Amyl alcohol: (CAS No. 71-41-0)	100%	N/A
WARNING! FLAMMABLE!		

SECTION III PHYSICAL DATA

Melting Point (°C)	-79°C	Specific Gravity (H_2O = 1)	0.813 @ 20°C
Boiling Point (°C)	133.0°C	Percent Volatile by Volume (%)	100%
Vapor Pressure (mm Hg)	2 mm @ 20°C	Evaporation Rate (Butyl acetate =1)	0.23
Vapor Density (Air=1)	3.04		
Solubility in Water	2.7 grams per 100 mL. @ 22°C		
Appearance & Odor	Clear liquid; mild odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	33°C (Closed cup)	Flammable Limits in Air % by Volume	1.2%	10%

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

The product is flammable. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instanty. Fire or excessive heat may produce hazardous decomposition products

Autoignition Temperature: 300°C

TDG **Class 3 Flammable liquid. UN 1105**

SECTION V REACTIVITY DATA

AA0349

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	Oxidizing materials.
	No		
Hazardous Decomposition Products	These products are carbon oxides.		
Reactive under what conditions	Keep away from heat and sources of ignition.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Ingestion. Inhalation.
TLV	N/A
Toxicity for animals	LD50: 2200 mg/Kg Oral rat
Chronic effects on humans	There are no known effects from chronic exposure to this product. Target organs: Central nervous system, eyes, liver, kidneys.
Acute effects on humans	Harmful if inhaled or swallowed. Irritating to the eyes, skin and respiratory system.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition.
Precautions	Do not breathe gas, fumes, vapor or spray. Avoid contact with skin and eyes. Use with adequate ventilation. Do not ingest. If ingested, seek immediate medical attention.
Spill or leak	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container.
Protective Clothing	Safety glasses. Lab coat. Vapor respirator.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No.	4	Date	October 29, 2002	Approved	Michael Raszeja

Fiche Signalétique

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS 9503404 9503406 9509806
Validé par: 29 octobre, 2002

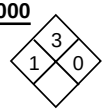
SECTION I Identification

Produit	Alcool n-amylique
Synonymes	1-Pentanol; Alcool pentyle
Formule	$CH_3(CH_2)_3CH_2OH$
# CAS	71-41-0

Telephone D'urgence

416-984-3000

NFPA



Santé	2
Flammabilité	2
Reactivité	1

WHMIS

Niveau de risque

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

SECTION II Ingrédients Dangereux

Nom	%	TWA
Alcool n-amylique: (CAS No. 71-41-0)	100%	Non-disponible.
AVERTISSEMENT! INFLAMMABLE!		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	-79°C	Gravité spécifique (Eau = 1)	0,813 @ 20°C
Point d'ebullition (°C)	133,0°C	Volatilité % par volume	100%
Tension de vapeur (mm Hg)	2 mm @ 20°C	Taux d'évaporation (Acetate butyl =1)	0,23
Densité de la vapeur (Air=1)	3,04		
Solubilité	2,7 g/100 mL. @ 22°C		
Odeur et apparence	Liquide sans couleur; odore caracteristique.		

SECTION IV Risques D'incendie ou D'explosion

			Seuil minimal	Seuil maximal
Point d'éclair	Creuset Fermé: 33°C	Limites d'inflmmabilité % par volume	1,2 %	10%

Moyens d'extinction

Utiliser des poudres chimiques sèches, du CO_2, une mousse d'alcool ou de l'eau pulvérisée. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Le produit est inflammable. Les vapeurs formées de ce produit sont plus lourdes que l'air et peuvent voyager le long de la terre à une source d'ignition et voyagez dos immédiatement. Le feu ou la chaleur excessive peut produire les produits dangereux de décomposition.

Temperature d'auto-ignition: 300°C.

TMD **Classe 3 Liquide inflammable. UN 1105**

SECTION V Données sur la Réactivité

AA0349

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	Matiéres comburants.
	non		
Produits de decomposition dangereux	Ces produits sont des oxydes de carbone.		
Conditions de Réactivité	Tenir à l'écart de la chaleur et de toute source d'ignition.		

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Ingestion. Inhalation.
LMP	Non-disponible.
Toxicité pour les animaux	LD50: 2200 mg/kg oral rat
Effets chroniques sur les humains	II n'y a aucun effet connu dû à une exposition chronique à ce produit. Les système nerveux central, les yeux, le foie et les reins sont des organes de cible.
Effets aigué sur les humains	Nuisible en cas d'inhalation ou en cas d'ingestion. Irritant pour les yeux, les voies respiratoires et la peau.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Les matières inflammables devraient être entreposées dans une armoire ou une pièce sécuritaire indépendante. Conserver à l'écart de la chaleur. Conserver à l'écart de toute source d'ignition.
Précautions	Ne pas inhaler les gaz, fumées, vapeurs ou aérosols. Éviter tout contact avec la peau et les yeux. Utilsez la ventilation adéquate. Ne pas ingérer. En cas d'ingestion il faut obtenir immédiatement de l'aide médicale.
Déversement ou fuite	Diluer avec de l'eau et absorber avec une moppe, ou absorber avec une substance inerte SÈCHE et mettre dans un contenant de récupération approprié.
Vêtements de protection	Lunettes de sécurité. Blouse de laboratoire. Respirateur anti-vapeurs.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	4	Date	29 octobre, 2002	Vérifié par	Michael Raszeja

Section 1 Chemical Product and Company Identification

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

Boreal Science
399 Vansickle Road
St. Catherines, Ontario
L2S 3T4 Canada
Tel: (800) 387-9393

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**AMYLASE**
Synonyms	Bacterial Amylase (50,000 BAU/g) / Alpha-Amylase / α-Amylase

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS08
Target organs: None known.

GHS Classification:
Respiratory sensitization (Category 1)

GHS Label information:
Hazard statement:
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement:
P261: Avoid breathing dust.
P284: Wear respiratory protection.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with all local, state and federal regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Calcium carbonate	1317-65-3	85-95%	215-279-6
Amylase	9000-90-2	3-8%	232-565-6
Starch, potato	9005-25-8	2-7%	232-679-6

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Amylase	None established.	None established.	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Pale yellow powder.
Odor: Characteristic bland odor.
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: Data not available
Boiling point: Decomposes.
Flash point: Not flammable.

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available
Explosion limits: Upper / Lower: Data not available
Vapor pressure (mm Hg): Negligible.
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): Data not available
Solubility(ies): Soluble in water.

Partition coefficient: (n-octanol / water): Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: Data not available
Molecular weight: Data not available

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and heat. Stable under recommended storage conditions.

Incompatibilities with other materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, nitrogen oxides and sulfur oxides.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May cause respiratory tract irritation.
Ingestion: No adverse health effects expected by ingestion.
Skin: May cause allergic reactions.
Eyes: May cause irritation.
Signs and symptoms of exposure: May cause coughing, symptoms similar to a cold. To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: None assigned
Shipping name: Not Regulated.
Hazard class: None assigned **Packing group:** None assigned **Reportable Quantity:** No **Marine pollutant:** No **Exceptions:** No

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Amylase	Listed	Not listed	Not listed	Not listed	Not listed

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Ammo-Lock

Mars Fishcare North America, Inc.

Chemwatch Hazard Alert Code: **1**

Chemwatch: **4656-48**
Version No: **4.1.1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **06/27/2017**
Print Date: **10/23/2018**
S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Ammo-Lock
Synonyms	Solution ID# 3337
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions. For product 45.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Mars Fishcare North America, Inc.**
Address	50 E. Hamilton Street United States
Telephone	215 822 8181
Fax	215 997 1290
Website	Not Available
Email	Not Available

Emergency phone number

Association / Organisation	**Not Available**
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Not Applicable

Label elements

Hazard pictogram(s)	Not Applicable

SIGNAL WORD	NOT APPLICABLE

Hazard statement(s)

Not Applicable

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
	>17	alphatic amine salts, proprietary
10102-17-7	NotSpec.	sodium thiosulfate pentahydrate

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ‣ Wash out immediately with water. ‣ If irritation continues, seek medical attention. ‣ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ‣ Flush skin and hair with running water (and soap if available). ‣ Seek medical attention in event of irritation.
Inhalation	‣ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ‣ Other measures are usually unnecessary.
Ingestion	‣ Immediately give a glass of water. ‣ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	‣ Use water delivered as a fine spray to control fire and cool adjacent area. ‣ **Do not** approach containers suspected to be hot. ‣ Cool fire exposed containers with water spray from a protected location.
Fire/Explosion Hazard	‣ Non combustible. ‣ Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: carbon dioxide (CO2) nitrogen oxides (NOx) sulfur oxides (SOx) other pyrolysis products typical of burning organic material.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Control personal contact with the substance, by using protective equipment.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Limit all unnecessary personal contact. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. ▸ Avoid reaction with oxidising agents

+ + + + + + +

X — Must not be stored together
0 — May be stored together with specific preventions
+ — May be stored together

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium thiosulfate pentahydrate	Sodium thiosulfate pentahydrate	2.4 mg/m3	26 mg/m3	1,200 mg/m3
sodium thiosulfate pentahydrate	Sodium thiosulfate	38 mg/m3	410 mg/m3	2,500 mg/m3

Ingredient	Original IDLH	Revised IDLH
sodium thiosulfate pentahydrate	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.

Personal protection	
Eye and face protection	▸ Safety glasses with side shields ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	Wear general protective gloves, eg. light weight rubber gloves.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. **OTHERWISE:** ▸ Overalls. ▸ Barrier cream.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear colourless liquid; mixes with water.

Physical state	Liquid	**Relative density (Water = 1)**	1.072
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Applicable
pH (as supplied)	6.9-7.8	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water (g/L)	Miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Ammo-Lock	TOXICITY	IRRITATION
	Not Available	Not Available
sodium thiosulfate pentahydrate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg[1]	Not Available
	Oral (rat) LD50: >2000 mg/kg[1]	
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

SODIUM THIOSULFATE PENTAHYDRATE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.

Acute Toxicity	⊘	**Carcinogenicity**	⊘
Skin Irritation/Corrosion	⊘	**Reproductivity**	⊘
Serious Eye Damage/Irritation	⊘	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	⊘	**STOT - Repeated Exposure**	⊘
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend: ✘ *– Data available but does not fill the criteria for classification*
✔ *– Data available to make classification*
⊘ *– Data Not Available to make classification*

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Ammo-Lock	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
sodium thiosulfate pentahydrate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	24000mg/L	4
	NOEC	0.08	Algae or other aquatic plants	50mg/L	4
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
sodium thiosulfate pentahydrate	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
sodium thiosulfate pentahydrate	LOW (LogKOW = -1.529)

Mobility in soil

Ingredient	Mobility
sodium thiosulfate pentahydrate	LOW (KOC = 6.124)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	‣ Recycle wherever possible. ‣ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ‣ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

SODIUM THIOSULFATE PENTAHYDRATE(10102-17-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory	US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No

Germ cell mutagenicity	No
Simple Asphyxiant	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

State Regulations

US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium thiosulfate pentahydrate)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	*Y = All ingredients are on the inventory* *N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

Revision Date	06/27/2017
Initial Date	Not Available

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

Stress Coat Marine

Mars (Mars Fishcare)

Chemwatch Hazard Alert Code: **2**

Chemwatch: **6632-76**
Version No: **2.1.1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **01/01/2013**
Print Date: **14/02/2014**
Initial Date: **Not Available**
L.GHS.USA.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Stress Coat Marine
Chemical Name	Not Applicable
Synonyms	Solution ID# RM000184
Proper shipping name	Not Applicable
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions. , For product 385.

Details of the supplier of the safety data sheet

Registered company name	Mars (Mars Fishcare)	Mars (Mars Fishcare)
Address	50 East Hamilton Street Chalfont 18914 PA United States	PO Box 218 Chalfont 18914-0218 PA United States
Telephone	+1 215 822 8181	+1 215 822 8181
Fax	+1 215 822 1906	Not Available
Website	Not Available	Not Available
Email	Not Available	Not Available

Emergency telephone number

Association / Organisation	Not Available	Not Available
Emergency telephone numbers	Not Available	Not Available
Other emergency telephone numbers	Not Available	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	0	
Toxicity	0	
Body Contact	0	
Reactivity	0	
Chronic	2	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

CANADIAN WHMIS SYMBOLS

None

GHS Classification	Not Applicable

Label elements

GHS label elements	

SIGNAL WORD	NOT APPLICABLE

Hazard statement(s)

Not Applicable

Supplementary statement(s)

Not Applicable

Precautionary statement(s): Prevention

Continued...

Not Applicable

Precautionary statement(s): Response

Not Applicable

Precautionary statement(s): Storage

Not Applicable

Precautionary statement(s): Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
85507-69-3	1-10	Aloes, extract
Not Available	1-20	non hazardous ingredients, proprietary
7732-18-5	>70	water

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ▸ Wash out immediately with water. ▸ If irritation continues, seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

	Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	▸ There is no restriction on the type of extinguisher which may be used. ▸ Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves in the event of a fire. ▸ Prevent, by any means available, spillage from entering drains or water courses. ▸ Use fire fighting procedures suitable for surrounding area. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire. ▸ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	▸ Non combustible. ▸ Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: , sulfur oxides (SOx) May emit poisonous fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite.

Continued...

	▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.
Major Spills	Moderate hazard. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Stop leak if safe to do so. ▸ Contain spill with sand, earth or vermiculite. ▸ Collect recoverable product into labelled containers for recycling. ▸ Neutralise/decontaminate residue (see Section 13 for specific agent). ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area and prevent runoff into drains. ▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services.

	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ **DO NOT** enter confined spaces until atmosphere has been checked. ▸ **DO NOT** allow material to contact humans, exposed food or food utensils. ▸ Avoid contact with incompatible materials. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this MSDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this MSDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	None known

PACKAGE MATERIAL INCOMPATIBILITIES

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
water	500(ppm)	500(ppm)	500(ppm)	500(ppm)

Ingredient	Original IDLH	Revised IDLH
Stress Coat Marine	Not Available	Not Available

MATERIAL DATA

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Continued...

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Personal protection

Eye and face protection

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Skin protection

See Hand protection below

Hand protection

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

Body protection

See Other protection below

Other protection

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

Continued...

Thermal hazards	

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Stress Coat Marine

Material	CPI
BUTYL	A
NEOPRENE	A
VITON	A
NATURAL RUBBER	C
PVA	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Not Applicable

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Light green liquid with no odour; mixes with water.

Physical state	Liquid	**Relative density (Water = 1)**	1.094
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Applicable
pH (as supplied)	9.3	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water (g/L)	Miscible	**pH as a solution(1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Not normally a hazard due to non-volatile nature of product The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Continued...

Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. The material may accumulate in the human body and progressively cause tissue damage. Prolonged use of purgatives/ laxatives may produce watery diarrhoea with excessive loss of water and electrolytes (particularly potassium), muscular weakness and weight loss. Changes in intestinal musculature associated with malabsorption, and dilation of the bowel, similar to ulcerative colitis and to megacolon may also result. Cardiac and renal symptoms have also been reported.

	TOXICITY	IRRITATION
Stress Coat Marine	Not Available	Not Available
Aloes, extract	TOXICITY	IRRITATION
	Intraperitoneal (mouse) LD50: 250 mg/kg	
	Not Available	Not Available
water	TOXICITY	IRRITATION
	Not Available	Not Available

Not available. Refer to individual constituents.

ALOES, EXTRACT	Aloe barbadensis Mill., extract
ALOES, EXTRACT, WATER	No significant acute toxicological data identified in literature search.

Acute Toxicity	Not Applicable	**Carcinogenicity**	Not Applicable
Skin Irritation/Corrosion	Not Applicable	**Reproductivity**	Not Applicable
Serious Eye Damage/Irritation	Not Applicable	**STOT - Single Exposure**	Not Applicable
Respiratory or Skin sensitisation	Not Applicable	**STOT - Repeated Exposure**	Not Applicable
Mutagenicity	Not Applicable	**Aspiration Hazard**	Not Applicable

CMR STATUS

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

NOT AVAILABLE

Ingredient	Endpoint	Test Duration	Effect	Value	Species	BCF
Stress Coat Marine	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

Mobility in soil

Ingredient	Mobility
Not Available	Not Available

Continued...

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material). ▸ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

Aloes, extract(85507-69-3) is found on the following regulatory lists	"US American Cleaning Institute Cleaning Product Ingredient Inventory","US NTP (National Toxicology Program) - Management Status Report","US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe, with qualifications"
water(7732-18-5) is found on the following regulatory lists	"US American Cleaning Institute Cleaning Product Ingredient Inventory","US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions","OSPAR National List of Candidates for Substitution – Norway","OECD List of High Production Volume (HPV) Chemicals","US DOE Temporary Emergency Exposure Limits (TEELs)","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","US FMA Air Freshener Fragrance Ingredient Survey Results","US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion","US - Pennsylvania - Hazardous Substance List"

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Stress Zyme

Mars Fishcare North America, Inc.

Chemwatch Hazard Alert Code: **0**

Chemwatch: **4656-5**
Version No: **4.1.1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **06/27/2017**
Print Date: **10/18/2018**
S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Stress Zyme
Synonyms	Solution ID# 3367
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	For product 56.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Mars Fishcare North America, Inc.**
Address	50 E. Hamilton Street United States
Telephone	215 822 8181
Fax	215 997 1290
Website	Not Available
Email	Not Available

Emergency phone number

Association / Organisation	**Not Available**
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Not Applicable

Label elements

Hazard pictogram(s)	Not Applicable
SIGNAL WORD	NOT APPLICABLE

Hazard statement(s)

Not Applicable

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
	0.01	non pathogenic bacterial cultures

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ‣ Wash out immediately with water. ‣ If irritation continues, seek medical attention. ‣ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ‣ Flush skin and hair with running water (and soap if available). ‣ Seek medical attention in event of irritation.
Inhalation	‣ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ‣ Other measures are usually unnecessary.
Ingestion	‣ Immediately give a glass of water. ‣ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting	‣ Use water delivered as a fine spray to control fire and cool adjacent area. ‣ **Do not** approach containers suspected to be hot. ‣ Cool fire exposed containers with water spray from a protected location.
Fire/Explosion Hazard	‣ Non combustible. ‣ Not considered a significant fire risk, however containers may burn.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Control personal contact with the substance, by using protective equipment.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Limit all unnecessary personal contact. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. None known

+ + + + + + +

X — Must not be stored together
0 — May be stored together with specific preventions
+ — May be stored together

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Stress Zyme	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Stress Zyme	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below

Hands/feet protection	Wear general protective gloves, eg. light weight rubber gloves.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. **OTHERWISE:** ▸ Overalls. ▸ Barrier cream.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Cloudy white to light tan liquid suspension with a sweet characteristic odour; mixes with water.

Physical state	Liquid	**Relative density (Water = 1)**	1.0
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Applicable
pH (as supplied)	6.9-7.7	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water (g/L)	Miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

	TOXICITY	IRRITATION
Stress Zyme	Not Available	Not Available
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

Acute Toxicity	⊘	**Carcinogenicity**	⊘
Skin Irritation/Corrosion	⊘	**Reproductivity**	⊘
Serious Eye Damage/Irritation	⊘	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	⊘	**STOT - Repeated Exposure**	⊘
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend: ✘ *– Data available but does not fill the criteria for classification*
✔ *– Data available to make classification*
⊘ *– Data Not Available to make classification*

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Stress Zyme	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	‣ Recycle wherever possible. ‣ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ‣ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

State Regulations

US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	*Y = All ingredients are on the inventory* *N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

Revision Date	06/27/2017
Initial Date	Not Available

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

Section 1 Chemical Product and Company Identification

Aldon Corporation
221 Rochester Street
Avon, NY 14414
(585) 226-6177

CHEMTREC 24 Hour Emergency USA
Phone Number (800) 424-9300
For laboratory and industrial use only.
Not for drug, food or household use.

Product	**URINE, ARTIFICIAL (CONTROL)**
Synonyms	N/A

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: Not applicable.
Target organs: None known.

GHS Classification:
Skin irrit. (Category 3)
Eye irrit. (Category 2B)

GHS Label information: **Hazard statement(s):**
H316: Causes mild skin irritation.
H320: Causes eye irritation.

Precautionary statement(s):
P264: Wash hands thoroughly after handling.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.

Hazards not otherwise classified:
Health hazards not otherwise classified (HHNOC) - Not Known
Physical hazards not otherwise classified (PHNOC) - Not Known

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	>99.89%	231-791-2
Methylparaben	99-76-3	0.1%	202-785-7
Alizarin Yellow R (C.I. No. 14095)	1718-34-9	0.0033%	217-002-4
Thymol	89-83-8	0.0017%	201-944-8

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool. In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental Release Measures

Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.

Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Not applicable.	None established.	None established.	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, yellow liquid.
Odor: No odor.
Odor threshold: N/A
pH: N/A
Melting / Freezing point: ~ 0°C (~ 32°F) [water]
Boiling point: ~ 100°C (212°F) [water]
Flash point: Not flammable.

Evaporation rate (= 1): < 1
Flammability (solid/gas): N/A
Explosion limits: Upper: N/A **Lower:** N/A
Vapor pressure (mm Hg): 14 [water]
Vapor density (Air = 1): 0.7 [water]
Relative density (Specific gravity): 1.0 [water]
Solubility(ies): Complete.

Partition coefficient: (n-octanol / water): N/A
Auto-ignition temperature: N/A
Decomposition temperature: N/A
Viscosity: N/A
Molecular formula: Mixture.
Molecular weight: Mixture.

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: Prolonged contact may cause irritation.
Eyes: Contact may cause irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: DH2450000 [Methylparaben]

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2016 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
All components listed with TSCA.						This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

SAFETY DATA SHEET
ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Recommended use of the chemical and restrictions on use

Application Fine Art Painting

Uses advised against No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Supplier
ColArt Americas Inc.
11 Constitution Avenue
Piscataway
New Jersey 08855 - 1396
USA
1-732-562-0770
R.Enquiries@colart.co.uk

Contact Person Regulatory Manager

Manufacturer
ColArt Tianjin Art Materials Co Ltd
80 Xianyang Road
Nankai District
Tianjin, 300113
China

+86 222736 7907
+86 222736 2015

Emergency telephone number

Emergency telephone For health information only call 1-800-628-3385 Piscataway NJ 08855.

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Not Classified

Environmental hazards Not Classified

Label elements

Hazard statements NC Not Classified

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Composition comments Any hazardous ingredients are below classification limit.

4. First-aid measures

Description of first aid measures

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

General information	If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.
Inhalation	No specific recommendations. If throat irritation or coughing persists, proceed as follows. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if any discomfort continues.
Ingestion	No specific recommendations. If throat irritation or coughing persists, proceed as follows. Rinse mouth. Get medical attention if any discomfort continues.
Skin Contact	No specific recommendations. Rinse with water. Get medical attention if any discomfort continues.
Eye contact	Rinse with water. Get medical attention if any discomfort continues.
Protection of first aiders	Use protective equipment appropriate for surrounding materials.

Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	No specific symptoms known. Spray/mists may cause respiratory tract irritation.
Ingestion	No specific symptoms known. May cause discomfort if swallowed.
Skin contact	No specific symptoms known. May cause discomfort.
Eye contact	No specific symptoms known. May be slightly irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
Specific treatments	No special treatment required.

5.Fire-fighting measures

Extinguishing media

Suitable extinguishing media	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Personal precautions, protective equipment and emergency procedures

Personal precautions No specific recommendations. For personal protection, see Section 8.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

Methods and material for containment and cleaning up

Methods for cleaning up Reuse or recycle products wherever possible. Absorb spillage to prevent material damage. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of contents/container in accordance with national regulations.

Reference to other sections For personal protection, see Section 8.

7. Handling and storage

Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage precautions No specific recommendations.

Storage class Unspecified storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

Ingredient comments OES = Occupational Exposure Standard. MEL = Maximum Exposure Limit.

Exposure controls

Appropriate engineering controls No specific ventilation requirements.

Eye/face protection No specific eye protection required during normal use. Large Spillages: Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible.

Hand protection No specific hand protection recommended.

Other skin and body protection No specific recommendations

Hygiene measures Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

Respiratory protection No specific recommendations. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.

Environmental exposure controls Not regarded as dangerous for the environment.

9. Physical and Chemical Properties

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Information on basic physical and chemical properties

Appearance	Paste
Color	Various colors.
Odor	Characteristic.
pH	pH (concentrated solution): 9-10
Initial boiling point and range	>100°C @ 760 mm Hg
Relative density	1.2- 1.5 @ 20. C°C
Solubility(ies)	Miscible with water

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Toxicological effects	Not regarded as a health hazard under current legislation.

Acute toxicity - oral

Notes (oral LD_{50})	Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD_{50})	Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC_{50})	Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data	Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation	Based on available data the classification criteria are not met.

Respiratory sensitization

Respiratory sensitisation	Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitisation	Based on available data the classification criteria are not met.

Germ cell mutagenicity

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Genotoxicity - in vitro	Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.

General information	No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	No specific symptoms known. Spray/mists may cause respiratory tract irritation.
Ingestion	No specific symptoms known. May cause discomfort if swallowed.
Skin Contact	No specific symptoms known. May cause discomfort.
Eye contact	No specific symptoms known. May be slightly irritating to eyes.
Acute and chronic health hazards	No specific health hazards known.
Route of entry	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
Medical Symptoms	Irritation of eyes and mucous membranes.

12. Ecological Information

Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Toxicity

Toxicity	Based on available data the classification criteria are not met.
Acute toxicity - fish	Not determined.
Acute toxicity - aquatic invertebrates	Not determined.
Acute toxicity - aquatic plants	Not determined.
Acute toxicity - microorganisms	Not determined.

Persistence and degradability

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Persistence and degradability The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Mobility in soil

Mobility No data available.

Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Waste class 08 01 12 waste paint and varnish other than those mentioned in 08 01 11

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT).

UN Number

Not applicable.

UN proper shipping name

Not applicable.

Transport hazard class(es)

No transport warning sign required.

Packing group

Not applicable.

Environmental hazards

Environmentally Hazardous Substance
No.

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Regulatory Status

This product has been evaluated by a toxicologist and labelled for acute and chronic health hazards in accordance with the Labelling of Hazardous Art Materials Regulation and Federal Regulation 16 CFR 1500.14 of the Federal Hazardous Substances Act. This product conforms to ASTM D-4236 Standard Practice for Labelling Art Materials for Chronic Adverse health effects.

This product has been certified by ACMI (Artists Craft Material Institute, Inc.) to carry the AP (Approved Product) Seal, meaning this product bears no chronic or acute human health hazards.

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 313 Emission Reporting
None of the ingredients are listed or exempt.

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

FDA - Essential Chemical
None of the ingredients are listed or exempt.

FDA - Precursor Chemical
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
None of the ingredients are listed or exempt.

Massachusetts "Right To Know" List
None of the ingredients are listed or exempt.

Rhode Island "Right To Know" List
None of the ingredients are listed or exempt.

ARTISTS LOFT ACRYLICS REGULAR, NEON AND METALLIC

Minnesota "Right To Know" List
None of the ingredients are listed or exempt.

New Jersey "Right To Know" List
None of the ingredients are listed or exempt.

Pennsylvania "Right To Know" List
None of the ingredients are listed or exempt.

Inventories

US - TSCA
None of the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification
None of the ingredients are listed or exempt.

16. Other information

Training advice	Read and follow manufacturer's recommendations.
Revision date	5/24/2016
Revision	4
Supersedes date	9/23/2015
SDS No.	23550

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: BB0050
Revision Date: September 18, 2013
Approved by: James A. Bertsch

MSDS No.: BB0050

Section 1 Chemical Product and Company Information

Product	**BARIUM HYDROXIDE**
Synonyms	Barium Hydrate; Barium Octahydrate

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

DANGER! POISON
MAY BE FATAL IF SWALLOWED. HARMFUL DUST. IRRITANT.
Do not take internally. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Store in a cool, dry place. Wash thoroughly after handling. Target organs: Kidneys, cardiovascular, neuromuscular and central nervous systems.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	3
Fire	0
Reactivity	1
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Barium hydroxide	12230-71-6	100%	TWA: 0.5 mg/m^3 comme baryum

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Use water spray to keep fire-exposed containers cool.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

(2008 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2008), GUIDE N0. 154)

Section 7 Handling & Storage — TOXIC STORAGE CODE BLUE

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White, crystalline powder.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: 780°C (1463°F)
Freezing / Melting point: 78°C (172°F)
Decomposition temperature: N/A
Solubility in water: Complete.
Specific gravity (H_2O = 1): 2.18
Percent volatile (%): N/A
Molecular formula: $Ba(OH)_2 \cdot 8H_2O$
Molecular weight: 315.48

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Air, dusting. Rapidly absorbs carbon dioxide from air, becoming completely insoluble in water.
Incompatibilities with other materials: Strong oxidizers, acids, chlorinated rubber. Material is corrosive to metals such as zinc.
Hazardous decomposition products: No information found.

Section 11 Toxicological Information

Effects of overexposure: May be fatal if ingested, inhaled or absorbed through skin. Ingestion causes severe irritation of the gastrointestinal tract, tightness in the muscles of the face and neck, vomiting and diarrhea, abdominal pain, muscular tremors, anxiety, weakness, labored breathing, cardiac irregularity, convulsions, and death from cardiac and respiratory failure. Barium hydroxide is a systemic poison that competes with potassium in the nervous system. May cause kidney damage. Estimated lethal dose lies between 1-15 grams. Death may occur within hours or up to a few days. Inhalation of dust causes irritation to the nose, throat, and respiratory tract. Symptoms include sore throat, coughing, and shortness of breath. Systemic poisoning may occur in sensitive individuals with symptoms similar to those of ingestion. Contact with skin and eyes may cause irritation and/or burns. Exercise appropriate procedures to minimize potential hazards.

ORL-RAT LD50: 308 mg/kg

Section 12 Ecological Information

Data not yet available. Do not flush into surface water or sanitary sewer system.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1564
Shipping name: Barium compounds, n.o.s., (Barium hydroxide)
Hazard class: 6.1
Packing group: III
Exceptions: Limited quantity equal to or less than 5 Kg.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (241-234-5), RCRA code D002, D005, DSL-listed.

Section 16 Additional Information

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**BARIUM NITRATE**
Synonyms	Barium Dinitrate / Nitric Acid, Barium Salt

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS03 / GHS07
Target organs: Central nervous system, Kidneys.

GHS Classification:
Oxidizing solid (Category 2)
Acute toxicity, oral (Category 4)
Acute toxicity, inhalation (Category 4)

GHS Label information: **Hazard statement:**
H272: May intensify fire; oxidizer.
H302: Harmful if swallowed.
H332: Harmful if inhaled.

Precautionary statement:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep away from clothing/incompatible/combustible materials.
P221: Take any precaution to avoid mixing with combustibles and reducing agents.
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301+P330: IF SWALLOWED: Rinse mouth.
P312: Call a POISON CENTER or doctor if you feel unwell.
P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Barium nitrate	10022-31-8	100%	233-020-5

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Although not flammable, substance is a strong oxidizer which releases oxygen on heating, increasing the burning rate of any material.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 141)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Barium and soluble compounds, as Ba	TWA: 0.5 mg/m^3(A4)	TWA: 0.5 mg/m^3	TWA: 0.5 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White crystalline powder.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 592°C (1097°F)
Boiling point: Decomposes
Flash point: Non flammable

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 3.24 @ 23°C
Solubility(ies): 8.7 g/100 ml in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: $Ba(NO_3)_2$
Molecular weight: 261.35

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Do not heat or rub with organic matter or other oxidizable substance. e.g. sulfur, sulfides, phosphides, hypophosphites, etc.

Incompatible materials: Barium oxides, magnesium and zinc, reducing agents and combustible materials.

Hazardous decomposition products: Nitrogen oxides, barium oxide, barium dust and/or fume.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 355 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause cough, shortness of breath, sore throat.
Ingestion: Ingestion causes excessive salivation, abdominal cramps, abdominal pain, diarrhea, nausea, vomiting, shortness of breath, weakness.
Skin: Contact with skin may cause irritation.
Eyes: Contact with eyes causes irritation.
Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: CQ9625000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (water flea, age <24 neonate), EC50 = 0.512 mM/24 hours
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1446
Shipping name: Barium nitrate
Hazard class: 5.1, (6.1)
Packing group: II
Reportable Quantity: No
Marine pollutant: No
Exceptions: No exceptions
2012 ERG Guide # 141

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Barium nitrate	Listed	Not listed	Not listed	Listed	Not listed	C ; D1A; D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: April 26, 2013 **Supercedes:** November 23, 2011

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture ou de ménage.

Produit	**NITRATE DE BARYUM**
Synonymes	Dinitrate de baryum / Acide nitrique, sel de baryum

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS03 / GHS07
Les organes cibles: Le système nerveux central et les reins.

Classification par le GHS:
Oxidizing solid (Catégorie 2)
Acute toxicity, oral (Catégorie 4)
Acute toxicity, inhalation (Catégorie 4)

Renseignements sur l'étiquette GHS: Mention de danger:
H272: Peut aggraver un incendie; comburant.
H302: Nocif en cas d'ingestion.
H332: Nocif par inhalation.

Déclarations de précaution:
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P220: Tenir à l'écart des vêtements / incompatibilités / matières combustibles.
P221: Prendre toutes précautions pour éviter de mélanger avec des matières combustibles et l'agents reducteurs.
P261: Éviter de respirer les poussières.
P264: Se laver les mains soigneusement après manipulation.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P271: Utiliser seulement en plein air ou dans un endroit bien ventilé.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P301+P330: EN CAS D'INGESTION: Rincer la bouche.
P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P370+P378: En cas d'incendie: Utiliser un produit chimique sec, mousse anti-alcool, dioxyde de carbone ou eau pulvérisée pour l'extinction.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Nitrate de baryum	10022-31-8	100%	233-020-5

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSER UNE IRRITATION. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT CAUSER UNE IRRITATION. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Bien que non inflammable, la substance est un oxydant fort qui libère l'oxygène sur le chauffage, augmentant la vitesse de combustion de n'importe quel matériel

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Enlever toute source d'ignition. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 141)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Baryum et de composés solubles, comme Ba	TWA: 0.5 mg/m^3(A4)	TWA: 0.5 mg/m^3	TWA: 0.5 mg/m^3

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Poudre cristalline blanche.
Odeur: Aucun odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: 592°C (1097°F)
Point d'ébullition: Se décompose
Point d'éclair: Non flammable

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Négligeable
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 3.24 @ 23°C
Solubilité (s): 8.7 g/100 ml dans l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: $Ba(NO_3)_2$
Poids moléculaire: 261.35

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Ne chauffez pas ou ne frottez pas avec la matière organique ou toute autre substance oxydable. par exemple soufre, sulfures, phosphures, hypophosphites, etc.

Matières incompatibles: Oxydes de baryum, magnésium et zinc, agents réducteurs et matériaux combustibles.

Produits dangereux de décomposition: Oxydes d'azote, oxyde de baryum, poussière de baryum et/ou vapeur.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 355 mg/kg
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: L'inhalation peut provoquer toux, essoufflement, maux de gorge.
Ingestion: L'ingestion provoque une salivation excessive, des crampes abdominales, des douleurs abdominales, de la diarrhée, des nausées, des vomissements, l'essoufflement, la faiblesse.
Peau: Le contact avec la peau peut provoquer une irritation.
Yeux: Le contact avec les yeux provoque une irritation.
Les signes et les symptômes de l'exposition: Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: CQ9625000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Daphnia magna (water flea, age <24 neonate), EC50 = 0.512 mM/24 hours
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN1446 **Nom d'expédition:** Nitrate de baryum
Classe de danger: 5.1, (6.1) **Groupe d'emballage:** II **Quantité à déclarer:** No **Polluant marin:** No
Exceptions: Aucune exceptions **2012 ERG Guide #:** 141

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Nitrate de baryum	Listed	Not listed	Not listed	Listed	Not listed	C ; D1A; D2B

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 26 avril, 2013 **Remplace:** 23 novembre, 2011

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**BENEDICT'S QUANTITATIVE SOLUTION**
Synonyms	Benedict's Sugar Test Reagent

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS09
Target organs: Liver, Kidneys

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)
Aquatic acute toxicity (Category 1)
Aquatic chronic toxicity (Category 1)

GHS Label information: **Hazard statement:**
H316: Causes mild skin irritation.
H320: Causes eye irritation.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement:
P264: Wash hands thoroughly after handling.
P273: Avoid release to the environment.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P332+P313: If skin irritation occurs: Get medical attention.
P391: Collect spillage.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	68.51%	231-791-2
Sodium citrate	68-04-2	11.98%	200-675-3
Sodium carbonate	497-19-8	10.23%	207-838-8
Potassium thiocyanate	333-20-0	7.37%	206-370-1
Cupric sulfate anhydrous	7758-98-7	1.90%	231-847-6 (anhydrous)
Potassium ferrocyanide	13943-58-3	0.01%	237-722-2

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES MILD SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Copper, dusts and mists, as Cu	TWA: 1 mg/m^3	TWA: 1 mg/m^3	TWA: 1 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, light blue liquid
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)
Boiling point: Approximately 100°C (212°F) (water)
Flash point: Data not available

Evaporation rate (Water = 1): <1
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 14 (water)
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): Approximately 1.0 (water)
Solubility(ies): Complete in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Avoid excessive temperatures which cause evaporation.

Incompatible materials: Strong acids and oxidizers.

Hazardous decomposition products: Sulfur oxides, nitrous oxides, carbon oxides, cyanides and copper fumes.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 300 mg/kg [Copper sulfate anhydrous]
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful by inhalation.
Ingestion: May be harmful by ingestion.
Skin: Contact may cause irritation.
Eyes: Contact may cause irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: GL8900000 [Copper sulfate pentahydrate]

Section 12 Ecological Information

Toxicity to fish: Salmo gairdneri (fish, estuary, fresh water), LC50 = < 0.75-0.84 mg/L [Copper sulfate anhydrous]
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Cupric sulfate	Listed	10 lbs (4.54 kg)	Not listed	Not listed	Not listed	D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: December 12, 2013 **Supercedes:** August 30, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**SOLUTION DE BENEDICT'S QUANTITATIF**
Synonymes	Réactif d'essai du sucre de Benedict's

Section 2 Identification De Risques

Mention d'avertissement: AVERTISSEMENT
Pictogrammes: GHS09
Les organes cibles: Le foie, les reins

Classification par le GHS:
Skin irritation (Category 3)
Eye irritation (Catégorie 2B)
Aquatic acute toxicity (Category 1)
Aquatic chronic toxicity (Category 1)

Renseignements sur l'étiquette GHS: Mention de danger:
H316: Provoque une légère irritation cutanée.
H320: Provoque une irritation des yeux.
H410: Très toxique pour les organismes aquatiques, entraîne des effets néfastes à long terme.

Déclarations de précaution(s):
P264: Se laver les mains soigneusement après manipulation.
P273: Éviter le rejet dans l'environnement.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P337+P313: Si l'irritation oculaire persiste: Obtenir des soins médicaux.
P332+P313: En cas d'irritation cutanée: Obtenir des soins médicaux.
P391: Recueillir le produit répandu.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
L'eau	7732-18-5	68.51%	231-791-2
Citrate de sodium	68-04-2	11.98%	200-675-3
Carbonaste de sodium	497-19-8	10.23%	207-838-8
Thiocyanate de potassium	333-20-0	7.37%	206-370-1
Sulfate cuivrique	7758-98-7	1.90%	231-847-6 (anhydre)
Ferrocyanide de potassium	13943-58-3	0.01%	237-722-2

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT PROVOQUER UNE IRRITATION L'APPAREIL RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE UNE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PROVOQUE UNE LÉGÈRE IRRITATION CUTANÉE. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas de feu, de l'eau peut s'évaporer à partir de cette solution, qui peut causer les produits dangereux de décomposition à être formée comme poussière ou vapeur.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Absorbez avec le matériel sec inerte, balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais et bien aéré, loin des substances incompatibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Cuivre, poussières et brouillards, que Cu	TWA: 1 mg/m^3	TWA: 1 mg/m^3	TWA: 1 mg/m^3

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions brumeuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Effacer liquide bleu clair
Odeur: Aucun odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: Environ 0°C (32°F) (eau)
Point d'ébullition: Environ 100°C (212°F) (eau)
Point d'éclair: Données non disponibles

Taux d'évaporation (Eau = 1): <1
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): 14 (eau)
Densité de vapeur (Air = 1): 0.7 (eau)
Densité relative (gravité spécifique): Environ 1.0 (eau)
Solubilité (s): Complet dans l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: Mélange
Poids moléculaire: Mélange

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Éviter les températures excessives qui causent l'évaporation.

Matières incompatibles: Des acides forts et des oxydants.

Produits dangereux de décomposition: Les oxydes de soufre, oxydes d'azote, oxydes de carbone, les cyanures et les vapeurs de cuivre.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 300 mg/kg [Sulfate cuivrique anhydre]
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut être nocif par inhalation.
Ingestion: Peut être nocif en cas d'ingestion.
Peau: Le contact peut causer une irritation.
Yeux: Le contact peut causer une irritation.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été à fond étudiées. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.
Informations complémentaires: RTECS #: GL8900000 [Sulfate cuivrique pentahydrate]

Section 12 L'Information Écologique

Toxicité pour les poissons: Salmo gairdneri (fish, estuary, fresh water), LC50 = < 0.75-0.84 mg/L [Sulfate cuivrique anhydre]
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Sulfate de cuivre	Listed	10 lbs (4.54 kg)	Not listed	Not listed	Not listed	D2B

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 12 decembre, 2013 **Remplace:** 30 août, 2013

Bismuth Nitrate

MSDS # 99.00

Section 1: Product and Company Identification

Bismuth Nitrate

Synonyms/General Names: Bismuth trinitrate, pentahydrate
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White crystalline powder; no odor.

HMIS (0 to 4)

Health	**2**
Fire Hazard	**0**
Reactivity	**3**

WARNING! Strong oxidizing agent and slightly toxic by ingestion.
Target organs: Kidneys

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

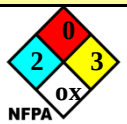
Bismuth Nitrate, Pentahydrate (10035-06-0), 100%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures



Strong Oxidizer. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage — Yellow

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in Oxidizer Storage Area [Yellow Storage] with other oxidizers and away from any combustible materials. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Bismuth Nitrate: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	$Bi(NO_3)_3 \cdot 5H_2O$.	**Appearance**	White crystalline powder.
Molecular weight	485.07.	**Odor**	No odor.
Specific Gravity	2.83 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Decomposes, soluble in nitric acid .
Melting Point	33°C.	**Evaporation rate**	N/A *(Butyl acetate = 1).*
Boiling Point/Range	80 °C.	**Partition Coefficient**	N/A *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Combustible materials, reducing agents, acids, metals, organic materials.
Shelf life: Fair shelf life, hygroscopic, store in cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Bismuth Nitrate: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Toxic to beneficial microorganisms (e.g. soil and sewage treatment microorganisms). Do not release to environment.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Nitrates, Inorganic, n.o.s.	**Canada TDG:**	Nitrates, Inorganic, n.o.s.
DOT Hazard Class:	5.1, pg II.	**Hazard Class:**	5.1, pg II.
Identification Number:	UN1477.	**UN Number:**	UN1477.

Section 15: Regulatory Information

EINECS: Not Listed .
TSCA: All components are listed or are exempt.
WHMIS Canada: C: Oxidizing Material .
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: December 20, 2011

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Fisher Scientific
Part of Thermo Fisher Scientific

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name:	Biuret Reagent Solution
Catalog Numbers:	AC612120000, AC612120010, AC612125000
Synonyms:	None Known.
Company Identification:	Acros Organics BVBA Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium
Company Identification: (USA)	Acros Organics One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	800-ACROS-01
For information in Europe, call:	+32 14 57 52 11
Emergency Number, Europe:	+32 14 57 52 99
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300
CHEMTREC Phone Number, Europe:	703-527-3887

Section 2 - Composition, Information on Ingredients

Risk Phrases: 35

CAS#:	1310-73-2
Chemical Name:	Sodium hydroxide
%:	10.0
EINECS#:	215-185-5
Hazard Symbols:	C

Risk Phrases:

CAS#:	6381-59-5
Chemical Name:	Potassium sodium tartrate tetrahydrate
%:	<1
EINECS#:	206-156-8
Hazard Symbols:	

Risk Phrases:

CAS#:	7732-18-5
Chemical Name:	Water
%:	Balance
EINECS#:	231-791-2
Hazard Symbols:	

Risk Phrases:

CAS#:	7758-99-8
Chemical Name:	Copper (ii) sulfate pentahydrate (1:1:5)
%:	<1.0
EINECS#:	unlisted
Hazard Symbols:	

Text for R-phrases: see Section 16

Hazard Symbols: C

Risk Phrases: 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! Corrosive. Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Target Organs: Respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye burns. May cause chemical conjunctivitis and corneal damage.

Skin: Causes skin burns. May cause deep, penetrating ulcers of the skin. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Ingestion: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. May cause systemic effects.

Inhalation: Causes chemical burns to the respiratory tract. Aspiration may lead to pulmonary edema. May cause systemic effects.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed. Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney, and brain damage.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Not available

Flash Point: Not available

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

NFPA Rating: health: 3; flammability: 0; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use only in a well-ventilated area. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes.

Storage: Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: clear blue

Odor: odorless

pH: Alkaline

Vapor Pressure: Not available

Vapor Density: >1.0 (Ether=1)

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: 212 deg F (100.00°C)

Freezing/Melting Point: 32 deg F (0.00°C)

Decomposition Temperature: Not available

Solubility in water: Not available

Specific Gravity/Density: 1.0

Molecular Formula: Solution

Molecular Weight: 0

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Excess heat.

Incompatibilities with Other Materials Metals, acrolein, acrylonitrile, aluminum, chlorine trifluoride, phenols, tetrahydrofuran, acetaldehyde, halogenated hydrocarbons, maleic anhydride, nitromethane, phosphorus pentoxide, allyl alcohol, nitroparaffins, nitropropane.

Hazardous Decomposition Products Oxides of sulfur, sodium peroxide fumes, sodium oxide, oxides of potassium.

Hazardous Polymerization Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 1310-73-2: WB4900000
CAS# 6381-59-5: None listed
CAS# 7732-18-5: ZC0110000
CAS# 7758-99-8: GL8900000

LD50/LC50:
RTECS:
CAS# 1310-73-2: Draize test, rabbit, eye: 400 ug Mild;
Draize test, rabbit, eye: 1% Severe;
Draize test, rabbit, eye: 50 ug/24H Severe;
Draize test, rabbit, eye: 1 mg/24H Severe;
Draize test, rabbit, skin: 500 mg/24H Severe;
.
RTECS:
CAS# 6381-59-5:.
RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;
.
RTECS:
CAS# 7758-99-8: Oral, mouse: LD50 = 43 mg/kg;
Oral, rat: LD50 = 300 mg/kg;
Skin, rat: LD50 = >2 gm/kg;
.

Carcinogenicity:
Sodium hydroxide - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Potassium sodium tartrate tetrahydrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Copper (ii) sulfate pentahydrate (1:1:5) - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Pseudomonas putida:

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

USA RQ: CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

R 34 Causes burns.

Safety Phrases:

S 25 Avoid contact with eyes.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 1310-73-2: 1

CAS# 6381-59-5: 0

CAS# 7732-18-5: Not available

CAS# 7758-99-8: 2

Canada

CAS# 1310-73-2 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

Canadian WHMIS Classifications: E

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List

CAS# 6381-59-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7758-99-8 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 1310-73-2 is listed on the TSCA Inventory.

CAS# 6381-59-5 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form in on the Inventory (40CFR720.3(u)(2)).

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 7758-99-8 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form in on the Inventory (40CFR720.3(u)(2)).

Section 16 - Other Information

MSDS Creation Date: 2/25/2002

Revision #3 Date 1/11/2007

00018-XXXX

MATERIAL SAFETY DATA SHEET

May be used to comply with OSHA's 29 CFR 1910.1200)

Note: blank spaces are not permitted. If any item is not applicable, or no information available, the space must be marked appropriately.

IDENTITY (AS USED ON LABEL AND LIST)

DICK BLICK STUDENT TEMPERA

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

(608) 868-6873
EMERGENCY TELEPHONE NUMBER

MAY 2011
DATE PREPARED

SECTION 2 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS: CHEMICAL NAME & COMMON NAMES	%	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED

Contains no hazardous substand per OSHA
29 CFR 1910.1200

Material is a water based product with the AP Seal. Products with, the AP Approved Products Seal of the Art and Craft Materials Institute Inc. are certified in a program of toxicological evaluation by a medium expert to contain no material in sufficient quantities to be toxic or injurious to humans or to cause acute or chronic health problems. These products are certified by the Institute to be in accordance with the voluntary chronic hazard labeling standard ASTM D-4236. In addition, there is no physical hazard as defined within 29 CFR Part 1910.1200 (c).

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT -	Range 215-225 F	SPECIFIC GRAVITY (H2O = 1) -	Range 1.03-1.68
VAPOR PRESSURE (mm Hg & TEMPERATURE) -	N/A	MELTING POINT -	N/A
VAPOR DENSITY (AIR=1) -	lighter than air	EVAPORATION RATE (WATER = 1) -	lower than ether
SOLUBILITY IN WATER -	completely soluble in water	WATER REACTIVE -	N/A
APPEARANCE & ODOR -	various colors and odorless		

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT & METHOD USED	FLAMMABILITY LIMITS IN AIR % BY VOLUME	
N/A	N/A	
EXTINGUISHER MEDIA	LEL	UEL
CO2, Foam or Water	N/A	N/A
SPECIAL FIRE FIGHTING PROCEDURES		
None known		
UNUSUAL FIRE AND EXPLOSION HAZARDS		
None		

Item Numbers: 00018-0089, 00018-1001, 00018-1005, 00018-1006, 00018-1007, 00018-1008, 00018-1009, 00018-1019, 00018-1029, 00018-1039, 00018-1059, 00018-1069, 00018-2005, 00018-2006, 00018-2007, 00018-2008, 00018-2009, 00018-3005, 00018-3006, 00018-3007, 00018-3008, 00018-3009, 00018-3045, 00018-3046, 00018-3047, 00018-3048, 00018-3049, 00018-3355, 00018-3356, 00018-3515, 00018-3516, 00018-3765, 00018-3766, 00018-4005, 00018-4006, 00018-4007, 00018-4008, 00018-4009, 00018-4105, 00018-4106, 00018-4107, 00018-4108, 00018-4109, 00018-4505, 00018-4506, 00018-4507, 00018-4508, 00018-4509, 00018-4885, 00018-4886, 00018-5005, 00018-5006, 00018-5007, 00018-5008, 00018-5009, 00018-5115, 00018-5116, 00018-5117, 00018-5118, 00018-5119, 00018-6505, 00018-6506, 00018-6507, 00018-6508, 00018-6509, 00018-7005, 00018-7006, 00018-7007, 00018-7008, 00018-7009, 00018-7075, 00018-7076, 00018-8005, 00018-8006, 00018-8007, 00018-8008, 00018-8009, 00018-8015, 00018-8016, 00018-8045, 00018-8046, 00018-8235, 00018-8236

SECTION 5 - REACTIVITY HAZARD DATA

STUDENT TEMPERA Page 2 of 2

STABILITY	CONDITIONS TO AVOID
X STABLE ☐ UNSTABLE	None

INCOMPATABILITY (MATERIALS TO AVOID)	N/A
HAZARDOUS DECOMPOSITION PRODUCTS	N/A

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR N/A ☐ WILL NOT OCCUR	None known

SECTION 6 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY N/A	CARCINOGEN LISTED IN N/A
☐ INHALATION ☐ INGESTION ☐ SKIN ABSORTION ☐ NOT HAZARDOUS	☐ NTP ☐ OSHA ☐ IARC MONOGRAPH X NOT LISTED

HEALTH HAZARDS	ACUTE
Refer to Section 2	CHRONIC

SIGNS AND SYMPTOMS	Not known
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE	Not known
EMERGENY FIRST AID PROCEDURES -	Consult a Physician Immediatley.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

STEPS TO BE TAKEN IS MATERIAL IS SPILLED OR RELEASED

Usual Clean Up Procedure

WASTE DISPOSAL METHODS

Dispose of in accordance with Federal and Local State Regulations

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store at room temperature.

OTHER PRECAUTIONS AND/OR SPECIAL HAZARDS

Not known

SECTION 8 - CONTROL AND PROTECTIVE MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE)

None required

VENTILATION TO BE USED	LOCAL EXHAUSE	MECHANICAL (GENERAL)	SPECIAL
None required	OTHER (SPECIFY)		

PROTECTIVE GLOVES	N/A	EYE PROTECTION	N/A
OTHER PROTECTIVE CLOTHING AND EQUIPMENT	N/A		
HYGIENIC WORK PRACTICES	N/A		

Item Numbers: 00018-0089, 00018-1001, 00018-1005, 00018-1006, 00018-1007, 00018-1008, 00018-1009, 00018-1019, 00018-1029, 00018-1039, 00018-1059, 00018-1069, 00018-2005, 00018-2006, 00018-2007, 00018-2008, 00018-2009, 00018-3005, 00018-3006, 00018-3007, 00018-3008, 00018-3009, 00018-3045, 00018-3046, 00018-3047, 00018-3048, 00018-3049, 00018-3355, 00018-3356, 00018-3515, 00018-3516, 00018-3765, 00018-3766, 00018-4005, 00018-4006, 00018-4007, 00018-4008, 00018-4009, 00018-4105, 00018-4106, 00018-4107, 00018-4108, 00018-4109, 00018-4505, 00018-4506, 00018-4507, 00018-4508, 00018-4509, 00018-4885, 00018-4886, 00018-5005, 00018-5006, 00018-5007, 00018-5008, 00018-5009, 00018-5115, 00018-5116, 00018-5117, 00018-5118, 00018-5119, 00018-6505, 00018-6506, 00018-6507, 00018-6508, 00018-6509, 00018-7005, 00018-7006, 00018-7007, 00018-7008, 00018-7009, 00018-7075, 00018-7076, 00018-8005, 00018-8006, 00018-8007, 00018-8008, 00018-8009, 00018-8015, 00018-8016, 00018-8045, 00018-8046, 00018-8235, 00018-8236

SAFETY DATA SHEET

Boardwalk® White Lotion Soap

Version	Revision Date:	MSDS Number:	Date of last issue: 02/10/2015
1.2	02/18/2015	51474-00003	Date of first issue: 01/26/2015

SECTION 1. IDENTIFICATION

Product name : Boardwalk® White Lotion Soap

Product code : BWK-420

Manufacturer or supplier's details

Company name of supplier : LAGASSE, Inc.

Address : One Parkway North Boulevard
Deerfield, Illinois 60015

Telephone : 800-989-7487

Emergency telephone : 800-989-7487

Recommended use of the chemical and restrictions on use

Recommended use : Skin-care

Restrictions on use : This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use. Cosmetics and consumer products, specifically defined by regulations around the world, are exempt from the requirement of an SDS for the consumer. While this material is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product for industrial workplace conditions as well as unusual and unintended exposures such as large spills. This SDS should be retained and available for employees and other users of this product. For specific intended-use guidance, please refer to the information provided on the package or instruction sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation : Category 2A

GHS Label element

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H319 Causes serious eye irritation.

Precautionary Statements : **Prevention:**

P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Alcohols, C10-16, ethoxylated, sulfates, sodium salts	68585-34-2	>= 1 - < 5
Cocoamidopropyl betaine	61789-40-0	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.
Get medical attention if symptoms occur.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.

Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Dry chemical Carbon dioxide (CO2)
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Sulfur oxides Carbon oxides Metal oxides Chlorine compounds Nitrogen oxides (NOx)
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and

disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Avoid inhalation of vapor or mist.
Do not swallow.
Do not get in eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Ingredients	CAS-No.
Alcohols, C10-16, ethoxylated, sulfates, sodium salts	68585-34-2
Cocoamidopropyl betaine	61789-40-0

Engineering measures : Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.
Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m3 - respirable particles, 10 mg/m3 - inhalable particles.

Personal protective equipment

Respiratory protection	:	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Hand protection		
Material	:	Impervious gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Eye protection	:	Wear the following personal protective equipment: Safety goggles
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Hygiene measures	:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	white, off-white
Odor	:	soapy
Odor Threshold	:	No data available
pH	:	4.8 - 6.2
Melting point/freezing point	:	No data available

Solidification / Setting point		2.90 °C
Initial boiling point and boiling range	:	98.00 °C
Flash point	:	> 100 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	1.0000 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	The substance or mixture is not classified self-reactive.
Viscosity		
Viscosity, kinematic	:	3,000 - 18,000 mm2/s (20.00 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Ingredients:

Alcohols, C10-16, ethoxylated, sulfates, sodium salts:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Cocoamidopropyl betaine:
Acute oral toxicity : LD50: > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Skin corrosion/irritation

Not classified based on available information.

Product:

Result: No skin irritation

Ingredients:

Alcohols, C10-16, ethoxylated, sulfates, sodium salts:
Result: Skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Result: Irritation to eyes, reversing within 21 days

Ingredients:

Alcohols, C10-16, ethoxylated, sulfates, sodium salts:
Result: Irreversible effects on the eye

Cocoamidopropyl betaine:
Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405
Remarks: Based on data from similar materials

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Product:

Assessment: Does not cause skin sensitization.

Ingredients:

Cocoamidopropyl betaine:
Test Type: Maximization Test (GPMT)
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Cocoamidopropyl betaine:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Result: negative Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:

Cocoamidopropyl betaine:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients:

Cocoamidopropyl betaine:

Species: Rat
NOAEL: 250 mg/kg
Application Route: Ingestion
Exposure time: 90 d
Method: OECD Test Guideline 408
Remarks: Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Cocoamidopropyl betaine:

Toxicity to fish : LC50: > 1 - 10 mg/l
Exposure time: 96 h
Method: ISO 7346/2
Remarks: Based on data from similar materials

Toxicity to bacteria : EC50: > 100 mg/l
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Persistence and degradability

Product:

Biodegradability : Result: Biodegradable

Ingredients:

Alcohols, C10-16, ethoxylated, sulfates, sodium salts:

Biodegradability : Result: Readily biodegradable.

Cocoamidopropyl betaine:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301
Remarks: Based on data from similar materials

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Water	7732-18-5	70 - 90 %
Alcohols, C10-16, ethoxylated, sulfates, sodium salts	68585-34-2	1 - 5 %
Sodium chloride	7647-14-5	1 - 5 %

New Jersey Right To Know

Water	7732-18-5	70 - 90 %
Alcohols, C10-16, ethoxylated, sulfates, sodium salts	68585-34-2	1 - 5 %
Sodium chloride	7647-14-5	1 - 5 %
Cocoamidopropyl betaine	61789-40-0	1 - 5 %

California Prop 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

AICS : All ingredients listed or exempt.

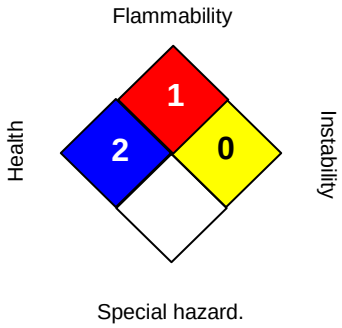
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), NECSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
Revision Date	:	02/18/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**BORIC ACID**
Synonyms	Boracic Acid

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS08
Target organs: Kidneys, Circulatory and central nervous systems

GHS Classification:
Reproductive toxicity (Category 1B)

GHS Label information: **Hazard statement:**
H360: May damage fertility or the unborn child.

Precautionary statement:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313: IF exposed or concerned: Get medical attention.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Boric acid	10043-35-3	100%	233-139-2

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Borate compounds, inorganic	TWA: 2 mg/m^3 STEL: 6 mg/m^3(A4)	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: White, crystalline powder
Odor: No odor
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: Data not available
Boiling point: Data not available
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Not flammable
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 1.4
Solubility(ies): 5.6 g/100 ml water

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: H_3BO_3
Molecular weight: 61.83

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures.

Incompatible materials: Acetic anhydride, potassium and heat sources.

Hazardous decomposition products: None known.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 2,500 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion: Ingestion may cause gastrointestinal irritation. Symptoms of over-exposure my include nausea, vomiting and diarrhea.
Skin: Contact may cause irritation.
Eyes: Contact may cause irritation.
Signs and symptoms of exposure: Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed. Human epidemiological studies show no increase in pulmonary disease in occupational populations with cronic exposures to boric acid dust and sodium borate dust. A recent epidemiological study under the conditions of normal occupational eposure to borate dusts indicated no effect on fertility.
Additional information: RTECS #: ED4550000

Section 12 Ecological Information

Toxicity to fish: Carassius auratus (goldfish) LC50: 0.63 g/L/3 day
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Water flea) LC50: 1085-1402 mg/L/48 hours
Toxicity to algae: Scenedesmus subspicatus (algae) EC50: 158 mg/L/96 hours
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Boric acid	Listed	Not listed	Not listed	Listed	Not listed	D2A

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: January 13, 2014 **Supercedes:** September 5, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**ACIDE DE BORE**
Synonymes	Acide borique

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS08
Les organes cibles: Les reins, les systemes circulatoire et nerveux central

Classification par le GHS:
Reproductive toxicity (Catégorie 1B)

Renseignements sur l'étiquette GHS: Mention de danger:
H360: Peut nuire à la fertilité ou au fœtus.

Déclarations de précaution:
P201: Se procurer les instructions avant utilisation.
P202: Ne pas manipuler avant d'avoir lu et compris toutes les précautions de sécurité.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P308+P313: En cas d'exposition prouvée ou suspectée: Consulter un médecin.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Acide de bore	10043-35-3	100%	233-139-2

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. IRRITE LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSER UNE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT ÊTRE NOCIF EN CAS D'ABSORPTION PAR LA PEAU. PEUT CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Borate composés inorganiques	TWA: 2 mg/m^3 STEL: 6 mg/m^3(A4)	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Poudre blanche cristalline
Odeur: Aucune odeur
Seuil de l'odeur: Données non disponibles
pH: Données non disponibles
Point de fusion / congélation: Données non disponibles
Point d'ébullition: Données non disponibles
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Négligeable
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 1.4
Solubilité (s): 5.6 g/100 ml l'eau

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles
Formule moléculaire: H_3BO_3
Poids moléculaire: 61.83

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Conditions à éviter: Les températures excessives.
Polymérisation dangereuse: N'aura pas lieu.

Matières incompatibles: Anhydride acétique, de potassium et sources de chaleur.

Produits dangereux de décomposition: Aucun connu.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 2,500 mg/kg
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut être nocif en cas d'inhalation. Peut causer une irritation des voies respiratoires.
Ingestion: L'ingestion peut causer l'irritation gastro-intestinale. Les symptômes de la surexposition mes incluent la nausée, le vomissement et la diarrhée.
Peau: Le contact peut causer une irritation.
Yeux: Le contact peut causer une irritation.
Les signes et les symptômes de l'exposition: Études d'alimentation animale chez le rat, la souris et le chien, à des doses élevées, ont démontré des effets sur la fertilité et les testicules. Des études avec l'acide borique chimiquement apparenté chez le rat, la souris et le lapin, à des doses élevées, démontrer les effets du développement sur le fœtus, y compris la perte de poids du fœtus et des variations squelettiques mineures. Les doses administrées étaient plusieurs fois supérieures à celles auxquelles les humains sont normalement exposés. L'homme des études épidémiologiques ne montrent aucune augmentation dans la maladie pulmonaire chez les populations professionnelles avec des expositions à la poussière Cronic l'acide borique et de la poussière de borate de sodium. Une étude épidémiologique récente dans les conditions normales du travail libre de eposure au borate poussières n'ont indiqué aucun effet sur la fertilité. .
Informations complémentaires: RTECS #: ED4550000

Section 12 L'Information Écologique

Toxicité pour les poissons: Carassius auratus (goldfish) LC50: 0.63 g/L/3 day
Toxicité pour les daphnies et autres invertébrés aquatiques: Daphnia magna (Water flea) LC50: 1085-1402 mg/L/48 hours
Toxicité pour les algues: Scenedesmus subspicatus (algae) EC50: 158 mg/L/96 hours
Persistance et dégradabilité: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Potentiel de bioaccumulation: Pas de données disponible
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Acide de bore	Listed	Not listed	Not listed	Listed	Not listed	D2A

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 13 janvier, 2014 **Remplace:** 5 septembre, 2013

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**BROMOCRESOL GREEN, 0.04% AQUEOUS SOLUTION**
Synonyms	Bromocresol Green, Water Solution (pH Indicator)

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: Not classified
Pictograms: Not classified
Target organs: None known

GHS Classification: Not classified
GHS Label information: **Hazard statement:** Not classified
Precautionary statement: Not classified

Supplementary information:
Do not breathe vapors, spray or mist. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	99.96%	231-791-2
Bromocresol green, disodium salt	62625-32-5	0.04%	263-657-4

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Protect from light.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Bromocresol green	None established	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Liquid, clear green.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)
Boiling point: Approximately 100°C (212°F) (water)
Flash point: Data not available

Evaporation rate (Water = 1): <1
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 14 (water)
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): Approximately 1.0 (water)
Solubility(ies): Complete in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation. Protect from light.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, sulfur oxides and bromine gas.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: May cause irritation.
Eyes: May cause irritation.
Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Bromocresol green, sodium salt	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: February 20, 2014 **Supercedes:** February 20, 2014

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**VERT DE BROMOCRÉSOL, 0.04% SOLUTÉ**
Synonymes	Vert de bromocrésol, solution de l'eau (pH indicateur)

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé comme dangereux à ce selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: Non classé
Pictogrammes: Non classé
Les organes cibles: Aucun connu

Classification par le GHS: Non classé
Renseignements sur l'étiquette GHS: Mention de danger: Non classé
Déclarations de précaution: Non classé

Des renseignements supplémentaires:
Ne pas respirer les vapeurs, les embruns ou le brouillard. Éviter tout contact avec les yeux, la peau ou les vêtements. Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage. Se laver les mains soigneusement après manipulation. Consulter un médecin en cas de malaise.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
L'eau	7732-18-5	99.96%	231-791-2
Vert de bromocrésol, sel sodique	62625-32-5	0.04%	263-657-4

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT IRRITER LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSE L'IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas de feu, de l'eau peut s'évaporer à partir de cette solution, qui peut causer les produits dangereux de décomposition à être formée comme poussière ou vapeur..

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Absorber avec un matériau inerte, balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais et bien aéré, loin des substances incompatibles. Protéger de la lumière.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Vert de bromocrésol	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions brumeuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Liquide, clair vert.
Odeur: Aucun odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: Environ 0°C (32°F) (eau)
Point d'ébullition: Environ 100°C (212°F) (eau)
Point d'éclair: Données non disponibles

Taux d'évaporation (Eau = 1): <1
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): 14 (eau)
Densité de vapeur (Air = 1): 0.7 (eau)
Densité relative (gravité spécifique): Environ 1.0 (eau)
Solubilité (s): Complet dans l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: Mélange
Poids moléculaire: Mélange

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives qui causent l'évaporation. Protéger de la lumière.

Matières incompatibles: Comburante fortes.

Produits dangereux de décomposition: Oxydes de carbone, l'oxydes de soufre et brome gazeux.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut être nocif en cas d'inhalation.
Ingestion: Peut être nocif en cas d'ingestion.
Peau: Peut causer une irritation.
Yeux: Peut causer une irritation.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance, au démuni chimique, physique et toxicologique de propriétés à fond étudié. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.
Informations complémentaires: RTECS #: Données non disponibles

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Vert de bromocrésol, sel sodique	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 20 février, 2014 **Remplace:** 20 février, 2014

BROMOTHYMOL BLUE

ChemWatch Company

Chemwatch: **10213**
Version No: **4.1.1.1**
Safety Data Sheet

Chemwatch Hazard Alert Code: **3**

Issue Date: **01/01/2013**
Print Date: **17/01/2015**
Initial Date: **Not Available**
S.GHS.IND.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	BROMOTHYMOL BLUE
Chemical Name	bromothymol blue
Synonyms	3',3"-Dibromothymolsulfonphthalein, 3',3?-Dibromothymolsulfonphthalein, 3',3â€³-Dibromothymolsulfonphthalein, 3,3'-dibromothymolsulfonphthalein, 3,3'-dibromothymolsulphonphthalein, 4,4'-(3H-2,1-Benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)phenol]S,S-dioxide, 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)-phenol]S,S-dioxide, BROMTHYMOL BLUE, Bromthymol Blue, C27-H28-Br2-O5-S, C6-H4-SO2-OC[C6-H-2-CH3-5-CH(CH3)2-3-Br-4-OH]2, bromothymol blue indicator, bromthymol blue, bromthymol blue indicator
Proper shipping name	Not Applicable
Chemical formula	C27H28Br2O5S
Other means of identification	Not Available
CAS number	76-59-5

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Acid-base (pH) indicator useful in the pH range 6.0 (yellow) to 7.6 (blue). Commonly used as the water soluble sodium salt or as a solution in dilute sodium hydroxide or alcohol/water (1:1).

Details of the manufacturer/importer

Registered company name	Merck	Baker Packers
Address	207 Colchester Road Kilsyth 3137 VIC Australia	6110 Rittiman Road San Antonio 78218 TX United States
Telephone	+61 3 9728 7600	Not Available
Fax	+61 3 9728 1351	Not Available
Website	http://203.221.251.46/msds/msds.aspx	Not Available
Email	admin@merck.com.au	Not Available

Emergency telephone number

Association / Organisation	Not Available	Not Available
Emergency telephone numbers	Not Available	Not Available
Other emergency telephone numbers	Not Available	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification	Not Applicable

Label elements

GHS label elements	Not Applicable

SIGNAL WORD	NOT APPLICABLE

Hazard statement(s)

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Continued...

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name	GHS Classification
76-59-5	100	bromothymol blue	Not Applicable

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ▸ Wash out immediately with water. ▸ If irritation continues, seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If dust is inhaled, remove from contaminated area. ▸ Encourage patient to blow nose to ensure clear passage of breathing. ▸ If irritation or discomfort persists seek medical attention.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	▸ Foam. ▸ Dry chemical powder. ▸ BCF (where regulations permit). ▸ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water courses. ▸ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	▸ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. ▸ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). ▸ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing dust and contact with skin and eyes. ▸ Wear protective clothing, gloves, safety glasses and dust respirator. ▸ Use dry clean up procedures and avoid generating dust.
Major Spills	Moderate hazard. ▸ **CAUTION**: Advise personnel in area. ▸ Alert Emergency Services and tell them location and nature of hazard. ▸ Control personal contact by wearing protective clothing.

	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Continued...

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▸ Avoid reaction with oxidising agents

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
bromothymol blue	Bromothymol blue; (Dibromothymolsulfonphthalein)	30 mg/m3	330 mg/m3	2000 mg/m3

Ingredient	Original IDLH	Revised IDLH
bromothymol blue	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C. apron. ▸ Barrier cream.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
BROMOTHYMOL BLUE Not Available

Material	CPI

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final

Respiratory protection

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

Continued...

selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Crystalline solid, cream, purple, green or brown coloured. Sparingly soluble in water, soluble in alcohol, ether and aqueous solutions of alkalis. Odourless.

Physical state	Divided Solid	**Relative density (Water = 1)**	Not available.
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not available.
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not available.
Melting point / freezing point (°C)	202	**Viscosity (cSt)**	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	624.43
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Applicable	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not available.	**Surface Tension (dyn/cm or mN/m)**	Not Applicable
Lower Explosive Limit (%)	Not available.	**Volatile Component (%vol)**	Negligible
Vapour pressure (kPa)	Negligible	**Gas group**	Not Available
Solubility in water (g/L)	Immiscible	**pH as a solution(1%)**	Not available.
Vapour density (Air = 1)	Not Applicable	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
Chronic	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence from animal testing that exposure to this material may result in toxic effects to the unborn baby. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Chronic intoxication with ionic bromides, historically, has resulted from medical use of bromides but not from environmental or occupational exposure; depression, hallucinosis, and schizophreniform psychosis can be seen in the absence of other signs of intoxication.

bromothymol blue	TOXICITY	IRRITATION

Continued...

	Not Available	Not Available

** Value obtained from manufacturer's msds*
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

BROMOTHYMOL BLUE	No significant acute toxicological data identified in literature search.

Acute Toxicity	⊘	**Carcinogenicity**	⊘
Skin Irritation/Corrosion	⊘	**Reproductivity**	⊘
Serious Eye Damage/Irritation	⊘	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	⊘	**STOT - Repeated Exposure**	⊘
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend: ✔ *– Data required to make classification available*
✘ *– Data available but does not fill the criteria for classification*
⊘ *– Data Not Available to make classification*

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

For Bromide:
Environmental Fate: Bromide ions may be introduced to the environment after the breakdown of various salts and complexes or after the degradation of organic compounds that contain carbon bonded to bromine. Bromides may also affect the growth of micro-organisms and have been used for this purpose in industry. Bromides in drinking water are occasionally subject to disinfection processes involving ozone of chlorine. Bromide may be oxidize to produce hypobromous acid which in turn may react with natural organic matter to form brominated compounds.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
bromothymol blue	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
bromothymol blue	LOW (LogKOW = 8.9932)

Mobility in soil

Ingredient	Mobility
bromothymol blue	LOW (KOC = 231500000)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO

Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

bromothymol blue(76-59-5) is found on the following regulatory lists	"Not Applicable"

Continued...

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

end of SDS

Section 1 Chemical Product and Company Identification

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

Boreal Science
399 Vansickle Road
St. Catherines, Ontario
L2S 3T4 Canada
Tel: (800) 387-9393

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**BUFFER SOLUTION PH7**
Synonyms	Buffer, Aqueous Solution

Section 2 Hazards Identification

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: None required
Target organs: None known

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)

GHS Label information: **Hazard statement(s):**
H316: Causes mild skin irritation.
H320: Causes eye irritation.

Precautionary statement(s):
P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	99.15%	231-791-2
Potassium phosphate, monobasic	7778-77-0	0.72%	231-913-4
Sodium hydroxide	1310-73-2	0.13%	215-185-5

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Potassium phosphate	None established.	None established.	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available
Melting / Freezing point: Approximately 0°C (32°F) (water)
Boiling point: Approximately 100°C (212°F) (water)
Flash point: Data not available

Evaporation rate (Water = 1): <1
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 14 (water)
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): Approximately 1.0 (water)
Solubility(ies): Complete in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Acids, alkalies, and air will change the buffer's ability.

Hazardous decomposition products: Thermal decomposition will yield phosphates and sodium oxide and/or hydroxides.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 3,200 mg/kg [Potassium phosphate]
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: May cause mild irritation.
Eyes: May cause mild irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: TC661500 [Potassium phosphate]

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Potassium phosphate	Listed	Not listed	Not listed	Listed	Not listed
Sodium hydroxide	Listed	1,000 lbs (454 kg)	D002	Listed	Not listed

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	***n*-BUTYL ALCOHOL**
Synonyms	1-Butanol / *n*-Butanol

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS02 / GHS05 / GHS07
Target organs: Central nervous system, Liver, Kidneys

GHS Classification:
Flammable liquid (Category 3)
Acute toxicity, oral (Category 4)
Skin irritation (Category 2)
Eye damage (Category 1)
STOT-SE (Category 3)
STOT-SE (Category 3)

GHS Label information: **Hazard statement:**
H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.

Precautionary statement:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233: Keep container tightly closed.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P261: Avoid breathing mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P330: Rinse mouth.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313: If skin irritation occurs: Get medical attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide to extinguish.
P403+P235: Store in a well-ventilated place. Keep cool.
P233: Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
n-Butyl alcohol	71-36-3	100%	200-751-6

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam. Water may be ineffective.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 129)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
n-Butanol	TWA: 20 ppm / 61 mg/m^3	TWA: 100 ppm / 300 mg/m^3	STEL: C 50 ppm / C 150 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: Characteristic odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: -89°C (-128°F)
Boiling point: 117.5°C (242°F)
Flash point: 37°C (98°F) TCC

Evaporation rate (Butyl acetate **= 1):** 0.43
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: 1.4% / 11.2%
Vapor pressure (mm Hg): 4.1 mm @ 20°C
Vapor density (Air = 1): 2.6
Relative density (Specific gravity): 0.8108 @ 20°/20°C
Solubility(ies): Moderately soluble in water.

Partition coefficient: (n-octanol / water): Log Pow: 0.88
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: $CH_3(CH_2)_3OH$
Molecular weight: 74.12

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Strong mineral acids, strong oxidizers, copper and it's alloys.

Hazardous decomposition products: Carbon oxides and unidentified organic compounds.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 790 mg/kg ; Inhalation-rat LC50: 24 mg/L/4hours
Skin corrosion/irritation: Skin-rabbit - Irritant.
Serious eye damage/irritation: Eyes-rabbit - Highly irritating.
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Harmful if inhaled. Causes respiratory tract irritation. Vapors in higher concentrations may cause narcotic effects. Excessive inhalation of vapors may cause nasal and respiratory irritation and may cause central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness and even death.
Ingestion: Harmful if swallowed. May cause headache, dizziness, nausea, vomiting and general weakness.
Skin: Contact with skin may cause irritation. Prolonged or repeated contact may result in defatting and drying of the skin, causing skin irritation and dermatitis.
Eyes: Contact with eyes may cause tearing, reddening and/or swelling.
Signs and symptoms of exposure: See Potential health effects above. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: EO1400000

Section 12 Ecological Information

Toxicity to fish: Pimephales promelas (fish, fresh water), LC50 = LC50: <1630 mg/L/96 hour
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50: 2237 mg/L/24 hours
Toxicity to algae: Scenedesmus subspicatus (Algae), EC50 = >500 mg/L/96 hours
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1120
Shipping name: Butanols
Hazard class: 3
Packing group: III
Reportable Quantity: 5,000 lbs (2270 kg)
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 5 L
2012 ERG Guide # 129

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Butanols	Listed	5,000 lbs.	U031	Listed	Not listed	B2; D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: August 6, 2013 **Supercedes:** July 5, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture ou de ménage.

Produit	**ALCOOL *n*-BUTYLIQUE**
Synonymes	1-Butanol / *n*-Butanol

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS02 / GHS05 / GHS07
Les organes cibles: Le système nerveux central, le foie et les reins

Classification par le GHS:
Flammable liquid (Catégorie 3)
Acute toxicity, oral (Catégorie 4)
Skin irritation (Catégorie 2)
Eye damage (Catégorie 1)
STOT-SE (Catégorie 3)
STOT-SE (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H226: Liquide et vapeurs inflammables.
H302: Nocif en cas d'ingestion.
H315: Provoque une irritation cutanée.
H318: Provoque des lésions oculaires graves.
H335: Peut irriter les voies respiratoires.
H336: Peut provoquer somnolence ou des vertiges.

Precautionary statement:
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P233: Maintenir le récipient fermé de manière étanche.
P241: Utiliser du matériel électrique/de ventilation/d'éclairage antidéflagrant.
P242: Ne pas utiliser d'outils produisant des étincelles.
P243: Prendre des mesures de précaution contre les décharges électrostatiques.
P261: Éviter de respirer les brouillards/vapeurs/aérosols.
P264: Se laver les mains soigneusement après manipulation.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P271: Utiliser seulement en plein air ou dans un endroit bien ventilé.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P301+P310: EN CAS D'INGESTION: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
P330: Rincer la bouche.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P303+P361+P353: EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tout vêtement souillé ou éclaboussé. Rincer la peau à l'eau/se doucher.
P332+P313: En cas d'irritation cutanée: Obtenir des soins médicaux.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P370+P378: En cas d'incendie: Utiliser un produit chimique sec, mousse anti-alcool, dioxyde de carbone pour l'extinction.
P403+P235: Stocker dans un endroit bien ventilé. Tenir au frais.
P233: Maintenir le récipient fermé de manière étanche.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Alcool n-butylique	71-36-3	100%	200-751-6

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE DES LÉSIONS OCULAIRES GRAVES. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PROVOQUE UNE IRRITATION CUTANÉE. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool. L'eau peut être inefficace.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Les vapeurs formées de ce produit sont plus lourdes que l'air et peuvent voyager le long de la terre à une source d'ignition et voyagez dos immédiatement. La flamme peut ne pas être évidente en jour.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Absorbez avec le matériel sec inerte, balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
n-Butanol	TWA: 20 ppm / 61 mg/m^3	TWA: 100 ppm / 300 mg/m^3	STEL: C 50 ppm / C 150 mg/m^3

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Clair, liquide incolore.
Odeur: Odeur caractéristique.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: -89°C (-128°F)
Point d'ébullition: 117.5°C (242°F)
Point d'éclair: 37°C (98°F) TCC

Taux d'évaporation (Acetate de butylique = 1): 0.43
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: 1.4% / 11.2%
Pression de vapeur (mm Hg): 4.1 mm @ 20°C
Densité de vapeur (Air = 1): 2.6
Densité relative (gravité spécifique): 0.8108 @ 20°/20°C
Solubilité (s): Modérément soluble dans l'eau.

Coefficient de partage: (n-octanol / eau): Log Pow: 0.88
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: $CH_3(CH_2)_3OH$
Poids moléculaire: 74.12

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives, la chaleur, étincelles, flamme nue et d'autres sources d'allumage.

Matières incompatibles: Les acides minéraux forts, les comburante fortes, le cuivre et c'est des alliages.

Produits dangereux de décomposition: Oxydes de carbone et composés organiques non identifiés.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 790 mg/kg ; Inhalation-rat LC50: 24 mg/L/4hours
La corrosion de la peau et l'irritation: Peau de lapin - Irritant.
Des lésions oculaires graves / irritation: Yeux-lapin - Très irritant.
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: La substance ou le mélange est classé comme toxique pour certains organes cibles, exposition unique, catégorie 3 avec des effets narcotiques.
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Nocif en cas d'inhalation. Cause l'irritation de région respiratoire. Les vapeurs dans des concentrations plus élevées peuvent causer des effets narcotiques. L'inhalation excessive des vapeurs peut causer l'irritation nasale et respiratoire et peut causer des effets de système nerveux central comprenant le vertige, la faiblesse, la fatigue, la nausée, le mal de tête et l'inconscience et même la mort possibles.
Ingestion: Nocif en cas d'ingestion. Peut cause de mai, vertige, nausée, vomissement et faiblesse générale.
Peau: Le contact avec la peau peut causer l'irritation. Le contact prolongé ou répété peut avoir comme conséquence le dégraissage et le séchage de la peau, entraînant l'irritation de peau et la dermatite.
Yeux: Le contact avec des yeux peut causer le déchirement, le rougissement et/ou le gonflement.
Les signes et les symptômes de l'exposition: Voir les effets sanitaires potentiels ci-dessus. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: EO1400000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pimephales promelas (fish, fresh water), LC50 = LC50: <1630 mg/L/96 hour
Toxicité pour les daphnies et autres invertébrés aquatiques: Daphnia magna (Crustacea), EC50: 2237 mg/L/24 hours
Toxicité pour les algues: Scenedesmus subspicatus (Algae), EC50 = >500 mg/L/96 hours
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN1120 **Nom d'expédition:** Butanols
Classe de danger: 3 **Groupe d'emballage:** III **Quantité à déclarer:** 5,000 lbs. (2270 kg) **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 L **2012 ERG Guide #:** 129

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Butanols	Listed	5,000 lbs.	U031	Listed	Not listed	B2; D2B

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 6 août, 2013 **Remplace:** 5 juillet, 2013

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**n-BUTYRIC ACID**
Synonyms	Ethylacetic Acid / Butanoic Acid

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS05
Target organs: Respiratory, Skin, Eyes

GHS Classification:
Skin corrosion (Category 1B)

GHS Label information: **Hazard statement:**
H314: Causes severe skin burns and eye damage.

Precautionary statement:
P260: Do not breathe mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
n-Butyric acid	107-92-6	100%	203-532-3

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SEVERE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. In contact with easily oxidizable materials, this chemical may react rapidly enough to cause ignition, violent combustion or explosion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 153)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Butyric acid	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: Strong, penetrating odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: -5.2°C (23°F)
Boiling point: 163.5°C (327°F)
Flash point: 72°C (161°F) CC

Evaporation rate (Butyl acetate **= 1):** 0.06
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: 2.0% / 10.0%
Vapor pressure (mm Hg): 0.43 @ 20°C
Vapor density (Air = 1): 3.04
Relative density (Specific gravity): 0.959 @ 20°/20°C
Solubility(ies): Soluble in water.

Partition coefficient: (n-octanol / water): Log Pow: 0.79
Auto-ignition temperature: 443°C (830°F)
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: $CH_3(CH_2)_2COOH$
Molecular weight: 88.11

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Strong oxidizers such as hydrogen peroxide, nitric acid, perchloric acid or chromium trioxice, strong alkalies such as sodium hydroxide.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 1500 mg/kg ; Inhalation-rabbit LC50: >40 g/m^3
Skin corrosion/irritation: Skin-rabbit - Corrosive
Serious eye damage/irritation: Eyes-rabbit - Corrosive
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Sore throat. Cough. Burning sensation. Shortness of breath. Labored breathing. Symptoms may be delayed.
Ingestion: Burning sensation. Abdominal pain. Shock or collapse.
Skin: Pain. Redness. Blisters. Skin burns.
Eyes: Pain. Redness. Severe deep burns. Loss of vision.
Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: ES5425000

Section 12 Ecological Information

Toxicity to fish: Leuciscus idus (fish, fresh water), LC50 = 250-480 mg/L/48 hours
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = 61.7 mg/L/24 hours
Toxicity to algae: Scenedesmus subspicatus (Algae), EC50 = 46.7 mg/L/72 hours - growth rate
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN2820 **Shipping name:** Butyric acid
Hazard class: 8 **Packing group:** III **Reportable Quantity:** 5,000 lbs (2270 kg) **Marine pollutant:** No
Exceptions: Limited quantity equal to or less than 5 L **2012 ERG Guide #** 153

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Butyric acid	Listed	5,000 lbs,	Not listed	Listed	Not listed	Not validated

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: August 7, 2013 **Supercedes:** July 5, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture ou de ménage.

Produit	**n-ACIDE BUTYRIQUE**
Synonymes	Acide éthylacétique / Acide butanoique

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS05
Les organes cibles: Le système respiratoire, le peut et les yeux

Classification par le GHS:
Skin corrosion (Catégorie 1B)

Renseignements sur l'étiquette GHS: Mention de danger:
H314: Provoque des brûlures de la peau et des lésions oculaires graves.

Déclarations de précaution:
P260: Ne pas respirer les brouillards/vapeurs/aérosols.
P264: Se laver les mains soigneusement après manipulation.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P301+P330+P331: EN CAS D'INGESTION: Rincer la bouche. Ne PAS faire vomir.
P303+P361+P353: EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tout vêtement souillé ou éclaboussé. Rincer la peau à l'eau/ se doucher.
P363: Laver les vêtements contaminés avant réutilisation.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P310: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
n-Acide butyrique	107-92-6	100%	203-532-3

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE DES LÉSIONS OCULAIRES. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PROVOQUE DE GRAVES BRÛLURES. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. En contact avec les matériaux facilement oxydables, ce produit chimique peut réagir assez rapidement à l'allumage de cause, à la combustion violente ou à l'explosion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Absorbez avec le matériel sec inerte, balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 153)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Aicde butyrique	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions brumeuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Clair, liquide incolore.
Odeur: Odeur forte et pénétrante.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: -5.2°C (23°F)
Point d'ébullition: 163.5°C (327°F)
Point d'éclair: 72°C (161°F) CC

Taux d'évaporation (Acetate de butylique = 1): 0.06
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: 2.0% / 10.0%
Pression de vapeur (mm Hg): 0.43 @ 20°C
Densité de vapeur (Air = 1): 3.04
Densité relative (gravité spécifique): 0.959 @ 20°/20°C
Solubilité (s): Soluble dans l'eau.

Coefficient de partage: (n-octanol / eau): Log Pow: 0.79
Auto-inflammation: 443°C (830°F)
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: $CH_3(CH_2)_2COOH$
Poids moléculaire: 88.11

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives, la chaleur, étincelles, flamme nue et d'autres sources d'allumage.

Matières incompatibles: Oxydants forts tels que le peroxyde d'hydrogène, l'acide nitrique, l'acide perchlorique ou le trioxice de chrome, alcalis forts tels que l'hydroxyde de sodium.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 1500 mg/kg ; Inhalation-rabbit LC50: >40 g/m^3
La corrosion de la peau et l'irritation: Peau de lapin - Corrosif
Des lésions oculaires graves / irritation: Yeux-lapin - Corrosif
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Maux de gorge. Toux. Sensation de brûlure. Essoufflement. Respiration laborieuse. Les symptômes peuvent être retardés.
Ingestion: Sensation de brûlure. Douleurs abdominales. Choc ou collapsus.
Peau: Pain. Rougeur. Cloques. Brûlures cutanées.
Yeux: douleur. Rougeur. Brûlures profondes graves. Perte de vision.
Les signes et les symptômes de l'exposition: Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: ES5425000

Section 12 L'Information Écologique

Toxicité pour les poissons: Leuciscus idus (fish, fresh water), LC50 = 250-480 mg/L/48 hours
Toxicité pour les daphnies et autres invertébrés aquatiques: Daphnia magna (Crustacea), EC50 = 61.7 mg/L/24 hours
Toxicité pour les algues: Scenedesmus subspicatus (Algae), EC50 = 46.7 mg/L/72 hours - growth rate
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN2820 **Nom d'expédition:** Acide butyrique
Classe de danger: 8 **Groupe d'emballage:** III **Quantité à déclarer:** 5,000 lbs. (2270 kg) **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 L **2012 ERG Guide #:** 153

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Acide butyrique	Listed	5,000 lbs,	Non listed	Listed	Non listed	Non validée

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 7 août, 2013 **Remplace:** 5 juillet, 2013

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.03.2017 Revision: 13.03.2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name:** CALCIUM CHLORIDE
· **CAS Number:**
10043-52-4
10035-04-08: dihydrate
· **EC number:**
233-140-8
· **Index number:**
017-013-00-2
· **Registration number** 01-2119494219-28
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
As brine for refrigeration plants; ice and dust control on roads; in cement production; in chemical synthesis; in washing and cleaning products; in fertliser formulations; in absorbants; in water treatment products; in products such as ph-regulators, flocculants, precipitants, neutralisation agents; as a laboratory reagent; in the manufacture of textiles, leather, fur; in the manufacture of non-metallic mineral products, e.g. plasters, cement; in the manufacture of pulp, paper and paper products; in the manufacture of plastics and rubber products; in the manufacture of basic metals, including alloys; in mining; in the manufacture of wood and wood products; in the manufacture of computer, electronic and optical products, electrical equipment.
· **Sector of Use**
SU1 Agriculture, forestry, fishery
SU2a Mining, (without offshore industries)
SU2b Offshore industries
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU4 Manufacture of food products
SU5 Manufacture of textiles, leather, fur
SU6a Manufacture of wood and wood products
SU6b Manufacture of pulp, paper and paper products
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU11 Manufacture of rubber products
SU12 Manufacture of plastics products, including compounding and conversion
SU13 Manufacture of other non-metallic mineral products, e.g. plasters, cement
SU14 Manufacture of basic metals, including alloys
SU15 Manufacture of fabricated metal products, except machinery and equipment
SU16 Manufacture of computer, electronic and optical products, electrical equipment
SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
SU19 Building and construction work
SU20 Health services
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU 0: Other: Warehousing and support activities for transportation
· **Product category**
PC2 Adsorbents
PC4 Anti-Freeze and de-icing products
PC12 Fertilisers
PC16 Heat transfer fluids
PC19 Intermediate
PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC21 Laboratory chemicals
PC27 Plant protection products
PC35 Washing and cleaning products (including solvent based products)
PC37 Water treatment chemicals
PC 0: Other: use as additive
· **Article category**
AC8 Paper articles
AC 0: Other: deicing material
· **Application of the substance / the mixture**
The substance has many industrial. professional and consumer applications.

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Trade name: CALCIUM CHLORIDE

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· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Daltrade Chemicals
94 Hailgate
Howden
Nr. Goole
East Yorkshire
DN14 7SZ
Tel: 01430 430041
Fax: 01430 430477
E-Mail: info@daltrade.co.uk

· **Further information obtainable from:** Product safety department.
· **1.4 Emergency telephone number:** Tel: 01430 430041 (not 24 hours)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
· **Hazard pictograms** GHS07
· **Signal word** Warning
· **Hazard statements**
H319 Causes serious eye irritation.
· **Precautionary statements**

P260	Do not breathe dust.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P401	Store in accordance with local/regional/national/international regulations.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances**
· **CAS No. Description**
10043-52-4: Calcium chloride (anhydrous)
10035-04-08: Calcium chloride (dihydrate)
· **Identification number(s)**
· **EC number:** 233-140-8
· **Index number:** 017-013-00-2

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
· **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Check for and remove any contact lenses.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
· **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Information for doctor:** Treat symptomatically and supportively.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
· **5.2 Special hazards arising from the substance or mixture**
Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
· **Additional information**
Non-combustible solid.
Freely soluble in water.
Hygroscopic.
Aqueous solution reacts alkaline.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
Ensure adequate ventilation
· **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
· **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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Trade name: CALCIUM CHLORIDE

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SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Prevent any seepage into the ground.
Unsuitable materials: Ferritic steels -danger of pitting corrosion.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from humidity and water.
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:** Not required.
· **DNELs**
Workers
Acute / short-term exposure - local effects
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 10 mg/m³

Long-term exposure - local effects
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 5 mg/m³

General population
Acute / short-term exposure - local effects
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 5 mg/m³

Long-term exposure - local effects
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 2.5 mg/m³
· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
Select PPE appropriate for the operations taking place taking into account the product properties.
· **General protective and hygienic measures:**
Do not breath dust
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid close or long term contact with the skin.
Do not eat, drink, smoke or sniff while working.
Ensure that eyewash stations and safety showers are close to the workstation location.
· **Respiratory protection:**
Use suitable respiratory protective device in case of insufficient ventilation.

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Trade name: CALCIUM CHLORIDE

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Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Wear suitable chemical resistant protective gloves for frequent or prolonged operations tested to EN374 with an acceptable permeation test. Suitable materials include neoprene (chloroprene), PVC and nitrile rubber.
Contaminated gloves should be carefully rinsed with water before reuse.
Non suitable materials: Leather gloves.

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

Most materials for protective googles and face visors will probably be suitable eg. polycarbonate.

· **Body protection:**
Protective work clothing
Body protection must be chosen depending on product properties, activity and possible exposure.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Solid
Colour:	White
· **Odour:**	Odourless
· **Odour threshold:**	Not determined.
· **pH-value (100 g/l) at 20 °C:**	8-10
· **Change in condition**	
Melting point/freezing point:	782 °C
Initial boiling point and boiling range:	1601 °C
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Product is not flammable.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Auto-ignition temperature:**	Not determined.
· **Explosive properties:**	Product does not present an explosion hazard.

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Trade name: CALCIUM CHLORIDE

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· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapour pressure:**	Not applicable.
· **Density at 20 °C:**	2.15 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with water at 20 °C:**	740 g/l
· **Partition coefficient: n-octanol/water:**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
The substance decomposes on heating at high temperature and on burning producing toxic and corrosive fumes.
· **10.3 Possibility of hazardous reactions**
The solution in water is a weak base. Attacks zinc in presence of water forming highly flammable hydrogen gas.
Dissolves violently in water with liberation of much heat.
Calcium chloride liquors can cause pitting of and corrosion of some grades of stainless steel and under high temperature and stress conditions can promote stress corrosion cracking.
The substance can react dangerously with: bromine trifluoride; boron trioxide + calcium oxide; zinc -> hydrogen.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** Hydrogen chloride (HCl)
· **Additional information:**
Non-combustible solid.
Freely soluble in water.
Hygroscopic.
Aqueous solution reacts alkaline.

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

10043-52-4 Calcium chloride

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/4 h	>160 mg/l (rat)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.

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· **Serious eye damage/irritation**
Causes serious eye irritation.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Subacute to chronic toxicity:**
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the nasal mucous membrane , resulting in ulcerations.
· **Additional toxicological information:**
ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its solution aerosol.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Recommended Hierarchy of Controls:
- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Contact waste processors for recycling information.
Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.
· **European waste catalogue**
Waste key numbers in accordance with the European Waste Catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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Trade name: CALCIUM CHLORIDE

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SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR, ADN**	Void
· **IMDG, IATA**	Void
· **14.2 UN proper shipping name**	n/a
· **ADN**	Void
· **IMDG, IATA**	Void
· **14.3 Transport hazard class(es)**	n/a
· **ADN/R Class:**	Void
· **14.4 Packing group**	n/a
· **IMDG, IATA**	Void
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.
· **UN "Model Regulation":**	Void

SECTION 15: Regulatory information

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product safety department.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**CALCIUM METAL**
Synonyms	Calcium

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS02
Target organs: None known

GHS Classification:
Water reactive (Category 2)

GHS Label information: **Hazard statement:**
H261: In contact with water releases flammable gas.

Precautionary statement:
P223: Do not allow contact with water.
P231+P232: Handle under inert gas. Protect from moisture.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P370+P378: In case of fire: Use Class D extinguisher or smother with dry sand, dry clay, dry ground limestone or graphite to extinguish.
P402+P404: Store in a dry place. Store in a closed container.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Calcium	7440-70-2	98%	231-179-5

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: DO NOT use water, foam or halogenated extinguishing agents or CO_2. Use Class D extinguisher or smother with dry sand, dry clay, dry ground limestone or graphite to extinguish.
Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.
Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Calcium reacts with water and acids to release hydrogen. Heat of reaction may ignite evolved hydrogen. Avoid direct viewing of calcium fires as eye injury may result, use fire glasses. Powders form explosive mixtures with air which may be ignited by a spark.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources. Avoid exposure to water and moisture.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Calcium	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid, silvery-gray metal.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 842°C (1542°F)
Boiling point: 1440°C (4755°F)
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 10 mm Hg @ 983°C
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 1.54
Solubility(ies): Reacts violently with water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Ca
Molecular weight: 40.08

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition. Avoid contact with air and water. Avoid dispersion of dust in air.

Incompatible materials: Acids, halogens, alkali, metals, hydroxides, carbonates. Calcium will react with water and acids to release hydrogen.

Hazardous decomposition products: Hydrogen, calcium hydroxide, calcium oxide.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion: May be harmful if swallowed.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Signs and symptoms of exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, shortness of breath, headache, nausea. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: EV8040000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1401 **Shipping name:** Calcium
Hazard class: 4.3 **Packing group:** II **Reportable Quantity:** 10 lbs (0.37 kg) **Marine pollutant:** No
Exceptions: Limited quantity equal to or less than (0.5 Kg) 1.1 lb. **2012 ERG Guide #** 138

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Calcium	Listed	10 lbs (0.37 kg)	D001 ; D003	Listed	Not listed	B6 ; E

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: June 10, 2013 **Supercedes:** December 2, 2011

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**MÉTAL DE CALCIUM**
Synonymes	Calcium

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS02
Les organes cibles: Aucun connu

Classification par le GHS:
Water reactive (Catégorie 2)

Renseignements sur l'étiquette GHS: Mention de danger:
H261: Dégage au contact de l'eau des gaz inflammables.

Déclarations de précaution:
P223: Éviter tout contact avec l'eau.
P231+P232: Manipuler sous gaz inerte. Protéger de l'humidité.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P335+P334: Enlever avec précaution les particules déposées sur la peau. Rincer à l'eau fraîche/poser une compresse humide.
P370+P378: En cas d'incendie: Utiliser Classe D extincteur ou étouffer avec du sable sec, de l'argile sèche, du calcaire broyé à sec ou en graphite pour l'extinction.
P402+P404: Stocker dans un endroit sec. Stocker dans un récipient fermé.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Calcium	7440-70-2	98%	231-179-5

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSER UNE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT ÊTRE NOCIF EN CAS D'ABSORPTION PAR LA PEAU. PEUT CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: N'utilisez pas d'eau, de la mousse ou des agents d'extinction ou du CO_2 halogénés. Utiliser Classe D extincteur ou étouffer avec du sable sec, de l'argile sèche, du calcaire broyé à sec ou en graphite pour l'extinction.
Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.
Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Le calcium réagit avec l'eau et des acides à l'hydrogène de dégagement. La chaleur de réaction peut mettre à feu l'hydrogène évolué. Évitez le visionnement direct des feux de calcium comme les dommages d'oeil peuvent résulter, pour employer des verres du feu. Le poussières les mélanges explosifs de forme avec de l'air qui peut être mis à feu par une étincelle.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Enlever toute source d'ignition. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.
Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage. Évitez l'exposition à l'eau et à l'humidité.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:	Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Calcium	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide, un métal gris-gris.
Odeur: Aucun odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: 842°C (1542°F)
Point d'ébullition: 1440°C (4755°F)
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): 10 mm Hg @ 983°C
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 1.54
Solubilité (s): Réagit violemment avec l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: Ca
Poids moléculaire: 40.08

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives, la chaleur, étincelles, flamme nue et d'autres sources d'allumage. Eviter tout contact avec l'air et l'eau. Évitez la dispersion des poussières dans l'air.

Matières incompatibles: Acides, halogènes, alcali, métaux, hydroxydes, carbonates. Le calcium réagira avec l'eau et des acides à l'hydrogène de dégagement.

Produits dangereux de décomposition: Hydrogène, hydroxyde de calcium, oxyde de calcium.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut être nocif en cas d'inhalation. Peut causer une irritation des voies respiratoires.
Ingestion: Peut être nocif en cas d'ingestion.
Peau: Peut être nocif en cas d'absorption par la peau. Peut causer une irritation de la peau.
Yeux: Peut causer une .
Les signes et les symptômes de l'exposition: Le produit est extrêmement destructeur pour le tissu des muqueuses et des voies respiratoires supérieures, des yeux et de la peau. toux, l'essoufflement, maux de tête, des nausées. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: EV8040000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponibles
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponibles
Toxicité pour les algues: Pas de données disponibles
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN1401 **Nom d'expédition:** Calcium
Classe de danger: 4.3 **Groupe d'emballage:** II **Quantité à déclarer:** 10 lbs (0.37 kg) **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de (0.5 Kg) 1.1 lb. **2012 ERG Guide #:** 138

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Calcium	Listed	10 lbs (0.37 kg)	D001 ; D003	Listed	Not listed	B6 ; E

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 10 juin, 2013 **Remplace:** 2 decembre, 2011

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 201.00
Revision Date: March 27, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Calcium Nitrate

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Oxidizing solids (Category 2). May intensify fire; oxidizer (H272). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Acute toxicity, oral (Category 5). May be harmful if swallowed (H303).

Hazard class: Skin corrosion or irritation (Category 3). Causes mild skin irritation (H316).

Hazard class: Serious eye damage or irritation (Category 2B). Causes eye irritation (H320).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Calcium nitrate tetrahydrate	13477-34-4	$Ca(NO_3)_2 \cdot 4H_2O$	236.16	
Synonym: Lime nitrate				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).
If skin irritation occurs: Get medical advice or attention (P332+P313).
If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.
Explosion and fire hazard on contact with organic materials. May explode if shocked or heated. When heated to decomposition, may emit toxic fumes.
In case of fire: Use a tri-class dry chemical fire extinguisher. Take any precautions to avoid mixing with combustibles (P221+P370+P378).

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Gather material in a pile (do not sweep). Place in a suitable container and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #3. Store with amides, nitrates, nitrites and azides.
Store in a cool, dry place. Deliquescent. Store in a cool, dry place within a Flinn Chem-Saf™ bag.
Keep and store away from clothing and combustible materials (P220). Take any precautions to avoid mixing with combustibles (P221).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264).

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Moist, colorless crystals. Odorless.
Soluble: Water, acetone, and alcohol

Melting point: 45 °C
Specific gravity: 1.82

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong reducing agents, acids, and organic material.
Shelf life: Fair to poor, deliquescent. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritant.
Chronic effects: N.A.
Target organs: Blood and central nervous system.

ORL-RAT LD_{50}: 302 mg/kg
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Calcium Nitrate. Hazard class: 5.1. UN number: UN1454.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (233-332-1), RCRA code D001.

SECTION 16 — OTHER INFORMATION

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 27, 2014

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**CALCIUM OXIDE**
Synonyms	Lime / Quick Lime / Burnt LIme

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: DANGER
Pictograms: GHS05 / GHS07
Target organs: Respiratory system, Eyes, Skin, Mucous membranes

GHS Classification:
Skin irritation (Category 2)
Eye damage (Category 1)
STOT-SE (Category 3)

GHS Label information: **Hazard statement:**
H315: Causes skin irritation.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.

Precautionary statement:
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash before reuse.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Calcium oxide	1305-78-8	100%	215-138-9

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. CAUSES SEVERE GASTROINTESTINAL TRACT IRRITATION AND/OR BURNS. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. CAUSES SEVERE RESPIRATORY TRACT IRRITATION AND/OR BURNS. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION AND/OR BURNS. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION AND/OR BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: DO NOT use carbon dioxide or halogenated agents. Use flooding amounts of water as spray to absorb the heat generated.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Reacts with water to release heat and form alkaline solution. Contact with water or moisture may generate sufficient heat to ignite combustible materials. Product will swell with moisture and may burst containers.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 157)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Calcium oxide	TWA: 2 mg/m^3	TWA: 5 mg/m^3	TWA: 2 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Hygroscopic, white lump.
Odor: Earthy odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 2572°C (4662°F)
Boiling point: 2850°C (5162°F)
Flash point: Not flammable

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Not applicable
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 3.2-3.4
Solubility(ies): Slightly soluble in water with evolution of heat

Partition coefficient: Not applicable
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: CaO
Molecular weight: 56.08

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Protect from water, moisture and acids. Product will swell and generate heat when moistened.

Incompatible materials: Ethanol, boric acid and calcium chloride, interhalogens such as boron trifluoride, chlorine trifluoride, fluorine, hydrofluoric acid, phosphorus pentoxide, perchlorates, nitrates and permanganates, acids. Reacts with water to form calcium hydroxide and heat. Reacts with carbon dioxide to from calcium carbonate.

Hazardous decomposition products: Thermal decomposition result in Calcium hydroxide.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: ca. 500-2,000 mg/kg
Skin corrosion/irritation: Skin-human: irritating (corrosive, causes burns)
Serious eye damage/irritation: Eyes-human: highly irritating (risk of serious damage to eyes)
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory effects.
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause severe irritation of the upper respiratory tract with pain, burns and inflammation. May be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.
Ingestion: Ingestion may cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause circulatory system failure. May cause perforation of the digestive tract. May cause excess salivation, painful swallowing, rapid pulse and thermal burns.
Skin: Contact with skin causes irritation and/or burns with possible deep, penetrating ulcers.
Eyes: Contact with eyes causes irritation and/or burns and possible corneal injury.
Signs and symptoms of exposure: See Potential health effects above.
Additional information: RTECS #: EW3100000

Section 12 Ecological Information

Toxicity to fish: Cyprinus carpio (fish, fresh water), LC50 = 1,070 mg/l/96 hours
Toxicity to daphnia and other aquatic invertebrates: Other aquatic crustacea, EC50 = 159.6 mg/l/24 hours
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1910
Shipping name: Calcium oxide
Hazard class: 8
Packing group: III
Reportable Quantity: No
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 5 Kg (air only)
2012 ERG Guide # 157

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Calcium oxide	Listed	Not listed	Not listed	Listed	Not listed	E

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: February 24, 2014 **Supercedes:** February 24, 2014

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**OXYDE DE CALCIUM**
Synonymes	Lime / Chaux vive / Chaux vive

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé comme dangereux à ce selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: DANGER
Pictogrammes: GHS05 / GHS07
Les organes cibles: Le système respiratoire, les yeux, la peau et les membrunes muqueuse

Classification par le GHS:
Skin irritation (Catégorie 2)
Eye damage (Catégorie 1)
STOT-SE (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H315: Provoque une irritation cutanée.
H318: Provoque des lésions oculaires graves.
H335: Peut irriter les voies respiratoires.

Déclarations de précaution:
P261: Éviter de respirer les poussières.
P264: Se laver les mains après avoir manipulé.
P271: Utilisez uniquement de l'extérieur ou dans un endroit bien aéré.
P280: Porter des gants / des vêtements de protection / protection pour les yeux / du visage.
P302+P352: EN CAS DE CONTACT AVEC LA PEAU: Laver abondamment avec de l'eau et du savon.
P305+P351+P338: SI DANS LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles cornéennes, si présentes et facile à faire. Continuer à rincer.
P304+P340: EN CAS D'INHALATION: Transporter la victime à l'air frais et la garder au repos dans une position confortable pour la respiration.
P310: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P332+P313: En cas d'irritation cutanée: consulter un médecin.
P337+P313: Si l'irritation oculaire persiste: consulter un médecin.
P362+P364: Enlever les vêtements contaminés et les laver avant réutilisation.
P403+P233: Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche.
P405: Garder sous clef.
P501: Éliminer le contenu / le conteneur dans une agence élimination des produits chimiques agréé, conformément aux réglementations locales / régionales / nationales.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Oxyde de calcium	1305-78-8	100%	215-138-9

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. CAUSES UNE GRAVE IRRITATION GASTRO-INTESTINAL ET / OU DE BRULURES. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: NOCIF EN CAS D'INHALATION. CAUSES UNE GRAVE IRRITATION ET / OU DE BRULURES DE L'APPAREIL RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: CAUSES DE GRAVES IRRITATION ET / OU BRULURES DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: CAUSES UNE IRRITATION ET / OU BRÛLURES DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: N'employez pas l'anhydride carbonique ou les agents halogénés. Employez les quantités d'inondation de l'eau comme le jet pour absorber la chaleur s'est produit.
Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.
Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Réagit avec de l'eau à la chaleur de dégagement et à la solution alkaline de forme. Le contact avec l'eau ou l'humidité peut produire de la chaleur suffisante pour mettre à feu les matériaux combustibles. Le produit gonflera avec l'humidité et peut éclater des récipients.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 157)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Oxyde de calcium	TWA: 2 mg/m^3	TWA: 5 mg/m^3	TWA: 2 mg/m^3

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Hygroscopique, morceau blanc
Odeur: Odeur de terre.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: 2572°C (4662°F)
Point d'ébullition: 2850°C (5162°F)
Point d'éclair: Ininflammable

Taux d'évaporation (= 1): Non applicable
Inflammabilité (solide / gaz): Non applicable.
Limites d'explosivité: Bas / Max: Non applicable
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 3.2-3.4
Solubilité (s): Légèrement soluble dans l'eau avec dégagement de chaleur

Coefficient de partage: Non applicable
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: CaO
Poids moléculaire: 56.08

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Protégez contre l'eau, l'humidité et les acides. Le produit gonflera et produira de la chaleur quand humidifié.
Matières incompatibles: Éthanol, acide borique et chlorure de calcium, interhalogens tels que le trifluorure de bore, le trifluorure de chlore, le fluor, l'acide fluorhydrique, le pentoxyde de phosphore, les perchlorates, les nitrates et les permanganates, acides. Réagit avec de l'eau à l'hydroxyde et à la chaleur de calcium de forme. Réagit avec de l'anhydride carbonique à du carbonate de calcium.
Produits dangereux de décomposition: Résultat de décomposition thermique en hydroxyde de calcium.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: ca. 500-2,000 mg/kg
La corrosion de la peau et l'irritation: Skin-human - irritating (corrosive, causes burns)
Des lésions oculaires graves / irritation: Eyes-human - highly irritating (risk of serious damage to eyes)
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Donnée s non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: La substance ou le mélange est classé comme toxique pour certains organes cibles, exposition unique, catégorie 3 avec des effets respiratoire.
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: L'inhalation peut causer l'irritation grave de la région respiratoire supérieure avec la douleur, les brûlures et l'inflammation. Peut être mortel en raison du spasme, de l'inflammation, de l'oedème du larynx et des bronches, de la pneumonite chimique et de l'oedème pulmonaire.
Ingestion: L'ingestion peut causer l'irritation grave d'appareil gastro-intestinal avec la nausée, le vomissement et les brûlures possibles. Défaillance du système circulatoire de cause de mai. Perforation de cause de mai de la région digestive. Salivation excessive de cause de mai, ingestion douloureuse, impulsion rapide et brûlures de courant ascendant.
Skin: Entrez en contact avec l'irritation et/ou les brûlures de causes de peau avec les ulcères profonds et pénétrants possibles.
Eyes: Entrez en contact avec l'irritation de causes de yeux et/ou les brûlures et les dommages cornéens possibles.
Les signes et les symptômes de l'exposition: Voir les effets sanitaires potentiels ci-dessus.
Informations complémentaires: RTECS #: EW3100000

Section 12 L'Information Écologique

Toxicité pour les poissons: Cyprinus carpio (fish, fresh water), LC50 = 1,070 mg/l/96 hours
Toxicité pour les daphnies et autres invertébrés aquatiques: Other aquatic crustacea, EC50 = 159.6 mg/l/24 hours
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: UN1910 **Nom d'expédition:** Oxyde de calcium
Classe de danger: 8 **Groupe d'emballage:** III **Quantité à déclarer:** Non **Polluant marin:** Non
Exceptions: Quantité limitée égale à ou moins de 5 Kg (air seulement) **2012 ERG Guide #:** 157

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Oxyde de calcium	Listed	Not listed	Not listed	Listed	Not listed	E

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 24 février, 2014 **Remplace:** 24 février, 2014

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 232.00

Revision Date: September 22, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

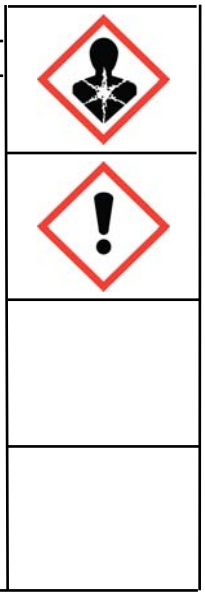
Chloroform

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Acute toxicity, oral (Category 4). Harmful if swallowed (H302). Do not eat, drink or smoke when using this product (P270).

Hazard class: Skin corrosion or irritation (Category 2). Causes skin irritation (H315).

Hazard class: Carcinogenicity (Category 1). May cause cancer (H350). Obtain special instructions before use (P201). Do not handle until all safety precautions have been read and understood (P202). Use personal protective equipment as required (P281).

Hazard class: Specific target organ toxicity, repeated exposure (Category 2). May cause damage to liver through prolonged or repeated exposure (H373). Do not breathe mist, vapors or spray (P260). Do not eat, drink or smoke when using this product (P270).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Chloroform	67-66-3	$CHCl_3$	119.38	
Synonym: Trichloromethane				

SECTION 4 — FIRST AID MEASURES

If exposed or concerned: Get medical advice or attention (P308+P313).
If inhaled: Call a POISON CENTER or physician if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
If on skin: Wash with plenty of water (P302+P352). **If skin irritation occurs:** Get medical advice or attention (P332+P313).
If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P302+P301+P312).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible liquid.
Concentrated vapors may be ignited by a source of heat.
When heated to decomposition, may emit toxic fumes.
In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
H-2
F-0
R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #4. Store with ethers, ketones, and halogenated hydrocarbons.
Store in Flinn Saf-Stor™ can. Store in a cool, dry place. Protect from light. Use only in a hood or well-ventilated area (P271).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves (pva not latex or nitrile), protective clothing and eye protection (P280). Wash hands thoroughly after handling. Use only in a hood or well-ventilated area (P271).
Exposure guidelines: STEL 50 ppm (OSHA) TLV 10 ppm; 49 mg/m^3 (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Clear, colorless liquid with a pleasant odor.
Soluble: Slightly in water. Miscible with alcohol.

Boiling point: 60 - 61.5 ^oC
Specific gravity: 1.5

SECTION 10 — STABILITY AND REACTIVITY

Any source of ignition. Avoid strong bases, aluminum, strong alkalies, and oxidizing materials. Air and light sensitive.
Shelf life: Good, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Skin, eye, and respiratory irritant, nausea, dizziness, and headache, toxic if swallowed
Chronic effects: Possible carcinogen IARC-2B and mutagen.
Target organs: Heart, liver, kidneys, and nerves.

ORL-RAT LD_{50}: 695 mg/kg
IHL-RAT LC_{50}: 47,702 mg/m^3/4H
SKN-RBT LD_{50}: > 20 g/kg

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #27j is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Chloroform. Hazard class: 6.1, Keep away from food. UN number: UN1888.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (200-663-8), RCRA code U044.

SECTION 16 — OTHER INFORMATION

[illegible]

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: September 22, 2014

CHROMA AUSTRALIA PTY LTD ACN 001 594 609
17 Mundowi Rd / PO Box 3B
Mount Kuring-Gai, NSW 2080 AUSTRALIA
www.chromaonline.com
PH: (02) 9457 9922 FAX: (02) 9457 8082
EMERGENCY PH: As above, or Poisons Information Centre

Date of publication: 8th January 2014

CHROMA

Material Safety Data Sheet

Classified as **NON-HAZARDOUS** according to the criteria of Safe Work Australia (formerly ASCC – Australian Safety & Compensation Council [formerly NOHSC – National Occupational Health & Safety Commission])

IDENTIFICATION

Product name: ChromaTemp™ Liquid Tempera

Other names: ----

U.N. No: N/A
Hazchem: N/A
Dangerous Goods Class & Sub Risk: N/A
Poisons Schedule: N/A

Manufacturer's Product Codes: Various

Use: Children's grade tempera equivalent paint.

**™ ***Trademark of Chroma Australia Pty Ltd or an affiliated company

PHYSICAL DESCRIPTION / PROPERTIES

Appearance: Creamy liquid, various colours
Boiling Point/Melting Point (°C): N/A
Vapour Pressure (Pascals or mm of Hg at 25°C): N/A
Specific Gravity: Approx 1g/ml
Flash Point (°C): N/A
Flammability limits (%): N/A
Solubility in Water (g/L): Soluble
Other properties: Slight ammonia smell

COMPONENTS

Chemical Entity	CAS No.	Concentration
Water	7732-18-5	Commercial In Confidence
Pigment, various	Commercial in Confidence	Commercial in Confidence
Acrylic Polymers	Commercial in Confidence	Commercial in Confidence
Fillers	1317-65-3	10 – 30%
Thickeners	N/A	5 - 8.5%
Monoethanolamine	141-43-5	1.5 – 2%
Dispersant	N/A	0.45 – 1.125%
Defoamer	265-155-0	0.25%
Surfactant	N/A	0.1 – 0.3%
Preservative	2682-20-4, 2634-33-5	0.0175%

NOTE: The physical data presented above are typical values only and should not be construed as a specification.

HEALTH HAZARD / TOXICOLOGICAL INFORMATION

No adverse health effects are expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms of effects may occur if the product is mishandled.

Inhalation: Inhalation of vapour may cause slight irritation
Ingestion: No adverse effects expected.
Eye Contact: Direct eye contact may cause slight irritation, redness and/or swelling.
Skin Contact: Prolonged or repeated contact may cause irritation.

Toxicological Data
This product carries the A.P. Non-Toxic Seal and is certified by a toxicologist in association with the Art & Craft Materials Institute (ACMI), Boston MA 02110 USA

FIRST AID MEASURES

Ingestion: Have affected person drink two (2) glasses of water. Never give anything by mouth to an unconscious person.
Inhalation: Inhalation of vapour may cause irritation; Move to fresh air. If irritation persists, consult a physician.
Skin contact: Prolonged or repeated contact may cause skin irritation; Wash affected areas thoroughly with cool water. If irritation persists, consult a physician.
Eye contact: Direct eye contact may cause irritation; Flush eyes with large amounts of cool water. If irritation persists, consult a specialist.

Advice to doctor: Treat symptomatically.

PRECAUTIONS FOR USE

Exposure limit(s): No Occupational Exposure Limits (OEL) value has been assigned.

Exposure controls
Engineering measures: Ensure adequate natural or mechanical ventilations. Keep containers closed when not in use.

Protective measures: Facilities storing or utilizing this material should be equipped with water facilities and appropriate ventilation equipment.

Individual protection measures
For general use Personal Protection Equipment (PPE) is not required; however a detailed risk assessment on the use of this product taking in to account the work environment and handling methods may indicate PPE is recommended.

Eye/face protection: General type safety goggles may be worn.
Skin protection: Single use nitrile gloves may be worn. Wash material immediately off skin with cool soapy water.
Respiratory protection: Not necessary if used in a ventilated environment

SAFE HANDLING & TRANSPORT INFORMATION

Safe handling: Avoid contact with eyes. Wash hands with cool soapy water immediately after use. Personal clothing protection is recommended.

Storage: Keep from freezing. Store in a cool, dry place away from direct sunlight. Shake/stir well before use. Ensure lid is tightly closed when not in use.

Ambient storage temperature: 1°C - 38°C

Australian Dangerous Goods (ADG) Code: Not regulated (not dangerous for transport)

Classification for sea transport (IMO-IMDG): Not regulated (not dangerous for transport)

Classification for air transport (IATA/ICAO): Not regulated (not dangerous for transport)

Hazchem Code: None allocated

FIRE / EXPLOSION HAZARD

Flammability: Non-flammable

Suitable extinguishing equipment: Use extinguishing media appropriate to surrounding fire conditions.

Specific hazards during fire fighting: Material can boil above 100°C/212°F.

Special protective equipment for fire fighters: Wear self-contained breathing apparatus and protective clothing.

DISPOSAL ADVICE

Small quantities
Do not pour left over product into drains. Unwanted product should be brushed onto newspaper and allowed to dry to be disposed of via domestic waste collection. Soak/Wipe up smaller spills with a rag and dispose of via domestic waste collection.

Large quantities
Clean up immediately. Prevent spill and cleaning runoff from entering sewers, drains and open bodies of water. Contain spill with sand or other inert material and transfer to containers for disposal. Avoid walking through spilled product as it may be slippery. Contact local waste disposal authority for disposal advice.

OTHER INFORMATION

Allergy information: Due care has been taken to ensure this product does not contain any food derivatives or food-based products however we cannot guarantee the same applies to any of our suppliers of the individual components of this product.

Revision: 8th January 2014 – MSDS reformatted and extra information added.

Please note: This product was discontinued in September 2008

SAFETY DATA SHEET

Issuing Date [illegible] **Revision Date** [illegible] **Revision Number** [illegible]

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Clorox® Original Bleach

Other means of identification

Synonyms [illegible]

Recommended use of the chemical and restrictions on use

Recommended use [illegible]

Uses advised against [illegible]

Details of the supplier of the safety data sheet

Supplier Address
[illegible]

Emergency telephone number

Emergency Phone Numbers [illegible]

2. HAZARDS IDENTIFICATION

Classification

[illegible]

[illegible]	[illegible]

GHS Label elements, including precautionary statements

Emergency Overview

Signal word **Warning**

Hazard Statements
[illegible]

Appearance [illegible] **Physical State** [illegible] **Odor** [illegible]

Precautionary Statements - Prevention
[illegible]

Precautionary Statements - Response
[illegible]

Precautionary Statements - Storage
[illegible]

Precautionary Statements - Disposal
[illegible]

Hazards not otherwise classified (HNOC)
[illegible]

Unknown Toxicity
[illegible]

Other information
[illegible]

Interactions with Other Chemicals
[illegible]

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade Secret

4. FIRST AID MEASURES

First aid measures

General Advice

Eye Contact

Skin Contact

Inhalation

Ingestion

Protection of First-aiders

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects

Indication of any immediate medical attention and special treatment needed

Notes to Physician

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

[illegible]

Unsuitable Extinguishing Media

[illegible]

Specific Hazards Arising from the Chemical

[illegible]

Explosion Data

Sensitivity to Mechanical Impact [illegible]

Sensitivity to Static Discharge [illegible]

Protective equipment and precautions for firefighters

[illegible]

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions [illegible]

Other Information [illegible]

Environmental precautions

Environmental Precautions [illegible]

Methods and material for containment and cleaning up

Methods for Containment [illegible]

Methods for Cleaning Up [illegible]

7. HANDLING AND STORAGE

Precautions for safe handling

Handling [illegible]

Conditions for safe storage, including any incompatibilities

Storage [illegible]

Incompatible Products [illegible]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
[illegible]	[illegible]	[illegible]	[illegible]

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Appropriate engineering controls

Engineering Measures [illegible]

Individual protection measures, such as personal protective equipment

Eye/Face Protection [illegible]

Skin and Body Protection [illegible]

Respiratory Protection [illegible]

Hygiene Measures [illegible]

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	[illegible]		
Appearance	[illegible]	**Odor**	[illegible]
Color	[illegible]	**Odor Threshold**	[illegible]

Property	**Values**	**Remarks/ Method**
pH	[illegible]	[illegible]
Melting/freezing point	[illegible]	[illegible]
Boiling point / boiling range	[illegible]	[illegible]
Flash Point	[illegible]	[illegible]
Evaporation rate	[illegible]	[illegible]
Flammability (solid, gas)	[illegible]	[illegible]
Flammability Limits in Air		[illegible]
Upper flammability limit	[illegible]	[illegible]
Lower flammability limit	[illegible]	[illegible]
Vapor pressure	[illegible]	[illegible]
Vapor density	[illegible]	[illegible]
Specific Gravity	[illegible]	[illegible]
Water Solubility	[illegible]	[illegible]
Solubility in other solvents	[illegible]	[illegible]
Partition coefficient: n-octanol/water	[illegible]	[illegible]
Autoignition temperature	[illegible]	[illegible]
Decomposition temperature	[illegible]	[illegible]
Kinematic viscosity	[illegible]	[illegible]
Dynamic viscosity	[illegible]	[illegible]
Explosive Properties	[illegible]	
Oxidizing Properties	[illegible]	

Other Information

Softening Point	[illegible]
VOC Content (%)	[illegible]
Particle Size	[illegible]
Particle Size Distribution	[illegible]

10. STABILITY AND REACTIVITY

Reactivity

[illegible]

Chemical stability

[illegible]

Possibility of Hazardous Reactions

[illegible]

Conditions to avoid

[illegible]

Incompatible materials

[illegible]

Hazardous Decomposition Products

[illegible]

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information [illegible]

Inhalation [illegible]

Eye Contact [illegible]

Skin Contact [illegible]

Ingestion [illegible]

Component Information [illegible]

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
[illegible]	[illegible]	[illegible]	[illegible]

Information on toxicological effects

Symptoms [illegible]

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization [illegible]

Mutagenic Effects [illegible]

Carcinogenicity [illegible]

Chemical Name	ACGIH	IARC	NTP	OSHA
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive Toxicity [illegible]

STOT - single exposure [illegible]

STOT - repeated exposure [illegible]
Chronic Toxicity [illegible]
Target Organ Effects [illegible]

Aspiration Hazard [illegible]

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-dust/mist) [illegible]

12. ECOLOGICAL INFORMATION

Ecotoxicity

[illegible]

Persistence and Degradability

[illegible]

Bioaccumulation

[illegible]

Other adverse effects

[illegible]

13. DISPOSAL CONSIDERATIONS

Disposal methods

[illegible]

Contaminated Packaging

[illegible]

14. TRANSPORT INFORMATION

DOT	[illegible]
TDG	[illegible]
ICAO	[illegible]
IATA	[illegible]
IMDG/IMO	[illegible]

15. REGULATORY INFORMATION

Chemical Inventories

TSCA	[illegible]
DSL/NDSL	[illegible]

TSCA [illegible]
DSL/NDSL [illegible]

U.S. Federal Regulations

SARA 313

[illegible]

SARA 311/312 Hazard Categories

Acute Health Hazard	[illegible]
Chronic Health Hazard	[illegible]
Fire Hazard	[illegible]
Sudden Release of Pressure Hazard	[illegible]
Reactive Hazard	[illegible]

Clean Water Act

[illegible]

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
[illegible]	[illegible]			[illegible]

CERCLA

[illegible]

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
[illegible]	[illegible]	-	[illegible]

US State Regulations

California Proposition 65

[illegible]

U.S. State Right-to-Know Regulations

[illegible]

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

International Regulations

Canada

WHMIS Hazard Class

[illegible]

16. OTHER INFORMATION

NFPA	**Health Hazard**	[illegible]	**Flammability**	[illegible]	**Instability**	[illegible]	**Physical and Chemical Hazards**	[illegible]
HMIS	**Health Hazard**	[illegible]	**Flammability**	[illegible]	**Physical Hazard**	[illegible]	**Personal Protection**	[illegible]

Prepared By [illegible]

Revision Date [illegible]

Revision Note [illegible]

Reference [illegible]

General Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Version 6.1
Revision Date 03/15/2019
Print Date 05/11/2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Cobalt(II) chloride hexahydrate

Product Number : 202185
Brand : SIGALD
Index-No. : 027-004-00-5
CAS-No. : 7791-13-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302
Respiratory sensitisation (Category 1), H334
Skin sensitisation (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word	Danger
Hazard statement(s)	
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	:	Cobaltous chloride
Formula	:	$Cl_2Co \cdot 6H_2O$
Molecular weight	:	237.93 g/mol
CAS-No.	:	7791-13-1
EC-No.	:	231-589-4
Index-No.	:	027-004-00-5

Component	Classification	Concentration
Cobalt dichloride hexahydrate		
	Acute Tox. 4; Resp. Sens.	<= 100 %

	1; Skin Sens. 1; Muta. 2; Carc. 1B; Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H302, H334, H317, H341, H350, H360, H400, H410 M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 10	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas, Cobalt/cobalt oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Cobalt dichloride hexahydrate	7791-13-1	TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Pulmonary function Asthma Myocardial effects Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index		

		or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans varies

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Cobalt dichloride hexahydrate	7791-13-1	Cobalt	15 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at end of workweek			
		Cobalt		Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	()No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.920 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available

t) Oxidizing properties No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents, Alkali metals

10.6 Hazardous decomposition products
Other decomposition products - No data available
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Cobalt/cobalt oxides
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 766 mg/kg
Remarks: Behavioral:Tremor. Diarrhoea Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
Inhalation: No data available
LD50 Dermal - Rat - > 2,000 mg/kg
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
In vitro tests showed mutagenic effects
Mouse
mammary gland
Mutation in mammalian somatic cells.

Carcinogenicity
This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
Possible human carcinogen

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Cobalt dichloride hexahydrate)
	2B - Group 2B: Possibly carcinogenic to humans (Cobalt dichloride hexahydrate)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity
Presumed human reproductive toxicant

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: GG0200000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence
Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinus carpio (Carp) - 0.33 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1.1 - 1.6 mg/l - 48 h
Toxicity to algae	EC50 - Chlorella vulgaris (Fresh water algae) - 0.5 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt dichloride hexahydrate)
Marine pollutant : yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cobalt dichloride hexahydrate)
Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

SECTION 15: Regulatory information

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Cobalt dichloride hexahydrate	7791-13-1	2015-07-08

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cobalt dichloride hexahydrate	7791-13-1	2015-07-08

	CAS-No.	Revision Date
Cobalt dichloride hexahydrate	7791-13-1	2015-07-08

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cobalt dichloride hexahydrate	7791-13-1	2015-07-08

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

Version: 6.1 Revision Date: 03/15/2019 Print Date: 05/11/2019

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 282.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Copper(II) Nitrate

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Oxidizing solids (Category 2). May intensify fire; oxidizer (H272). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Acute toxicity, oral (Category 4). Harmful if swallowed (H302). Do not eat, drink or smoke when using this product (P270).

Hazard class: Skin corrosion or irritation (Category 2). Causes skin irritation (H315).

Hazard class: Serious eye damage or irritation (Category 1). Causes serious eye damage (H318).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Copper(II) nitrate hydrate Synonym: Cupric nitrate	10031-43-3	$Cu(NO_3)_2 \cdot 2.5H_2O$	241.60	

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). Immediately call a POISON CENTER or physician (P310).
If on skin: Wash with plenty of water (P302+P352). **If skin irritation occurs:** Get medical advice or attention (P332+P313).
If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P302+P301+P312).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.
Strong oxidizer. Avoid contact with combustible and organic materials. When heated to decomposition, may emit toxic fumes.
In case of fire: Use a tri-class dry chemical fire extinguisher. Take any precautions to avoid mixing with combustibles (P221+P370+P378).

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Sweep up the spill, place in a sealed bag or container, and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #3. Store with amides, nitrates, nitrites and azides.
Deliquescent. Store in a cool, dry place within a Flinn Chem-Saf™ bag. Keep and store away from clothing and combustible materials (P220). Take any precautions to avoid mixing with combustibles (P221).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264).

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Blue crystals. Odorless.
Soluble: Water and alcohol

Boiling point: 170 °C (decomposes)
Melting point: 114 °C
Specific gravity: 2.32

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with organic materials, reducing agents, heat, or moisture. Avoid dust.
Shelf life: Poor, deliquescent. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Corrosive.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD_{50}: 940 mg/kg
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Nitrates, Inorganic, N.O.S. Hazard class: 5.1, Oxidizer. UN number: UN1477.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (221-838-5), RCRA code D001.

SECTION 16 — OTHER INFORMATION

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 21, 2014

SAFETY DATA SHEET

1. Identification

Product identifier **Corn Starch**

Other means of identification Not available.

Recommended use Not available.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name	Cargill, Incorporated	
Address	Minneapolis, MN 55440 US	
Telephone	General Information:	1-800-370-7386
E-mail	Not available.	
Emergency phone number	24 Hour Emergency:	1-800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Combustible dust

Label elements

Signal word Warning

Hazard statement May form combustible dust concentrations in air.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Prevent dust accumulation to minimize explosion hazard.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Corn Starch	63798-35-6	100

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Dust may form explosive mixture with air. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In the event of fire, cool tanks with water spray.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Use only non-sparking tools. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate personal protective equipment. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Use with adequate ventilation. Eliminate all sources of ignition. Minimize dust generation and accumulation. Combustible dust clouds may be created where operations produce fine material (dust). Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with ‘best practices’ (e.g. NFPA-654). Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid direct contact with eyes.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear suitable gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	White powder.
Physical state	Solid.
Form	Powder.
Color	White.
Odor	Bland.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.45 - 1.6
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	770 °F (410 °C)
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, sparks and open flame. Minimize dust generation and accumulation. Contact with incompatible materials. Humidity.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and malaise.
Inhalation	No adverse effects due to inhalation are expected.
Skin contact	May cause skin irritation.
Eye contact	May cause eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Irritant effects.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available for this product.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200 due to the potential for dust explosion.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	19-June-2014
Revision date	-
Version #	01
Further information	Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.
Disclaimer	The information contained herein is believed to be true and accurate. However, all statements, recommendations or suggestions are made without any guarantee, representation or warranty, express or implied, on our part. Therefore, no warranty is made or to be implied that the information set out in this document is accurate or complete, and we accordingly exclude all liability in connection with the use of this information or the products referred to herein. All such risks are assumed by the purchaser/user. For the avoidance of doubt, however, nothing in this document excludes or limits our liability for death or personal injury caused by our negligence or for fraudulent misrepresentation.

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT

Synonyms
CRAYOLA PREMIER& ARTISTA II TEMPERA PAINTS; CRAYOLA PREMIER TEMPERA/POSTER PAINT. STANDARD & FLUORESCENT PAINT; PRODUCT CODE(S): PREMIER TEMPERA; 44-1997; 54-1116-X-XXX; 54-1216-X-XXX; 54-1232-X-XXX; ARTISTA WASHABLE TEMPERA; 54-3115-X-XXX; 54-3132-X-XXX; 007-BROWN; 033-PEACH; 034-YELLOW; 036 ORANGE; 038-RED; 40-VIOLET(PURPLE); 042-BLUE; 044-GLOWING GREEN; 048-TURQUOISE; 051-BLACK; 053-WHITE; 069-MAGENTA; 083-GOLD; 084-SILVER; 092-FL ELECTRIC BLUE; 093-FL RED; 094-FL ORANGE YELLOW; 096-FL CHARTRUESE; 097-FL SHOCKING PINK; 04-0615; 54-1106; 54-1206; 54-1208; 54-1264; 54-1997; 54-2101; 54-2102; 54-3108; 54-3181; 54-3182; 54-3183; 54-3115F; 54-3128; 54-3164; 54-3208; 54-3214; 54-5504; 54-6001; 54-6002; 54-6003; 54-6004; 54-6005; 54-6006; 54-6007; 54-6008; 54-6009; 54-6010; 54-6011; 54-6012; 54-6013; 54-6014; 54-6015; 54-6016; 54-6017; 54-6018; 54-6019; 54-6020; 54-8516; 57-0323; 74-7217;

Product Description
Finished product.

Product Use
Arts and Crafts for children

Restrictions on Use
None known.

Details of the supplier of the safety data sheet
CRAYOLA LLC
1100 Church Lane
Easton, PA 18044
Phone: 1-800-272-9652
Emergency Phone #: 1-800-535-5053 or call local POISON CONTROL
E-mail: support@crayola.com

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
None needed according to classification criteria.

GHS Label Elements

Symbol(s)
None needed according to classification criteria.

Signal Word
None needed according to classification criteria

Hazard Statement(s)
None needed according to classification criteria.

Precautionary Statement(s)

Prevention
None needed according to classification criteria.

Response
None needed according to classification criteria.

Storage
None needed according to classification criteria.

Disposal

Dispose in accordance with all applicable federal, state/regional and local laws and regulations.

Other Hazards

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Not available	Product has been certified as nontoxic by the Art & Creative Materials Institute, Inc. and conforms to ASM D 4236 standard practice for labeling art materials for acute and chronic adverse health hazards.	100

Section 4 - FIRST AID MEASURES

Inhalation

It is unlikely that emergency treatment will be required. Remove from exposure. Get medical attention, if needed.

Skin

It is unlikely that emergency treatment will be required. If adverse effects occur, wash with soap or mild detergent and large amounts of water. Get medical attention, if needed.

Eyes

It is unlikely that emergency treatment will be required. Flush eyes with plenty of water for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion

Call a poison control center or doctor immediately for treatment advice.

Most Important Symptoms/Effects

Acute

No information on significant adverse effects.

Delayed

No information on significant adverse effects.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, regular dry chemical, regular foam, water.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Slight fire hazard.

Hazardous Combustion Products

Oxides of carbon.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Use extinguishing agents appropriate for surrounding fire. Stay upwind and keep out of low areas. Avoid inhalation of material or combustion by-products.

Special Protective Equipment and Precautions for Firefighters

Wear protective clothing and equipment suitable for the surrounding fire.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Stop leak if possible without personal risk. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for reuse or disposal.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

Store and handle in accordance with all current regulations and standards. See original container for storage recommendations. Keep separated from incompatible substances.

Incompatible Materials

Oxidizing agents.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Based on available information, additional ventilation is not required.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Eye protection not required under normal conditions.

Skin Protection

Protective clothing is not required under normal conditions.

Respiratory Protection

No respirator is required under normal conditions of use. Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

Glove Recommendations

Protective gloves are not required under normal conditions.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	various colors liquid	**Physical State**	liquid
Odor	slight odor.	**Color**	Not available
Odor Threshold	Not available	**pH**	8.2 - 9
Melting Point	Not available	**Boiling Point**	Not available

Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	Not available	**Flammability (solid, gas)**	Not available
Autoignition Temperature	Not available	**Flash Point**	Not available
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	Not available
Vapor Density (air=1)	Not available	**Specific Gravity (water=1)**	10.1 - 10.3
Water Solubility	(Soluble)	**Partition coefficient: n-octanol/water**	Not available
Viscosity	40	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	Not available
Physical Form	Liquid.	**Molecular Weight**	Not available

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions
Will not polymerize.

Conditions to Avoid
None reported.

Incompatible Materials
Oxidizing agents.

Hazardous decomposition products
None known.

Thermal decomposition products
Oxides of carbon.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
No information on significant adverse effects.

Skin Contact
No information on significant adverse effects.

Eye Contact

No information on significant adverse effects.

Ingestion

No information on significant adverse effects.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

None.

Delayed Effects

None.

Irritation/Corrosivity Data

None.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.
No information available for the product.

Germ Cell Mutagenicity

No information available for the product.

Tumorigenic Data

No information available for the product.

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

Aspiration hazard

Not expected to be an aspiration hazard.

Medical Conditions Aggravated by Exposure

No data available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of in accordance with all applicable federal, state and local regulations. Recycle if possible.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
UN/NA #: Not regulated

IATA Information:
UN#: Not regulated

ICAO Information:
UN#: Not regulated

IMDG Information:
UN#: Not regulated

TDG Information:
UN#: Not regulated

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

No hazard categories applicable.

U.S. State Regulations

None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Not listed under California Proposition 65.

Component Analysis - Inventory

Product has been certified as nontoxic by the Art & Creative Materials Institute, Inc. and conforms to ASM D 4236 standard practice for labeling art materials for acute and chronic adverse health hazards. (Not available)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
No	No	No	No	No	No	No	No	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW	VN (Draft)
No	No	No	No	No	No	No

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 1 Fire: 1 Instability: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

09/13/2018 - Update to Section(s) 1.

Preparation Date

February 19, 2016

Revision date

09/13/2018

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.

MATERIAL SAFETY DATA SHEET

SUPPLIER: PROLAB SCIENTIFIC

DATE OF MSDS: 2010-01-02
NAME OF PRODUCT: CUPRIC SULFATE
EMERGENCY TELEPHONE NO.: (613) 996-6666 (CANUTEC)

1. Product Identification

Synonyms: Copper (II) Sulfate Pentahydrate (1:1:5); blue vitriol; Sulfuric acid copper (2+) salt (1:1), Pentahydrate
CAS No: 7758-98-7 (Anhydrous)
Molecular Weight: 249.68

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Cupric Sulfate	7758-98-7	100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED. AFFECTS THE LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAFETY DATA Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 0 - None
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Causes irritation to respiratory tract, symptoms may include coughing, sore throat, and shortness of breath. May result in ulceration and perforation of respiratory tract. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.

Ingestion:
May cause burning pain in the mouth, esophagus, and stomach. Hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste, and diarrhea

may occur. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, blood effects, paralysis and coma. Death may occur from shock or renal failure. Fatalities have occurred as a result of ingesting gram quantities of copper sulfate.

Skin Contact:
May cause irritation and itching.

Eye Contact:
Dust may cause irritation. Contact may cause conjunctivitis, ulceration, or clouding of the cornea.

Chronic Exposure:
Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discoloration of the skin or hair, blood and liver damage, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, impaired liver, kidney, or pulmonary function, glucose 6-phosphate-dehydrogenase deficiency, or pre-existing Wilson's disease may be more susceptible to the effects of this material.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:
In case of contact, wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.

Explosion:
Not considered to be an explosion hazard. Sealed container may rupture during fire conditions from pressure water vapor release.

Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. When heated above 110C (230F) material will melt. Avoid using a direct water stream on molten material as it may causes splattering.

6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Solutions are corrosive to mild steel. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
1 mg/m3 (TWA) for copper dusts & mists as Cu
-ACGIH Threshold Limit Value (TLV):
1 mg/m3 (TWA) for copper dusts & mists as Cu

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne
Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Transparent blue triclinic crystals or crystalline granules or powder.

Boiling Point:
>> 150C (>> 302F)
Decomposes with loss of 5H2O

Odor:
Odorless.

Melting Point:
110C (230F) Loses 4H2O @ this temperature.

Solubility:
31.6g/100cc H20 @ 0C (32F)

Vapor Density (Air=1):
No information found.

Specific Gravity:
2.28 @ 15.6C/4C

Vapor Pressure (mm Hg):
No information found.

pH:
4.0 (0.2 M solution)

Evaporation Rate (BuAc=1):
(water=1): slowly efflorescent.

% Volatiles by volume @ 21C (70F): 0

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
When heated to decomposition cupric oxide and sulfur oxide may form.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Substance will ignite hydroxylamine. Solutions are acidic and can react with magnesium to evolve flammable hydrogen gas. May react with acetylene to form dangerous acetylides.

Conditions to Avoid:
Incompatibles.

11. Toxicological Information

Oral rat LD50: 300 mg/kg. Investigated as a tumorigen, mutagen.

--------\Cancer Lists\----------

Ingredient	NTP Carcinogen Known	NTP Carcinogen Anticipated	IARC Category
Cupric Sulfate (7758-98-7)	No	No	None

12. Ecological Information

Environmental Fate:
Data for anhydrous material unless otherwise noted. When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material is expected to significantly bioaccumulate. This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. Bioaccumulation data for copper.

Environmental Toxicity:
This material is expected to be very toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l. The IC50/72-hour values for algae are less than 1 mg/l. Toxicity data for copper.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, T.D.G)

Proper Shipping Name: CUPRIC SULFATE
Hazard Class: 9.2

UN/NA: NA 9109 Packing Group: II
Information reported for product/size: > 5 KG
(If less than 5 Kg of this material is present, it is not regulated for transport.)

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Cupric Sulfate (7758-98-7)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	DSL	NDSL	--Canada-- Phil.
Cupric Sulfate (7758-98-7)	Yes	Yes	No	Yes

-------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Cupric Sulfate (7758-98-7)	No	No	No	Copper compoun

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Cupric Sulfate (7758-98-7)	10	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Mixture / Solid)

Australian Hazchem Code: None allocated.
Poison Schedule: S5

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:
Health: 2 Flammability: 0 Reactivity: 0

Label Hazard Warning:
WARNING! HARMFUL IF SWALLOWED. AFFECTS THE LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Avoid breathing dust.
Keep container closed.
Use only with adequate ventilation.

Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention.

Product Use:
Laboratory Reagent.

Revision Information:
New 16 section MSDS format, all sections have been revised.

Safety Data Sheet

24 Hour Emergency Phone Numbers
Medical/Poison Control:
In U.S.: Call 1-800-222-1222

Outside U.S.: Call your local poison control center

Transportation/National Response Center:

1-800-535-5053
1-352-323-3500

NOTE: The National ResponseCenter emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this SDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

1. Identification

This Safety Data Sheet is available in American Spanish upon request.
Los Datos de Serguridad pueden obtenerse en Espanol si lo riquiere.

Product Name:	Ready Mixed Concrete Patch	**Revision Date:**	3/24/2016
Product UPC Number:	31084, 31090	**Supercedes Date:**	6/19/2015
Product Use/Class:	Spackling Compound	**SDS No:**	00079707001
Manufacturer:	DAP Products Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (non - emergency matters)		
Preparer:	Regulatory Department		

2. Hazards Identification

EMERGENCY OVERVIEW: Product dust may be irritating to eyes, skin and respiratory system. Removal of this product after use or by dry sanding will generate dust and exposure to this dust may be irritating to the eyes, ears, nose and mouth.

GHS Classification
Acute Tox. 4 Oral

Symbol(s) of Product

Signal Word
Warning

GHS HAZARD STATEMENTS

Acute Toxicity, Oral, category 4	H302	Harmful if swallowed.

GHS SDS PRECAUTIONARY STATEMENTS

P270 Do no eat, drink or smoke when using this product.

3. Composition/Information on Ingredients

Chemical Name	CAS-No.	Wt. %	GHS Symbols	GHS Statements
Quartz	14808-60-7	25-50	GHS03-GHS07	H270-302
Limestone	1317-65-3	10-25	GHS03	H270
Clay	1332-58-7	2.5-10	GHS03	H270

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

4. First-aid Measures

FIRST AID - INHALATION: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

FIRST AID - SKIN CONTACT: Wash skin with soap and water for 15 minutes. Get medical aid if symptoms persist.

FIRST AID - EYE CONTACT: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

FIRST AID - INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

5. Fire-fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: No Information

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

EXTINGUISHING MEDIA: Alcohol Foam, Carbon Dioxide, Dry Chemical, Foam, Water Fog

6. Accidental Release Measures

ENVIRONMENTAL MEASURES: No Information

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

7. Handling and Storage

HANDLING: KEEP OUT OF REACH OF CHILDREN!DO NOT TAKE INTERNALLY. Use only with adequate ventilation. Ensure fresh air entry during application and drying. Do not breathe dust. Removal of this product after use will result in the generation of Dust. If dry-sanded, exposure to dust may result in the build-up of material in eyes, ears, nose, and mouth which may cause irritation. Wash thoroughly after handling.

STORAGE: Avoid excessive heat and freezing. Do not store at temperatures above 120 degrees F. Store away from caustics and oxidizers. Keep containers tightly closed.

8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

Chemical Name	ACGIH TLV-TWA	ACGIH-TLV STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Quartz	0.025 mg/m3 TWA respirable fraction	N.E.	N.E.	N.E.
Limestone	N.E.	N.E.	15 mg/m3 TWA total dust, 5 mg/m3 TWA respirable fraction	N.E.

Clay	2 mg/m3 TWA particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	N.E.	15 mg/m3 TWA total dust, 5 mg/m3 TWA respirable fraction	N.E.

Further Advice: MEL = Maximum Exposure Limit OES = Occupational Exposure Standard SUP = Supplier's Recommendation Sk = Skin Sensitizer N.E. = Not Established

Personal Protection

RESPIRATORY PROTECTION: If concentrations exceed the exposure limits specified, use of a NIOSH-approved supplied air respirator is recommended. Where the protection factor is exceeded, use of a Self Contained Breathing Apparatus (SCBA) may be necessary. Use an approved NIOSH/OSHA respirator if dry sanded. National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m3) as determined by a full shift sample up to 10-hour work shift. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Wear protective gloves.

EYE PROTECTION: Safety glasses with side-shields.

OTHER PROTECTIVE EQUIPMENT: Not required under normal use.

HYGIENIC PRACTICES: Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

Appearance:	Gray	**Physical State:**	Paste
Odor:	Musty	**Odor Threshold:**	Not Established
Density, g/cm3:	1.86 - 1.88	**pH:**	Between 7.0 and 12.0
Freeze Point, °C:	Not Established	**Viscosity (mPa.s):**	Not Established
Solubility in Water:	No Information	**Partition Coeff., n-octanol/water:**	Not Established
Decomposition Temperature, °C:	Not Established	**Explosive Limits, %:**	N.I. - N.I.
Boiling Range, °C:	N.I. - N.I.	**Auto-Ignition Temperature, °C**	Not Established
Minimum Flash Point, °C:	93.3	**Vapor Pressure, mmHg:**	No Information
Evaporation Rate:	Slower Than n-Butyl Acetate	**Flash Method:**	Seta Closed Cup
Vapor Density:	Heavier Than Air	**Flammability:**	Non-Flammable
Combustibility:	Does not support combustion		

(See "Other information" Section for abbreviation legend)
(If product is an aerosol, the flash point stated above is that of the propellant.)

10. Stability and Reactivity

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat and freezing.

INCOMPATIBILITY: Incompatible with strong bases and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e., COx, NOx.

11. Toxicological Information

EFFECT OF OVEREXPOSURE - INHALATION: Dust from dry sanding may cause eye, skin, nose, throat and respiratory tract irritation.

EFFECT OF OVEREXPOSURE - SKIN CONTACT: Under normal use conditions, this product is not expected to cause adverse health effects. Prolonged or repeated contact with skin may cause mild irritation.

EFFECT OF OVEREXPOSURE - EYE CONTACT: Under normal use conditions, this product is not expected to cause adverse health effects. Direct eye contact may cause irritation.

EFFECT OF OVEREXPOSURE - INGESTION: Under normal use conditions, this product is not expected to cause adverse health effects. Single dose oral toxicity is very low. Amounts ingested incidental to industrial handling are not likely to cause injury; however, ingestion of large amounts may cause injury. Ingestion may result in obstruction when material hardens.

CARCINOGENICITY: No Information

EFFECT OF OVEREXPOSURE - CHRONIC HAZARDS: The International Agency for Research on Cancer (IARC) has determined that crystalline silica in the form of quartz or cristobalite that is inhaled from occupational sources is carcinogenic to humans (Group 1-carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program (NTP) classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (Group A2). Breathing dust containing respirable crystalline silica may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects: Excessive inhalation of respirable dust can cause pneumoconiosis, a respiratory disease, which can result in delayed, progressive, disabling and sometimes fatal lung injury. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. Smoking exacerbates this disease. Individuals with pneumoconiosis are predisposed to develop tuberculosis. There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) and kidney disease. Prolonged or repeated inhalation of dust may cause lung damage.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Inhalation, Skin Contact

Acute Toxicity Values
The acute effects of this product have not been tested. Data on individual components are tabulated below

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
14808-60-7	Quartz	500 mg/kg Rat	>2000 mg/kg	>20 mg/L
1317-65-3	Limestone	6450 mg/kg Rat	>2000 mg/kg	>20 mg/L
1332-58-7	Clay	>5000 mg/kg Rat	>5000 mg/kg Rat	>20 mg/L

N.I. = No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Ecological injuries are not known or expected under normal use.

13. Disposal Information

DISPOSAL INFORMATION: This product does not meet the definition of a hazardous waste according to U.S. EPA Hazardous Waste Management Regulation, 40 CFR Section 261. Dispose as hazardous waste according to all local, state, federal and provincial regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

14. Transport Information

SPECIAL TRANSPORT PRECAUTIONS: No Information

DOT UN/NA Number:	N.A.
DOT Proper Shipping Name:	Not Regulated.
DOT Technical Name:	N.A.
DOT Hazard Class:	N.A.
Hazard SubClass:	N.A.
Packing Group:	N.A.

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Acute Health Hazard, Chronic Health Hazard

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.
This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS AND REPORODUCTIVE TOXINS

CALIFORNIA PROPOSITION 65: WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

International Regulations: As follows -

CANADIAN WHMIS:

This SDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class No Information

16. Other Information

Revision Date: 3/24/2016 **Supersedes Date:** 6/19/2015

Reason for revision: Substance and/or Product Properties Changed in Section(s):
11 - Toxicological Information
15 - Regulatory Information
16 - Other Information
Substance Regulatory CAS Number Changed
Substance Hazardous Flag Changed
Substance Hazard Threshold % Changed
Statement(s) Changed

Datasheet produced by: Regulatory Department

HMIS Ratings:

Health:	1	Flammability:	0	Reactivity:	0	Personal Protection:	X

VOC Less Water Less Exempt Solvent, g/L 33.5

VOC Material, g/L: 24

VOC as Defined by California Consumer Product Regulation, Wt/Wt%: 0.0

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H270	May cause or intensify fire; oxidiser.
H302	Harmful if swallowed.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

GHS03

GHS07

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS. Since thisdocument is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**DEXTROSE**
Synonyms	D-Glucose

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: None required
Pictograms: No symbol required
Target organs: None known

GHS Classification: None required
GHS Label information: **Hazard statement:** None required
Precautionary statement: None required

Supplemental information:
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Dextrose, anhydrous	50-99-7	100%	200-075-1

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Dextrose	None established	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White granules.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 148°C (298°F)
Boiling point: Decomposes
Flash point: Not applicable

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): 6.3
Relative density (Specific gravity): 1.5
Solubility(ies): 90 g/100 ml water @ 20°C

Partition coefficient: (n-octanol / water): Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available.
Molecular formula: $C_6H_{12}O_6$
Molecular weight: 180.16

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures.
Incompatible materials: Strong oxidizers.
Hazardous decomposition products: Oxides of carbon.
Hazardous polymerization: Will not occur.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause respiratory irritation.
Ingestion: Not expected to be a health hazard.
Skin: Not expected to be a health hazard.
Eyes: Contact with eyes may cause transient irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards..
Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Dextrose	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: December 12, 2013 **Supercedes:** September 18, 2012

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**DEXTROSE**
Synonymes	D-Glucose

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé comme dangereux à ce selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: Aucune requise
Pictogrammes: Aucun symbole n'est demandé
Les organes cibles: Aucun connu

Classification par le GHS: Aucune requise
Renseignements sur l'étiquette GHS: Mention de danger: Aucune requise
Déclarations de précaution: Aucune requise

Informations supplementaires:
Ne pas respirer les poussières. Ne pas mettre dans les yeux, la peau ou les vêtements. Porter des gants de protection / des vêtements de protection / protection des yeux / du visage. Se laver les mains après avoir manipulé. Consulter un médecin en cas de malaise.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Dextrose, anhydre	50-99-7	100%	200-075-1

Section 4 Mesures De Premiers Soins

INGESTION: Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupérer à l'usage s'il n'est pas contaminé. Balayer ou passer l'aspirateur et placer dans un récipient approprié pour une élimination appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Dextrose	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreux prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Granules blanche.
Odeur: Aucune odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: 148°C (298°F)
Point d'ébullition: Se décompose
Point d'éclair: Non applicable

Taux d'évaporation (= 1): Non applicable
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Non applicable
Pression de vapeur (mm Hg): Négligeable
Densité de vapeur (Air = 1): 6.3
Densité relative (gravité spécifique): 1.5
Solubilité (s): 90 g/100 ml water @ 20°C

Coefficient de partage: (n-octanol / eau): Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles.
Formule moléculaire: $C_6H_{12}O_6$
Poids moléculaire: 180.16

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Conditions à éviter: Les températures excessives.

Polymérisation dangereuse: N'aura pas lieu.

Matières incompatibles: Comburantes fortes.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Inhalation may cause respiratory irritation.
Ingestion: Ne devrait pas être un danger pour la santé.
Peau: Ne devrait pas être un danger pour la santé.
Yeux: Contact avec les yeux peut causer une irritation passagère.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été à fond étudiées. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.
Informations complémentaires: RTECS #: Données non disponibles

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponibles
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponibles
Toxicité pour les algues: Pas de données disponibles
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Dextrose	Listed	Not listed	Not listed	Listed	Not listed	Produit non contrôlé

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 12 decembre, 2013 **Remplace:** 18 septembre, 2012

MATERIAL SAFETY DATA SHEET

Johnson wax PROFESSIONAL

STRIDE CITRUS RTU (READY TO USE)

HMIS		NFPA	Personal protective equipment
Health	0	0	None / Aucune / Ninguno
Fire Hazard	0	0	
Reactivity	0	0	

Version Number: 1 *Preparation date: 2007-07-26*

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: STRIDE CITRUS RTU (READY TO USE)

MSDS #: 114185-004
Product Code: 04185
Recommended use: Floor care.

Manufacturer, importer, supplier:

US Headquarters
JohnsonDiversey, Inc.
8310 16th St.
Sturtevant, Wisconsin 53177-0902
Phone: 1-888-352-2249
MSDS Internet Address:
www.johnsondiversey.com

Canadian Headquarters
JohnsonDiversey - Canada, Inc.
2401 Bristol Circle
Oakville, Ontario L6H 6P1
Phone: 1-800-668-3131

Emergency telephone number: 1-800-851-7145 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
The product contains no substances which at their given concentration, are considered to be hazardous to health.

Principle routes of exposure: Eye contact. Skin contact. Inhalation. Ingestion.
Eye contact: None known.
Skin contact: None known.
Inhalation: None known.
Ingestion: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components None

4. FIRST AID MEASURES

Eye contact: Rinse with plenty of water.
Skin contact: Rinse with plenty of water.
Inhalation: No specific first aid measures are required.
Ingestion: No specific first aid measures are required.
Aggravated Medical Conditions: None known.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: The product is not flammable. Extinguish fire using agent suitable for surrounding fire.
Specific hazards: Not applicable
Unusual hazards: None known
Specific methods: No special methods required

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Extinguishing media which must not be used for safety reasons: No information available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Not applicable.
Environmental precautions and clean-up methods: Clean-up methods - large spillage. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use a water rinse for final clean-up.

7. HANDLING AND STORAGE

Handling:
Handle in accordance with good industrial hygiene and safety practice. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.
Storage:
Protect from freezing. Keep tightly closed in a dry, cool and well-ventilated place. KEEP OUT OF REACH OF CHILDREN.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
No special ventilation requirements.

Personal Protective Equipment

Eye protection:	No special requirements under normal use conditions.
Hand protection:	No special requirements under normal use conditions
Skin and body protection:	No special requirements under normal use conditions.
Respiratory protection:	No special requirements under normal use conditions.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	**Bulk density:**	No information available
pH:	7.5	**Dilution pH:**	NA
Appearance:	Liquid	**Vapor density:**	No information available
Color:	Clear Orange	**Evaporation Rate**	No information available
Odor:	Citrus	**Boiling point/range:**	Not determined
Specific gravity:	1.00	**Melting point/range:**	Not determined
Density:	8.33 lbs/gal	**Decomposition temperature:**	Not determined
VOC:	0.08%	**Autoignition temperature:**	No information available
Flash point:	>200°F >93.3°C	**Partition coefficient (n-octanol/water):**	No information available
Solubility:	Soluble	**Solubility in other solvents:**	No information available
Viscosity:	No information available	**Elemental Phosphorus:**	0 %P

10. STABILITY AND REACTIVITY

Stability:	The product is stable.
Polymerization:	Hazardous polymerization does not occur.
Hazardous decomposition products:	None reasonably foreseeable.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Oral LD50 estimated to be greater than 5000 mg/kg Dermal LD50 estimated to be > 2000 mg/kg
Component Information:	See Section 3
Chronic toxicity:	None known

Specific effects

Carcinogenic effects:	None known
Mutagenic effects:	None known
Reproductive toxicity:	None known
Target organ effects:	None known

12. ECOLOGICAL INFORMATION

Environmental Information: No data available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Dispose of according to all federal, state and local applicable regulations

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION

International Inventories
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), China (IECSC).

U.S. Regulations
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:
Water	7732-18-5	-	-	-	-

CERCLA/ SARA
SARA 311/312 Hazard Categories

Immediate: -
Delayed: -
Fire: -
Reactivity: -
Sudden Release of Pressure: -

Canada
WHMIS hazard class: Non-controlled.

16. OTHER INFORMATION

Reason for revision: Not applicable
Prepared by: NAPRAC
Additional advice: None

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

MATERIAL SAFETY DATA SHEET

According to 91/155/EEC, 93/112/EC, 2001/58/EC

Date of issue : July 2018
Date of revision : June 2023

FOR EMERGENCY AND GENERAL INFORMATION **TOLL FREE HELPLINE : 1800 209 2095**
Diversey India Hygiene Pvt. Ltd., 501, 5th Floor, Ackruti Centre Point,
MIDC Central Road, Andheri (East), Mumbai - 400093. INDIA
Tel.: +91 22 66444222 Fax : +91 22 66444223

SECTION 1 - PRODUCT IDENTIFICATION

Product Name : Virex II 256

Application of the product :

SECTION 2 - HAZARDS IDENTIFICATION

Classification :

C, Corrosive

Emergency Overview : Danger. Corrosive. Causes Skin and Eye burns. Harmful or fatal if swallowed. Combustible liquid and vapour.

Principle routes of exposure : Eye contact. Skin contact. Inhalation.

Eyes : Corrosive. Causes permanent damage including blindness.

Skin : Corrosive. Causes permanent damage.

Inhalation : May cause irritation and corrosive effects to nose, throat and respiratory tract.

Ingestion : May be irritating to mouth, throat and stomach.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization

Description : Mixture in water of non-dangerous ingredients and the substances listed below.

Hazardous ingredients :

CAS	Ingredients	% by Weight	LD50 Oral-Rat (mg/kg)	LD50 Dermal-Rabbit	LC50 Inhalation-Rat
1643-20-5	Lauryl dimethyl amine oxide	0.1-1.5%	Not available	Not available	Not available
64-17-5	ethyl alcohol	1-5%	7060	Not available	=124.7 mg/l (4 h)
68424-85-1	N-Alkyl Dimethyl Benzyl Ammonium Chloride	5-10%	426	Not available	Not available
7173-51-5	Didecyl Dimethyl Ammonium Chloride	5-10%	84	Not available	Not available

SECTION 4 - FIRST AID MEASURES

Inhalation : If breathing is affected, remove to fresh air. If person is not breathing, call an ambulance and then give artificial respiration, preferably by mouth to mouth, if possible. Get medical attention immediately.

Skin contact : Take off contaminated clothing. Rinse immediately with plenty of water for 15-20 minutes. Get medical attention immediately.

Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Get medical attention immediately.

Ingestion : Call a doctor or poison control center immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconsciousness person.

Notes to Physician : Probable mucosal damage may contraindicate the use of gastric lavage.

(Contd. on page 2)

Product Name : Virex II 256

Aggravated Medical Conditions : Individuals with chronic respiratory disorders such as asthma, chronic bronchitis, emphysema, etc., may be more susceptible to irritating effects.

SECTION 5 - FIRE FIGHTING MEASURES

Suitable extinguishing media : Use dry chemical, CO2, water spray or "alcohol" foam.

Specific hazards : Although this product has a flash point below 200°F, it is an aqueous solution containing an alcohol and does not sustain combustion.

Unusual hazards : Corrosive material (see Sections 8 and 10)

Specific methods : No special methods required.

Special protective equipment for firefighters : As in any fire, wear self-contained breathng apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Extinguishing media which must not be used for safety reasons : No information available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Protection of personnel : Put on appropriate personal protective equipment (see Section 8)

Environmental precautions and Clean-up Method : Clean-up methods - Large spillage. Remove all sources of ignition. Absorb spill with inert material (eg. dry sand or earth), then place in a chemical waste container. Use a water rinse for a final clean-up.

SECTION 7 - HANDLING AND STORAGE

Handling (see also sections 8 and 15)

Avoid contact with eyes, skin and clothing. Do not taste or swallow. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Remove and wash contaminated clothing and footwear before re-use. Wash thoroughly after handling. Product residue may remain on/in empty containers. All precautions for handling the product must be used in handling the empty container and residue. COMBUSTIBLE LIQUID AND VAPOUR. Keep away from open flames, hot surfaces and sources of ignition. Use only in well-ventilated areas. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.

Storage : Protect from freezing. Keep tightly closed in a dry cool and well-ventilated place.. KEEP OUT OF REACH OF CHILDREN.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls : Good general ventilation should be sufficient to control airborne levels. Respiratory protection is not required if food ventilation is maintained.

Personal Protection Equipment:

Breathing equipment : In case of insufficient ventilation wear suitable respiratory equipment. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Protection of hands : Chemical resistant gloves.

Eye protection : Chemical splash goggles.

Skin and body protection : Protective footwear. If major exposure is possible wear suitable protective clothing and footwear.

Hygiene measures : If major exposure is possible, wear suitable protective clothing and footwear.

CAS	Ingredients	ACGIH	OSHA	Mexico
64-17-5	ethyl alcohol	1000 ppm (STEL)	1000 ppm (TWA) 1900 mg/m³ (TWA)	1000 ppm (TWA) 1900 mg/m³ (TWA)

(Contd. on page 3)

Product Name : Virex II 256

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

General information :	
Form :	Liquid
Appearance :	Aqueous solution
Colour :	Clear Blue
Odour :	Minty
Specific gravity :	1.0
Bulk Density :	No information available
Evaporation rate :	No information available
Vapor density :	No information available
Change in condition :	
Melting point/ Melting range :	Not determined
Boiling point/ Boiling range :	Not determined
Decomposition temperature :	Not determined
Autoignition temperature :	No information available
Solubility :	Completely Soluble
Solubility in other solvents :	No information available
Partition coefficient : (n-octanol/water)	No information available
Elemental phosphorus :	0.00% by wt.
Density :	8.34 lbs/gal 1 kg/l.
Flash point :	> 187°F > 86.1°C
Viscosity :	No information available
VOC :	3.1%*
pH-value :	10.2
Dilution pH:	8.8@1:256
Explosion limits :	
upper :	Not determined
lower :	Not determined

* - Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Consumer Products, Sections 94508

SECTION 10 - STABILITY AND REACTIVITY

Stability : The product is stable.
Polymerization: Hazardous polymerization does not occur.
Hazardous decomposition products : None reasonably foreseeable.
Materials to avoid : Oxidizing agents.
Conditions to avoid: Keep away from heat. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute toxicity : Corrosive. Oral LD50 estimated to be between 1000-2000 mg/kg. Dermal LD50 estimated to be >2000 mg/kg
Component information : See Section 3
Chronic toxicity : None known.
Specific Effects :

(Contd. on page 4)

Product Name : Virex II 256

Carcinogenic effects : None known
Mutageic effects : None known
Reproductive toxicity : None known
Target organ effects : None known

SECTION 12 - ECOLOGICAL INFORMATION

Environmental information : No data available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by storage or disposal.
Storage : Store in original container in areas inaccessible to children. Open dumping is prohibited. Do not reuse empty container.
Container Disposal : See product label for complete disposal instructions. Always dispose of according to all federal, state and local applicable regulations.

SECTION 14 - TRANSPORT INFORMATION

Land transport ADR/RID (cross-border)

ADR/RID Class :	8 Corrosive substances
Kemler Number :	80
UN-Number :	1903
Packaging Group :	III
Label :	8
Proper Shipping Name :	DISINFECTANT, LIQUID, CORROSIVE, N.O.S, (DIDECYL DIMETHYL AMMONIUM CHLORIDE, ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE)

Maritime transport IMDG :

IMDG Class :	8
UN-Number :	1903
Label :	8
Packaging Group :	III
Proper Shipping Name :	DISINFECTANT, LIQUID, CORROSIVE, N.O.S, (DIDECYL DIMETHYL AMMONIUM CHLORIDE, ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE)

Air transport ICAO-TI and IATA-DGR :

ICAO / IATA Class:	8

(Contd. on page 5)

Product Name : Virex II 256

UN-Number :	1903
Label :	8
Packaging Group :	III
Proper Shipping Name :	DISINFECTANT, LIQUID, CORROSIVE, N.O.S, (DIDECYL DIMETHYL AMMONIUM CHLORIDE, ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE)

Transport / Additional Information : Transport regulations include special provisions for certain classes of dangerous goods packed in limited quantities.

SECTION 15 - REGULATORY INFORMATION

International Inventories at CAS# Level : All components of this product are listed on the following inventories : U.S.A. (TSCA)

US Regulations :
EPA Reg. No. : 70627-24
California Proposition 65 : This product is not subject to the reporting requirements under California's Proposition 65

CERCLA/SARA

SARA 311/312 Hazard Categories :

Immediate :	X
Delayed :	-
Fire :	X
Reactivity :	-
Sudden Release of Pressure :	-

SECTION 16 - OTHER INFORMATION

The information in this document is based on our best present knowledge. However, it does not constitute a guarantee for any specific product features and does not establish a legally binding contract.

Department issuing material safety data sheet:
Contact :
Diversey India Hygiene Pvt. Ltd.
501, 5th Floor, Ackruti Centre Point, MIDC Central Road,
Andheri (East), Mumbai - 400093. INDIA
Tel.: +91 2266444222. Fax:+91 2266444223

** In case of local regulation change or formulation change this MSDS may undergo revision before the stated revision date.*

iLOVEToCREATE®
A DUNCAN ENTERPRISES COMPANY

Safety Data Sheet

1. COMPANY AND PRODUCT IDENTIFICATION

iLoveToCreate
A Duncan Enterprises Company
5673 East Shields Avenue
Fresno, CA 93727
559-291-4444
559-291-9444 (Fax)

EMERGENCY TELEPHONE NUMBERS
Health Emergencies:
559-291-4444 7:00 am – 3:30 pm Pacific Std. Time
Spill and Off-Hour Health Emergencies:
800-424-9300 U.S. and Canada
703-527-3887 Outside U.S. and Canada (Collect)

Product Name: **DUNCAN DESIGNER GLAZES**
Product Description: Nontoxic Ceramic Glazes

2. HAZARDS IDENTIFICATION

HMIS Hazard Ratings for Product	
Health	**1**
Flammability	**0**
Reactivity	**0**
Personal Protection	**See Section 8**

Rating Scale:
0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe
* = Chronic Effects

3. COMPOSITION / INGREDIENT INFORMATION

The ingredients in this formulation are a trade secret. All ingredients in the formula are non-hazardous, unless specified in Sections 2 and 15.

4. FIRST AID MEASURES

Eye Contact:	Flush eyes with large amounts of water until irritation subsides. Consult a physician if irritation persists.
Skin Contact:	Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.
Inhalation:	Move subject to fresh air. Consult a physician if symptoms persist.
Ingestion:	If swallowed, give two glasses of water to drink. Consult a physician. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Autoignition Temperature:	Non-flammable
Flash Point:	Not Applicable
Upper Explosive Limit (%):	Not Applicable
Lower Explosive Limit (%):	Not Applicable
Extinguisher Media:	CO_2, Dry Chemical, Foam – Use extinguishing media appropriate for surrounding fire
Special Firefighting Procedures:	Not Applicable
Fire & Explosion Hazards:	Not Applicable
NFPA Flammability Hazard Class:	0 = Insignificant

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:	Spills should be taken up with suitable absorbent material and placed in containers. Spill areas can be washed with water; collect wash water for approved disposal. Do not flush to storm sewer or waterway.
For safety and environmental precautions, please review entire Safety Data Sheet for necessary information.	

7. HANDLING AND STORAGE

Storage Temperature:	40° - 100°F
Handling / Storage:	Protect from freezing; keep container sealed when not in use
Ventilation Requirements:	General

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Conditions Under Which Personal Protective Equipment Required:	Normal work conditions, maintenance / repair
Eye Protection Requirements:	Wear safety glasses with side shields; protect against splashing
Glove Requirements:	Gloves not normally required for foreseeable conditions of use.
Clothing Requirements:	Protective clothing is normally not necessary for foreseeable conditions of use.
Change / Removal of Clothing:	None required
Wash Requirements:	Good hygiene practices should be followed
Respirator Requirements:	NIOSH approved respirator for sprays and mists recommended if using a sprayer
Ventilation Requirements:	General; local exhaust ventilation recommended when spraying

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance / Physical Description:	Colored liquid. Odorless
pH:	7 - 10
Boiling Point:	212°F
Freezing Point:	Approx. 0°C (32°F)
Melting Point:	1832°F (1000°C)
Solubility in Water:	Miscible
Specific Gravity (Water = 1):	1.3 – 1.8
Bulk Density:	10.8 – 15.0 lb / gal
Evaporation Rate (Water = 1):	1
Vapor Pressure:	17.5 mm Hg @ 20°C (68°F)
Autoignition Temperature:	Not Applicable
Flash Point:	Not Applicable
Oxidizing Properties:	Not Applicable

10. STABILITY AND REACTIVITY

Stability:	Stable
Incompatible Materials:	None known
NFPA Reactivity Class:	0 = Insignificant
Hazardous Decomposition Products:	Avoid fumes when firing
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	None Known

11. TOXICOLOGICAL INFORMATION

Acute (Short-Term) Effects of Exposure	
Route of Entry	Eye contact, skin contact, inhalation, ingestion
Acute Effects – Eye:	Slight, transient
Acute Effects – Skin Contact:	No known signs or symptoms associated with exposure to product
Acute Effects – Inhalation:	No known signs or symptoms associated with exposure to product
Acute Effects – Ingestion:	No known signs or symptoms associated with exposure to product

Chronic (Long-Term) Effects of Exposure	
Effect of Chronic Exposure:	This product should be considered non – hazardous and has no known chronic effects.
Target Organs:	Not applicable
Carcinogenicity:	**IARC Monographs:** No **NTP:** No **OSHA Regulated:** No

12. ECOLOGICAL INFORMATION

No applicable data

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods:	Waste disposal should be in accordance with existing Federal, State, and Local environmental regulations.
Empty Container Warnings:	Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Information	
DOT Shipping Name:	Glazes or Stains, Ceramic or Pottery, Artists or Hobbyists Liquid
DOT Hazard Class:	88690 Sub. 1
DOT Reportable Quantity:	None

15. REGULATORY INFORMATION

TSCA:	All components are on the TSCA Inventory
FDA:	21CFR175.105
SARA/Title III:	This product contains no substances at or above the reported threshold under Section 313, based on available data.
CONFORMS TO NONTOXIC ASTM D-4236	Products bearing the Nontoxic Product Seal are certified in a program of toxicological evaluation by a nationally recognized toxicologist to contain no materials in sufficient quantities to be toxic or injurious to humans or to cause acute or chronic health problems. These products are certified to be labeled in accordance with the voluntary chronic hazard labeling standard ASTM D-4236. In addition, there is no physical hazard as defined within 29 CFR Part 1910.1200(c).

16. OTHER INFORMATION

Table of Abbreviations	
ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
ASTM	American Society for Testing Materials
°C	Degrees Centigrade
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CPR	Controlled Products Regulations
DOT	Department of Transportation
EPA	Environmental Protection Agency
°F	Degrees Fahrenheit
FDA	Food & Drug Administration
g / l	Grams per liter
DOT	Department of Transportation
EPA	Environmental Protection Agency
°F	Degrees Fahrenheit
FDA	Food & Drug Administration
g / l	Grams per liter
Hg	Mercury
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
LD	Lethal Dose
mg / kg	Milligram per kilogram
mm	Millimeter
SDS	Safety Data Sheet
MSHA	Mine Safety and Health Administration
N / A	Not Applicable
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
ppm	Parts per million
SARA	Superfund Amendment and Reauthorization Act
STEL	Short-Term Exposure Limit
TSCA	Toxic Substances Control Act
TWA	Time - Weighted Average
U.N.	United Nations
WHMIS	Workplace Hazardous Materials Information System
>	Greater Than
<	Less Than

16. OTHER INFORMATION (Continued)

Creation Date:	05/31/07
Revision Date:	01/22/13
Technical Contact:	Frank Peters Research & Development Manager iLoveToCreate A Duncan Enterprises Company 5673 East Shields Avenue Fresno, CA 93727 559-291-4444 559-291-9444 (Fax)

Disclaimer

The information given and the recommendations made herein apply to our product(s) alone and not combined with any other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

Fisher Scientific CANADA
A Fisher Scientific International Company

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Identification:

- **Key:** 89854
- **Name:** EDTA Solution

Catalog Numbers:

BP2482-1, BP2482-100, BP2482-20, BP2482-500, BP24824, NC9380929

Synonyms:

Company Identification:

Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410

For information, call:

- 201-796-7100

Emergency Number:

- 201-796-7100

For CHEMTREC assistance, call:

- 800-424-9300

For International CHEMTREC assistance, call:

- 703-527-3887

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS #	Chemical Name	%	EINECS #
60-00-4	Ethylenediaminetetraacetic acid (EDTA)	<2.0	200-449-4
7732-18-5	Water	>98	231-791-2

Text for R-phrases: see Section 16

Hazard Symbols: XI

Risk Phrases: 36 52 53

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: Not available. Caution! May cause allergic skin reaction. May cause kidney damage. May cause eye and skin irritation. May cause reproductive and fetal effects. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. May cause skin sensitization by skin contact.

Target Organs: Kidneys, bone marrow.

POTENTIAL HEALTH EFFECTS

Eye: May cause eye irritation.

Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Ingestion: May cause irritation of the digestive tract. Exposure may cause kidney injury, muscle cramps, bone-marrow depression, and a generalized allergic

Inhalation: May cause respiratory tract irritation.

Chronic: Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration.

SECTION 4 - FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. Get medical aid if cough or other symptoms appear.

Notes to Physician: Treat symptomatically and

SECTION 5 - FIRE FIGHTING MEASURES

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 0

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal.

SECTION 7 - HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

EXPOSURE LIMITS

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylenediaminetetraacetic acid (EDTA)	none listed	none listed	none listed
Water	none listed	none listed	none listed

OSHA Vacated PELs:

Ethylenediaminetetraacetic acid (EDTA): No OSHA Vacated PELs are listed for this chemical.

Water: No OSHA Vacated PELs are listed for this chemical.

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Not available.

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature:

Solubility in water:

Specific Gravity/Density:

Molecular Formula:

Molecular Weight:

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, copper, copper alloys, aluminum.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:

- CAS# 60-00-4: AH4025000
- CAS# 7732-18-5: ZC0110000

LD50/LC50:

- CAS# 60-00-4: Oral, mouse: LD50 = 30 mg/kg.
- CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.

Carcinogenicity:

Ethylenediaminetetraacetic acid (EDTA) -

- Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Water -

- Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

No information available.

Teratogenicity:

Embryo or Fetus: Stunted fetus, oral-rat TDLo=7632mg/kg. Specific Developmental Abnormalities: Cardiovascular, Craniofacial, Musculoskeletal, Respiratory, and Urogenital, oral-rat TDLo=7632mg/kg.

Reproductive Effects:

Fertility: Post-implantation mortality, oral-rat TDLo=7632mg/kg.

Neurotoxicity:

No information available.

Mutagenicity:

Cytogenetic Analysis: intraperitoneal-mouse 50mmol/L. DNA Inhibition: hamster fibroblast 500ug/L, rabbit kidney 250umol/L.

Other Studies:

None.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

- Catfish (tap water) 129ppm/96H.

SECTION 13 - DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

SECTION 14 - TRANSPORT INFORMATION

US DOT

- No information available

Canadian TDG

- No information available.

SECTION 15 - REGULATORY INFORMATION

US FEDERAL

TSCA

- CAS# 60-00-4 is listed on the TSCA inventory.
- CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List

- None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

- None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

- None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

- None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

- CAS# 60-00-4: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

- None of the chemicals in this product have a TPQ.

Section 313

- No chemicals are reportable under Section 313.

Clean Air Act:

- This material does not contain any hazardous air pollutants.
- This material does not contain any Class 1 Ozone depletors.
- This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

- CAS# 60-00-4 is listed as a Hazardous Substance under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

- None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Ethylenediaminetetraacetic aci can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

- Hazard Symbols: XI
- Risk Phrases:
  - R 36 Irritating to eyes.
  - R 52 Harmful to aquatic organisms.
  - R 53 May cause long-term adverse effects in the aquatic environment.
- Safety Phrases:
  - S 22 Do not breathe dust.
  - S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

- CAS# 60-00-4: 2
- CAS# 7732-18-5: No information available.

United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada

- CAS# 60-00-4 is listed on Canada's DSL List.
- CAS# 7732-18-5 is listed on Canada's DSL List.
- This product has a WHMIS classification of D2B.
- CAS# 60-00-4 is not listed on Canada's Ingredient Disclosure List.
- CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

SECTION 16 - ADDITIONAL INFORMATION

MSDS Creation Date: 2/16/1998, **Revision #4 Date:** 3/04/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

SAFETY DATA SHEET

Version 3.9
Revision Date 06/13/2014
Print Date 03/24/2018

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Ethidium bromide
Product Number	:	160539
Brand	:	Aldrich
Index-No.	:	612-278-00-6
CAS-No.	:	1239-45-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	+1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 2), H330
Germ cell mutagenicity (Category 2), H341

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H302	Harmful if swallowed.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.

P281	Use personal protective equipment as required.
P284	Wear respiratory protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/ physician.
P320	Specific treatment is urgent (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	EtBr 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide Homidium bromide
Formula	:	$C_{21}H_{20}BrN_3$
Molecular Weight	:	394.31 g/mol
CAS-No.	:	1239-45-8
EC-No.	:	214-984-6
Index-No.	:	612-278-00-6

Hazardous components

Component	Classification	Concentration
3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide		
	Acute Tox. 4; Acute Tox. 2; Muta. 2; H302, H330, H341	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, nitrogen oxides (NOx), Hydrogen bromide gas

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: dark red
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	4 - 7 at 25 °C (77 °F)
e)	Melting point/freezing point	Melting point/range: 260 - 262 °C (500 - 504 °F) - dec.
f)	Initial boiling point and boiling range	no data available
g)	Flash point	no data available
h)	Evapouration rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapour pressure	no data available
l)	Vapour density	no data available
m)	Relative density	no data available

n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available
t)	Oxidizing properties	no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 1,503 - 2,177 mg/kg

LC50 Inhalation - rat - 1 h - 0.0118 - 0.134 mg/l

Dermal: no data available

LD50 Subcutaneous - mouse - 110 mg/kg

LD50 Intravenous - rat - 16 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
In vitro tests showed mutagenic effects

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: SF7950000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2811 Class: 6.1 Packing group: I
Proper shipping name: Toxic solids, organic, n.o.s. (3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide)
Reportable Quantity (RQ):
Marine pollutant: No

Poison Inhalation Hazard: No

IMDG
UN number: 2811 Class: 6.1 Packing group: I EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide)
Marine pollutant: No

IATA
UN number: 2811 Class: 6.1 Packing group: I
Proper shipping name: Toxic solid, organic, n.o.s. (3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide)
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide	1239-45-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide	1239-45-8	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
H302	Harmful if swallowed.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.
Muta.	Germ cell mutagenicity

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the

product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.9 Revision Date: 06/13/2014 Print Date: 03/24/2018

Elaboration: Luiz Antonio Gomes Pinto Junior - Quality Specialist	
Approval: Danilo Tostes Oliveira - Quality Assurance Coordinator	Signature:

1- IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product name
Ethanol, ethyl alcohol.

Application
Fuel vehicle and chemical industry.

Supplier
Copersucar S.A.
Av. Paulista, 287 – São Paulo – SP – CEP 01311-000

2- COMPOSITION AND INFORMATION ON THE INGREDIENTS

This product is a pure substance.

Chemical nature

Chemical name	N° CAS	Concentration % (m/m)	Classification of risk
Ethanol	64175	92,6 a 99,9	ONU: 1170 class 3

Synonymous
Absolute ethanol, Anhydrous Ethanol, Hydrated Ethanol.

3- HAZARDS IDENTIFICATION

MAIN HAZARDS

Health

Eyes: redness, rearing, blurred vision and injuries in the cornea. Skin: redness, rash, dry skin and dermatosis. Inhalation/ingestion can cause drowsiness, dizziness, headache, giddiness, nausea, vomiting and loss of the conscience. Impairment of liver function may occur if preexisting liver disorders exist

Hazards physical/ chemicals

Inflammable if exposed to sparks, heat or flames. It reacts with oxidants substances liberating great amount of heat.

Environment

Aquatic organisms are affected when water is contaminated by the product.

4- FIRST- AID MEASURES

Inhalation

Remove to ventilated and decontaminate place. Give mouth-to-mouth resuscitation if not breathing. Get medical attention immediately.

Contact with the skin

Wash with soap and cold running water. Remove contaminated clothes.

Contact with the eyes

Immediately flush with running water for 15 minutes while holding eyelid. Get medical attention immediately.

Ingestion

Do not induce vomiting. Nothing by mouth if unconscious. Get medical attention immediately.

Notes for the doctor
Unknown antidote. Treatment must be symptomatic.

5- MEASURES OF PREVENTION AND FIRE COMBAT

Extinguishing media
Dry chemical dust, special foam for polar solvent and CO_2.

Specific hazard
Ethanol can form explosive mixtures in closed environments.

Special fire fighting procedure
Wear full fire fighting protective equipment and a full faced self contained breathing apparatus. Cool fire exposed containers with water spray.

Unusual fire & explosion hazards
Vapors may flow along surfaces to distant ignition sources and flash back.
Closed containers exposed to heat may explode. Contact with strong oxidizers may cause fire.

6- CONTROL MEASURES FOR HANDLING AND SPILLING

Personal precautions
Use safety eyeglasses, impermeable gloves and boots and respirator with filter for organic vapors. For greater hazard use independent respiratory equipment:

Environment precautions
Contain the spill and avoid that it reaches, water distribution system, rivers, lagoons, ponds, etc.

Methods for removal and cleanness
Collect in adequate container and absorb the remainder with sawdust or inert material.

Neutralization
Not applicable.

Discarding
See section 13.

Prevention of secondary danger
Not applicable.

7- HANDLING AND STORAGE

HANDLING

Use appropriate techniques
Observe good safety practices and industrial hygiene.

Prevention of exposition
Avoid the contact of the liquid with the skin and the inhalation of vapors.

Fire prevention or explosion
Avoid accumulation of vapors, mainly in closed places.

Information for safe handling
"Toxic for inhalation", "Keep up the product in original packings"; "Do not use compressed air for transference"; "Do not handling next to ignition sources".

STORAGE

Store in grounded metallic tanks protected against atmospheric discharges. The tanks must be protected by basins of containment with volume enough to contain the volume of the tanks.

For small volumes, store in covered and ventilated place, with impermeable floor and collecting system.

Incompatible products
Permanganic Acid, Sulfuric acid, Acid Nitric, Silver Nitrate, Phosphoric Oxide, Acetyl Bromide, Caustics, Amine Aliphatic and Isocianates.

Storage material
Carbon steel, Iron or Copper. Glass and plastic can be used for small volumes. Do not use aluminum for any storage container.

Labeling
Symbol for inflammable liquid.

8- CONTROL OF EXPOSITION And INDIVIDUAL PROTECTION

Limits of exposition: inhalation.

Chemical name	Limit Exp.	Type
Ethanol	780	ppm
	1.480	mg/m³

Biological pointers
Not applicable.

Other limits and values
Oral lethal dose (DL50) the 5 to 15 g for kg of weight (rat).

Individual protection equipment

- **Respiratory protection:** filter for organic vapors or independent mask.
- **Protection for the hands:** rubber gloves or PVC.
- **Protection for the eyes:** eyeglasses for total protection.
- **Protection for the skin and body:** impermeable tissue (PVC).

9- PHYSICAL CHEMICALCHARACTERISTICS

Physical state: liquid.
Odor: characteristic.
Color: colorless.
pH: 7,0 ± 1,0.
Boiling point: 78,4 ℃.
Freezing point: no available.
Melting point: - 114,4 ℃.
Decomposition temperature: unknown.
Flash point: 13 ℃.
Auto ignition temperature: 363,0 ℃.
Explosivity limits
- **Lower explosivity limit:** 3,3 %.
- **Higher explosivity limit:** 19,0 %.

Vapor pressure: 40 mmHg (a 19 ℃).
Vapor density: 1,59 (air = 1).
Evaporation rate: 0,72 % a year (in atmospheric carbon steel storage).
Density: 789,3 kg/m³.
Solubility: soluble in water, ethyl ether, chloroform, alcohol and acetone.
Coefficient of partition water/ octanol: unknown.

10-STABILITY AND REACTIVITY

Stability
Stable at normal conditions of temperature and pressure.

Dangerous reactions
Reacts with strong acids and bases, Silver Nitrate, Phosphoric Oxide, Acetyl Bromides, Alifatic amines and Isocianates, liberating great amount of heat.

No reported cases of polymerization at normal conditions of temperature and pressure.

11-TOXICOLOGICAL INFORMATION

Acute toxicity
May cause irritation of eyes and mucous membranes. May cause central nervous system depression if inhaled or ingested.

Chronic toxicity
May cause skin irritation or dermatitis. May cause liver damage.

Specific effect
Classified as not carcinogenic for the OSHA, NTP e IARC.

Carcinogenicity
None of the compounds in this product is listed by IARC, NTP, or OSHA as carcinogenic.

12-ECOLOGICAL INFORMATION

Ecotoxicity
It can cause damages to aquatic organisms.

13-CONSIDERATION ON TREATMENT AND DISPOSAL

Residues of the product
Use the regulamentation of the local agency for environment control.

Contaminated packings
Wash with water and dispose according the regulamentation local agency for environment control.

14-INFORMATION ON TRANSPORT

Road transport in Brazil and Mercosul
- **Proper shipping name:** ethanol.
- **Number ONU:** 1170.
- **Risk class / division:** 3.

- **Subsidiary risk:** not applicable.
- **Risk number:** 33.
- **Packing group:** II.
- **Reportable amount:** in kg or corresponding volume.

Domestic air transportation and International ICAO & IATA Section 4.2

- **Proper shipping name:** ethanol.
- **UN number:** 1170.
- **Hazard class/ division:** 3.
- **Packing group:** II.
- **Label:** flammable liquid.

International Maritime Transport – IMDG Code Amendment 29-98

- **Proper shipping name:** ethanol.
- **UN number:** 1170.
- **Hazard class/ division:** 3.
- **Packing group:** II.
- **Label:** flammable liquid.

15-REGULAMENTATION

Label
Flammable liquid.

16-SECTION 16: OTHER INFORMATION

The information of this FISPQ reflects the best available data and the knowledge for the appropriate handling of this product on normal conditions for the aforementioned application. Copersucar is not responsible and shall not be liable for any damage for other use of the product such as mixing, reaction or combination with other product or process.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**ETHYLENE GLYCOL**
Synonyms	1,2-Ethanediol

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS07
Target organs: Central nervous system, Liver, Kidneys

GHS Classification:
Acute toxicity, oral (Category 4)

GHS Label information: **Hazard statement:**
H302: Harmful if swallowed.

Precautionary statement:
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330: Rinse mouth.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Ethylene glycol*	107-21-1	95-100%	203-473-3
*May conatin ≤5% Diethylene glycol			

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Dry chemical, CO_2, water spray or regular foam.
Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.
Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Although ethylene glycol has a high flash point, vapor concentrations that exceed 3.2% by volume can form flammable mixtures in air. When misted in air, glycol becomes a moderate fire and explosion hazard, Class III B combustible liquid.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Ethylene glycol	STEL: C 100 mg/m^3(A4)	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid
Odor: Mild odor
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: -13°C (9°F)
Boiling point: 198°C (388°F)
Flash point: 116°C (241°F) PMCC

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available
Explosion limits: Lower / Upper: 3.2% / 15.3%
Vapor pressure (mm Hg): 0.05 @ 20°C
Vapor density (Air = 1): 2.14
Relative density (Specific gravity): 1.1135 @ 20°C
Solubility(ies): Soluble in water

Partition coefficient: Data not available
Auto-ignition temperature: 398°C (748°F)
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: $HOCH_2CH_2OH$
Molecular weight: 62.07

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Strong oxidizers. Strong acids. Permanganates. Dichromates. Reactive sodium compounds. Sulfur compounds. Alkali metals. Nitrates.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 4700 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause cough, dizziness, and headache.
Ingestion: Ingestion causes abdominal pain, dullness, nausea, unconsciousness, and vomiting.
Skin: Contact with skin causes irritation defatting on prolonged contact.
Eyes: Contact with eyes may cause redness and pain.
Signs and symptoms of exposure: The substance may cause effects on the kidneys and central nervous system. This may result in renal failure and brain injury. Exposure could cause lowering of consciousness. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: KW2975000

Section 12 Ecological Information

Toxicity to fish: Leuciscus idus melanotus (fish, fresh water), LC50 = >10,000 mg/L/48 hours
Toxicity to daphnia and other aquatic invertebrates: Artemia salina (Crustacea), EC50 = >20 g/L/24 hours
Toxicity to algae: Scenedesmus quadricauda (Algae), EC50 = >10 g/L/7 days
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Ethylene glycol	Listed	Not listed	Not listed	Listed	Not listed	D1B ; D2A

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: March 18, 2014 **Supercedes:** March 18, 2014

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**ÉTHYLÈNE GLYCOL**
Synonymes	1,2-Ethanediol

Section 2 Identification De Risques

Mention d'avertissement: AVERTISSEMENT
Pictogrammes: GHS07
Les organes cibles: Le système nerveux central, le foie et les reins.

Classification par le GHS:
Acute toxicity, oral (Catégorie 4)

Renseignements sur l'étiquette GHS: Mention de danger:
H302: Nocif en cas d'ingestion.

Déclarations de précaution:
P264: Se laver les mains soigneusement après manipulation.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P301+P312: EN CAS D'INGESTION: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P330: Rincer la bouche.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Éthylène glycol*	107-21-1	95-100%	203-473-3
*Peut contenir ≤ 5% de diéthylène glycol			

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSER UNE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT ÊTRE NOCIF EN CAS D'ABSORPTION PAR LA PEAU. PEUT CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Produit chimique sec, CO_2, eau pulvérisée ou mousse ordinaire.
Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.
Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Bien que l'éthylène-glycol ait un point d'inflammabilité élevé, les concentrations en vapeur qui dépassent 3.2% par le volume peuvent former les mélanges inflammables en air. Une fois misted en air, le glycol devient un risque modéré d'incendie et d'explosion, liquide combustible de la classe III B.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Enlever toute source d'ignition. Absorber avec un matériau inerte, balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Éthylène glycol	STEL: C 100 mg/m^3(A4)	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions brumeuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Clair, liquide incolore
Odeur: Odeur douce
Seuil de l'odeur: Données non disponibles
pH: Données non disponibles
Point de fusion / congélation: -13°C (9°F)
Point d'ébullition: 198°C (388°F)
Point d'éclair: 116°C (241°F) PMCC

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles
Limites d'explosivité: Bas / Max: 3.2% / 15.3%
Pression de vapeur (mm Hg): 0.05 @ 20°C
Densité de vapeur (Air = 1): 2.14
Densité relative (gravité spécifique): 1.1135 @ 20°C
Solubilité (s): Soluble dans l'eau

Coefficient de partage: Données non disponibles
Auto-inflammation: 398°C (748°F)
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles
Formule moléculaire: $HOCH_2CH_2OH$
Poids moléculaire: 62.07

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives, la chaleur, étincelles, flamme nue et d'autres sources d'allumage.

Matières incompatibles: Oxydants forts. Acides forts. Permanganates. Dichromates. Composés réactifs de sodium. Composés de soufre. Métaux d'alcali. Nitrates.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 4700 mg/kg
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.
Toxicité pour la reproduction: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: L'inhalation peut causer une toux, des étourdissements, des maux de tête.
Ingestion: L'ingestion provoque des douleurs abdominales, la matité, nausées, perte de conscience, et des vomissements.
Peau: Le contact avec la peau provoque une irritation dégraissage de contact prolongé.
Yeux: Le contact avec les yeux peut causer des rougeurs et de la douleur.
Les signes et les symptômes de l'exposition: La substance peut avoir des effets sur les reins et le système nerveux central. Cela peut entraîner une insuffisance rénale et des lésions cérébrales. L'exposition peut provoquer une diminution de conscience. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: KW2975000

Section 12 L'Information Écologique

Toxicité pour les poissons: Leuciscus idus melanotus (fish, fresh water), LC50 = >10,000 mg/L/48 hours
Toxicité pour les daphnies et autres invertébrés aquatiques: Artemia salina (Crustacea), EC50 = >20 g/L/24 hours
Toxicité pour les algues: Scenedesmus quadricauda (Algae), EC50 = >10 g/L/7 days
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Éthylène glycol	Listed	Not listed	Not listed	Listed	Not listed	D1B ; D2A

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 18 mars, 2014 **Remplace:** 18 mars, 2014

Febreze Blossom & Breeze

[illegible]

[illegible]

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

[illegible]

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

[illegible]

1.2.2. Uses advised against

[illegible]

1.3. Details of the supplier of the safety data sheet

[illegible]

1.4. Emergency telephone number

[illegible]

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

[illegible]

Adverse physicochemical, human health and environmental effects

[illegible]

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

[illegible]

2.3. Other hazards

[illegible]

SECTION 3: Composition/information on ingredients

3.1. Substance

[illegible]

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

SECTION 4: First aid measures

4.1. Description of first aid measures

[illegible]

4.2. Most important symptoms and effects, both acute and delayed

[illegible]

4.3. Indication of any immediate medical attention and special treatment needed

[illegible]

SECTION 5: Firefighting measures

5.1. Extinguishing media

[illegible]

5.2. Special hazards arising from the substance or mixture

[illegible]

5.3. Advice for firefighters

[illegible]

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

[illegible]

6.1.2. For emergency responders

[illegible]

6.2. Environmental precautions

[illegible]

6.3. Methods and material for containment and cleaning up

[illegible]

6.4. Reference to other sections

[illegible]

SECTION 7: Handling and storage

7.1. Precautions for safe handling

[illegible]

[illegible]

7.2. Conditions for safe storage, including any incompatibilities

[illegible]

7.3. Specific end use(s)

[illegible]

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National limit values

Alcohol (64-17-5)		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

8.1.2. Monitoring procedures: DNELS, PNECS, OEL

Alcohol (64-17-5)	
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]

8.2. Exposure controls

[illegible]

[illegible]

[illegible]

[illegible]

Febreze Blossom & Breeze

[illegible]

[illegible]

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

[illegible]

Property	Value	Unit	Test method/Notes
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Melting point/freezing point	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

9.2. Other information

[illegible]

SECTION 10: Stability and reactivity

10.1. Reactivity

[illegible]

10.2. Chemical stability

[illegible]

10.3. Possibility of hazardous reactions

[illegible]

10.4. Conditions to avoid

[illegible]

10.5. Incompatible materials

[illegible]

10.6. Hazardous decomposition products

[illegible]

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1. Mixture

Febreze Blossom & Breeze	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

11.1.2. Substances in the mixture

[illegible]

Alcohol (64-17-5)	
[illegible]	[illegible]

Benzisothiazolinone (2634-33-5)	
[illegible]	[illegible]

SECTION 12: Ecological information

12.1. Toxicity

[illegible]

[illegible]

Alcohol (64-17-5)	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Benzisothiazolinone (2634-33-5)	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

12.2. Persistence and degradability

Alcohol (64-17-5)	
[illegible]	[illegible]
[illegible]	[illegible]

12.3. Bioaccumulative potential

[illegible]

Alcohol (64-17-5)	
[illegible]	[illegible]
[illegible]	[illegible]

12.4. Mobility in soil

[illegible]

12.5. Results of PBT and vPvB assessment

Febreze Blossom & Breeze	
[illegible]	[illegible]

Component	
[illegible]	[illegible]

12.6. Other adverse effects

[illegible]

SECTION 13: Disposal considerations

13.1. Waste treatment methods

[illegible]

SECTION 14: Transport information

14.1. UN number

[illegible]

14.2. UN proper shipping name

[illegible]

14.3. Transport hazard class(es)

[illegible]

[illegible]

14.4. Packing group

[illegible]

14.5. Environmental hazards

[illegible]

14.6. Special precautions for user

14.6.1. Overland transport

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

14.6.2. Transport by sea

[illegible]

14.6.3. Air transport

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

[illegible]

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

[illegible]

[illegible]	[illegible]

15.1.2. National regulations

[illegible]

15.2. Chemical safety assessment

[illegible]

SECTION 16: Other information

16.1. Indication of changes

[illegible]	[illegible]

16.2. Abbreviations and acronyms

[illegible]

16.3. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008 [CLP]	classification procedure
[illegible]	[illegible]

16.4. Relevant R-phrases and/or H-statements (number and full text) for mixture and substances

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Febreze Blossom & Breeze

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

16.5. Training advice

[illegible]

16.6. Further information

[illegible]

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

MATERIAL SAFETY DATA SHEET

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9804304 9804306 9804204 9804206 9804209
Effective Date: October 7, 2002

SECTION I NAME

Product	Ferric nitrate
Chemical Synonyms	Iron (III) nitrate, nonahydrate
Formula	$Fe(NO_3)_3 \cdot 9H_2O$
CAS No.	7782-61-8

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

NFPA

Health	1
Flammability	0
Reactivity	3

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Ferric nitrate, Nonahydrate	100%	N/A
DANGER! STRONG OXIDIZER.		

SECTION III PHYSICAL DATA

Melting Point (°C)	47.2°C	Specific Gravity (H_2O = 1)	1.68 @ 21°C
Boiling Point (°C)	N/A	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	N/A	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	Soluble.		
Appearance & Odor	Pale violet crystals; slight odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Non-flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. In contact with easily oxidizable materials, this chemical may react rapidly enough to cause ignition, violent combustion or explosion.

TDG **Class 5.1 Oxidizing substance. UN1466**

SECTION V REACTIVITY DATA

FF0110

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	Aluminums, cyanides, phosphorous, stannous chloride, thiocyanates, oxidizing materials, organic materials and sodium hypophosphite.
	No		
Hazardous Decomposition Products	Oxides of nitrogen.		
Reactive under what conditions	Extremely reactive or incompatible with reducing aents, organic materials. Highly reactive with metals, alkalis. Very slightly to slightly reactive with acids, moisture.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Ingestion. Inhalation.
TLV	N/A
Toxicity for animals	Acute oral toxicity (LD50): 3250 mg/kg (Rat).
Chronic effects on humans	May cause respiratory tract irritation. Target organs: Blood.
Acute effects on humans	Very dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep container in a cool, well ventilated place. Keep away from heat. Keep away from incompatible materials. Keep away from sources of ignition and open flames.
Precautions	Avoid contact with skin and eyes. Do not breathe dust. Use with adequate ventilation. Do not ingest.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Wash spill area with soap and water.
Protective Clothing	Gloves, safety glasses, lab coat, dust respirator.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No.	3	Date	October 7, 2002	Approved	Michael Raszeja

Fiche Signalétique

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS 9804304 9804306 9804204 9804206 9804209
Validé par: 7 octobre, 2002

SECTION I Identification

Produit	Nitrate ferrique
Synonymes	Nitrate de fer, nonahydrate
Formule	$Fe(NO_3)_3 \cdot 9H_2O$
# CAS	7782-61-8

Telephone D'urgence

416-984-3000

NFPA

Santé	1
Flammabilité	0
Reactivité	3

Niveau de risque **WHMIS**

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

SECTION II Ingrédients Dangereux

Nom	%	TWA
Nitrate ferrique	100%	Sans objet.
DANGER! COMBURANTE FORTE.		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	47,2°C	Gravité spécifique (Eau = 1)	1,68 @ 21°C
Point d'ebullition (°C)	Sans objet.	Volatilité % par volume	Sans objet.
Tension de vapeur (mm Hg)	Sans objet.	Taux d'évaporation (=1)	Sans objet.
Densité de la vapeur (Air=1)	Sans objet.		
Solubilité	Soluble.		
Odeur et apparence	Cristal violet pâle; léger odeur.		

SECTION IV Risques D'incendie ou D'explosion

Point d'éclair	Ininflammable.	Limites d'inflmmabilité % par volume	Sans objet.	Seuil minimal / Seuil maximal

Moyens d'extinction

Utiliser des poudres chimiques sèches, du CO_2, une mousse d'alcool ou de l'eau pulvérisée. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Le feu ou la chaleur excessive peut produire les produits dangereux de décomposition à produire comme poussière ou vapeur. En contact avec les matériaux facilement oxydables, ce produit chimique peut réagir assez rapidement à l'allumage de cause, à la combustion violente ou à l'explosion.

TMD **Classe 5.1 Substance comburante. UN1466**

SECTION V Données sur la Réactivité

FF0110

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	Aluminium, cyanures, phosphoreux, chlorure stanneux, sulfocyanates, matériaux d'oxydation, matériaux organiques et hypophosphites de sodium.
	non		

Produits de decomposition dangereux	Oxydes d'azote.
Conditions de Réactivité	Extrêment réactif ou incompatible avec les agents réducteurs, les substances organiques. Très réactif avec les métaux, les alcalis. Trés à légèrement réactif avec les acides, l'humidité.

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Ingestion. Inhalation.
LMP	Sans objet.
Toxicité pour les animaux	Toxicité orale aiguë (DL50): 3250 mg/kg (Rat).
Effets chroniques sur les humains	Peut causer une irritation respiratoire. La sang sont des organes de cible.
Effets aigué sur les humains	Très dangereux en cas de contact avec la peau (irritant), d'ingestion, d'inhalation.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Conserver le récipient dans un endroit frais et bien aéré. Conserver à l'écart de la chaleur. Conserver à l'écart des matières incompatibles. Conserver à l'écart de toute source d'ignition et toute flamme nue.
Précautions	Éviter tout contact avec la peau et les yeux. Ne pas inhaler les poussières. Utilsez la ventilation adéquate. Ne pas ingérer. En cas d'ingestion il faut obtenir immédiatement de l'aide médicale.
Déversement ou fuite	Utiliser les instruments nécessaires pour mettre le solide répandu dans un contenant de récuperation approprié. Bien laver la surface où le solide était répandu avec du savon et de l'eau.
Vêtements de protection	Gants, lunettes de sécurité, blousse de laboratoire, respirateur anti-poussières.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	3	Date	7 octobre, 2002	Vérifié par	Michael Raszeja

SAFETY DATA SHEET

Date of issue: 09/07/95

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No: 26096 ID No.: 2609600

Product name: **Iron(II) sulphide technical (ferrous sulphide)**

Manufacturer/supplier identification

Company: VWR International Ltd., Merck House, Poole, Dorset, BH15 1TD, England
Telephone : + 44 (0) 1202 669700 Telefax : + 44 (0) 1202 665599

Emergency telephone No.: + 44 (0) 1202 669700

2. Composition/information on ingredients

Chemical characterization

Inorganic solid

Product name: Iron(II) sulphide

CAS number: 1317-37-9 EC-No.: 215-268-6

3. Hazards identification

4. First aid measures

- Eye contact: Irrigate thoroughly with water for at least 10 minutes. If discomfort persists, obtain medical attention.
- Inhalation: Remove from exposure, rest and keep warm. In severe cases obtain medical attention.
- Skin contact: Wash off thoroughly with soap and water. Remove contaminated clothing and wash before re-use. In severe cases, OBTAIN MEDICAL ATTENTION.
- Ingestion: Wash out mouth thoroughly with water and give plenty of water to drink. OBTAIN MEDICAL ATTENTION.

5. Fire-fighting measures

Special risks:

May evolve toxic fumes in fire.

Suitable extinguishing media:

Not applicable

6. Accidental release measures

Wear appropriate protective clothing.

Carefully sweep up and dispose of in accordance with local regulations.
For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

7. Handling and storage

Handling:

Storage:

Store at room temperature (15 to 25°C recommended). Keep well closed and protected from direct sunlight and moisture.

8. Exposure controls/personal protection

UK Exposure Limits:

None assigned

Personal protective equipment:

As appropriate to the situation and the quantity handled.
- Respirator: Dust respirator
- Ventilation: Extraction hood
- Gloves: Rubber or plastic
- Eye Protection: Goggles or face-shield
- Other Precautions: Plastic apron, sleeves, boots - if handling large quantities

9. Physical and chemical properties

General information:

Form:	solid
Colour:	greyish black
Odour:	almost odourless

Health, safety and environmental information:

Melting temperature	1193°C
Boiling temperature	decomposition
Density(g/ml)	4.84
Solubility in water	Immiscible or insoluble

10. Stability and reactivity

sensitive to moisture, sensitive to air.

Substances to be avoided
acids (Formation of: hydrogen sulphide).

11. Toxicological information

The following applies to sulphides in general: release of hydrogen sulphide (CNS disorders, impaired locomotor coordination, cardiovascular disorders) in the stomach possible after ingestion.

Further data

No data

We have no evidence of carcinogenic effects. We have no evidence of mutagenic or teratogenic effects.

12. Ecological information

The following applies to soluble sulphides in general: toxic for aquatic organisms: e.g. sodium sulphide: fish: LDLow: 3.0 mg/l; ammonium sulphide: fish: C. auratus 72 h. lethal from 100 mg/l up. Hydrogen sulphide may form even in a dilute acidic environment. The following applies to hydrogen sulphide: biological effects: fish: toxic from 0,5 mg/l up; sulphide has a harmful effect on plankton and fish; hazard for drinking water!

13. Disposal considerations

Chemical residues are generally classified as special waste, and as such are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company.

14. Transport information

Not subject to transport regulations.

15. Regulatory information

Labelling according to EC directives

EC-No.: 215-268-6

Local Regulations

16. Other information

Reason for alteration: Changes in Section : 15

Date of issue:	09/07/95
Date of print:	13/07/05

Formic Acid

MSDS # 295.00

Section 1: Product and Company Identification

Formic Acid

Synonyms/General Names: Methanoic Acid
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Colorless fuming liquid, strong odor.

HMIS (0 to 4)

Health	3
Fire Hazard	2
Reactivity	0

DANGER! Strongly corrosive to body tissue and slightly toxic by ingestion. Severe inhalation hazard.
Combustible liquid, keep away from ignition sources.
Target organs: Kidneys, Liver, Central Nervous System.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Formic Acid (64-18-6), 88-92%. Water (7732-18-5), 8-12%.

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. ***Do not induce vomiting***. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Class II Combustible liquid. When heated to decomposition, emits acrid fumes of carbon oxides.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all ignition sources and ventilate area. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage White

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in Corrosive Area [White Storage] with other corrosive items. Store in a dedicated corrosive cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines Formic Acid: OSHA PEL: 9 mg.m^3 and ACGIH TLV: 9.4 mg.m^3, STEL: 19 mg/m^3.

Section 9: Physical and Chemical Properties

Molecular formula	HCOOH.	**Appearance**	Colorless fuming liquid.
Molecular weight	46.03.	**Odor**	Strong odor.
Specific Gravity	1.21 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	1.59.	**Solubility**	Completely soluble in water.
Melting Point	8.4°C.	**Evaporation rate**	1.6 *(Butyl acetate = 1).*
Boiling Point/Range	101°C decomposes.	**Partition Coefficient**	N/A *(log P_{OW}).*
Vapor Pressure (20°C)	44.8 mmHg.	**pH**	1, very acidic, (corrosive).
Flash Point:	69°C (156°F) CC.	**LEL**	18 %.
Autoignition Temp.:	520°C (968°F).	**UEL**	57 %.

Section 10: Stability and Reactivity

Avoid heat and ignition sources.
Stability: Stable under normal conditions of use. During storage decomposes to carbon monoxide and water, creating explosive danger in a tightly closed bottle. Avoid extended storage.
Incompatibility: Acids, bases, oxidizers.
Shelf life: Poor shelf life, hygroscopic, store in cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. ***Skin***: Redness, blistering, burning, itching, tissue destruction with slow healing. ***Ingestion***: Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. ***Inhalation***: Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.
Chronic Effects: Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.
Sensitization: none expected
Formic Acid: LD50 [oral, rabbit]; 1100 mg/m^3; LC50 [rat]; 3750 ppm ; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Toxic to aquatic and terrestrial life. Do not release into environment.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer disposal after being neutralized to pH 7.

Section 14: Transport Information

DOT Shipping Name:	Formic Acid.	**Canada TDG:**	Formic Acid.
DOT Hazard Class:	8(3), pg II.	**Hazard Class:**	8, pg II .
Identification Number:	UN1779.	**UN Number:**	UN1779.

Section 15: Regulatory Information

EINECS: Listed (200-579-1).
TSCA: All components are listed or are exempt.
WHMIS Canada: B3, E: Combustible, Corrosive liquid.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: December 21, 2011
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use****.*

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: FF0290
Revision Date: September 10, 2013
Approved by: James A. Bertsch

MSDS No.: FF0290

Section 1 Chemical Product and Company Information

Product	**d-FRUCTOSE**
Synonyms	d-Levulose

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

LOW HAZARD FOR USUAL LABORATORY HANDLING.
Store in a cool place. Use with adequate ventilation.
Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	0
Fire	1
Reactivity	0
Contact	1

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
d-Fructose	57-48-7	100%	None established. (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Dusts may form flammable and explosive mixtures in air.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.

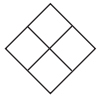
Flash Point: Non-flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Remove all sources of ignition. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White crystalline powder.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): Negligible.
Vapor Density (Air = 1): 6.2
Evaporation rate (= 1): N/A
Viscosity: N/A
Boiling point: Decomposes.
Freezing / Melting point: 104°C (219°F) dec.
Decomposition temperature: N/A
Solubility in water: Soluble
Specific gravity (H_2O = 1): 1.60 g/cm^3
Percent volatile (%): N/A
Molecular formula: $C_6H_{12}O_6$
Molecular weight: 180.16

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures.
Hazardous polymerization: Will not occur.
Incompatibilities with other materials: Strong oxidizers.
Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Effects of overexposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

ORL-RAT LD50: N/A
IHL-RAT LC50: N/A
SKN-RBT LD50: N/A

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (200-333-3), DSL-listed.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**D-GLUCOSE**
Synonyms	Dextrose

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: None required
Pictograms: No symbol required
Target organs: None known

GHS Classification: None required
GHS Label information: **Hazard statement:** None required
Precautionary statement: None required

Supplemental information:
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Dextrose, anhydrous	50-99-7	100%	200-075-1

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Dextrose	None established	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White granules.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 148°C (298°F)
Boiling point: Decomposes
Flash point: Not applicable

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): 6.3
Relative density (Specific gravity): 1.5
Solubility(ies): 90 g/100 ml water @ 20°C

Partition coefficient: (n-octanol / water): Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available.
Molecular formula: $C_6H_{12}O_6$
Molecular weight: 180.16

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures.
Incompatible materials: Strong oxidizers.
Hazardous decomposition products: Oxides of carbon.
Hazardous polymerization: Will not occur.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause respiratory irritation.
Ingestion: Not expected to be a health hazard.
Skin: Not expected to be a health hazard.
Eyes: Contact with eyes may cause transient irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards..
Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Dextrose	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: January 14, 2014 **Supercedes:** December 26, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**D-GLUCOSE**
Synonymes	Dextrose

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé comme dangereux à ce selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: Aucune requise
Pictogrammes: Aucun symbole n'est demandé
Les organes cibles: Aucun connu

Classification par le GHS: Aucune requise
Renseignements sur l'étiquette GHS: Mention de danger: Aucune requise
Déclarations de précaution: Aucune requise

Informations supplementaires:
Ne pas respirer les poussières. Ne pas mettre dans les yeux, la peau ou les vêtements. Porter des gants de protection / des vêtements de protection / protection des yeux / du visage. Se laver les mains après avoir manipulé. Consulter un médecin en cas de malaise.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Dextrose, anhydre	50-99-7	100%	200-075-1

Section 4 Mesures De Premiers Soins

INGESTION: Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupérer à l'usage s'il n'est pas contaminé. Balayer ou passer l'aspirateur et placer dans un récipient approprié pour une élimination appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Dextrose	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreux prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Granules blanche.
Odeur: Aucune odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: 148°C (298°F)
Point d'ébullition: Se décompose
Point d'éclair: Non applicable

Taux d'évaporation (= 1): Non applicable
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Non applicable
Pression de vapeur (mm Hg): Négligeable
Densité de vapeur (Air = 1): 6.3
Densité relative (gravité spécifique): 1.5
Solubilité (s): 90 g/100 ml water @ 20°C

Coefficient de partage: (n-octanol / eau): Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles.
Formule moléculaire: $C_6H_{12}O_6$
Poids moléculaire: 180.16

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Conditions à éviter: Les températures excessives.

Polymérisation dangereuse: N'aura pas lieu.

Matières incompatibles: Comburantes fortes.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Inhalation may cause respiratory irritation.
Ingestion: Ne devrait pas être un danger pour la santé.
Peau: Ne devrait pas être un danger pour la santé.
Yeux: Contact avec les yeux peut causer une irritation passagère.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été à fond étudiées. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.
Informations complémentaires: RTECS #: Données non disponibles

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponibles
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponibles
Toxicité pour les algues: Pas de données disponibles
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Dextrose	Listed	Not listed	Not listed	Listed	Not listed	Produit non contrôlé

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 14 janvier, 2014 **Remplace:** 26 decembre, 2013

SAFETY DATA SHEET

Humco Holding Group, Inc.
7400 Alumax Dr
Texarkana TX 75501 USA
800-662-3435
cs@humco.com
www.humco.com

24-Hour Emergency Number (CHEMTREC)
USA- 800-424-9300
All non-emergency calls should be directed to Customer Service at 800-662-3435

NAME: GLYCERIN SDS NO. 1031

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Glycerin
Synonyms: 1,2,3-Propanetriol; Glycerol
Recommended Use: OTC Skin Protectant

Manufacturer by: Humco Holding Group, Inc.
7400 Alumax Dr
Texarkana TX 75501 USA
800-662-3435
cs@humco.com
www.humco.com

24-Hour Emergency Number (CHEMTREC)
USA- 800-424-9300

All non-emergency calls should be directed to Customer Service at 800-662-3435

2. HAZARD IDENTIFICATION

Pictogram:	Not Applicable
Classification:	Not a hazardous substance or mixture
Signal Word:	Not Applicable
Hazard Statements:	Not Applicable
Potential Health Effects:	Can be irritating to the eyes. Can be harmful if ingested. Can be harmful if inhaled. Avoid breathing mist. Can be irritating to the skin.

3. COMPOSITION / INGREDIENTS

CHEMICAL NAME	CAS#
Glycerin	56-81-5

The exact percentage has been withheld as a trade secret

4. FIRST-AID MEASURES

ROUTE	COMMON SYMPTOMS	FIRST AID
Inhalation	Dizziness	[illegible]
Ingestion	Cramps, diarrea	[illegible]
Skin	Dermal irritation	[illegible]
Eyes	Irritation	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

5. FIRE-FIGHTING MEASURES

Flash Point:	[illegible]
Auto Ignition:	[illegible]
Extinguishing Media:	Use methods appropriate for the surrounding fire. Consider water spray or fog, carbon dioxide, dry chemical powder, or alcohol resistant foam.
Products of Combustion:	[illegible]
Fire Fighting Equipment and Procedures:	[illegible]

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Read entire label before using and follow all label directions.
Environmental Precautions:	Prevent discharge to open waters.
Method of Containment:	**Small Spill:** Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements. **Large Spill:**

	Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Method for Clean-Up:	Ventilate area of spill or leak. Sweep or scrap up and containerize in approved chemical waste container. Wash spill area with water.

7. HANDLING AND STORAGE

Handling:	Do not consume more than recommended.
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protective Equipment (PPE)	
Eye/Face Protection:	None needed under normal use.
Skin Protection:	None needed under normal use.
Respiratory Protection	None needed under normal use.
General Hygiene Considerations:	Wash hands after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid. (Viscous (Syrupy) liquid.)	**Upper/Lower Flammability:**	Not determined
Odor:	Mild	**Vapor Pressure**	0 kPa (@ 20°C)
Odor Threshold:	Not determined	**Vapor Density:**	3.17 (Air = 1)
pH:	Not determined	**Relative Density:**	1.2636
Melting point /Freezing Point:	19°C (66.2°F)	**Solubilities:**	Miscible in cold water, hot water and alcohol. Partially soluble in acetone. Very slightly soluble in diethyl ether (ethyl ether). Limited

			solubility in ethyl acetate. Insoluble in carbon tetrachloride, benzene, chloroform, petroleum ethers, and oils
Boiling point/range:	290°C (554°F)	**Partition coefficient: n-octanol/water:**	Not determined
Flash point	Not determined	**Auto-ignition temperature**	Not determined
Evaporation rate	Not determined	**Decomposition Temperature:**	Not determined
Flammability:	Not flammable	**Viscosity**	Not determined

10. STABILITY AND RACTIVITY

Reactivity:	Hygroscopic. Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate. Glycerin may react violently with acetic anhydride, aniline and nitrobenzene, chromic oxide, lead oxide and fluorine, phosphorous triodide, ethylene oxide and heat, silver perchlorate, sodium peroxide, sodium hydride.
Chemical Stability:	Stable under normal ambient temperatures (70°F)
Possibility of Hazardous reactions:	Not determined.
Conditions to Avoid:	Avoid contact with incompatible materials, excess heat and ignition, sources, moisture
Incompatible materials:	Not determined
Hazardous Decomposition Products:	Not determined

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Not determined.
Skin irritation:	Not determined.
Eye contact damage:	Not determined.
Respiratory damage:	Not determined.
Ingestion overdose:	Not determined.
Delayed, immediate, or chronic effects from short- and long-term exposure	Not determined.
LD50	Not determined.
Symptoms associated with exposure:	Not determined.
Carcinogenicity:	
OSHA:	Not listed

NTP:	Not listed
IARC:	Not listed

12. ECOLOGICAL INFORMATION

Acute or chronic aquatic toxicity:	Not determined.
Chemical degradation:	Not determined.
Biodegradation:	Not determined.
Bioaccumulation potential	Not determined.
Adsorption studies or leaching studies:	Not determined.
Other adverse effects	Not determined.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with federal, state and local laws and regulations. Avoid release into environment.

14. TRANSPORT INFORMATION

DOT Hazard Classification:	Non-Hazardous
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group number:	Not applicable
Environmental hazards:	Not applicable
Special precautions:	Do not freeze, avoid extreme heat

15. REGULATORY INFORMATION

Not determined

16. OTHER INFORMATION

The information in this SDS is considered current and reliable. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal are beyond Humco's control, it is the responsibility of the user to determine safe conditions for use and to assume liability for loss, damage, or expenses arising from improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission. Various agencies may have specific regulations concerning the transportation, handling, storage, use or disposal of this product which may not be reflected in the SDS. The user should review these regulations to ensure full compliance.

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]

SECTION 1. IDENTIFICATION

[illegible] GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

Manufacturer or supplier's details

[illegible]

Recommended use of the chemical and restrictions on use

[illegible]

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

[illegible]

GHS label elements

[illegible]

Other hazards

[illegible]

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]	[illegible]	[illegible]	[illegible]

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

SECTION 4. FIRST AID MEASURES

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

SECTION 5. FIREFIGHTING MEASURES

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

SECTION 6. ACCIDENTAL RELEASE MEASURES

[illegible]

SECTION 7. HANDLING AND STORAGE

[illegible]

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Personal protective equipment

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

[illegible]

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]

SECTION 10. STABILITY AND REACTIVITY

[illegible]

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

[illegible]

Acute toxicity

[illegible]

Components:

C11-15 Alkane/cycloalkane:

[illegible]

Limonene:

[illegible]

Skin corrosion/irritation

[illegible]

Components:

C11-15 Alkane/cycloalkane:

[illegible]

Limonene:

[illegible]

Serious eye damage/eye irritation

[illegible]

Components:

C11-15 Alkane/cycloalkane:

[illegible]

Limonene:

Respiratory or skin sensitisation

Skin sensitisation

Respiratory sensitisation

Product:

Components:

C11-15 Alkane/cycloalkane:

Limonene:

Germ cell mutagenicity

Components:

C11-15 Alkane/cycloalkane:

Limonene:

[illegible]

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]

Carcinogenicity

[illegible]

Components:

Limonene:

[illegible]

Reproductive toxicity

[illegible]

Components:

C11-15 Alkane/cycloalkane:

[illegible]	[illegible]
[illegible]	[illegible]

STOT - single exposure

[illegible]

STOT - repeated exposure

[illegible]

Repeated dose toxicity

Components:

C11-15 Alkane/cycloalkane:

[illegible]

Limonene:

[illegible]

Aspiration toxicity

[illegible]

Components:

C11-15 Alkane/cycloalkane:

[illegible]

Limonene:

[illegible]

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

C11-15 Alkane/cycloalkane:

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]

Limonene:

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
M[illegible]	[illegible]

Persistence and degradability

Components:

C11-15 Alkane/cycloalkane:

[illegible]	[illegible]

Limonene:

[illegible]	[illegible]

Bioaccumulative potential

Components:

Limonene:

[illegible]	[illegible]

Mobility in soil

[illegible]

Other adverse effects

[illegible]

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

[illegible]	[illegible]
[illegible]	[illegible]

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

IMDG-Code

National Regulations

TDG

SECTION 15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

Canadian lists

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

GOJO® NATURAL* ORANGE™ Pumice Hand Cleaner

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

SAFETY DATA SHEET

8/20/2015

SECTION I - IDENTIFICATION

Material Name
HANDY ART ACRYLIC, HANDY ART NU MASTER HEAVY BODY ACRYLIC
HANDY ART MEDIUM BODY ACRYLIC, HANDY ART NU MASTER FLUID ACRYLIC

Company Information
Handy Art, Inc.
365 Sunnyside Drive
Milton, WI 53563
Phone: 1-608-868-6873
Fax: 1-608-868-6233
Email: handyart@handyart.com

For emergencies call: 608-868-6873

For health emergencies call the Poison Control Center: 1-800-222-1222

SECTION II - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

There are no GHS label elements.

PRIMARY ROUTES OF ENTRY: INHALATION, INGESTION, EYE, SKIN

EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE: NONE EXPECTED

EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE: NONE EXPECTED

CARCINOGEN LISTING: NTP: **NO** IARC: **NO** OSHA: **NO**

SEE SECTION III FOR COMPONENTS AFFECTED

MEDICAL CONDITIONS USUALLY AGGRAVATED BY OVER EXPOSURE TO THIS PRODUCT: NONE

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Hazardous Ingredients	CAS/EC #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC
None					

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURES: NONE REQUIRED. NO ACUTE HEALTH EFFECTS EXPECTED.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
AUTOIGNITION TEMPERATURE: N/A
EXPLOSION LIMITS IN AIR (% BY VOLUME): NOT EXPLOSIVE

EXTINGUISHING MEDIA: NO SPECIAL MEDIA REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE & EXPLOSION HAZARDS: NOT COMBUSTIBLE

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal, see Section XIII

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING STORAGE AND HANDLING: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: NONE REQUIRED
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC): NONE REQUIRED
WORK/HYGIENE PRACTICES: NONE REQUIRED
ENGINEERING CONTROLS: NONE REQUIRED

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
MELTING POINT: N/A
VAPOR PRESSURE: N/A
SPECIFIC VAPOR DENSITY (AIR=1): N/A
SPECIFIC GRAVITY: N/A
SOLUBILITY IN WATER: N/A
REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: NONE
STABILITY: STABLE CONDITIONS TO AVOID: NONE
INCOMPATIBILITY (MATERIALS TO AVOID): NONE
HAZARDOUS DECOMPOSITION PRODUCTS: NONE

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS ASSOCIATED WITH USE OF THIS MATERIAL: NONE EXPECTED
The summated LD50 is 30276 mg/kg.
The summated LC50 is 11787 mg/cubic meter.
This product is not considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section III)

SECTION XII - ECOLOGICAL INFORMATION

NO HARMFUL EFFECTS KNOWN OTHER THAN THOSE ASSOCIATED WITH SUSPENDED INERT SOLIDS IN WATER.

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE.
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

U.S. DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200
EPA SARA TITLE III CHEMICAL LISTINGS
NONE

SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
NONE

SECTION 313 TOXIC CHEMICALS (40 CFR 372):
NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:
FERRIC OXIDE
MICA
PROPYLENE GLYCOL

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:
CHROMIUM OXIDE GREEN
MICA
PIGMENT RED 101
PIGMENT WHITE 6
PROPYLENE GLYCOL

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:
NONYL PHENOL ETHOXYLATE

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling:

NONE

SECTION XVI - OTHER INFORMATION

LAST REVISION DATE: 08/20/2015

Prepared by Duke OEM Toxicology

COLOR INFORMATION

THIS SDS APPLIES TO THE FOLLOWING COLORS WHICH ARE ASSOCIATED WITH HAZARDOUS AND/OR NON-HAZARDOUS INGREDIENTS

Product Color	SKU	Hazardous Ingredient
000 TITANIUM WHITE		(NONE)
005 BLOCKOUT WHITE		(NONE)
010 CHROME YELLOW		(NONE)
015 YELLOW OXIDE		(NONE)
020 DEEP YELLOW		(NONE)
025 CHROME ORANGE		(NONE)
030 PHTHALO RED		(NONE)
035 VERMILION		(NONE)
040 BRITE RED		(NONE)
045 GREEN OXIDE		(NONE)
050 PHTHALO GREEN		(NONE)
055 COBALT BLUE		(NONE)
060 PHTHALO BLUE		(NONE)
065 ULTRAMARINE BLUE		(NONE)
070 MAGENTA		(NONE)
075 VIOLET		(NONE)
080 VENETIAN RED		(NONE)
085 BURNT SIENNA		(NONE)
090 BURNT UMBER		(NONE)
093 RAW SIENNA		(NONE)
095 RAW UMBER		(NONE)
100 MARS BLACK		(NONE)
105 GRAY		(NONE)
TURQUOISE		(NONE)
PEACH		(NONE)
109 ALIZARIN CRIMSON		(NONE)
109 BRIGHT RED		(NONE)
109 BUFF TITANIUM		(NONE)
109 CERULEAN BLUE HUE		(NONE)
109 CHROME GREEN OXIDE		(NONE)
109 CHROME YELLOW		(NONE)
109 COBALT BLUE HUE		(NONE)
109 HOOKER'S GREEN		(NONE)
109 LIGHT GREEN		(NONE)
109 LIGHT PORTRAIT		(NONE)
109 MAGENTA		(NONE)
109 PHTHALO BLUE		(NONE)
109 PHTHALO GREEN		(NONE)
109 PRIMARY CYAN		(NONE)
109 PRIMARY MAGENTA		(NONE)
109 PRIMARY YELLOW		(NONE)
109 PURPLE		(NONE)
109 RAW UMBER		(NONE)
109 RED OXIDE		(NONE)
109 RUBINE RED		(NONE)
109 TITANIUM WHITE		(NONE)
109 TURQUOISE GREEN		(NONE)
109 ULTRA BLUE HUE		(NONE)
109 ULTRAMARINE BLUE		(NONE)
109 VIOLET		(NONE)
109 YELLOW HANSA LIGHT		(NONE)
110 LIGHT GREEN		(NONE)
115 MAROON		(NONE)
150 FL YELLOW		(NONE)
151 FL HOT PINK		(NONE)
152 FL ORANGE		(NONE)
154 FL RED		(NONE)
155 FL MAGENTA		(NONE)
156 FL BLUE		(NONE)

Product Color	SKU	Hazardous Ingredient
158 FL GREEN		(NONE)
159 FL VIOLET		(NONE)
160 BRASS		(NONE)
162 GOLD		(NONE)
163 TREASURE GOLD		(NONE)
164 COPPER		(NONE)
165 BRONZE		(NONE)
166 SILVER		(NONE)
PEARLESCENT TITANIUM WHITE		(NONE)
PEARLESCENT CHROME YELLOW		(NONE)
PEARLESCENT CHROME ORANGE		(NONE)
PEARLESCENT VERMILION		(NONE)
PEARLESCENT BRITE RED		(NONE)
PEARLESCENT GREEN OXIDE		(NONE)
PEARLESCENT PHTHALO GREEN		(NONE)
PEARLESCENT PHTHALO BLUE		(NONE)
PEARLESCENT VIOLET		(NONE)
PEARLESCENT MARS BLACK		(NONE)
PRIMARY BLUE		(NONE)
BRIGHT GREEN		(NONE)
IRIDESCENT GOLD		(NONE)
IRIDESCENT SILVER		(NONE)

SAFETY DATA SHEET

1. Identification

Product identifier **QT-TB**

Other means of identification

SDS number 538N-57A

Product code HIL01011

Product registration number 1839-83-1658

Recommended use Disinfectant/Cleaner

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Manufacturer

Company name HILLYARD INDUSTRIES

Address 302 North Fourth St.
St. Joseph, MO 64501

Contact person Regulatory Affairs

Telephone number (816) 233-1321 (Ext. 8285)

Fax (816) 383-8485

E-mail regulatoryaffairs@hillyard.com

Emergency telephone # (800) 424-9300
(Only in the event of chemical emergency involving a spill, leak, fire, exposure, or accident involving chemicals.)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Serious eye damage/eye irritation	Category 2B
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement Combustible liquid. Causes eye irritation.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep cool.

Disposal Buyer assumes all risk and liability associated with disposal of this product (original concentration or dilution) in violation of applicable law in compliance with applicable federal, state and local requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
2-(2-butoxyethoxy)ethanol		112-34-5	5 - < 10
Tetrasodium ethylenediamine tetraacetate		64-02-8	1 - < 3
Alkyl (68% C12, 32% C14) dimethyl ethylbenzyl ammonium chloride		85409-23-0	< 0.2
Alkyl dimethyl benzyl ammonium chloride (C12-18)		68391-01-5	< 0.2
Other components below reportable levels			90 - 100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Most important symptoms/effects, acute and delayed Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Combustible liquid.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. Avoid contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

DO NOT CONTAMINATE WATER, FOOD, OR FEED BY STORAGE OR DISPOSAL.
PESTICIDE STORAGE - Store in a dry place no lower in temperature than 50ºF or higher than 120ºF.
Keep away from heat, sparks and open flame. Store away from incompatible materials (see Section 10 of the SDS).
Do not contaminate water, food or feed by storage or disposal. Pesticide Storage: Open dumping is prohibited. Store in original container in areas inaccessible to children.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2-(2-butoxyethoxy)ethanol (CAS 112-34-5)	TWA	10 ppm	Inhalable fraction and vapor.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use safety eyewear with splash guards or side shields, chemical goggles, or face shields.

Skin protection

Hand protection

Wear protective gloves.

Other

None normally required. If unable to avoid prolonged or repeated contact with skin, wear impervious clothing.

Respiratory protection

Not normally required with adequate ventilation. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Clear, colorless liquid

Physical state

Liquid.

Form

Liquid.

Color

Colorless

Odor

Lemon odor

Odor threshold

Not available

pH	12 - 13 Concentrate
Melting point/freezing point	Not applicable / Not available
Initial boiling point and boiling range	210 °F (98.89 °C)
Flash point	> 180.0 °F (> 82.2 °C) Tag Closed Cup
Evaporation rate	< 1 (ethyl ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	17.36 mm Hg
Vapor density	1.03 Air = 1
Relative density	1.02 at 77°F
Solubility(ies)	
Solubility (water)	100 % Complete
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Density	8.49 lb/gal
Percent volatile	96.5 - 97.5 %
VOC (Weight %)	8.01 %

10. Stability and reactivity

Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Do not mix with other chemicals. Contact with incompatible materials.
Incompatible materials	Acids. Oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort.

Information on toxicological effects

Acute toxicity Toxicity data is not available for this mixture. Data below are estimates based on summation methods.

Product	Species	Test Results
QT-TB		
Acute		
Dermal		
LD50	Rabbit	33750 mg/kg estimated

Product	Species	Test Results
Inhalation		
LC50	Mouse	5882.353 mg/l, 2 Hours estimated
		5871.021 mg/l, 4 Hours estimated
	Rat	12058.8232 mg/l, 0.5 Hours estimated
		7058.8237 mg/l, 4 Hours estimated
Oral		
LD50	Guinea pig	24837.5996 mg/kg estimated
	Mouse	27265.4043 mg/kg estimated
	Rabbit	27500 mg/kg estimated
	Rat	48439.9336 mg/kg estimated

Components	Species	Test Results
2-(2-butoxyethoxy)ethanol (CAS 112-34-5)		
Acute		
Dermal		
LD50	Rabbit	2700 mg/kg
Oral		
LD50	Guinea pig	2000 mg/kg
	Mouse	2400 mg/kg
	Rabbit	2200 mg/kg
	Rat	4500 mg/kg
Tetrasodium ethylenediamine tetraacetate (CAS 64-02-8)		
Acute		
Oral		
LD50	Rat	> 2000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Prolonged inhalation may be harmful.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product		Species	Test Results
QT-TB			
Aquatic			
Crustacea	EC50	Daphnia	27111.5469 mg/l, 48 hours estimated
Fish	LC50	Fish	14750.9004 mg/l, 96 hours estimated

Components		Species	Test Results
2-(2-butoxyethoxy)ethanol (CAS 112-34-5)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	1300 mg/l, 96 hours
Tetrasodium ethylenediamine tetraacetate (CAS 64-02-8)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	472 - 500 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

2-(2-butoxyethoxy)ethanol	0.56

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. Buyer assumes all risk and liability associated with disposal of this product (original concentration or dilution) in violation of applicable law.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products PESTICIDE DISPOSAL – Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Contaminated packaging CONTAINER DISPOSAL – Nonrefillable container. Do not reuse or refill container. Clean container promptly after emptying. Triple rinse as follows: Fill container ¼ full with water. Tip container on its side and roll it back and forth, ensuring at least one complete revolution for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Repeat this procedure two more times. Offer for recycling or reconditioning, if available. If not available, puncture and dispose in a sanitary landfill. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List or Exempt.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

FIFRA Information FIFRA: This product is a U.S. EPA Registered pesticide, EPA Reg. No. 1839-83-1658, and is subject to certain labeling requirements under Federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide products. The hazard information required on the pesticide label is reproduced here.

PRECAUTIONARY STATEMENTS - HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION
KEEP OUT OF REACH OF CHILDREN. Causes moderate eye irritation. Avoid contact with eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

FIRST AID: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	04-04-2015
Version #	01
HMIS® ratings	Health: 1 Flammability: 2 Physical hazard: 0
Disclaimer	No representations or warranties, either express or implied, of merchantability, fitness for a particular purpose, or of any nature are made with respect to the product(s) or information contained in this material safety data sheet. The information and recommendations contained in this Material Safety Data Sheet are supplied pursuant to 29 CFR 1910.1200 of the Occupational Safety and Health Standards Hazard Communication Rule. All information contained herein is presented in good faith and is believed to be appropriate and accurate. The buyer or user assumes all risks associated with the use, misuse or disposal of this product. The buyer or user is responsible to comply with all federal, state or local regulations concerning the use, misuse or disposal of these products.

MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA'S Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION

NFPA Rating: Health-3; Flammability-0; Reactivity-1; Special-0

HMIS Rating: Health-3; Flammability-0; Reactivity-1; Personal Protection-E

Manufacturer's Name: BRODY CHEMICAL
Address: 4825 S. 6200 W.
SLC, UT. 84118

DOT Hazard Classification: **CORROSIVE**
Identity (trade name as used on label)**:**
HYDROCHLORIC ACID

Date Prepared: 11/15/2002 Prepared By: RW

MSDS Number: Revision- 13

Information Calls: (801) 963-2436
EMERGENCY RESPONSE NUMBER: 1-800-424-9300

NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	Approx. % wt.	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source **
Hydrogen Chloride	7647-01-0	100	5	5	d

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 212°F.

Specific Gravity (H2O=1): 1.05

Vapor Pressure: PSIG @ 70°F (Aerosols): N/A

Vapor Pressure (Non-Aerosols)(mm Hg and Temperature): N/A

Vapor Density (Air = 1): N/A

Evaporation Rate (Butyl Acetate = 1): 1

Solubility in Water: Total

Water Reactive: None

Appearance and Odor: Clear liquid, acidic odor.

|PH: .75

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols) N/A

Auto Ignition Temperature N/A

Flammability Limits in Air by % in Volume: % LEL: N/A % UEL: N/A

FLASH POINT AND METHOD USED (non-aerosols): None
SPECIAL FIRE FIGHTING PROCEDURES: None

EXTINGUISHER MEDIA: Non-combustible

Unusual Fire & Explosion Hazards: Avoid exposure to metals, oxidants which might produce flammable hydrogen gas.

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY [X] STABLE [ ] UNSTABLE

HAZARDOUS POLYMERIZATION [ ] WILL [X] WILL NOT OCCUR

Incompatibility (Mat. to avoid): None known

Conditions to Avoid: None known

Hazardous Decomposition Products: None known

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: [X] INHALATION [ ] INGESTION [ ] SKIN ABSORPTION [ ] EYE [ ] NOT HAZARDOUS

ACUTE EFFECTS:

Inhalation: Will irritate mucous membranes.

Eye Contact: Will cause severe burns.

Skin Contact: Will cause severe burns

Ingestion: May be fatal if swallowed.

CHRONIC EFFECTS:

Medical Conditions Generally Aggravated by Exposure: None known

EMERGENCY FIRST AID PROCEDURES

Eye Contact: Flush with water and contact physician.

Skin Contact: Flush with water and contact physician.

Inhalation: Remove to fresh air and contact physician.

Ingestion: Give large amounts of water and contact physician.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (specify type): Niosh approved acid respirator.

Protective Gloves: Chemical gloves

Eye Protection: Wear protective eye wear.

Ventilation Requirements: Exhaust recommended.

Other Protective Clothing & Equipment: Pants and long sleeve shirt to minimize exposure.

Hygienic Work Practices: Wash hands and all exposed areas after use.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken If Material Is Spilled Or Released: Sweep up or flush down drain. Rinse area with water.

Waste Disposal Methods: Crush container and place in trash receptacle.

Precautions To Be Taken In Handling & Storage: Store in a cool dry area. Keep away from sources of water or heat.

Other Precautions &/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind.

** Chemical Listed as Carcinogen or Potential Carcinogen. [a] NTP [b] IARC Monograph [c] OSHA [d] Not Listed [e] Animal Data Only

Section 1 Chemical Product and Company Identification

ProlabScientific
2213 le Chatelier, Laval, Quebec, H7L 5B3
www.prolabscientific.com ✆ 1-800-556-5226
info@prolabscientific.com

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**HYDROGEN PEROXIDE, 3%**
Synonyms	Hydrogen peroxide aqueous solution, stabilized

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: No symbol required
Target organs: Respiratory and gastrointestinal systems, skin, eyes

GHS Classification:
Acute toxicity (Category 5)
Eye irritation (Category 2B)

GHS Label information: **Hazard statement:**
H303: May be harmful if swallowed.
H320: Causes eye irritation.

Precautionary statement:
P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P312: Call a POISON CENTER or doctor if you feel unwell.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	<97%	231-791-2
Hydrogen peroxide	7722-84-1	3%	231-765-0
Acetanilide	103-84-4	0.05%	203-150-7

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES IRRITATION TO EYES. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Water only! Apply vast amounts for cooling and dilution.
Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.
Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This product is a strong oxidizer which may release oxygen and promote the combustion of flammable materials. Spontaneous combustion can occur if allowed to remain in contact with oxidizable materials. Drying of product on clothing or combustible material may cause fire.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Hydrogen peroxide	TWA: 1 ppm ; 1.4 mg/m^3 (A3)	TWA: 1 ppm ; 1.4 mg/m^3	TWA: 1 ppm ; 1.4 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: Slightly pungent odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)
Boiling point: Approximately 100°C (212°F) (water)
Flash point: Data not available

Evaporation rate (Water **= 1):** <1
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 14 (water)
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): Approximately 1.0 (water)
Solubility(ies): Complete in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition. Contact with combustible materials may result in spontaneous combustion.

Incompatible materials: Acids, bases, metals, metal salts, reducing agents, organic materials, alkalies,dust and dirt contaminants, flammable substances, oxidizable materials.

Hazardous decomposition products: Oxygen, which will promote the combustion of flammable material.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 800 mg/kg [50% hydrogen peroxide]
Skin corrosion/irritation: Data not available.
Serious eye damage/irritation: Data not available.
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC classified: Group 3: Not classifiable as to its carcinogenicity to humans.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available.
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: May cause irritation.
Eyes: May cause irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: MX0900000 [Hydrogen peroxide]

Section 12 Ecological Information

Toxicity to fish: Gambusia affinis (fish, fresh water), NOEC = 2.38 - 9.86 mg/l [Hydrogen peroxide]
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacia), EC50 = 7.7 mg/l/24 hours [Hydrogen peroxide]
Toxicity to algae: Chlorella vulgaris (Algae), EC50 = 2.5 mg/l/growth rate [Hydrogen peroxide]
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2016 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Hydrogen peroxide	Listed	Not listed	Not listed	Listed	Not listed

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

SAFETY DATA SHEET

Version 5.5
Revision Date 09/16/2014
Print Date 10/11/2014

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Iodine
Product Number	:	57652
Brand	:	Fluka
Index-No.	:	053-001-00-3
CAS-No.	:	7553-56-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure, Oral (Category 1), Thyroid, H372
Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H312 + H332	Harmful in contact with skin or if inhaled
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H372	Causes damage to organs (Thyroid) through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.

Precautionary statement(s)

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves/ protective clothing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/ attention if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Iodum
Formula	:	I_2
Molecular weight	:	253.81 g/mol
CAS-No.	:	7553-56-2
EC-No.	:	231-442-4
Index-No.	:	053-001-00-3

Hazardous components

Component	Classification	Concentration
Iodine		
	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; STOT RE 1; Aquatic Acute 1; H312 + H332, H315, H319, H335, H372, H400	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Hydrogen iodide

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas. Hygroscopic.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Iodine	7553-56-2	C	0.1 ppm 1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	0.1 ppm 1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.1 ppm 1 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.01 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen		
		STEL	0.1 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Hypothyroidism Not classifiable as a human carcinogen		

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the

sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid Colour: black, violet
b)	Odour	pungent
c)	Odour Threshold	No data available
d)	pH	5.4
e)	Melting point/freezing point	Melting point/range: 113 °C (235 °F)
f)	Initial boiling point and boiling range	184 °C (363 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	0.41 hPa (0.31 mmHg) at 25 °C (77 °F)
l)	Vapour density	8.76 - (Air = 1.0)
m)	Relative density	4.930 g/cm3
n)	Water solubility	0.3 g/l at 25 °C (77 °F) - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 2.49 at 20 °C (68 °F)
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	8.76 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Rubber, Plastics, Iron and iron salts., Sulphur compounds, Ammonia, Magnesium, Zinc, Aluminum, Metals, Alkalis, Antimony salts, Arsenites, bromides, chlorides, iodides, thiocyanates, ferrous salts, hypophosphites, morphine salts, oils, creosote, phosphates, tannins, tartrates, Mixing iodine, antimony, and ammonia resulted in an explosion. A violent reaction occurs between iodine and acetaldehyde., Acetylene, Acetaldehyde, Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 14,000 mg/kg
Remarks: Diarrhoea

LC50 Inhalation - Rat - 4 h - > 4.588 mg/l
(OECD Test Guideline 403)
Remarks: Cough Respiratory disorder

LC50 Dermal - Rat - male - 1,425 mg/kg
(OPPTS 870.1200)

No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: Moderate skin irritation

Serious eye damage/eye irritation
Moderate eye irritation

Respiratory or skin sensitisation
- Mouse
Result: Does not cause skin sensitisation.
(OECD Test Guideline 429)

Germ cell mutagenicity
Hamster
Embryo
Result: negative

Mutagenicity (micronucleus test)
Mouse - male and female
Result: negative

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation. - Respiratory system

Specific target organ toxicity - repeated exposure
Oral - Causes damage to organs through prolonged or repeated exposure. - Thyroid

Aspiration hazard
No data available

Additional Information
RTECS: NN1575000

Prolonged exposure to iodides may produce iodism in sensitive individuals. Symptoms of exposure include: skin rash, running nose, headache and irritation of the mucous membrane. For severe cases the skin may show pimples, boils, hives, blisters and black and blue spots. Iodides are readily diffused across the placenta. Neonatal deaths from respiratory distress secondary to goiter have been reported. Iodides have been known to cause drug-induced fevers, which are usually of short duration.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 1.7 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.2 mg/l - 48 h
Toxicity to algae	Growth inhibition EC50 - Desmodesmus subspicatus (green algae) - 0.13 mg/l (OECD Test Guideline 201)

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3495 Class: 8 (6.1) Packing group: III
Proper shipping name: Iodine
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3495 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B

Proper shipping name: IODINE
Marine pollutant: No

IATA
UN number: 3495 Class: 8 (6.1) Packing group: III
Proper shipping name: Iodine

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Iodine	7553-56-2	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Iodine	7553-56-2	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Iodine	7553-56-2	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Eye Irrit.	Eye irritation
H312	Harmful in contact with skin.
H312 + H332	Harmful in contact with skin or if inhaled
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the

product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.5 Revision Date: 09/16/2014 Print Date: 10/11/2014

MATERIAL SAFETY DATA SHEET

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9415204 9415206 9415208 9415304 9415306 9415308 9415406 9415408 9415505 9415506
Effective Date: September 13, 2002

SECTION I NAME

Product	Iron Metal Filings
Chemical Synonyms	Iron Filings
Formula	Fe
CAS No.	7439-89-6

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

NFPA

Health	1
Flammability	0
Reactivity	1

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Iron filings	100%	N/A
CAUTION!		

SECTION III PHYSICAL DATA

Melting Point (°C)	1371 - 1483°C	Specific Gravity (H_2O = 1)	N/A
Boiling Point (°C)	2850 - 3150°C	Percent Volatile by Volume (%)	Negligible.
Vapor Pressure (mm Hg)	N/A	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	Insoluble.		
Appearance & Odor	Dark black particles; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Non-flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, water spray or foam. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

N/A

TDG **Not controlled under TDG.**

SECTION V REACTIVITY DATA

IX0210

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	Strong oxidizers, organic agents, mineral acids, water.
	No		
Hazardous Decomposition Products	N/A		
Reactive under what conditions	Slightly reactive to reactive with oxidizing agents.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Ingestion. Inhalation.
TLV	N/A
Toxicity for animals	N/A
Chronic effects on humans	There is no known effects from chronic exposure to this product. Target organs: None known.
Acute effects on humans	No specific information is available.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep away from heat, sources of ignition, incompatibles as oxidizers. Keep in a cool place. Keep container tightly closed.
Precautions	Avoid contact with skin and eyes. DO NOT ingest. If ingested, seek medical advice immediately.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Wash spill area with soap and water.
Protective Clothing	Safety glasses, lab coat, dust respirator, gloves.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No.	4	Date	September 13, 2002	Approved	Michael Raszeja

ScholAR Chemistry™

Fiche Signalétique

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS: 9415204, 9415206, 9415208, 9415304, 9415306, 9415308, 9415406, 9415408, 9415505, 9415506

Validé par: 13 septembre, 2002

SECTION I Identification

Produit	Limaille de métal de fer
Synonymes	Limaille de fer
Formule	Fe
# CAS	7439-89-6

Telephone D'urgence

416-984-3000

NFPA

Santé	1
Flammabilité	0
Reactivité	1

Niveau de risque

WHMIS

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

SECTION II Ingrédients Dangereux

Nom	%	TWA
Limaille de fer	100%	Sans objet.
ATTENTION!		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	1371 - 1483°C	Gravité spécifique (Eau = 1)	Sans objet.
Point d'ebullition (°C)	2850 - 3150°C	Volatilité % par volume	Négligeable.
Tension de vapeur (mm Hg)	Sans objet.	Taux d'évaporation (=1)	Sans objet.
Densité de la vapeur (Air=1)	Sans objet.		
Solubilité	Insoluble.		
Odeur et apparence	Noir foncée particles; inodore.		

SECTION IV Risques D'incendie ou D'explosion

			Seuil minimal	Seuil maximal
Point d'éclair	Ininflammable.	Limites d'inflmmabilité % par volume Sans objet.		

Moyens d'extinction

Utiliser des poudres chimiques SÈCHES, du CO_2, de l'eau pulvérisse ou une mousse. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Sans objet.

TMD **Substance non réglementée par le TMD (Canada).**

SECTION V Données sur la Réactivité

IX0210

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	Comburants forte, acides organiques, acides minéral, l'eau.
	non		

Produits de decomposition dangereux	Sans objet.
Conditions de Réactivité	Légèrement réactif à réactif avec les agents comburant.

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Ingestion. Inhalation.
LMP	Sans objet.
Toxicité pour les animaux	Sans objet.
Effets chroniques sur les humains	Il n'y a aucun effet connu dû à une exposition chronique à ce produit. On ne connaît aucun organe de cible.
Effets aigué sur les humains	Aucune information spécifique n'est disponible.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Conserver à l'écart de la chaleur, source d'ignition, matières incompatibles tel que oxydantes. Conserver dans un endroit frais. Conserver le récipient bien fermé.
Précautions	Éviter tout contact avec la peau et les yeux. NE PAS ingérer. Si ingéré, consulter immédiatement un médecin.
Déversement ou fuite	Utiliser les instruments nécessaires pour mettre le solide répandu dans un contenant de récupération approprié. Bien laver la surface où le solide était répandu avec du savon et de l'eau.
Vêtements de protection	Lunettes de sécurité, blouse de laboratoire, respirateur anti-poussières, gants.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	4	Date	13 septembre, 2002	Vérifié par	Michael Raszeja

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 341.00

Revision Date: August 3, 2015

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iron(III) Nitrate Solution

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Skin and serious eye damage, corrosion or irritation (Category 2, 2A). Causes skin and serious eye irritation (H315+H319).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iron(III) nitrate	7782-61-8	$Fe(NO_3)_3 \cdot 9H_2O$	404.00	4-40%
Water	7732-18-5	H_2O	18.00	60-96%

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). Immediately call a POISON CENTER or physician (P310).
If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353).
If swallowed: Rinse mouth. Do NOT induce vomiting (P301+P330+P331).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solution.
In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Contain the spill with sand or absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #3. Store with amides, nitrates, nitrites and azides.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264).
Exposure guidelines: (as iron nitrate) TLV 1 mg/m^3 (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Brown-yellow liquid. Odorless.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with oxidizers and organic material.
Shelf life: Good, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Corrosive, irritant.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD_{50}: 3250 mg/kg as iron(III) nitrate
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

[illegible]

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: August 3, 2015

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: IX0235
Revision Date: September 9, 2013
Approved by: James A. Bertsch

MSDS No.: IX0235

Section 1 Chemical Product and Company Information

Product	**ISOPROPYL ALCOHOL**
Synonyms	2-Propanol, Isopropanol

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING! FLAMMABLE!
HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION.
Avoid contact with skin and eyes. Avoid repeated or prolonged inhalation of vapors. Use with adequate ventilation. Keep away from heat, sparks and open flame. Store in a cool place. Wash thoroughly after handling. Target organs: Central nervous system, liver, kidneys.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	3
Reactivity	2
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Isopropyl alcohol	67-63-0	100%	TWA: 400 ppm; STEL: 500 ppm (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Fires involving a small amount of combustibles may be smothered by dry chemical. In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heater, smoking, electric motors or ignition sources at locations distant from material handling point. CAUTION! Flame may not be visible in daylight.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.

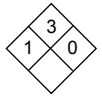
Flash Point: 12°C (53°F) Closed Cup

Autoignition temperature: 399°C (750°F) ASTM-E659-78

Explosion Limits: Lower: 2% **Upper:** 12%

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Remove all sources of ignition. Provide adequate ventilation. Recover for use if not contaminated. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

(2008 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2008), GUIDE PAGE NO. 129)

Section 7 Handling & Storage — FLAMMABLE STORAGE CODE RED

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Liquid.
Appearance: Clear, colorless.
Odor: Aromatic odor.
pH: N/A
Vapor pressure (mm Hg): 33 mm @ 20°C
Vapor Density (Air = 1): 2.1
Evaporation rate (Butyl acetate = 1): 2.3
Viscosity: N/A
Boiling point: 82°C (-130°F)
Freezing / Melting point: -90°C (~139°F)
Decomposition temperature: N/A
Solubility: Complete.
Specific gravity (H_2O = 1): 0.786 - 0.79 @ 20°C
Percent volatile (%): 100%
Molecular formula: $(CH_3)_2CHOH$
Molecular weight: 60.10

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatibilities with other materials: Strong oxidizing materials, caustics, aluminums, metals, nitroform, oleum, chlorinated compounds can react vigorously with this alcohol.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Effects of overexposure: INGESTION: 100 ml can be fatal. Aspiration hazard. EYES: Liquid may cause irritation. SKIN: Prolonged or repeated contact may cause irritation and drying, cracking and defatting of the skin. INHALATION: Exposure to high concentrations (>400 ppm) may cause eyes, nose and throat irritation and excessively high concentrations may cause narcosis (drowsiness, sleepiness). Target organs: Central nervous system, liver, kidneys.

ORL-RAT LD50: 5045 mg/kg
IHL-RAT LC50: N/A
SKN-RBT LD50: 12800 g/kg

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1219
Shipping name: Isopropanol
Hazard class: 3
Packing group: II
Exceptions: Ltd Qty ≤ 1 Lt.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (200-661-7), RCRA code D001

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

Bravo™ 1500+
UHS Floor Stripper

Revision: 2020-06-01 **Version:** 02.0

1. IDENTIFICATION

Product name: Bravo™ 1500+
UHS Floor Stripper
Product Code: 95594995
SDS #: MS0800128
Recommended use:
- Industrial/Institutional
- Floor stripper
- This product is intended to be diluted prior to use

Uses advised against: Uses other than those identified are not recommended

Manufacturer, importer, supplier:
US Headquarters
Diversey, Inc.
1300 Altura Rd., Suite 125
Fort Mill, SC 29708
Phone: 1-888-352-2249
SDS Internet Address: https://sds.diversey.com

Canadian Headquarters
Diversey Canada, Inc.
6150 Kennedy Road Unit 3
Mississauga, Ontario L5T 2J4
Phone: 1-800-668-7171

Emergency telephone number: 1-800-851-7145; 1-651-917-6133 (Int'l)

2. HAZARDS IDENTIFICATION

Classification for the undiluted product

Skin corrosion/irritation	Category 1C
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Signal word: **Danger.**

Hazard Statements
CAUSES SEVERE SKIN BURNS AND SERIOUS EYE DAMAGE. MAY CAUSE RESPIRATORY IRRITATION.
Precautionary Statements
Causes burns/ serious damage to mouth, throat and stomach. Do not breathe vapors. Avoid contact with eyes, skin and clothing. Wash affected areas thoroughly after handling. Use only in a well-ventilated area. Wear protective gloves, protective clothing and eye or face protection. IF SWALLOWED: Rinse mouth. DO NOT induce vomiting unless directed to do so by medical personnel. Drink a cupful of milk or water. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water for at least 15 minutes. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Immediately call a Poison Center (1-800-851-7145) or physician. Store in a well-ventilated place. Keep container tightly closed. Dispose of in accordance with all federal, state and local applicable regulations. SUPPLEMENTAL INFORMATION:. DO NOT MIX WITH AMMONIA, BLEACH OR OTHER CHLORINATED COMPOUNDS. Mix only with water. Can react to release hazardous gases. May vigorously react with strong alkaline products resulting in spattering and excessive heat.

Health hazards not otherwise classified (HHNOC) - Not applicable
Physical hazards not otherwise classified (PHNOC) - Not applicable

Classification for the diluted product @ 1:4

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

Signal word: Warning.

Hazard and Precautionary Statements
CAUSES SKIN AND SERIOUS EYE IRRITATION.
Avoid contact with eyes, skin and clothing. Wash affected areas thoroughly after handling. May cause irritation to mouth, throat and stomach. Wear chemical-resistant gloves. IF SWALLOWED: Rinse mouth. Drink a cupful of milk or water. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists: Get medical advice or attention. Dispose of in accordance with all federal, state and local applicable regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Classified Ingredients

Ingredient(s)	CAS #	Weight %
Monoethanolamine	141-43-5	7 - 13%
Benzyl alcohol	100-51-6	3 - 7%
Diethylene glycol butyl ether	112-34-5	1 - 5%
Sodium xylene sulfonate	1300-72-7	1 - 5%
Alcohol, C9-C11, ethoxylated	68439-46-3	> 0.1 - < 1%
Ammonium hydroxide	1336-21-6	> 0.1 - < 1%

*Exact percentages are being withheld as trade secret information

4. FIRST AID MEASURES

Undiluted Product:

Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes.
Skin: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water for at least 15 minutes.
Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Ingestion: IF SWALLOWED: Rinse mouth. DO NOT induce vomiting unless directed to do so by medical personnel. Drink a cupful of milk or water.

Most Important Symptoms/Effects: No information available.
Immediate medical attention and special treatment needed Not applicable.

Diluted Product:

Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists: Get medical advice/attention
Skin: IF ON SKIN: Wash with plenty of soap and water If skin irritation occurs: Get medical advice/attention
Inhalation: No specific first aid measures are required
Ingestion: IF SWALLOWED: Rinse mouth. Drink a cupful of milk or water.

5. FIRE-FIGHTING MEASURES

Specific methods:	No special methods required
Suitable extinguishing media:	The product is not flammable. Extinguish fire using agent suitable for surrounding fire.
Specific hazards:	Corrosive material (See sections 8 and 10).

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Extinguishing media which must not be used for safety reasons: No information available.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Put on appropriate personal protective equipment (see Section 8.).
Environmental precautions and clean-up methods: Clean-up methods - large spillage. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use a water rinse for final clean-up.

7. HANDLING AND STORAGE

Handling: Can react to release hazardous gases. May vigorously react with acids resulting in spattering and excessive heat. Do not mix with other products or chemicals except as directed on the label. Mix only with water. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not taste or swallow. Product residue may remain on/in empty containers. All precautions for handling the product must be used in handling the empty container and residue. Avoid breathing vapors or mists. Use only with adequate ventilation. Remove and wash contaminated clothing and footwear before re-use. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.
Storage: Keep tightly closed in a dry, cool and well-ventilated place.
Aerosol Level (if applicable) : Not applicable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines: .

Ingredient(s)	CAS #	ACGIH	OSHA
Monoethanolamine	141-43-5	6 ppm (STEL) 3 ppm (TWA)	3 ppm (TWA) 6 mg/m^3 (TWA)
Diethylene glycol butyl ether	112-34-5	10 ppm (TWA)	

Undiluted Product:
Engineering measures to reduce exposure:
Good general ventilation should be sufficient to control airborne levels.

Personal Protective Equipment
It is the responsibility of the employer to determine the potential risk of exposure to hazardous chemicals for employees in the workplace in order to determine the necessity, selection, and use of personal protective equipment.

Eye protection: Chemical-splash goggles.
Hand protection: Chemical-resistant gloves.
Skin and body protection: Protective footwear. Wear suitable protective clothing.
Respiratory protection: No personal protective equipment required under normal use conditions.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Diluted Product:
Engineering measures to reduce exposure:
Good general ventilation should be sufficient to control airborne levels.

Personal Protective Equipment
Eye protection: Chemical-splash goggles.
Hand protection: Chemical-resistant gloves.
Skin and body protection: No personal protective equipment required under normal use conditions.
Respiratory protection: No personal protective equipment required under normal use conditions.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Evaporation Rate: No information available
Odor threshold: No information available.
Melting point/range: Not determined
Autoignition temperature: No information available
Solubility in other solvents: No information available

Color: Clear Straw
Odor: Product specific Solvent
Boiling point/range: Not determined
Decomposition temperature: Not applicable
Solubility: Completely Soluble
Relative Density (relative to water): 1.019

Density: 1.019 Kg/L
Bulk density: No information available
Flash point (°F): > 200 °F > 93 °C
Viscosity: No information available
VOC: 10.7 % *
Flammability (Solid or Gas): Not applicable
Sustained combustion: Not applicable
Explosion limits: - upper: Not determined **- lower:** Not determined

Vapor density: No information available
Vapor pressure: No information available.
Partition coefficient (n-octanol/water): No information available
Elemental Phosphorus: 0.00 % by wt.
pH: > 11
Corrosion to metals: Not corrosive to metals

Dilution pH:
≈ 11.45
Dilution Flash Point (°F): > 200 °F > 93.3 °C
VOC % by wt. at use dilution: 2 %

* - Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Consumer Products, Sections 94508

10. STABILITY AND REACTIVITY

Reactivity:	Not Applicable
Stability:	The product is stable
Possibility of hazardous reactions:	May vigorously react with acids resulting in spattering and excessive heat.
Hazardous decomposition products:	None reasonably foreseeable.
Materials to avoid:	Acids. Strong acids. Do not mix with any other product or chemical unless specified in the use directions.
Conditions to avoid:	None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:
Skin contact, Inhalation, Ingestion, Eye contact

Delayed, immediate, or chronic effects and symptoms from short and long-term exposure
Skin contact: Unlikely to be irritant in normal use.
Eye contact: Corrosive. Causes serious eye damage. Symptoms may include pain, burning sensation, redness, watering, blurred vision or loss of vision.
Ingestion: Causes burns/ serious damage to mouth, throat and stomach. Symptoms may include stomach pain and nausea.
Inhalation: May cause irritation and corrosive effects to nose, throat and respiratory tract. Symptoms may include coughing and difficulty breathing.
Sensitization: No known effects.
Target Organs (SE): No information available
Target Organs (RE): None known

Numerical measures of toxicity

ATE - Oral (mg/kg):	>5000
ATE - Dermal (mg/kg):	>5000
ATE - Inhalatory, mists (mg/l):	11

12. ECOLOGICAL INFORMATION

Ecotoxicity: No information available.

Persistence and Degradability: No information available.

Bioaccumulation: No information available.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products (undiluted product): This product, as sold, if discarded or disposed, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the waste solution meets RCRA criteria for hazardous waste. Dispose in compliance with all Federal, state, provincial, and local laws and regulations.

Waste from residues / unused products (diluted product): This product, as sold, if discarded or disposed, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the waste solution meets RCRA criteria for hazardous waste. Dispose in compliance with all Federal, state, provincial, and local laws and regulations.

RCRA Hazard Class (undiluted product): Not Regulated
RCRA Hazard Class (diluted product): Not Regulated
Contaminated Packaging: Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT/TDG/IMDG: The information provided below is the full transportation classification for this product. This description does not account for the package size(s) of this product, that may fall under a quantity exception, according to the applicable transportation regulations. When shipping dangerous goods, please consult with your internal, certified hazardous materials specialist to determine if any exceptions can be applied to your shipment.

DOT (Ground) Bill of Lading Description: UN2491, ETHANOLAMINE SOLUTIONS, 8, III

IMDG (Ocean) Bill of Lading Description: UN2491, ETHANOLAMINE SOLUTIONS, 8, III

15. REGULATORY INFORMATION

International Inventories at CAS# Level
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL).

RIGHT TO KNOW (RTK)

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:
Water	7732-18-5	-	-	-	-
Monoethanolamine	141-43-5	X	X	X	-
Benzyl alcohol	100-51-6	X	-	X	-
Diethylene glycol butyl ether	112-34-5	-	X	-	-
Sodium xylene sulfonate	1300-72-7	-	-	-	-
Alcohol, C9-C11, ethoxylated	68439-46-3	-	-	-	-
Ammonium hydroxide	1336-21-6	X	X	X	X

CERCLA/ SARA

Ingredient(s)	CAS #	Weight %	CERCLA/SARA RQ (lbs)	Section 302 TPQ (lbs)	Section 313
Diethylene glycol butyl ether	112-34-5	1 - 5%			X
Ammonium hydroxide	1336-21-6	> 0.1 - < 1%	1000	100	X

Ingredient(s)	CAA HAP	CAA ODS	CWA Priority Pollutants
Diethylene glycol butyl ether	X		

Ingredient(s)	CAS #	NPRI
Diethylene glycol butyl ether	112-34-5	X

16. OTHER INFORMATION

NFPA (National Fire Protection Association)
Rating Scale: (Low Hazard) 0 - 4 (Extreme Hazard)

Health 3
Flammability 0
Instability 0
Special Hazards -

Diluted Product:

Health 2
Flammability 0
Instability 0
Special Hazards -

Revision: 2020-06-01
Version: 02.0

Reason for revision:	Not applicable
Prepared by:	North American Regulatory Affairs
Additional advice:	• Does not contain an added fragrance

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

SAFETY DATA SHEET

+Optimize Thick Hand Sanitizer

Section 1. Identification

GHS product identifier : +Optimize Thick Hand Sanitizer

Other means of identification : Not available.

Product code : 4022054/4022052

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Supplier's details : Keystone Research & Pharmaceutical
480 South Democrat Rd.
Gibbstown, NJ 08027
856-663-4700

Emergency telephone number (with hours of operation) : **(800) 535-5053**

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 68.2%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1.2%

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Flammable liquid and vapor.
Causes serious eye irritation.
Causes skin irritation.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	CAS number	EC number	INCI Name	%
ethanol	64-17-5	200-578-6	ALCOHOL	≥60 - ≤75
glycerol	56-81-5	200-289-5	GLYCERIN	≤3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Section 4. First aid measures

If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
redness
irritation

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ethanol	**ACGIH TLV (United States, 3/2019).** STEL: 1000 ppm 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 1000 ppm 10 hours. TWA: 1900 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.
glycerol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Opaque.

Odor : Alcohol-like.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: 25°C (77°F)

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.9

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m³	4 hours
	LD50 Oral	Rat	7 g/kg	-
glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 Ul	-
	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	400 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

Classification

Product/ingredient name	OSHA	IARC	NTP
ethanol	-	3	-

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
redness
irritation

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks

Section 12. Ecological information

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
ethanol	-0.35	-	low
glycerol	-1.76	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	UN1170	UN1170	UN1170	UN1170	UN1170	UN1170
UN proper shipping name	Ethanol Solutions	Ethanol Solutions	Ethanol Solutions	Ethanol Solutions	Ethanol Solutions	Ethanol Solutions
Transport hazard class(es)	3 	3  	3 	3  	3  	3 
Packing group	III	III	III	III	III	III

Section 14. Transport information

Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark).
The marine pollutant mark is not required when transported by road or rail.

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined
Commerce control list precursor: Triethanolamine

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
ethanol	≥60 - ≤75	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 1A
glycerol	≤3	EYE IRRITATION - Category 2A

State regulations

Massachusetts : The following components are listed: ETHYL ALCOHOL; UNDENATURED ALCOHOL; GLYCERINE MIST

New York : None of the components are listed.

New Jersey : The following components are listed: ETHYL ALCOHOL; ALCOHOL; GLYCERIN; 1,2, 3-PROPANETRIOL

Pennsylvania : The following components are listed: UNDENATURED ALCOHOL; ETHANOL; 1,2, 3-PROPANETRIOL

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Inventory list

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Europe : Not determined.

Japan : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Thailand : Not determined.

Turkey : Not determined.

United States : All components are listed or exempted.

Viet Nam : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	3
Physical hazards	0

Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing	:	8/31/2020
Date of issue/Date of revision	:	8/31/2020
Date of previous issue	:	7/20/2020
Version	:	0.03
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	:	Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Information contained within this SDS is only to be distributed as required by law.

SAFETY DATA SHEET
Klean-Strip Pro Paint Thinner

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: [illegible]

Company Name: [illegible]
[illegible]
[illegible]

Phone Number: [illegible]

Web site address: [illegible]

Emergency Contact: [illegible]
Information: [illegible]

Intended Use: [illegible]

Synonyms: [illegible]

Additional Information [illegible]

2. HAZARDS IDENTIFICATION

Acute Toxicity: Inhalation, Category 4
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2B
Specific Target Organ Toxicity (single exposure), Category 3

GHS Signal Word: **Warning**

GHS Hazard Phrases: [illegible]

GHS Precaution Phrases: [illegible]

GHS Response Phrases: [illegible]

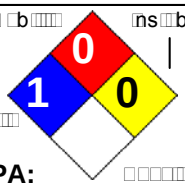
GHS Storage and Disposal Phrases: [illegible]

Hazard Rating System:

HMIS:

HEALTH	1
FLAMMABILITY	0
PHYSICAL	0
PPE	X

NFPA:



OSHA Regulatory Status:

Potential Health Effects (Acute and Chronic):

Inhalation:

Skin Contact:

Eye Contact:

Ingestion:

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #

Additional Chemical Information

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

Note to Physician:

5. FIRE FIGHTING MEASURES

Flash Pt:

Explosive Limits:

Autoignition Pt:

Suitable Extinguishing Media:

Unsuitable Extinguishing Media:

Fire Fighting Instructions:

Flammable Properties and Hazards:

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling:

Precautions To Be Taken in Storing:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits

Respiratory Equipment (Specify Type):

Eye Protection:

Protective Gloves:

Other Protective Clothing:

Engineering Controls (Ventilation etc.):

Work/Hygienic/Maintenance Practices:

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[illegible]
Appearance and Odor:	[illegible]
Melting Point:	[illegible]
Boiling Point:	[illegible]
Autoignition Pt:	[illegible]
Flash Pt:	[illegible]
Explosive Limits:	[illegible]
Specific Gravity (Water = 1):	[illegible]
Vapor Pressure (vs. Air or mm Hg):	[illegible]
Vapor Density (vs. Air = 1):	[illegible]
Evaporation Rate:	[illegible]
Solubility in Water:	[illegible]
Viscosity:	[illegible]
pH:	[illegible]
Percent Volatile:	[illegible]
VOC / Volume:	[illegible]
Additional Physical Information	[illegible]

10. STABILITY AND REACTIVITY

Stability:	[illegible]
Conditions To Avoid - Instability:	[illegible]
Incompatibility - Materials To Avoid:	[illegible]
Hazardous Decomposition Or Byproducts:	[illegible]
Possibility of Hazardous Reactions:	[illegible]
Conditions To Avoid - Hazardous Reactions:	[illegible]

11. TOXICOLOGICAL INFORMATION

Toxicological Information:

Carcinogenicity/Other Information:

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA

12. ECOLOGICAL INFORMATION

General Ecological Information:

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name:
DOT Hazard Class:
UN/NA Number:

Additional Transport Information:

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists

Regulatory Information Statement:

16. OTHER INFORMATION

Revision Date:
Preparer Name:
Additional Information About This Product:
Company Policy or Disclaimer:

SAFETY DATA SHEET
Klean-Strip Pro Paint Thinner

[illegible]

Lauric Acid

MSDS # □□□□□

Section 1: Product and Company Identification

Lauric Acid

Synonyms/General Names: Dodecanoic acid
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White, waxy solid; slight odor.

HMIS (0 to 4)

Health	**1**
Fire Hazard	**1**
Reactivity	**0**

CAUTION! Body tissue irritant and combustible solid.
Target organs: None known.□
□
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Lauric Acid (143-07-7), 99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Combustible solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines: Lauric Acid: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	$CH_3(CH_2)_{10}COOH$.	**Appearance**	White, waxy solid.
Molecular weight	200.32.	**Odor**	Slight odor.
Specific Gravity	0.89 g/mL @ 25°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Insoluble.
Melting Point	43°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	190°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	110°C (230°F).	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizing agents, alkalis.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Lauric Acid: LD50 [oral, rat]; 12 g/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (205-582-1).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Material Safety Data Sheet

Version 4.6
Revision Date 05/05/2013
Print Date 06/04/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Lead(II) nitrate
Product Number	:	31137
Brand	:	Sigma-Aldrich
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Oxidizer, Carcinogen, Target Organ Effect, Toxic by inhalation., Harmful by ingestion., Irritant, Teratogen

GHS Classification
Oxidizing solids (Category 2)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Serious eye damage (Category 1)
Reproductive toxicity (Category 1A)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H272	May intensify fire; oxidiser.
H302 + H332	Harmful if swallowed or if inhaled
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P220	Keep/Store away from clothing/ combustible materials.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

	present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	2

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	2
Special hazard.:	OX

Potential Health Effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula	:	N_2O_6Pb
Molecular Weight	:	331.21 g/mol

Component		Concentration
Lead nitrate Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
CAS-No. EC-No. Index-No.	10099-74-8 233-245-9 082-001-00-6	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx), Lead oxides

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Remarks	See 1910.1025			
Lead nitrate	10099-74-8	TWA	0.075 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Confirmed animal carcinogen with unknown relevance to humans			
		TWA	0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Central Nervous System impairment Hematologic effects Peripheral Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans varies			
		TWA	0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
	See Appendix C			

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid
Colour	white

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 470 °C (878 °F) - dec.
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Auto-ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	4.53 g/cm3
Water solubility	500 g/l
Partition coefficient: n-octanol/water	no data available

Solubility in other solvents	Ethanol 0.4 g/l
	Methanol 13.3 g/l
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evapouration rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong reducing agents, Organic materials, Powdered metals

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx), Lead oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
Inhalation LC50
Dermal LD50
no data available

Other information on acute toxicity
LD50 Intravenous - rat - 93 mg/kg

LD50 Intraperitoneal - mouse - 74 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC:	2B - Group 2B: Possibly carcinogenic to humansRe-evaluation of inorganic lead compounds, IARC Monograph (Vol. 87) (February 2004) (Lead nitrate)
	2A - Group 2A: Probably carcinogenic to humans (Lead nitrate)
IARC:	2B - Group 2B: Possibly carcinogenic to humansRe-evaluation of inorganic lead compounds, IARC Monograph (Vol. 87) (February 2004) (Lead nitrate)
	2A - Group 2A: Probably carcinogenic to humans (Lead nitrate)
NTP:	Reasonably anticipated to be a human carcinogen (Lead nitrate)

Reasonably anticipated to be a human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Lead nitrate)

OSHA: 1910.1025 (Lead nitrate)

Reproductive toxicity

no data available

Teratogenicity

Developmental Toxicity - rat
Specific Developmental Abnormalities: Central nervous system.

Known human reproductive toxicant

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Potential health effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Lead salts have been reported to cross the placenta and to induce embryo- and feto- mortality.

Synergistic effects
no data available

Additional Information
RTECS: OG2100000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 1.5 mg/l - 96.0 h
	LC50 - Cyprinus carpio (Carp) - 0.4 - 1.3 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.5 - 2.0 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1469 Class: 5.1 (6.1) Packing group: II
Proper shipping name: Lead nitrate
Reportable Quantity (RQ): 10 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1469 Class: 5.1 (6.1) Packing group: II EMS-No: F-A, S-Q
Proper shipping name: LEAD NITRATE
Marine pollutant: Marine pollutant

IATA
UN number: 1469 Class: 5.1 (6.1) Packing group: II
Proper shipping name: Lead nitrate

15. REGULATORY INFORMATION

OSHA Hazards
Oxidizer, Carcinogen, Target Organ Effect, Toxic by inhalation., Harmful by ingestion., Irritant, Teratogen

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Lead nitrate	10099-74-8	1993-04-24

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Lead nitrate	10099-74-8	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Lead nitrate	10099-74-8	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Lead nitrate	10099-74-8	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Lead nitrate	CAS-No. 10099-74-8	Revision Date 1992-10-01

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: LL0080
Revision Date: September 19, 2013
Approved by: James A. Bertsch

MSDS No.: LL0080

Section 1 Chemical Product and Company Information

Product	**LEAD METAL**
Synonyms	N/A

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

CAUTION!
MAY BE HARMFUL OR FATAL IF SWALLOWED OR INHALED AS DUST OR FUME. Suspect cancer hazard. Store away from incompatible materials.
Target organs: Lungs, kidneys.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	3
Fire	0
Reactivity	0
Contact	1

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Lead metal	7439-92-1	99+%	TWA: 0.05 mg/m^3 (Lead and inorganic compounds as Pb) (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: Use water spray to keep fire-exposed containers cool. In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Molten aluminum may explode on contact with water.

Extinguishing Media: Sand, dry chemical, or CO2 should be used on surrounding fire. Do NOT use water on fire where molten metal is present.

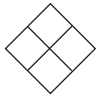
Flash Point: N/A

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Wet-sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water after material pickup is complete. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale fumes. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Silvery gray, metallic shots.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: 1753°C (3187°F)
Freezing / Melting point: 327°C (621°F)
Decomposition temperature: N/A
Solubility: Insoluble.
Specific gravity (H_2O = 1): 11.34 (20/4°C)
Percent volatile (%): N/A
Molecular formula: Pb
Molecular weight: 207.19

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures and heat.
Hazardous polymerization: Will not occur.

Incompatibilities with other materials: Strong oxidizers, hydrogen peroxide, acids.

Hazardous decomposition products: Emits toxic fumes of lead.

Section 11 Toxicological Information

Effects of overexposure: WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER. Risk of cancer depends on level and duration of exposure. Sheets have sharps edges and may cause cuts or scratches. Not absorbed through skin. Contact with eyes may cause transient irritation. Ingestion may cause anorexia, vomiting, malaise, convulsions due to increased intracranial pressure. Inhalation of dust or fumes can cause lead poisoning. Exercise appropriate procedures to minimize potential hazards.

RTECS #: OF7525000
Intraperitoneal-rabbit: Lowest published toxic dose: 50 mg/kg
Oral-woman: Lowest published toxic dose: 450 mg/kg/6 year

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (231-100-4), RCRA code D008, DSL-listed, Ca Prop 65-listed.

Section 16 Additional Information

US – OSHA SAFETY DATA SHEET

Issue Date: 4/2/2015 **Revision Date:** 9/06/2018

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Lead Shot**

OTHER PRODUCT NAMES: Reload Lead, Magnum Shot, Chill Shot, Lawrence Brand Shot, West Coast Shot, Free Flow Shot, Ballast Shot, Radiation Shot, Buck Shot, Copper Plated Shot

MANUFACTURER:
Mayco Manufacturing, LLC
18 West Oxmoor Road
Birmingham, AL 35209
205-942-4242 (Call for additional information)

EMERGENCY TELEPHONE NUMBER: ChemTel – 800-255-9324

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification:

Category	Hazard and Precautionary Statements	
Health	H302	Harmful if swallowed
Acute Toxicity – Category 4	H332	Harmful if inhaled
Reproductive – Category 1A	H360df	May damage fertility or unborn child
Carcinogenicity – Category 1B	H373	May cause damage to the central nervous system and systems for reproduction organs through prolonged or repeated exposure
Specific Target Organ Toxicity – Category 2		
	P201	Obtain special instructions before use
	P202	Do not handle until all safety precautions have been read and understood
	P260	Do not breathe dust/vapors
	P281	Use personal protective equipment as required
	P308 + P313	If exposed or concerned, get medical advice/attention
Environmental	H400	Very toxic to aquatic life
Aquatic Chronic – 1	H410	Very toxic to aquatic life with long lasting effects
Aquatic Acute – 1		
Handling	P405	Store locked up
	P501	Dispose of contents/container in accordance with local/regional/national/international regulations

GHS Label: Lead Products

Signal Word: DANGER!

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Material	% by Wt.	CAS #	OSHA EXPOSURE LIMIT
Lead	91 – 99.99	7439-92-1	0.05 mg/cubic meter
Antimony	0.5 – 6.5	7440-36-0	0.50 mg/cubic meter
Arsenic	0.1 – 2.0	7440-38-2	0.01 mg/cubic meter
Copper	0.1 – 1.0	7440-50-8	0.10 mg/cubic meter

SECTION 4: FIRST AID MEASURES

Eye Contact: Remove contact lenses if applicable and flush eyes with water for at least 15 minutes.
Skin Contact: Wash skin thoroughly. If contact with molten metal, cool skin rapidly and seek medical assistance.
Ingestion: Do not induce vomiting. Call poison control center or doctor.
Inhalation: Remove from exposure and rest in a position comfortable for breathing.
Important Symptoms & Effects, Acute & Delayed: Lead poisoning can occur through acute or chronic doses. Symptoms include headaches, abdominal pain, memory loss, kidney failure, anemia, and change in skin tone, reproductive problems, weakness, pain, or tingling.
Indication of Medical Attention: If any acute or chronic symptoms arise or if feeling unwell after exposure, seek medical advice.

SECTION 5: FIRE-FIGHTING MEASURES

Flash Point: Not Applicable
Flammable Limits: Not Applicable
Extinguishing Media: Dry chemical, foam or CO_2. Do not use water when molten metal is present.
Hazards Combustion Products: Molten metals produce fume, vapor and or dust that may be toxic and/or respiratory irritants. Lead metal is not flammable or explosive. This product or its dust can react violently with strong oxidizing agents.
Fire Fighting Procedures: Use full-body protective clothing. Wear self-contained, full-face, positive pressure breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Allow metal to cool and solidify if molten. Lead dust or particulate should be vacuumed using a vacuum with a HEPA filter or wet-swept. Place spilled materials in dry, closed containers for proper disposal or recycling. Do not dry sweep or use compressed air.

SECTION 7: HANDLING AND STORAGE

Handling: Minimize dust generation and accumulation. Follow good hygiene practices. Do not eat, drink, smoke or apply personal products when handling. Avoid contact with eyes, skin, and clothing. Wear personal protective equipment as necessary and recommended in Section 8. Wash exposed skin with soap and water after handling.
Storage: Store away from strong oxidizers. Keep away from food and beverages. Protect from physical damage and surface oxidation.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lead 7439-92-1	TWA: 0.15 mg/m³Pb	TWA: 0.05 mg/m³Pb	IDLH: 100mg/m³Pb TWA: 0.050 mg/m³Pb
Antimony 7440-36-0	TWA: 0.5 mg/m³Sb	TWA: 0.5 mg/m³Sb	IDLH: 0.50 mg/m³Sb TWA: 0.5 mg/m³Sb
Arsenic 7440-38-2	TWA: 0.01 mg/m³,A1 As	TWA: 0.01 mg/m³As	IDLH: 5 mg/m³As TWA: 0.002 mg/m³As 15-minute ceiling
Copper 7440-50-8	TWA: 1.0 mg/m³Cu	TWA: 1.0 mg/m³Cu	IDLH: 2000 mg/m³Cu TWA: 1.0 mg/m³Cu

Engineering Controls: Handle and process in well-ventilated areas. Ensure that dust-handling systems are designed in a manner to prevent the escape of dust/fume into the work area. Emergency eyewash stations and safety showers should be available in the immediate vicinity of use. Ensure compliance with local/regional/national/international regulations.
Personal Protective Equipment: Protective goggles, gloves, and clothing, as needed. Respiratory protection, as necessary when exposures are unknown or above the PEL.
Eye/Face Protection: Use safety glasses with side shields or chemical goggles.
Skin and Body Protection: Protective clothing is required if exposure exceeds the PEL or TLV or where the possibility of skin or eye irritation exists. Full body cotton or disposable coveralls and disposable gloves should be worn during use and handling. Clothing and gloves should be left at work site and either properly disposed or laundered after use in accordance with applicable regulations. Personal clothing, including shoes/boots, should be protected from contamination. If working with molten or hot metals use heat-resistant gloves.
Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn as appropriate for protection from toxic dust.
General Hygiene Considerations: Do not eat, drink, smoke or apply cosmetics when using this product. Thoroughly wash face, hands and other exposed skin after handling or processing. Contaminated work clothing should not be allowed outside the workplace except for disposal or laundering.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Appearance: Gray with bluish or silvery tint
Odor: N/A
pH: N/A
Melting Point: 327.43°C (621.4°F)
Boiling Point: 1740°C (3164°F)
Boiling Range: N/A
Flash Point: N/A
Evaporation Rate: N/A
Flammability: N/A
Upper/Lower Flammability Limit: N/A
Molecular weight: 207.21g/mol
Viscosity: N/A
Decomposition Temperature: N/A
Auto Ignition Temperature: N/A
Partition Coefficient: N/A
Solubility: N/A
Specific Gravity (Relative Density): 9.96
Vapor Density: N/A
Vapor Pressure: 1mm Hg@ 973°C (1783°F)

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Stable under normal conditions.
Chemical Stability: Stable under normal conditions.
Possible Hazardous Reactions: None under normal processing.
Hazardous Polymerization: Hazardous polymerization does not occur.
Conditions to Avoid: Incompatible materials
Incompatible Materials: Strong oxidizing agents
Hazardous Decomposition Products: Lead oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Exposure: Hazardous exposure can occur when the product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume. Main routes of exposure include ingestion and inhalation.
Chronic and Acute Related Symptoms/Effects: Acute ingestion of lead may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity including kidney failure, anemia, and reproductive problems, and must be treated by a physician. Chronic exposure may cause cancer or lead poisoning. Acute inhalation of lead dust may cause irritation of upper respiratory tract and lungs and can result in both acute and chronic overexposure.
Measures of Toxicity:
Acute Toxicity Estimate-Lead: 500 mg/kg body weight
Acute Toxicity-Antimony: LD_{50} (mouse) – 145 mg/kg
Carcinogenic Effects:
May cause cancer. Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is currently lacking.
IARC Group: 2A
National Toxicology Program (NTP) Status: Reasonably anticipated to be a human carcinogen.
Additional Health Data: Heavy metals, such as lead and antimony, are taken into the body primarily by inhalation and ingestions. Most inhalation problems can be avoided with adequate precautions such as ventilation and respiratory protection. Follow good personal hygiene practices to avoid inhalation and incidental ingestions. Restrict the use and presence of food, tobacco, and cosmetics to non-contaminated areas. Wash before eating, smoking or leaving the work site. Keep contaminated clothing and PPE out of non-contaminated areas. Do not allow contaminated clothing of PPE to be taken home. These products are intended for professional and industrial uses and should be isolated from children and their environment.

SECTION 12: ECOLOGICAL INFORMATION

Environmental Fate: Toxic to aquatic life and terrestrial environments.
Persistence and Degradability: Lead is persistent in soil and sediments. No data on environmental degradation.
Bioaccumulation Potential: Lead bioaccumulates in animals and plants.
Mobility in Soil: Lead accumulates in soil but is not particularly mobile.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste materials or by-products formed during handling or processing, and contaminated packaging should be properly characterized and disposed in accordance with applicable local/regional/national/international rules and regulations or recycled as appropriate. Consult local, state or federal environmental agencies for applicable requirements.

SECTION 14: TRANSPORT INFORMATION

The lead products covered by this Safety Data Sheet are not subject to DOT regulation. Waste materials or by-products formed during handling or processing or due to damage may be subject to regulation. Consult DOT for applicable requirements.

SECTION 15: REGULATORY INFORMATION

US Federal Regulations:
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS No.	Weight - %	SARA 313 – Threshold Values %
Lead	7439-92-1	91-99.99	0.1
Antimony	7440-36-0	0.5 – 6.5	1.0
Arsenic	7440-38-2	0.1 – 2.0	0.1
Copper	7440-50-8	0.1 – 1.0	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard Yes

Chronic Health Hazard Yes

CERCLA (Comprehensive Environmental Response, Compensation and Liability Act)

Lead has an RQ (reportable quantity) of 10 pounds

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants	CWA – Hazardous Substances
Lead - 7439-92-1	10 lb.	X	X	X
Antimony - 7440-36-0	5000 lb.	X	X	X
Arsenic - 7440-38-2	1 lb.	X	X	X
Copper - 7440-50-8	1 lb.	-	X	X

TSCA (Toxic Substance Control Act)

Lead is listed on the TSCA inventory

U.S. State Regulations:

California Proposition 65 "WARNING"

This product can expose you to chemicals including Lead and Antimony, which is known in the State of California to cause cancer and birth defects or other reproductive harm. Form more information go to www.P65Warnings.ca.gov.

Chemical Name	California Proposition 65
Lead – 7439-92-1	Cancer
Antimony – 7440-36-0	Cancer
Arsenic – 7440-38-2	Developmental
Copper – 7440-50-8	Cancer

US State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Lead – 7439-92-1	X	X	X
Antimony – 7440-36-0	X	X	X
Arsenic – 7440-38-2	X	X	X
Copper – 7440-50-8	X	X	X

SECTION 16: OTHER INFORMATION

Issue Date:	27-Augustl-2018
Last Revision Date:	30-November-2017
Revision Note:	More concise information. Corrected transport information. Minor reformatting.

Disclaimer: The information provided in this Safety Data Sheet is based upon information and sources available at the time of its preparation or revision which the manufacturer believes is reliable but is beyond its supervision or control. There is no warranty, expressed or implied, with respect to this information and the manufacturer assumes no liability resulting from its use. The manufacturer assumes no responsibility and expressly disclaims liability for loss, damage or expense arising out of or in any way connected with the handling, processing, storage, use or disposal of these products. It is the user's responsibility to determine the suitability of this product and to comply with the requirements of all applicable rules and regulations regarding the handling, use, processing, and disposal of these products.

SAFETY DATA SHEET **SDS No.:** LL0170 **GENERAL STORAGE CODE GREEN**

Section 1 Chemical Product and Company Information

80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**LIMEWATER SOLUTION**
Synonyms	Calcium Hydroxide, Water Solution

Section 2 Hazards Identification

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: None required
Target organs: None known

GHS Classification:
Eye irritation (Category 2B)

GHS Label information: **Hazard statement(s):**
H320: Causes eye irritation.

Precautionary statement(s):
P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Nommé Chimique	# CAS	%	EINECS
Water	7732-18-5	99.86%	231-791-2
Calcium hydroxide	1305-62-0	0.14%	215-137-3

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Calcium hydroxide	TWA: 5 mg/m^3	TWA: 5 mg/m^3 respirable fraction	TWA: 5 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: No odor.
Odor threshold: Data not available.
pH: 13.0
Melting / Freezing point: Approximately 0°C (32°F) (water)
Boiling point: Approximately 100°C (212°F) (water)
Flash point: Data not available

Evaporation rate (Water = 1): <1
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 14 (water)
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): Approximately 1.0 (water)
Solubility(ies): Complete in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Strong acids, fluorine.

Hazardous decomposition products: None known.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 7,340 mg/kg [Calcium hydroxide]
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: May cause irritation.
Eyes: May cause irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: EW2800000 [Calcium hydroxide]

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Calcium hydroxide	Listed	Not listed	Not listed	Listed	Not listed	E

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

SAFETY DATA SHEET
LIQUITEX PROFESSIONAL SPRAY PAINT

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name LIQUITEX PROFESSIONAL SPRAY PAINT

Recommended use of the chemical and restrictions on use

Application Fine Art Painting

Details of the supplier of the safety data sheet

Supplier
ColArt Americas Inc.
11 Constitution Avenue
Piscataway
New Jersey 08855 - 1396
USA
1-732-562-0770
R.Enquiries@colart.co.uk

Contact Person Regulatory Manager

Manufacturer

Emergency telephone number

Emergency telephone For health information only call 1-800-628-3385 Piscataway NJ 08855.

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Aerosol 2 - H223, H229

Health hazards Eye Irrit. 2A - H319

Environmental hazards Not Classified

Label elements

Pictogram

Signal word Warning

Hazard statements
H223 Flammable aerosol.
H229 Pressurized container: may burst if heated.
H319 Causes serious eye irritation.

Precautionary statements
P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P264 Wash contaminated skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

LIQUITEX PROFESSIONAL SPRAY PAINT

3. Composition/information on ingredients

Mixtures

Ethyl Alcohol		**10-30%**
CAS number: 64-17-5	REACH registration number: 01-2119457610-43-XXXX	
Classification Flam. Liq. 2 - H225 Eye Irrit. 2A - H319		

ACETONE		**1-5%**
CAS number: 67-64-1	REACH registration number: 01-2119471330-49-xxxx	
Classification Flam. Liq. 2 - H225 Eye Irrit. 2 - H319 STOT SE 3 - H336		

METHANOL		**<1%**
CAS number: 67-56-1	REACH registration number: 01-2119433307-44-xxxx	
Classification Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331		

The Full Text for all Hazard Statements are Displayed in Section 16.

Composition comments Ethyl Alcohol has a specific Concentration limit of >50% for causes serious eye irritation (H319). Therefore this classification is not applied to the product.,-

4. First-aid measures

Description of first aid measures

General information Move affected person to fresh air at once.

Inhalation Keep affected person away from heat, sparks and flames. Move affected person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Keep affected person warm and at rest. Get medical attention immediately.

Ingestion Rinse mouth thoroughly with water. Do not induce vomiting. Get medical attention.

Skin Contact Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

Eye contact If liquid has entered the eyes, proceed as follows. Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

LIQUITEX PROFESSIONAL SPRAY PAINT

5.Fire-fighting measures

Extinguishing media

Suitable extinguishing media Extinguish with the following media: Powder. Dry chemicals, sand, dolomite etc. Water spray, fog or mist.

Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up. FLAMMABLE. May explode when heated or when exposed to flames or sparks.

Advice for firefighters

Protective actions during firefighting Containers close to fire should be removed or cooled with water. Use water to keep fire exposed containers cool and disperse vapors.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Provide adequate ventilation. Avoid inhalation of vapors. Use suitable respiratory protection if ventilation is inadequate.

Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Contain spillage with sand, earth or other suitable non-combustible material.

Methods and material for containment and cleaning up

Methods for cleaning up Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Leave small quantities to evaporate, if safe to do so. Do not allow material to enter confined spaces, due to the risk of explosion.

7. Handling and storage

Precautions for safe handling

Usage precautions Keep away from heat, sparks and open flame. Avoid inhalation of vapours and spray mists. Provide adequate ventilation. Avoid inhalation of vapors. Use approved respirator if air contamination is above an acceptable level. Eliminate all sources of ignition.

Conditions for safe storage, including any incompatibilities

Storage precautions Keep away from heat, sparks and open flame. Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C. Store at moderate temperatures in dry, well ventilated area.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Ethyl Alcohol

Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 1900 mg/m³
Short-term exposure limit (15-minute): ACGIH 1000 ppm 1880 mg/m³
A3

OSHA = Occupational Safety and Health Administration.

LIQUITEX PROFESSIONAL SPRAY PAINT

ACGIH = American Conference of Governmental Industrial Hygienists.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Exposure controls

Protective equipment

Appropriate engineering controls	Provide adequate ventilation. Avoid inhalation of vapors and spray/mists. Observe any occupational exposure limits for the product or ingredients.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapor contact.
Hygiene measures	DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Aerosol.
Color	Various colors.
Odor	Organic solvents.
Flash point	<40°C
Upper/lower flammability or explosive limits	: 1.8
Other flammability	Aerosol ignition distance: 30 cm
Auto-ignition temperature	> 400°C
Comments	Information given is applicable to the major ingredient.
Other information	Not available.

10. Stability and reactivity

Stability	Avoid the following conditions: Heat, sparks, flames.
Conditions to avoid	Avoid heat, flames and other sources of ignition. Avoid exposing aerosol containers to high temperatures or direct sunlight.
Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon. Oxides of nitrogen.

11. Toxicological information

LIQUITEX PROFESSIONAL SPRAY PAINT

Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)	18,993.35

Acute toxicity - dermal

Notes (dermal LD_{50})	Not determined.
ATE dermal (mg/kg)	56,980.06

Acute toxicity - inhalation

Notes (inhalation LC_{50})	Not determined.
ATE inhalation (vapours mg/l)	569.8

Inhalation	Vapors in high concentrations are narcotic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Nausea, vomiting.
Skin Contact	Skin irritation should not occur when used as recommended. Repeated exposure may cause skin dryness or cracking.
Eye contact	Vapor or spray in the eyes may cause irritation and smarting.
Acute and chronic health hazards	Prolonged and repeated contact with solvents over a long period may lead to permanent health problems. Prolonged or repeated exposure to vapors in high concentrations may cause the following adverse effects: Nausea, vomiting. Headache. Gas or vapor in high concentrations may irritate the respiratory system.
Route of entry	Inhalation
Target Organs	Central nervous system Respiratory system, lungs
Medical Symptoms	Symptoms following overexposure may include the following: Headache. Dizziness. Arrhythmia, (deviation from normal heart beat).

12. Ecological Information

Ecotoxicity	There are no data on the ecotoxicity of this product.

Toxicity

Acute toxicity - fish	Not determined.
Acute toxicity - aquatic invertebrates	Not determined.
Acute toxicity - aquatic plants	Not determined.
Acute toxicity - microorganisms	Not determined.

Persistance and degradability

Persistence and degradability	The degradability of the product is not known.

Mobility in soil

Mobility	Highly volatile and will rapidly evaporate to the air

13. Disposal considerations

Waste treatment methods

General information	Do not puncture or incinerate even when empty.

LIQUITEX PROFESSIONAL SPRAY PAINT

Disposal methods	Empty containers must not be punctured or incinerated because of the risk of an explosion. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Waste class	08 01 11* - waste paint and varnish containing organic solvents or other dangerous substances

14. Transport information

UN Number

UN No. (DOT)	1950
UN No. (IMDG)	1950
UN No. (ICAO)	1950

UN proper shipping name

Proper shipping name (DOT)	AEROSOLS, FLAMMABLE
Proper shipping name (IMDG)	AEROSOLS, FLAMMABLE
Proper shipping name (ICAO)	AEROSOLS, FLAMMABLE

Transport hazard class(es)

IMDG Class	2.1
ICAO class/division	2.1

Transport labels

Packing group

Not applicable.

Environmental hazards

Environmentally Hazardous Substance

No.

15. Regulatory information

LIQUITEX PROFESSIONAL SPRAY PAINT

Regulatory Status

This product has been evaluated by a toxicologist and labelled for acute and chronic health hazards in accordance with the Labelling of Hazardous Art Materials Regulation and Federal Regulation 16 CFR 1500.14 of the Federal Hazardous Substances Act. This product conforms to ASTM D-4236 Standard Practice for Labelling Art Materials for Chronic Adverse health effects.

This product has been certified by ACMI (Artists Craft Material Institute, Inc.) to carry the CL (Cautionary Labelling) Seal, meaning the following warnings and safe use instructions should be observed.

WARNING:FLAMMABLE. VAPOR HARMFUL.
Contains: DIMETHYL ETHER
PRECAUTIONS:Do not store or use near heat or flame. Use only with adequate ventilation.
KEEP OUT OF REACH OF
CHILDREN.
FIRST AID TREATMENT:If inhalation symptoms occur, move to fresh air. If symptoms persist, see a physician.
For further health information contact a poison control center or call 1-800-628-3385
Piscataway NJ 08855.

WARNING: CONTENTS UNDER PRESSSURE.
Do not puncture or incinerate or expose to temperatures above 120o F (50o C).
KEEP OUT OF REACH OF CHLDREN.

16. Other information

Revision date	7/28/2015
Revision	9
Supersedes date	6/18/2015
Hazard statements in full	H223 Flammable aerosol. H229 Pressurized container: may burst if heated. H319 Causes serious eye irritation.

JiangxiGanfeng Lithium Co., Ltd

Longteng road, Economic Development Region ,Xinyu, Jiangxi, China
Tel: 86-790-6411121 Fax: 86-790-6855376   http://www.ganfenglithium.com

MATERIAL SAFTY DATA SHEET

1、CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Longteng Road, Econmic development zone, xinyu ,yichun, Jiangxi, China

[illegible]

2、COMPOSITION /INFORMATION ON INGREDIENT

[illegible]

[illegible]

3、HAZARD IDENTIFICATION

[illegible]

[illegible]

[illegible]

[illegible]

4、FIRST AID MEASURES

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

JiangxiGanfeng Lithium Co., Ltd
Longteng road, Economic Development Region ,Xinyu, Jiangxi, China
Tel: 86-790-6411121 Fax: 86-790-6855376 http://www.ganfenglithium.com

5、FIRE FIGHTING MEASURES

6、ACCIDENTAL RELEASE MEASURES

7、HANDLING AND STORAGE

8、PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	TWA (ACGIH)	STEL/Ceiling (ACGIH)	PEL (OSHA)	STEL/Ceiling (OSHA)

JiangxiGanfeng Lithium Co., Ltd
Longteng road, Economic Development Region ,Xinyu, Jiangxi, China
Tel: 86-790-6411121 Fax: 86-790-6855376 http://www.ganfenglithium.com

[illegible]

[illegible]

[illegible]

[illegible]

Protective Clothing: **Rubber gloves**
Work Hygienic Practices: **Quick-drench eyewash and safety shower.**

9、PHYSICAL AND CHEMICAL PROPERTIES

[illegible]

10、STABILITY AND REACTIVITY

[illegible]

11、TOXICOLOGICAL INFORMATION

[illegible]

JiangxiGanfeng Lithium Co., Ltd
Longteng road, Economic Development Region ,Xinyu, Jiangxi, China
Tel: 86-790-6411121 Fax: 86-790-6855376 http://www.ganfenglithium.com

[illegible]

12、ECOLOGICAL INFORMATION

Ecotoxicological Information:

[illegible]

Chemical Fate Information:

No data available for the product

13、DISPOSAL CONSIDERATIONS

[illegible]

14、TRANSPORT INFORMATION

[illegible]

Section 15: Regulatory information

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Section 16:Other information

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ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: LL0225
Revision Date: September 30, 2013
Approved by: James A. Bertsch

MSDS No.: LL0225

Section 1 Chemical Product and Company Information

Product	**LITHIUM NITRATE**
Synonyms	Lithium Salt

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

DANGER! STRONG OXIDIZER!
MAY BE HARMFUL IF SWALLOWED.
Contact with other material may cause fire or explosion. Protect from moisture. Keep in a cool, dry place. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Target organs: Eyes, skin, liver, kidneys, and central nervous system.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	2
Fire	0
Reactivity	3
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Lithium nitrate	7790-69-4	100%	TWA: 15 mg/m^3 (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is a strong oxidizer which releases oxygen on heating. The oxygen will intensify any fire in the immediate surrounding. Contact with easily oxidizable, combustible substance or powdered metals may cause fire or explosion upon ignition from any source. Strong oxidizers may explode when shocked, or if exposed to heat, flame, or friction. Also may act as initiation source for dust or vapor explosions.

Extinguishing Media: Use water only. DO NOT use dry chemical, CO_2 or Halon.

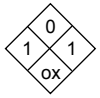
Flash Point: Non-combustible.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Remove all sources of ignition. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

(2008 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2008), GUIDE PAGE NO. 140)

Section 7 Handling & Storage — OXIDIZER STORAGE CODE YELLOW

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep dry.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solide.
Appearance: White granules.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: Decomposes @ 600°C (1112°F)
Freezing / Melting point: 251°C (483°F)
Decomposition temperature: N/A
Solubility: 43% by wt. at 20°C (68°F)
Specific gravity (H_2O = 1): 2.38
Percent volatile (%): 100%
Molecular formula: $LiNO_3$
Molecular weight: 68.94

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Readily absorbs moisture, keep dry.

Incompatibilities with other materials: Oxidizable, organic and combustible materials, acids and powdered metals.

Hazardous decomposition products: Emits nitrogen oxides and oxygen.

Section 11 Toxicological Information

Effects of overexposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN2722
Shipping name: Lithium nitrate
Hazard class: 5.1
Packing group: III
Exceptions: Ltd Qty ≤ 5 Kg.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (232-218-9), RCRA-Code D001

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**MAGNESIUM NITRATE, HEXAHYDRATE**
Synonyms	Magnesium Nitrate, 6-Hydrate

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS03
Target organs: None known

GHS Classification:
Oxidizing solid (Category 3)

GHS Label information: **Hazard statement:**
H272: May intensify fire; oxidizer.

Precautionary statement:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep away from clothing/incompatible/combustible materials.
P221: Take any precaution to avoid mixing with combustibles and incompatible materials.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378: In case of fire: Use water. Do not use dry chemicals or foams to extinguish.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Magnesium nitrate, hexahydrate	13446-18-9	100%	233-826-7 [anhydrous]

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO_2 or Halon® may provide limited control.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 140)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Magnesium nitrate	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White, deliquescent crystals
Odor: No odor
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: 89°C (192°F)
Boiling point: Decomposes
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 1.46
Solubility(ies): Soluble in water

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: 330°C (626°F)
Viscosity: Data not available
Molecular formula: $Mg(NO_3)_2 \cdot 6H_2O$
Molecular weight: 256.41

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and heat.

Incompatible materials: Reducing agents, oxidizers, organic and combustible materials.

Hazardous decomposition products: Nitric acid fumes and sometimes nitrogen tetroxide are reported.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 5440 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May cause mild respiratory tract irritation. Symptoms may include coughing and shortness of breath.
Ingestion: Ingestion of large doses can cause abdominal pain, cyanosis (blue lips, fingernails and skin), confusion, convulsions, dizziness, headache, nausea, and unconsciousness.
Skin: Can cause mild irritation.
Eyes: Can cause mild irritation.
Signs and symptoms of exposure: Under some circumstances methemoglobinemia occurs in individuals when the nitrate is converted by bacteria in the stomach to the nitrite. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: OM3756000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1474
Shipping name: Magnesium nitrate
Hazard class: 5.1
Packing group: III
Reportable Quantity: No
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 5 Kg
2012 ERG Guide # 140

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Magnesium nitrate, anhydrous	Listed	Not listed	Not listed	Listed	Not listed	C

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: April 30, 2014 **Supercedes:** April 30, 2014

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture ou de ménage.

Produit	**NITRATE DE MAGNESIUM, HEXAHYDRATE**
Synonymes	Nitrate de magnesium, 6-Hydrate

Section 2 Identification De Risques

Mention d'avertissement: AVERTISSEMENT
Pictogrammes: GHS03
Les organes cibles: Aucun connu

Classification par le GHS:
Oxidizing solid (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H272: Peut aggraver un incendie; comburant.

Déclarations de précaution:
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P220: Tenir à l'écart des vêtements / incompatibilités / matières combustibles.
P221: Prendre toutes précautions pour éviter de mélanger avec des matières combustibles et des matériaux incompatibles.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P370+P378: En cas d'incendie: Utiliser de l'eau. Ne pas utiliser de produits chimiques secs ou des mousses pour l'extinction.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Nitrate de magnesium, hexahydrate	13446-18-9	100%	233-826-7 [anhydre]

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSER UNE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT ÊTRE NOCIF EN CAS D'ABSORPTION PAR LA PEAU. PEUT CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utiliser de l'eau. Ne pas utiliser de produits chimiques secs ou des mousses. CO_2 ou Halon® peuvent fournir un contrôle limité.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Substances accélèrent la combustion lorsqu'ils sont impliqués dans un incendie. Peut enflammer les combustibles (bois, papier, huile, vêtements, etc.) Les conteneurs peuvent exploser lorsqu'ils sont chauffés.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Enlever toute source d'ignition. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 140)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Nitrate de magnesium	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Blanc, cristaux déliquescents
Odeur: Aucun odeur
Seuil de l'odeur: Données non disponibles
pH: Données non disponibles
Point de fusion / congélation: 89°C (192°F)
Point d'ébullition: Se décompose
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 1.46
Solubilité (s): Soluble dans l'eau

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: 330°C (626°F)
Viscosité: Données non disponibles
Formule moléculaire: $Mg(NO_3)_2 \cdot 6H_2O$
Poids moléculaire: 256.41

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives et la chaleur.

Matières incompatibles: L'agents reducteurs, les oxydants, organique et le matieres combustible.

Produits dangereux de décomposition: Vapeurs d'acide nitrique et parfois tétroxyde d'azote sont signalés.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 5440 mg/kg
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.
Toxicité pour la reproduction: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut causer une irritation des voies respiratoires doux. Les symptômes peuvent inclure la toux et l'essoufflement.
Ingestion: L'ingestion de fortes doses peut provoquer des douleurs abdominales, cyanose (lèvres bleues, les ongles et la peau), confusion, convulsions, vertiges, maux de tête, des nausées et une perte de conscience.
Peau: Peut causer une légère irritation.
Yeux: Peut causer une légère irritation.
Les signes et les symptômes de l'exposition: Dans certaines circonstances, une méthémoglobinémie se produit chez les personnes lorsque le nitrate est converti par les bactéries dans l'estomac pour le nitrite. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: OM3756000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN1474 **Nom d'expédition:** Magnesium nitrate
Classe de danger: 5.1 **Groupe d'emballage:** III **Quantité à déclarer:** No **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 Kg **2012 ERG Guide #:** 140

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Nitrate de magnesium, anhydre	Listed	Not listed	Not listed	Listed	Not listed	C

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 30 avril, 2014 **Remplace:** 30 avril, 2014

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: MM0180
Revision Date: September 17, 2013
Approved by: James A. Bertsch

MSDS No.: MM0180

Section 1 Chemical Product and Company Information

Product	**MALTOSE**
Synonyms	Malt Sugar, D(+)-Maltose

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Maltose, monohydrate	6363-53-7	100%	None established.

Section 3 Hazards Identification

Emergency Overview

CAUTION!
Keep container tightly closed. Store in a cool, dry place.
Wash thoroughly after handling. Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	0
Fire	1
Reactivity	0
Contact	0

HMIS *

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Dusts may form flammable and explosive mixtures in air.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Yellow powder.
Odor: No odor.
pH: N/A
Freezing / Melting point: 102-103°C (215-217°F)
Boiling point: Decomposes.
Decomposition temperature: N/A
Vapor pressure (mm Hg): Negligible.
Vapor Density (Air = 1): 12.4
Solubility in water: Soluble.
Specific gravity (H_2O = 1): N/A
Percent volatile (%): N/A
Evaporation rate (= 1): N/A
Viscosity: N/A
Molecular formula: $C_{12}H_{22}O_{11}{\bullet}H_2O$
Molecular weight: 360.32

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures and heat.
Incompatibilities with other materials: Strong oxidizers.
Hazardous decomposition products: Oxides of carbon.
Hazardous polymerization: Will not occur.

Section 11 Toxicological Information

Effects of overexposure: No specific hazard known. However, any material that is ingested, inhaled or that comes in contact with the skin and eyes may cause respiratory irritation and/or gastrointestinal upset or allergic reaction in certain individuals. Exercise appropriate procedures to minimize potential hazards.

RTECS #: OO5250000 (Maltose, anhydrous CAS # 69-79-4)
ORAL-RAT LD50: 34,800 mg/kg

Section 12 Ecological Information

Aquatic toxicity: Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: Not Regulated.
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA - listed, **EINECS** - listed as Maltose anhydrous (200-716-5), **DSL** - listed.

Section 16 Additional Information

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**MANGANESE NITRATE, 50% SOLUTION**
Synonyms	Manganous Nitrate Solution

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS03 / GHS05 / GHS07 / GHS08
Target organs: Respiratory system, Central nervous system, Lungs, Blood, Kidneys

GHS Classification:
Oxidizing liquid (Category 2)
Acute toxicity, oral (Category 4)
Skin corrosion (Category 1C)
Eye damage (Category 1)
STOT-RE (Category 2)
Aquatic toxicity, chronic (Category 3)

GHS Label information: **Hazard statement:**
H272: May intensify fire; oxidizer.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H373: May cause damage to organs (*brain*) through prolonged or repeated exposure (*inhalation*).
H412: Harmful to aquatic life with long lasting effects.

Supplementary Hazard Statement Code(s):
EUH071: Corrosive to the respiratory tract.

Precautionary statement:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep away from clothing/incompatible/combustible materials.
P221: Take any precaution to avoid mixing with combustibles and incompatible materials.
P260: Do not breathe mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370+P378: In case of fire: Use WATER ONLY to extinguish.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Manganese nitrate	10377-66-9	50.0%	233-828-8
Water	7732-18-5	45.0%	231-791-2
Nitric acid	7697-37-2	5.0%	231-714-2

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: CORROSIVE TO THE RESPIRATORY TRACT. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SEVERE SKIN BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use water. Do not use dry chemicals or foams. CO_2 or Halon® may provide limited control.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 140)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Keep away from clothing/incompatible/combustible materials.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Nitric acid	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm	TWA: 2 ppm STEL: 4 ppm

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, reddish-orange liquid
Odor: No odor
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: 10°C (50°F)
Boiling point: Data not available
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 1.575 @ 15°C
Solubility(ies): Soluble in water

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: Mixture
Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatible materials: Water-reactive materials. Oxidizable materials, including sulfur and organic materials, active metals, including zinc and aluminum, strong reducing agents or flammable materials.

Hazardous decomposition products: Nitrogen oxide gases expected.

Section 11 Toxicological Information

Acute toxicity: Oral-human LD_{Lo}: 430 mg/kg ; Inhalation-rat LC50: 0.8 mg/L [Nitric acid]
Skin corrosion/irritation: Skin-rabbit - Corrosive [Nitric acid]
Serious eye damage/irritation: Eyes-rabbit - Corrosive [Nitric acid]
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation of mist may cause CNS effects such as languor, sleepiness, and weakness in legs. High exposure may cause pneumonia or upper respiratory tract irritation.
Ingestion: Ingestion causes some of the same symptoms as inhalation. May cause gastrointestinal disturbances and/or tissue damage.
Skin: Contact can cause irritation and/or burns.
Eyes: Contact can cause irritation and/or burns.
Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: QU5775000 [Nitric acid]

Section 12 Ecological Information

Toxicity to fish: Gambusia affinis (fish, fresh water), LC50 = 72 mg/L/96 hours [Nitric acid]
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacia), EC_{Lo} = 107 mg/L [Nitric acid]
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN3098 **Shipping name:** Oxidizing liquid, corrosive, n.o.s., (Manganese nitrate, Nitric acid)
Hazard class: 5.1, (8) **Packing group:** III **Reportable Quantity:** Yes **Marine pollutant:** No
Exceptions: Limited quantity equal to or less than 5 L **2012 ERG Guide #** 140

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Manganese nitrate	Listed	Not listed	Not listed	Listed	Not listed	Not listed
Nitric acid	Listed	1,000 lbs (454 kg)	D001	Listed	Not listed	C ; E

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: May 14, 2014 **Supercedes:** May 14, 2014

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**MANGANESE NITRATE, 50% SOLUTION**
Synonymes	Manganous Nitrate Solution

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS03 / GHS05 / GHS07 / GHS08
Les organes cibles: Le système respiratoire, le système nerveux central, les poumons, le sang et les reins

Classification par le GHS:
Oxidizing liquid (Catégorie 2)
Acute toxicity, oral (Catégorie 4)
Skin corrosion (Catégorie 1C)
Eye damage (Catégorie 1)
STOT-RE (Catégorie 2)
Aquatic toxicity, chronic (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H272: Peut aggraver un incendie; comburant.
H302: Nocif en cas d'ingestion.
H314: Provoque des brûlures de la peau et des lésions oculaires graves.
H373: Risque présumé d'effets graves pour les organes (le cerveau) à la suite d'expositions répétées ou d'une exposition prolongée (*inhalation*).
H412: Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.

Supplémentaires code mention de danger(s):
EUH071: Corrosive to the respiratory tract.

Déclarations de précaution:
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P220: Tenir à l'écart des vêtements / incompatibilités / matières combustibles.
P221: Prendre toutes précautions pour éviter de mélanger avec des matières combustibles et des matériaux incompatibles.
P260: Ne pas respirer les brouillards/vapeurs/aérosols.
P264: Se laver les mains soigneusement après manipulation.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P273: Éviter le rejet dans l'environnement.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P301+P330+P331: EN CAS D'INGESTION: Rincer la bouche. Ne PAS faire vomir.
P303+P361+P353: EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tout vêtement souillé ou éclaboussé. Rincer la peau à l'eau/ se doucher.
P363: Laver les vêtements contaminés avant réutilisation.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P310: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P370+P378: En cas d'incendie: Utiliser de L'EAU SEULEMENT pour l'extinction.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Manganese nitrate	10377-66-9	50.0%	233-828-8
L'eau	7732-18-5	45.0%	231-791-2
Acide nitrique	7697-37-2	5.0%	231-714-2

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: CORROSIF POUR LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE DES BRÛLURES DE LA PEAU. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PROVOQUE DES BRÛLURES DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utiliser de l'eau. Ne pas utiliser de produits chimiques secs ou des mousses. CO_2 ou Halon® peuvent fournir un contrôle limité.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas de feu, de l'eau peut s'évaporer à partir de cette solution, qui peut causer les produits dangereux de décomposition à être formée comme poussière ou vapeur.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Enlever toute source d'ignition. Absorber avec un matériau inerte, balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 140)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais et bien aéré, loin des substances incompatibles. Tenir à l'écart des vêtements / incompatibilités / matières combustibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Acide nitrique	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm	TWA: 2 ppm STEL: 4 ppm

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions brumeuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Clair, liquide rouge-orange
Odeur: Aucun odeur
Seuil de l'odeur: Données non disponibles
pH: Données non disponibles
Point de fusion / congélation: 10°C (50°F)
Point d'ébullition: Données non disponibles
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 1.575 @ 15°C
Solubilité (s): Soluble dans l'eau

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles
Formule moléculaire: Mélange
Poids moléculaire: Mélange

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives qui causent l'évaporation.

Matières incompatibles: Matériaux eau-réactifs. Les matériaux oxydables, y compris le soufre et les matériaux organiques, actifs metals, y compris le zinc et l'aluminium, les agents réducteurs forts ou les matériaux inflammables.

Produits dangereux de décomposition: Gaz d'oxyde d'azote prévus.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-human LD_{Lo}: 430 mg/kg ; Inhalation-rat LC50: 0.8 mg/L [Acide nitrique]
La corrosion de la peau et l'irritation: Peau de lapin - corrosif [Acide nitrique]
Des lésions oculaires graves / irritation: Yeux-lapin - corrosif [Acide nitrique]
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.
Toxicité pour la reproduction: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: L'inhalation du brouillard peut causer des effets sur le SNC tels que la langueur, la somnolence et une faiblesse dans les jambes. Une forte exposition peut provoquer une pneumonie ou une irritation des voies respiratoires supérieures.
Ingestion: L'ingestion provoque certains des mêmes symptômes que l'inhalation. Peut causer des troubles gastro-intestinaux et / ou des tissus endommagés.
Peau: Le contact peut causer une irritation et / ou des brûlures.
Yeux: Le contact peut causer une irritation et / ou des brûlures.
Les signes et les symptômes de l'exposition: Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: QU5775000 [Acide nitrique]

Section 12 L'Information Écologique

Toxicité pour les poissons: Gambusia affinis (fish, fresh water), LC50 = 72 mg/L/96 hours [Acide nitrique]
Toxicité pour les daphnies et autres invertébrés aquatiques: Daphnia magna (Crustacia), EC_{Lo} = 107 mg/L [Acide nitrique]
Toxicité pour les algues: Pas de données disponibles
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN3098 **Nom d'expédition:** Liquide comburant, corrosif, n.o.s., (Nitrate de manganèse, Acide nitrique)
Classe de danger: 5.1, (8) **Groupe d'emballage:** III **Quantité à déclarer:** Yes **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 L **2012 ERG Guide #:** 140

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Nitrate de manganèse	Listed	Not listed	Not listed	Listed	Not listed	Not listed
Acide ntirique	Listed	1,000 lbs (454 kg)	D001	Listed	Not listed	C ; E

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 14 mai, 2014 **Remplace:** 14 mai, 2014

Elements Glazes

SECTION 1: IDENTIFICATION OF SUBSTANCE AND SUPPLIER

Product Identification: Elements™ Glazes

Product Usage: Glazing of ceramic ware

Product Identifier Codes:

Glazes: EL-101 Oyster Shell, EL-102 Sandstorm, EL-103 Sea Spray, EL-105 River Birch, EL-106 Tidal Pool, EL-107 Amber Ash, EL-108 Jade Moss, EL-110 Mudslide, EL-111 Ruby Creek, EL-112 Tornado Sky, EL-113 Spanish Moss, EL-117 Waterfall, EL-118 Blue Grotto, EL-119 Burnished Steel, EL-120 Black Ice, EL-121 Copper Aventurine, EL-122 Malachite, EL-123 Patina, EL-124 Stormy Blue, EL-125 Sahara Sands, EL-127 Rose Granite, EL-128 Wheat, EL-129 Slate, EL-130 Sea Green, EL-131 Turtle Shell, EL-132 Rust Red, EL-133 Autumn, EL-134 Mirror Blue, EL-135 Rare Earth, EL-136 Lapis Lagoon, EL-137 Black Adventurine, EL-138 Desert Canyon, EL-139 Nectar, FN-215 Aztec Jade, FN-217 Evergreen Fir, FN-218 Green Sapphire, FN-219 Lustre Green

Manufacturer:		Coloramics, LLC (D.B.A. Mayco Colors)
		4077 Weaver Court South
		Hilliard, Ohio 43026
		United States of America
		(614) 876-1171

IN CASE OF EMERGENCY PLEASE CONTACT YOUR REGIONAL/LOCAL POISON CONTROL CENTER

SECTION 2: HAZARDS IDENTIFICATION

Classification of mixture: Non-classified (1999/45/EEC)

Each glaze family is a mixture of ceramic material containing, water, non-leaded frits, clay, and other minerals and color pigments. Contains potential carcinogens: Crystalline silica (quartz), as an inhalation hazard, may be present if:

- Unfired, dried glaze is excessively handled and allowed to create dust.
- Mist is present after spray application

A few pigments may contain a very small amount of zirconium encapsulated cadmium, titanium dioxide, and other metals. Other ingredients present have no known acute toxicity.

GHS Label Elements: None Required

Other Hazards: None known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Each glaze family contain proprietary mixtures of ceramic materials (listed below) and color pigments. The Elements™ glaze line is classified as non-hazardous.

Ingredients	CAS #	Ranges of Percentages
Water	7732-18-5	46.1% - 53.2%
Frit	65997-18-4	36.6% - 44.4%
Clay/Kaolin	1332-58-7	2.9% - 5.5%
Zinc Oxide	1314-13-2	0.8% - 2.0%
Bentonite	1302-78-91	0.0% - 1.3%
Aluminum Oxide	1344-28-1	0.0% - 2.1%
Cryolite	15096-52-3	0.0% - 4.8%
Zirconium Silicate	14940-68-2	0.0% - 4.3%
Carboxymethylcellulose	9004-34-2	0.4% - 0.7%
RM60C	N/A	0.0% - 17.5%
Proxel	75037-67-1	0.1%
Pigments	varies	varies

SECTION 4: FIRST-AID MEASURES

- **Inhalation:** May cause irritation. Remove from exposure.
- **Skin:** May cause irritation. Wash skin with soap and water.
- **Eyes:** May cause irritation. Flush eyes with large quantities of water for at least 15 minutes. If irritation persists after washing, contact a physician.
- **Ingestion:** Contact a physician.

Important Symptoms/Effects: None Known

Immediate Medical Attention/Special Treatment: None Known

SECTION 5: FIRE-FIGHTING MEASURES

- **Suitable Extinguishing Media:** None

- **Specific Hazards Arising From Chemical:** None
- **Special Protective Equipment and Precautions for Fire Fighters:** None

SECTION 6: ACCIDENTAL RELEASE MEASURES

- **Personal Precautions, Protective Equipment and/or Emergency Procedures:** None
- **Environmental Precautions:** None
- **Methods and Materials for Containment and Clean-Up:** Wipe/Mop spill area and rinse with water

SECTION 7: HANDLING AND STORAGE

- **Precautions for Safe Handling:** Ventilation - local exhaust if spray application is used
- **Work/Hygienic Practices:** Food, beverages, and smoking materials should not be in the work area. Wash thoroughly before eating, drinking, smoking, or applying cosmetics.
- **Conditions for Safe Storage, Including Incompatibilities:** None

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients	CAS #	PEL	TLV
Aluminum Oxide	1344-28-1	5 mg/m^3	1.0 mg/m^3
Zinc Oxide	1314-13-2	5 mg/m^3	2.0 mg/m^3

Remaining main glaze ingredients do not have formal Exposure Limits. Some pigments contain metals that have exposure limits (Co, TiO2, Cu, Cr, Mn) but are used in low levels.

These glazes are non-hazardous liquid mixtures of ceramic materials containing, water, non-leaded frits, clay, and other minerals and color pigments. These mixtures have no TLV or PEL

- **Engineer Control:** Adequate ventilation (local exhaust) if spray application is used.
- **Respiratory Protection:** Use a NIOSH approved respirator if spray application is used.
- **Protective Gloves:** Not normally needed.
- **Eye Protection:** Wear appropiate eye protection or safety glasses to keep mist out of eyes if spray application is used.
- **Personal Protective Clothing or Equipment:** Wear appropriate clean, protective clothing such as, but not limited to, overalls, smocks, and aprons.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colored and/or Clear Liquid Mixtures
Odor/Odor Threshold:	Neglible
PH:	N/A
Boiling Point/Range:	N/A

Freezing point:	32°F
Flash Point:	None
Vapor Pressure:	N/A
Vapor Density:	N/A
Flammability:	None
Evaporation Rate:	None
Upper/Lower Explosive Limits:	None
Partition Coefficient (octanol/water):	N/A
Relative Density:	N/A
Solubility in Water:	Partial
Decompositional Temperature:	None
Viscosity:	N/A
Auto ignition temperature:	None

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	None Known
Chemical Stability:	Stable
Possibility of Hazardous Reactions:	None Known
Conditions to Avoid:	Fumes from firing in kiln; Mist created from spray application.
Incompatible Material:	None Known
Hazardous Decomposition or By-Products:	None Known

SECTION 11: TOXICOLOGY INFORMATION

Primary Route(s) of Entry: Dermal, Inhalation.

Hazard to Humans: None during normal use. The highest threat of inhalation exists during the excessive handling of dried, unfired glazed ware and/or during spray application.

Acute Toxicity: N/A
Skin Corrosion.Irritation: N/A
Serious Eye Damage/Irritation: N/A
Respiratory/Skin Sensitization: N/A
Germ Cell Mutagenicity: N/A
Carcinogenicity: N/A
Reproductive Toxicity: N/A
STOT-Single Exposure: N/A
STOT-Repeated Exposure: N/A
Aspiration Hazard: N/A

Additional information:

These mixtures contain silica, a know carcinogen. Inhalation is the route of entry into the body that can lead to

the development of Silicosis.

These water-based, premixed products should be non-toxic during recommended use.

Some of the pigments may contain small amounts of various forms of metals (Sn, Mn, TiO_2, Cu, Zr, V, Fe. Co, Cr, Ni, Cd), some of which are considered carcinogenic. The metals in pigments may be in form of frits, spinel or formed from high temperature calcination that may have a different bioavailability than the metal itself. Silica and pigments in the glaze should be non-toxic during recommended use.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:	None
Biodegradability:	No
Mobility in Soil:	No
Persistence:	Yes
Bioaccumulation:	No
Other Adverse Effects:	None

SECTION 13: DISPOSAL CONSIDERATIONS

Follow local, state and federal regulations.

SECTION 14: TRANSPORTATION INFORMATION

Product Identifier: Non-Hazardous Mixtures

UN Shipping Name: N/A
UN Number: None
Environmental Hazard: None
Packing Group: None
Transportation Hazard Class: N/A
Special Precautions: None

SECTION 15: REGULATORY INFORMATION

Federal, State and Local regulations not provided elsewhere in the SDS:

National Regulations:

United States:

- TSCA: all components of these products are on the US TSCA Inventory
- SARA Section 313 Toxic Chemicals: None
- IARC, OSHA and NTP: Silica (Quartz), Titanium Dioxide, Cobalt, Nickel and Chromium are listed on the carcinogen list.

State Regulations:

California

- Proposition 65: Silica (Quartz), Titanium Dioxide, Cobalt, Nickel and Chromium are listed on the carcinogen list.

Chemical Safety Assessment:

Conforms to ASTM D 4236 This material has been evaluated under the provisions of LHAMA (Labeling of Hazardous Art Material Act). This product is judged to be non-toxic and non- flammable under proposed use conditions. No special warning is required under the provisions of LHAMA or California Proposition 65 during use.

SECTION 16: ADDITIONAL INFORMATION

Mayco Glazes do not contain and products and/or ingredients derived from nuts, peanuts, eggs, milk, or gluten. Mayco Glazes do not contain latex.

This information is furnished with out warranty, representation, inducement or license of any kind, except that it is accurate to the best of knowledge of COLORAMICS, LLC or obtained from sources believed to be accurate.

COLORAMICS, LLC does not assume any legal responsibility for use or reliance on same. Customers are encouraged to conduct their own tests before using any product. Read the product label.

Acronyms used in this SDS:

- CAS #: Chemical Abstracts Service Number
- TSCA: Toxic Substances Control Act
- SARA: Superfund Amendments and Reauthorization Act
- IARC: International Agency for Research on Cancer
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- PEL: Permissible Exposure Limit
- TLV: Threshold Limit Values

Prepared:		July 17, 2014
Supersedes:		November 4, 2010

METHANOL HOLDINGS (TRINIDAD) LIMITED

SAFETY DATA SHEET
METHANOL

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: Methanol
Product codes(s): Methanol
Synonym(s): Alcohol, Methyl Hydroxide, Methyl Hydrate, Wood Alcohol, Wood Spirit
REACH Registration Number: This product has been registered according to Regulation (EC) 1907/2006.

1.2 Relevant identified uses of the substance or mixture and uses advised against

General use: Solvent, fuel, feedstock
Uses advised against: No uses advised against

1.3 Details of the supplier and of the safety data sheet

Manufacturer/Distributor
Methanol Holdings (Trinidad) Limited
Atlantic Avenue, Point Lisas Industrial Estate
Point Lisas, Trinidad, West Indies
+1-868-636-2906/9

Non-Emergency Contact
North America: Southern Chemical Corporation +1-281-799-4416
Europe: Helm AG 011-19-40-23750
Trinidad: Methanol Holdings (Trinidad) Limited +1-868-636-2906

1.4 Emergency telephone number

North America	**Chemtrec: +1-800-424-9300**
Europe	**Giftinformationszentrum Nord: 011-49-551-19240**
Trinidad	**Industrial Plant Services Limited: +1-868-636-1251**

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Substance

Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation (EC) No 1272/2008
Flammable liquid, Category 2 [H225]
Acute Toxicity, Category 3 [H301]
Acute Toxicity, Category 3 [311]
Acute Toxicity, Category 3 [H331]
Specific target organ toxicity, Single exposure, Category 1 (STOT SE 3) [H370]

2.2 Label Elements

Hazard Symbol(s):

GHS02 GHS06 GHS08

Signal Word: Danger

Hazard Statement(s):
H225 - Highly flammable liquid and vapor
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H331 - Toxic if inhaled
H370 - Causes damage to organs: eyes, skin, respiratory system, central nervous system, gastrointestinal tract

Precautionary Statements:

[Prevention]
P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground and bond containers and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, lighting and mixing equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe fumes, mists, vapors and spray.
P280 - Wear protective gloves, protective clothing, eye protection and face protection.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.

[Response]
P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide for extinction.
P303 + P361 + P353 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water or shower.
P363 - Wash contaminated clothing before reuse.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330 - Rinse mouth with water.
P321 - Specific treatment: Refer to product label and Section 4. Contact a POISON CENTER or doctor.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a comfortable position for breathing.

[Storage] P405 + P403 + P233 + P235 - Store locked up in well-ventilated place. Keep container tightly closed. Keep cool.
[Disposal] P501 - Dispose of contents in accordance with national/local regulations.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
>99	Methanol	67-56-1	200-659-6	603-001-00-X	H225, H301, H311, H331, H370

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3.2 Mixtures

Not applicable

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If product vapor or fumes causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist, seek medical attention.

Eyes: Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting upper and lower lids. Remove contact lenses, if present after the first 2 minutes and continue rinsing Obtain immediate medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing, and continue rinsing for at least 15 minutes. Wash affected area with soap and water. Wash contaminated clothing and shoes thoroughly before reuse. If irritation persists, seek prompt medical attention.

Ingestion: Ingestion of methanol is potentially life threatening. Onset of symptoms may be delayed for 18 to 24 hours after digestion.

Rinse mouth with water if the victim is conscious. Remove dentures, if present. Do not induce vomiting unless directed to do so by medical personnel. Give 2 to 3 cupfuls of milk or water to drink if the victim is conscious, alert and able to swallow. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes eye irritation characterized by redness, burning sensation, tearing, swelling and inflammation. May cause corneal injury and painful sensitization to light. Continued exposure may cause lesions. Vapors and fumes can cause eye irritation.

Skin: May cause skin irritation. Methanol is a defatting agent. Repeated or prolonged exposure may cause drying and cracking of skin. Absorption through the skin can be toxic. Symptoms may be similar to inhalation exposure.

Inhalation: Irritating to mucous membranes and to the respiratory system. Causes central nervous system depression and particularly affects the optic nerve. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, narcosis, coma and death.

Ingestion: Ingestion of 100 - 125 ml (~3 to 4 oz.) can be fatal or cause serious, irreversible injury such as blindness. Symptoms are similar to those for inhalation, but severity and speed of appearance may be greater. May cause central nervous system depression, characterized by excitement, followed by headache dizziness, drowsiness and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Chronic: Prolonged or repeated contact with skin may defat tissue causing dermatitis or aggravate existing skin problems. Pre-existing skin, eye and respiratory disorders may be aggravated by exposure to this product. Impaired kidney, liver and central nervous system functions from pre-existing disorders may be aggravated by exposure to this product. Chronic exposures to methanol may cause reproductive disorders and teratogenic effects. Refer to Section 11.2.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to Doctor and Hospital Personnel: Effects may be delayed. Ethanol may inhibit methanol metabolism.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: Use media such as water fog, foam, dry chemical or carbon dioxide.

Unsuitable methods of extinction: Methanol will float on water. As a result water using water jets or streams may spread the fire.

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapor. Methanol burns with a clean, clear flame that is almost invisible in daylight. Vapors may form an explosive mixture with air. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Exposure to ignition sources such as heat, sparks, flames or electronic devices (e.g. cell phones) can ignite vapors, causing a flash fire. Containers may explode if exposed to fire or heat. During a fire irritating and highly toxic gases may be generated by thermal decomposition or combustion. Symptoms of overexposure to these gases may not be apparent. Seek medical advice.

Explosion hazards: Vapor forms an explosive mixture with air.

5.3 Advice for firefighters

Responders should stay upwind. Full protective equipment including self-contained breathing apparatus should be used (HAZMAT suits) if there is liquid methanol or if vapor levels are above the threshold limit value (TLV). Water may be used to cool closed containers to prevent pressure build up and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control runoff water to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate protective clothing designated in Section 8. Ventilate the area. Remove all sources of ignition. No smoking. Evacuate non-essential personnel from the hazard area.

6.2 Environmental precautions

Do not flush to sewer. Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. Cover drains and contain spill. Recover liquid where possible, or dilute with water or use alcohol-resistant foam to reduce fire hazard. Collect liquid in an approved container, or cover with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect product using non-sparking tools and place into approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Clean contaminated area with soap and water.

US regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

6.4 Reference to other sections

For indications about waste treatment, see Section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear all appropriate protective equipment specified in Section 8. Keep away from sources of ignition. NO SMOKING. Do not get in eyes or on skin or clothing. Do not breathe vapor or fumes. Wash hands thoroughly after handling. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator.

Advice on protection against fire and explosion

Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use non-sparking type tools and equipment, including explosion proof ventilation.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool, dry, well-ventilated storage areas in closed containers. Keep away from oxidizers, acids and bases.

Transfer to approved containers having correct labeling. DO NOT store in aluminum or lead containers. (Anhydrous methanol is non-corrosive to most metals at ambient temperatures except lead and magnesium. Coatings of copper and its alloys, zinc or aluminum are unsuitable for storage as they are attacked slowly. Mild steel is the recommended construction material for tanks.

Plastics may be used for short-term storage, but are not recommended for long-term use due to deterioration effects and the subsequent risk of contamination.

Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition.

Outside or detached storage is recommended. Tanks must be grounded, vented and have vapor emission controls including floating roofs, inert gas blanketing to prevent the formation of explosive mixtures and pressure vacuum relief valves to control tank pressures. Tanks should be of welded construction and should also be diked.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits

CAS Number	Ingredient	OSHA PEL - TWA	ACGIH TLV	NIOSH
67-56-1	Methanol	200 ppm; 250 mg/m^3	200 ppm; 160 mg/m^3 TWA 250 ppm; 327 mg/m^3 STEL Skin designation	200 ppm; 260 mg/m^3 TWA; 250 ppm; 325 mg/m^3 STEL; 6,000 ppm IDLH Skin designation

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material, including eyes and mucous membranes, either by direct contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposure should be considered.

8.2 Exposure controls

Engineering Measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation using explosion proof ventilation equipment. Local exhaust is preferable. Use only under a chemical fume hood. Refer to Section 7.1.

Individual protection measures: The level of risk of exposure to methanol will dictate the appropriate level of personal protective equipment (PPE) required. Wear protective clothing and chemical resistant footwear to prevent repeated or prolonged contact with methanol. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking or using the lavatory.

Eye/face protection: Wear protective chemical goggles. Refer to 29 CFR 1910.133, ANSI Z87.1 or European Standard EN 166.

Hand Protection: Wear rubber (butyl or Nitrile) or neoprene gloves for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Other protective equipment: Protective clothing. Protective boots, if the situation requires.

Respiratory Protection: Always use an approved respirator when vapor/aerosols are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Mild, alcoholic
Odor Threshold	59 ppm
Molecular Weight	32.04
Chemical Formula	CH_3OH
pH	Not applicable
Freezing/Melting Point, Range	-97.8 °C (-144 °F)
Boiling Point	64.5 °C (148.1 °F)
Evaporation Rate	5.9 (n-BuAc =1); 5.3 (Ether = 1)
Flammability (solid, gas)	Not applicable
Flash Point	11 °C (51.8 °F)
Autoignition Temperature (NFPA30)	385 °C (725 °F)
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	6% (NFPA 30)
Upper Explosive Limit (UEL)	36.5% (NFPA 30)
Vapor Pressure	12.8 kPa @ 20 °C
Vapor Density	1.11 (Air = 1)
Specific Gravity	0.791 - 0.793 @ 20 °C
Viscosity	0.55 cP @ 20 °C
Soluble in	Water, Ethanol, Ether, Acetone, Chloroform
Partition Coefficient: n-octanol/water	log Pow = -0.82/-0.66
Saturation Concentration	166 g/m^3
Volatiles by Volume @ 21 ºC	100%

9.2 Other data

No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

No special reactivity has been reported.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Vapors may form explosive mixture with air. Reacts with strong oxidizing agents and halogenated hydrocarbons. Avoid excessive heat and

sources of ignition. The substance decomposes on burning and may produce irritating fumes.

10.4 Conditions to avoid

Ignition sources, high temperatures, incompatible materials, oxidizers. Avoid impact. Avoid confined areas.

10.5 Incompatible materials

Avoid contact with strong oxidizing agents, strong mineral or organic acids, strong bases and halogenated hydrocarbons. Contact with these may cause a violent or explosive reaction. May be corrosive to lead, aluminum, magnesium and platinum.

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, formic acid, formaldehyde and other toxic fumes and gases.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity

LD_{50}, Mouse: 7,300 mg/kg
LD_{50}, Rabbit: 14,200 mg/kg
LD_{50}, Rat: 5,628 mg/kg

Acute inhalation toxicity

LC_{50}, Rat: 64,000 ppm

Acute dermal toxicity

LD_{50}, Rabbit: 15,800 mg/kg

Skin irritation

No data available

Eye irritation

Causes eye irritation.

Sensitization

No data available

Genotoxicity

No data available

Mutagenicity

No data available

Specific organ toxicity - single exposure

May cause drowsiness or dizziness. Causes damage to organs: eyes, skin, respiratory system, central nervous system, gastrointestinal tract.

Specific organ toxicity - repeated exposure

Prolonged and repeated exposure to skin may cause defatting of skin and dermatitis.

Aspiration hazard

No data available

11.2 Further information

Material is slowly eliminated from the body; therefore, it can have cumulative toxicity effects with repeated exposures. Methanol is a potential hazard to the fetus. May cause liver disorder (e.g. edema, proteinuria) and damage. Significant exposure to this product may adversely affect people with chronic disease of the respiratory system, central nervous system, kidneys, liver, skin and/or eyes.

Methanol is not listed as a carcinogen by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity and/or teratogenicity of this material, nor is there any available data that indicates it causes adverse developmental and/or fertility effects in humans. Developmental effects have been observed in the offspring of rats and mice exposed to methanol by inhalation. These included skeletal, cardiovascular, urinary system and central nervous system (CNS) malformations in rats and increased resorptions and skeletal and CNS malformations in mice.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Methanol is dangerous to aquatic life in high concentrations. A study of methanol's toxic effects on sewage sludge bacteria reported little effect on digestion at 0.1% while 0.5% methanol retarded digestion. Methanol will be broken down into carbon dioxide and water.

Acute and prolonged toxicity to fish: LC_{50} - Pimephales promelas (Fathead minnow), 96 h: 29,400 mg/l

Toxicity to aquatic invertebrates: EC_{50} - Daphnia magna (Water flea), static, 24 h: 23,500 mg/l (immobilization)

12.2 Persistence and degradability

Methanol is readily biodegradable in water (test: 99% OECD; BOD 80% ThOD).

When released into the air methanol is expected to exist in the aerosol phase and will be degraded from the ambient atmosphere by the reaction with photochemically produced hydroxyl radicals with an estimated half life of 17.8 days. When released into the soil, methanol is expected to readily biodegrade and leach into groundwater. When released into water it is expected to have a half life of between 1 and 10 days.

12.3 Bioaccumulation potential

Methanol is not expected to bioaccumulate.

12.4 Mobility

Mobility is soil is high.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Do not allow material to run into surface waters, waste water or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Recycling is the recommended disposal method. Biological treatment may be used for dilute aqueous waste. Incineration should only be performed using a legally approved incinerator fitted with emission controls. Methanol wastes are not suitable for underground injection.

RCRA U-Series: Methanol (CAS #67-56-1); waste number U154 (Ignitable waste)

SECTION 14 - TRANSPORT INFORMATION

Classification of substance in compliance with UN Recommendations

UN-number:	1230
Hazard Class:	3
Sub-Risks:	6.1
Packing Group:	II
Proper Shipping Name:	UN 1230, Methanol

ADR (Transportation by Road)

Hazard Class:	3
Packing Group:	II
Danger Label, Tanks:	3 + 6.1
Danger Label, Packages:	3 + 6.1
Hazchem:	2WE

RID (Transportation by Rail)

Hazard Class:	3
Packing Group:	II
Danger Label, Tanks:	3 + 6.1
Danger Label, Packages:	3 + 6.1

ANDR (Transportation by Inland Waterways)

Hazard Class:	3
Packing Group:	II
Danger Label, Tanks:	3 + 6.1
Danger Label, Packages:	3 + 6.1

IMDG (Maritime Transport)

Hazard Class:	3
Sub-Risks:	6.1
Packing Group:	II
MFAG:	19 (IMDG suppl. 2002 p. 40)
EMS Number:	F-E, S-D
Marine Pollutant:	No

ICAO (Air Transportation)

Hazard Class:	3
Sub-Risk:	6.1
Packing Group:	II

United States Department of Transportation (Ground Transportation)

Proper Shipping Name:	Methanol
Hazard Class:	3
UN/NA:	1230

Packing Group:	II
NAERG:	Guide #131
Packaging Authorization:	Non-Bulk: 49 CFR 173.202; Bulk: 173.242
Packaging Exceptions:	49 CFR 173.4b, 173.150

Limited Quantities (LQ): When substances and their packaging meet the conditions established by ADR, RID, and ADNR only the following prescriptions shall be complied with:

*Each package shall display a diamond-shaped figure with the following inscription: "UN1230".

*In the case of different goods with different identification numbers within a single package, the inscription shall be" "LQ".

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910.200. Flammable liquid, Target organ effect, Toxic by inhalation, Toxic by skin absorption, Irritant

TSCA Status: All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory.

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Fire Hazard, Acute Health Hazard

SARA 313 Information: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA

SARA 302/304 Emergency Planning & Notification: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): Methanol is a CERCLA reportable material.

Methanol (CAS #67-56-1): RQ = 2,268 kg (5,000 lbs)

Clean Air Act (CAA)

Methanol (CAS #67-56-1) is listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).
This product does not contain any Class 1 Ozone depletors.
This product does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

Other U.S. State Inventories

Methanol (CAS #67-56-1) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/ Air Pollutants lists: CA, DE, ID, IL, ME, MA, MN, NJ, NY, PA, RI, WA.

Canada

WHMIS Hazard Symbol and Classification


B2 - Flammable liquid with flash points less than 38 °C (100 °F)


D2A - Teratogenicity and embryotoxicity
D2B - Eye irritation


D1A - Toxic material causing immediate and serious toxic effects

Canadian National Pollutant Release Inventory (NPRI): Methanol is listed on the NPRI.

European Economic Community

Labeling (67/548/EEC to 1999/45/EC)


F - Flammable


T - Toxic

Risk Phrases: R11 - Highly flammable
R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed
R39/23/24/25 - Toxic danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed

Safety Phrases: S1/2 - Keep locked up and out of the reach of children
S7 - Keep container tightly closed

Safety Phrases: S16 - Keep away from sources of ignition
S36/37 - Wear suitable protective clothing and gloves
S45 - In case of accident of if you feel unwell, seek medical advice immediately (show label where possible)

WGK, Germany (Water danger/protection): 1

Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Canada:	Domestic Substance List (DSL)	Yes
Canada:	Non-Domestic Substance List (NDSL)	No
Europe:	Inventory of New and Existing Chemicals (EINECS)	Yes
United States:	Toxic Substance Control Act (TSCA)	Yes
Australia:	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand:	New Zealand Inventory of Chemicals (NZIoC)	Yes
China:	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan:	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea:	Existing Chemicals List (ECL)	Yes
Philippines:	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
No - One or more components of this product are not on the inventory and are not exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

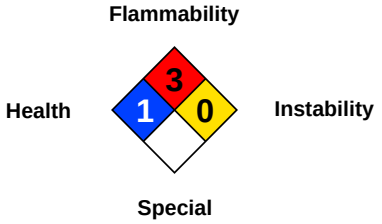
Hazardous Material Information System (HMIS)

Health	* 2
Flammability	3
Physical Hazard	0
Personal Protection	H

HMIS and NFPA Hazard Rating Legend

* = Chronic Health Hazard	2 = MODERATE
0 = INSIGNIFICANT	3 = HIGH
1 = SLIGHT	4 = EXTREME

National Fire Protection Association (NFPA)



The information and recommendations herein are taken from data contained in independent industry-recognized references and are believed to be accurate and represent the best information currently available to us. Methanol Holdings (Trinidad) Limited makes no representation or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Users should conduct their own investigations to determine the suitability of the information to their particular purpose. Accordingly, Methanol Holdings (Trinidad) Limited will not be responsible for loss or damages resulting from use of or reliance upon this information.

Revision 2: 07 July 2016
Preparation date: 7 December 2012

SAFETY DATA SHEET **SDS No.:** MM0465 **TOXIC STORAGE CODE BLUE**

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**METHYL ORANGE**
Synonyms	C.I. No. 13025 / C.I. Acid Orange 52

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS06
Target organs: Skin, Eyes

GHS Classification:
Acute toxicity, oral (Category 3)

GHS Label information: **Hazard statement:**
H301: Toxic if swallowed.

Precautionary statement:
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P330: Rinse mouth.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Methyl orange, pH indicator	547-58-0	100%	208-925-3

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from light.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particles not otherwise classified	None established	TWA: 5 mg/m^3 respirable fraction	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Orange-brown crystalline powder
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: >300°C (572°F)
Boiling point: Data not available
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): 11.3
Relative density (Specific gravity): 0.35 - 0.39
Solubility(ies): 0.2 g/100 ml water @ 20°C

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: 285°C (544°F)
Viscosity: Data not available.
Molecular formula: $C_{14}H_{14}N_3NaO_3S$
Molecular weight: 327.34

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures. Protect from light.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, nitrogen oxides and sulfur oxides.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 60 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: May cause irritation.
Eyes: May cause irritation.
Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: DB6327000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN2811
Shipping name: Toxic solids, organic, n.o.s., (Methyl orange)
Hazard class: 6.1
Packing group: III
Reportable Quantity: No
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 1 L
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Methyl orange	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: February 7, 2013 **Supercedes:** January 1, 2012

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**ORANGE DE MÉTHYLE**
Synonymes	C.I. No. 13025 / C.I. Acid Orange 52

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS06
Les organes cibles: Peau, yeux

Classification par le GHS:
Acute toxicity, oral (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H301: Toxique en cas d'ingestion.

Déclarations de précaution:
P264: Se laver les mains soigneusement après manipulation.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P301+P310: EN CAS D'INGESTION: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
P330: Rincer la bouche.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Orange de méthyle, pH indicateur	547-58-0	100%	208-925-3

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT IRRITER LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PEUT CAUSE L'IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupérer pour usage s'il n'est pas contaminé. Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Protéger de la lumière.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particules non classées ailleurs	Aucun établi	TWA: 5 mg/m^3 fraction respirable	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide. Orange-brun poudre cristalline.
Odeur: Aucun odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: >300°C (572°F)
Point d'ébullition: Données non disponibles
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): 11.3
Densité relative (gravité spécifique): 0.35 - 0.39
Solubilité (s): 0.2 g/100 ml water @ 20°C

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: 285°C (544°F)
Viscosité: Données non disponibles.
Formule moléculaire: $C_{14}H_{14}N_3NaO_3S$
Poids moléculaire: 327.34

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives. Protéger de la lumière.

Matières incompatibles: Comburante fortes.

Produits dangereux de décomposition: Oxydes de carbone, l'oxydes d'azote et l'oxydes de soufre.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 60 mg/kg
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut être nocif en cas d'inhalation.
Ingestion: Peut être nocif en cas d'ingestion.
Peau: Peut causer une irritation.
Yeux: Peut causer une irritation.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance, au démuni chimique, physique et toxicologique de propriétés à fond étudié. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.
Informations complémentaires: RTECS #: DB6327000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: UN2811
Nom d'expédition: Solides toxiques, organiques, n.o.s., (Orange de méthyle)
Classe de danger: 6,1
Groupe d'emballage: III
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Quantité limitée égale à ou moins de 1 L
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Orange de méthyle	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 7 février, 2013 **Remplace:** 1 janvier, 2012

SAFETY DATA SHEET

Creation Date 22-Feb-2010 **Revision Date** 16-Nov-2010 **Revision Number** 1

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Description: **Methylene Blue**
Synonyms C.I. 52015 trihydrate; Basic Blue 9 trihydrate

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals
Uses advised against No Information available

Details of the supplier of the safety data sheet

E-mail address begel.sdsdesk@thermofisher.com

Emergency Telephone Number

For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100

CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute oral toxicity	Category 4

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

Symbol(s) Xn - Harmful
R-phrase(s) R22 - Harmful if swallowed

Label Elements

Signal Word **Warning**

SECTION 2. HAZARDS IDENTIFICATION

Hazard Statements
H302 - Harmful if swallowed

Precautionary Statements - EU (§28, 1272/2008)
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell

Other Hazards

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
Methylene blue trihydrate 7220-79-3		>95	7220-79-3	Xn;R22	Acute Tox. 4 (H302)	-
Methylene blue 61-73-4	EEC No. 200-515-2	-	61-73-4	Xn; R22	Acute Tox. 4 (H302)	-

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

SECTION 4. FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do not induce vomiting.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.

Notes to Physician Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which must not be used for safety reasons
No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental precautions

Should not be released into the environment.

Methods and material for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe dust.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Biological limit values	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.
Derived No Effect Level (DNEL)	No information available.
Predicted No Effect Concentration (PNEC)	No information available.

Exposure controls

Engineering Measures	Ensure adequate ventilation, especially in confined areas Ensure that eyewash stations and safety showers are close to the workstation location

Personal protective equipment

Eye Protection	Safety glasses with side-shields
Hand Protection	Protective gloves
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls	No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Dark green
odor	odorless
pH	No information available.
Vapor Pressure	negligible
Vapor Density	13 (Air = 1.0)
Boiling Point/Range	No information available.
Melting Point/Range	100 - 110°C / 212 - 220°F
Decomposition temperature	190 °C
Flash Point	No information available.
Autoignition Temperature	No information available.
Water Solubility	soluble
Molecular Formula	C16 H18 Cl N3 S . 3 H2 O
Molecular Weight	373.89

SECTION 10. STABILITY AND REACTIVITY

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions . None under normal processing..

Conditions to Avoid

Avoid dust formation, Incompatible products, Excess heat.

Incompatible Materials

Hazardous Decomposition Products

Hydrogen chloride gas. Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methylene blue	1180 mg/kg (Rat)		

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.
Mutagenic Effects No information available
Reproductive Effects No information available.
Developmental Effects No information available.
Target Organs None known.
Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information
Endocrine Disruptor Information None known

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects Do not empty into drains

Persistence and degradability

No information available

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Results of PBT and vPvB assessment

Other adverse effects

No information available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products Dispose of in accordance with local regulations

Contaminated Packaging Empty containers should be taken to local recyclers for disposal

SECTION 14. TRANSPORT INFORMATION

IMDG/IMO Not regulated

ADR Not regulated

IATA Not regulated

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Methylene blue	200-515-2	-		X	X	-	X	X	X	X	X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
CHINA - China Inventory of Existing Chemical Substances
AICS - Inventory of Chemical Substances
KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

SECTION 16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R22 - Harmful if swallowed

Revision Date 16-Nov-2010
Revision Summary
Reason for revision Not applicable
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: MM0586
Revision Date: January 22, 2014
Approved by: James A. Bertsch

MSDS No.: MM0586

Section 1 Chemical Product and Company Information

Product	**MINERAL OIL**
Synonyms	White Mineral Oil; Heavy Paraffin Oil

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

CAUTION!
Avoid inhalation of oil mist. Do not handle or store near heat, sparks, flame or strong oxidizing agents. Wash thoroughly after handling.
Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	0
Fire	1
Reactivity	0
Contact	0

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Mineral oil	8042-47-5	100%	TWA: 5 mg/m^3 as Mineral oil (ACGIH 2012)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool. Slight fire hazard. Material must be preheated before ignition will occur (OSHA Class IIIB). If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, foam or water spray. Do not use streams of water as this will scatter the liquid and spread the fire. A water spray may be used to keep fire-exposed containers and surroundings cool.

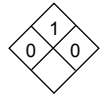
Flash Point: minimum 350°F (176.7°C) COC

Autoignition temperature: N/A

Explosion Limits: Lower: 0.9% **Upper:** 7.0%

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mists. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Liquid.
Appearance: Oily, colorless.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): <1 @ 20°C (68°F)
Vapor Density (Air = 1): >1
Evaporation rate (Butyl acetate = 1): < 1
Viscosity: N/A
Boiling point: N/A
Freezing / Melting point: N/A
Decomposition temperature: N/A
Solubility: Negligible in water.
Specific gravity (H_2O = 1): 0.818-0.880 @ 25/25°C
Percent volatile (%): N/A
Molecular formula: $CH_3[CH_2]_nCH_3$
Molecular weight: Variable

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Avoid excessive heat and open flames.

Incompatibilities with other materials: Chlorine, fluorine and other strong oxidizers.

Hazardous decomposition products: None identified.

Section 11 Toxicological Information

Effects of overexposure: INGESTION: Negligible effect. May act as a laxative. EYES: No significant health hazards identified. SKIN: No significant health hazards identified. INHALATION: No significant health hazards identified. Specific toxicity tests have not been conducted on this product. Hazard evaluation is based on information from similar products. Repeated exposure to levels of oil mists in excess of the exposure limits may result in accumulation of oil droplets in pulmonary tissue and may lead to irritaiton of the nose and throat. Exercise appropriate procedures to minimize potential hazards.

Oral-rat LD50: >5,000 mg/kg
Dermal-rabbit LD50: >2,000 mg/kg

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS (232-455-8), DSL-listed.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

MATERIAL SAFETY DATA SHEET

Date Printed: 11/04/14

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT CODE: MS-CS12946
PRODUCT NAME: ModPodge Antique Matte

PLAID ENTERPRISES, INC.
3225 WESTECH DRIVE
NORCROSS, GA 30092

PHONE: 678-291-8100 CHEMTREC 24-HOUR PHONE: 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT/EXPOSURE LIMITS	CAS#	% BY WT.

*****No reportable quantities of hazardous materials are present.*****

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYE: Direct contact with material may cause slight irritation.

SKIN: Prolonged or repeated contact may cause slight skin irritation.

INGESTION: Not an anticipated route of exposure. Small amounts are not anticipated to be harmful.

INHALATION: Exposure to vapors in poorly ventilated areas may cause irritation of the nose, throat, and respiratory tract.

CHRONIC (CANCER) INFORMATION: No anticipated chronic effects. This product does not contain regulated levels of NTP, IARC, ACGIH or OSHA listed carcinogens.

TERATOLOGY (BIRTH DEFECT) INFORMATION: Product does not contain chemicals at levels known to cause birth defects.

REPRODUCTION INFORMATION: No Data.

4. FIRST AID MEASURES

EYES: Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

SKIN: Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.

INGESTION: Small amounts are not anticipated to be harmful. Give 2 glasses of water to drink.

INHALATION: Remove to fresh air. Get medical attention if breathing is difficult.

NOTE TO PHYSICIANS: Please contact your local poison control center for information regarding this product.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: Not Determined METHOD: Not Determined

FLAMMABLE LIMITS:

LOWER FLAMMABLE LIMIT: Not Determined
UPPER FLAMMABLE LIMIT: Not Determined

AUTOIGNITION TEMPERATURE: Not Applicable.

HAZARDOUS COMBUSTION PRODUCTS: Not Applicable

EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire, water spray, foam, carbon dioxide, or dry chemical.

FIREFIGHTING INSTRUCTIONS: Use water spray to cool containers not actively involved in fire. Self-contained breathing apparatus recommended for fire fighters.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Absorb spill with inert material.

LARGE SPILL: Floor may be slippery, use care to avoid falling. Contain spills immediately with inert materials (e.g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal. Caution: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

HANDLING: Avoid employee exposure through the use of appropriate engineering controls, adequate personal protective equipment, and good industrial hygiene practices. Wash thoroughly after handling. Handle in well-ventilated workspace.

STORAGE: Store in a moderate cool, dry, well ventilated area away from direct sources of heat. Avoid freezing (32F). Position containers so that any labeling information is visible. Keep containers closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: The use of local exhaust ventilation is recommended to control emissions near the source. Additional engineering controls should be used as necessary.

RESPIRATORY PROTECTION: Respiratory protection is generally not required. A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Impervious clothing should be worn when gross contact is likely, such as when cleaning up large spills. Neoprene gloves may provide protection against permeation.

EYE PROTECTION: Use safety glasses with side shields (ANSI Z87.1 or approved equivalent).

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 212 Deg. F
MELTING POINT: Not determined.
VAPOR PRESSURE: Not Determined
VAPOR DENSITY: Not Determined.
SOLUBILITY IN WATER: 100% Soluble or dispersible.
SPECIFIC GRAVITY: 1.21
PH: 8.5 to 9.5
ODOR: Acrylic odor
APPEARANCE: Amber Emulsion
COATING VOC: .46 lb/gl
MATERIAL VOC: .19 lb/gl

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID): This material is considered stable. However, avoid temperatures above 177C/350F, the onset of polymer decomposition. Thermal decomposition is dependent on time and temperature.

INCOMPATIBILITY: There are no known materials which are incompatible with this product.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition will not occur.

HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

11. TOXICOLOGICAL INFORMATION

As packaged for consumers, this product is certified in a toxicological evaluation by a medical expert to contain no materials in sufficient quantities to be toxic or injurious to humans, including children, or to cause acute or chronic health problems.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: No applicable data.

CHEMICAL FATE INFORMATION: Appreciable evaporation from water to air is expected in the environment. No appreciable bioconcentration is expected in the environment.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Local, State, and Federal waste disposal regulations.

14. TRANSPORT INFORMATION:

NOT MEANT TO BE ALL INCLUSIVE

US DOT Hazard Class.....Nonregulated

15. REGULATORY INFORMATION:

NOT MEANT TO BE ALL INCLUSIVE - SELECTED REGULATIONS REPRESENTED

U.S. FEDERAL REGULATIONS: The components of this product are included on the TSCA inventory.

OSHA: This product is considered non-hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200)

CERCLA: SARA HAZARD CATEGORY: Release of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

SECTION 313: This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS: This product is not a controlled product under the Canadian Workplace Hazardous Materials Information System (WHMIS).

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All components of this product are on the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA.

EINECS: All the components of this product are on the European Inventory of Existing Commercial Chemical Substances.

STATE REGULATIONS:

VOLATILE ORGANIC COMPOUNDS: The Volatile Organic Compounds (VOCs) are below the emission limits as regulated by The Environmental Protection Agency (EPA) and state regulations.

16. OTHER INFORMATION

NAME OF PREPARER: Jim Stanley

REVISION DATE: 03-16-2012

HMIS CODES: H F R P
1 0 0 A

HMIS HAZARD RATINGS: H=HEALTH, F=FIRE, R=REACTIVITY, P=PERSONAL

SCALE: 0=MINIMAL, 1=SLIGHT, 2=MODERATE, 3=SERIOUS, 4=SEVERE
PERSONAL PROTECTION: See Section 8, Exposure Controls/Personal Protection for recommended handling of material as supplied; check with supervisor for your actual use condition.
HMIS is a registered trademark of the National Paint and Coatings Association.

MATERIAL SAFETY DATA SHEET

Date Printed: 11/04/14

LIST OF ACRONYMS:
ACGIH: American Conference of Government Industrial Hygienists
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
PPM: Parts Per Million
SARA: Superfund Amendment Reauthorization Act
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Please note that this MSDS applies to industrial handling of this material. Consumers should read product label. The information and recommendations set forth herein are believed to be accurate, The data is derived from information provided to Plaid Enterprises, Inc. from its raw material suppliers. Plaid Enterprises, Inc. makes no guarantee or warranty, expressed or implied, regarding the accuracy, reliability, or completeness of the data or the results to be obtained from the use thereof. It is the responsibility of the user of the product to comply with all applicable federal, state, and local laws and regulations.

Date Printed: 11/04/14

SAFETY DATA SHEET

8/28/2015

SECTION I - IDENTIFICATION

Material Name
NASCO COUNTRY SCHOOL TEMPERA

Company Information
Handy Art Inc
365 Sunnyside Drive
Milton, WI 53563
Phone 1-608-868-6873
Fax 1-608-868-6233
Email handyart@handyart.com

For emergencies call 608-868-6873

For health emergencies call the Poison Control Center: 1-800-222-1222

SECTION II - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

There are no GHS label elements.

PRIMARY ROUTES OF ENTRY: INHALATION, INGESTION, EYE, SKIN

EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE: NONE EXPECTED

EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE: NONE EXPECTED

CARCINOGEN LISTING: NTP: **NO** IARC **NO** OSHA **NO**

SEE SECTION III FOR COMPONENTS AFFECTED

MEDICAL CONDITIONS USUALLY AGGRAVATED BY OVER EXPOSURE TO THIS PRODUCT: NONE

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Hazardous Ingredients	CAS/EC #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC
None					

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURES: NONE REQUIRED NO ACUTE HEALTH EFFECTS EXPECTED.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
AUTOIGNITION TEMPERATURE: N/A
EXPLOSION LIMITS IN AIR (% BY VOLUME): NOT EXPLOSIVE

EXTINGUISHING MEDIA: NO SPECIAL MEDIA REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE & EXPLOSION HAZARDS: NOT COMBUSTIBLE

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal, see Section XIII

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING STORAGE AND HANDLING: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: NONE REQUIRED
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC): NONE REQUIRED
WORK/HYGIENE PRACTICES: NONE REQUIRED
ENGINEERING CONTROLS: NONE REQUIRED

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
VAPOR PRESSURE: N/A
SPECIFIC VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: N/A

MELTING POINT: N/A

SPECIFIC GRAVITY: N/A
REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: NONE
STABILITY: STABLE CONDITIONS TO AVOID: NONE
INCOMPATIBILITY (MATERIALS TO AVOID): NONE
HAZARDOUS DECOMPOSITION PRODUCTS: NONE

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS ASSOCIATED WITH USE OF THIS MATERIAL: NONE EXPECTED
The summated LD50 is 24816 mg/kg.
The summated LC50 is 84660 mg/cubic meter.
This product is not considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section III)

SECTION XII - ECOLOGICAL INFORMATION

NO HARMFUL EFFECTS KNOWN OTHER THAN THOSE ASSOCIATED WITH SUSPENDED INERT SOLIDS IN WATER

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE ,AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

[U.S. DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.]

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200
EPA SARA TITLE III CHEMICAL LISTINGS
NONE

SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
NONE

SECTION 313 TOXIC CHEMICALS (40 CFR 372):
NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:
FERRIC OXIDE
MICA
PROPYLENE GLYCOL

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM
MICA
PIGMENT RED 101
PROPYLENE GLYCOL

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:
NONYL PHENOL ETHOXYLATE

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling:

NONE

SECTION XVI - OTHER INFORMATION

LAST REVISION DATE: 08/28/2015

Prepared by Duke OEM Toxicology

COLOR INFORMATION

THIS SDS APPLIES TO THE FOLLOWING COLORS WHICH ARE ASSOCIATED WITH HAZARDOUS AND/OR NON-HAZARDOUS INGREDIENTS

Product Color	SKU	Hazardous Ingredient
000 PEACH		(NONE)
005 WHITE		(NONE)
010 YELLOW		(NONE)
015 ORANGE		(NONE)
020 RED		(NONE)
025 MAGENTA		(NONE)
030 BLUE		(NONE)
035 TURQUOISE		(NONE)
040 VIOLET		(NONE)
045 GREEN		(NONE)
050 BROWN		(NONE)
055 BLACK		(NONE)
060 GRAY		(NONE)
100 MAHOGANY		(NONE)
110 MUSTARD		(NONE)
115 OLIVE		(NONE)
120 SALMON		(NONE)
125 NUTMEG		(NONE)
150 FL YELLOW		(NONE)
152 FL ORANGE		(NONE)
153 FL PINK		(NONE)
154 FL RED		(NONE)
155 FL MAGENTA		(NONE)
156 FL BLUE		(NONE)
158 FL GREEN		(NONE)
159 FL VIOLET		(NONE)
160 BRASS		(NONE)
162 GOLD		(NONE)
163 TREASURE GOLD		(NONE)
164 COPPER		(NONE)
166 SILVER		(NONE)
SPARKLE PEACH		(NONE)
SPARKLE WHITE		(NONE)
SPARKLE YELLOW		(NONE)
SPARKLE ORANGE		(NONE)
SPARKLE RED		(NONE)
SPARKLE MAGENTA		(NONE)
SPARKLE BLUE		(NONE)
SPARKLE TURQUOISE		(NONE)
SPARKLE VIOLET		(NONE)
SPARKLE GREEN		(NONE)
SPARKLE BROWN		(NONE)
SPARKLE BLACK		(NONE)
BRONZE		(NONE)

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**NINHYDRIN**
Synonyms	1,2,3-Indantrione Monohydrate

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS07
Target organs: Eyes, Skin, Respiratory system

GHS Classification:
Acute tox. (Category 4)
Skin irrit. (Category 2)
Eye irrit. (Category 2A)
STOT-SE (Category 3)

GHS Label information: **Hazard statement:**
H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Precautionary statement:
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash before reuse.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with all local, state and federal regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Ninhydrin	485-47-2	100%	207-618-1

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam. Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particles not otherwise classified	None established	TWA: 5 mg/m^3 respirable fraction	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Yellow-white crystalline powder.
Odor: Characteristic odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: Data not available
Boiling point: Data not available
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): Data not available
Solubility(ies): Soluble in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: 240-250°C (464-482°F)
Viscosity: Data not available.
Molecular formula: $C_9H_4O_3{\bullet}H_2O$
Molecular weight: 178.14

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures. Protect from light. Turns red at 125°C (257°F). Swells at 139°C (282.2°F).

Incompatible materials: Amines, caustic and other alkalies.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: Causes irritation.
Eyes: Causes irritation.
Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: NK5425000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Ninhydrin	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: October 23, 2012 **Supercedes:** January 3, 2012

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**NINHYDRIN**
Synonymes	Monohydrate 1,2,3-Indantrione

Section 2 Identification De Risques

Mention d'avertissement: AVERTISSEMENT
Pictogrammes: GHS07
Les organes cibles: Les yeux, la peau et le système respiratoire

Classification par le GHS:
Acute tox. (Catégorie 4)
Skin irrit. (Catégorie 2)
Eye irrit. (Catégorie 2A)
STOT-SE (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H302: Nocif en cas d'ingestion.
H315: Provoque une irritation cutanée
H319: Provoque une sévère irritation des yeux.
H335: Peut irriter les voies respiratoires

Déclarations de précaution:
P261: Éviter de respirer les poussières.
P264: Se laver les mains après avoir manipulé.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P271: Utilisez uniquement de l'extérieur ou dans un endroit bien aéré.
P280: Porter des gants / des vêtements de protection / protection pour les yeux / du visage.
P302+P352: EN CAS DE CONTACT AVEC LA PEAU: laver abondamment à l'eau et au savon.
P305+P351+P338: SI DANS LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles cornéennes, si présentes et facile à faire. Continuer à rincer.
P304+P340: EN CAS D'INHALATION: Transporter la victime à l'air frais et la garder au repos dans une position confortable pour la respiration.
P301+ P330+P312: EN CAS D'INGESTION: rincer la bouche. Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P332+P313: En cas d'irritation cutanée: consulter un médecin.
P337+P313: Si l'irritation oculaire persiste: consulter un médecin.
P362+P364: Enlever les vêtements contaminés et les laver avant réutilisation.
P403+P233: Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence élimination des produits chimiques sous licence conformément à toutes les réglementations locales, provinciales et fédérales.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Ninhydrin	485-47-2	100%	207-618-1

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT IRRITER LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: CAUSE L'IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PEUT ÊTRE CAUSER UNE IRRITATION DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool. Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particules non classées ailleurs	Aucun établi	TWA: 5 mg/m^3 fraction respirable	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solid. Yellow-white crystalline powder.
Odeur: Odeur caractéristique.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: Données non disponibles
Point d'ébullition: Données non disponibles
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): Données non disponibles
Solubilité (s): Soluble dans l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: 240-250°C (464-482°F)
Viscosité: Données non disponibles.
Formule moléculaire: $C_9H_4O_3 \cdot H_2O$
Poids moléculaire: 178.14

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives. Protégez contre la lumière. Tourne le rouge à 125°C (257°F). Gonfle à 139°C (282.2°F).

Matières incompatibles: Amines, caustique et d'autres alcalis.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut être nocif en cas d'inhalation.
Ingestion: Peut être nocif en cas d'ingestion.
Peau: Provoque une irritation.
Yeux: Provoque une irritation.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance, au démuni chimique, physique et toxicologique de propriétés à fond étudié. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.
Informations complémentaires: RTECS #: NK5425000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Ninhydrin	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 23 octobre, 2012 **Remplace:** 3 janvier, 2012

An ISO 9001:2000 Certified Company

THE POWER OF THREE³
PHARMCO-AAPER
AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

SECTION I
PRODUCT AND COMPANY IDENTIFICATION

Product: Nitric Acid,
This MSDS is valid for all grades and catalog #'s

Synonyms: Nitric Acid, Aqua Fortis, Azotic Acid; Hydrogen nitrate
Formula: HNO_3

Manufacturer: PHARMCO-AAPER
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 40065
Phone (502) 633-0650
Fax (502) 633-0685

Emergency Contact:
CHEMTREC 1-800-424-9300

SECTION II
COMPOSITION /INFORMATION ON INGREDIENTS

%wt	Material	CAS	Exposure Limits
68.0 – 70.0	Nitric Acid	7697-37-2	TWA 2 ppm (5mg/m*f*)
Balance	Water	7732-18-5	None established

SECTION III
HAZARDS IDENTIFICATION

POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

Routes of Exposure:

Inhalation: Corrosive! Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract.

Ingestion: Corrosive! Swallowing nitric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact: Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color.

Eye Contact: Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure: Long-term exposure to concentrated vapors may cause erosion of teeth and lung damage. Long-term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

SECTION IV
FIRST AID

Immediate first aid treatment reduces the health effects of this substance.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

SECTION V
FIRE FIGHTING MEASURES

Fire: Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas.

Explosion: Reacts explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, etc. Reacts with most metals to release hydrogen gas which can form explosive mixtures with air.

Fire Extinguishing Media: Water spray may be used to keep fire exposed containers cool. Do not get water inside container.

Special Information: Increases the flammability of combustible, organic and readily oxidizable materials. In the

event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

SECTION VI
SPILL/ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer!

SECTION VII
HANDLING AND STORAGE

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

SECTION VIII
EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH Approved): If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Nitric acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.
Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION IX
PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless to yellowish liquid.
Odor: Suffocating, acrid.
Solubility: Infinitely soluble.
Specific Gravity: 1.41
pH: 1.0 (0.1M solution)
% Volatiles by volume @ 21C (70F): 100 (as water and acid)
Boiling Point: 122C (252F)
Melting Point: -42C (-44F)
Vapor Density (Air=1): 2-3
Vapor Pressure (mm Hg): 48 @ 20C (68F)
Evaporation Rate (BuAc=1): No information found.

SECTION X
STABILITY/REACTIVITY INFORMATION

Stability: Stable under ordinary conditions of use and storage. Containers may burst when heated.
Hazardous Decomposition Products: When heated to decomposition, emits toxic nitrogen oxides fumes and hydrogen nitrate. Will react with water or steam to produce heat and toxic and corrosive fumes.
Hazardous Polymerization: Will not occur.
Incompatibilities: A dangerously powerful oxidizing agent, concentrated nitric acid is incompatible with most substances, especially strong bases, metallic powders, carbides, hydrogen sulfide, turpentine, and combustible organics.
Conditions to Avoid: Light and heat.

SECTION XI
DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION XII
TRANSPORTATION INFORMATION

DOT Proper Shipping Name: NITRIC ACID
Hazard Class: 8

UN/NA: UN2031
Packing Group: II

IMO Proper Shipping Name: NITRIC ACID (WITH NOT MORE THAN 70% NITRIC ACID)
Hazard Class: 8
UN/NA: UN2031
Packing Group: II

SECTION XIII
REGULATORY INFORMATION

Federal EPA
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS Number	RQ
Nitric acid	7697-37-2	1,000lb

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, and 312). Extremely Hazardous Substances: Nitric Acid, Fuming.
Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313): Nitric Acid Fuming, 70%
Toxic Substances Control Act (TSCA) Status:
All components of this product are listed on the TSCA inventory.

State Right to Know
No components of this product are listed on the California Prop 65 lists.
New York release reporting list: Nitric Acid Fuming
Rhode Island RTK hazardous substances: Nitric Acid, Fuming
Pennsylvania RTK: Nitric Acid, Fuming
Florida: Nitric Acid, Fuming
Minnesota: Nitric Acid, Fuming
Massachusetts: Nitric Acid, Fuming
New Jersey: Nitric Acid, Fuming

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.

Section 1 Chemical Product and Company Information

80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**PHENOLPHTHALEIN SOLUTION**
Synonyms	1% Phenolphthalein in 95% Ethanol / Phenolphthalein Indicator

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS02 / GHS07 / GHS08 / GHS06
Target organs: Eyes, Central nervous system, Liver, Kidneys.

GHS Classification:
Flammable liquid (Category 2)
Acute toxicity, inhalation (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2B)
Mutagenicity (Category 2)
Carcinogenicity (Category 1B)
Reproductive toxicity (Category 2)
STOT-SE (Category 2)
STOT-SE (Category 3)

GHS Label information: **Hazard statement:**
H225: Highly flammable liquid and vapour.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H336: May cause drowsiness or dizziness.
H341: Suspected of causing genetic defects.
H350: May cause cancer.
H361f: Suspected of damaging fertility.
H371: May cause damage to organs.

Precautionary statement:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product contains a chemical known to the State of California to cause reproductive toxicity (Methanol, developmental).

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Ethyl alcohol	64-17-5	80.75 - 81.51%	200-578-6
Isopropyl alcohol	67-63-0	8.55%	200-661-7
Water	7732-18-5	5.00%	231-791-2
Methanol	67-56-1	3.80 - 4.08%	200-659-6
Phenolphthalein	77-09-8	1.00%	201-004-7
Methyl isobutyl ketone	108-10-1	0.85 - 0.95%	203-550-1

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 127)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Ethanol	STEL: 1000 ppm / 1880 mg/m^3(A3)	TWA: 1000 ppm / 1900 mg/m^3	TWA: 1000 ppm / 1900 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: Mild characteristic odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: -114°C (-173°F)*
Boiling point: 74-80°C (165.2-176°F)*
Flash point: 5°C (41°F)*

Evaporation rate (Butyl acetate **= 1):** Ca 2*
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: 4.0%(V) / 20.0%(V)*
Vapor pressure (mm Hg): Ca 50 @ 20°C*
Vapor density (Air = 1): Ca 1.5*
Relative density (Specific gravity): 0.7919-0.7955°C @ 60/60°F*
Solubility(ies): Soluble in water.

Partition coefficient: (n-octanol / water): Low Pow: -.32*
Auto-ignition temperature: 400°C (752°F)*
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

*[200 Proof Ethanol]

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.
Incompatible materials: Strong oxidizers, inorganic acids and halogens.
Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 7060 mg/kg ; Inhalation-rat LC50: 124.7 mg/l/4hours [Ethanol]
Skin corrosion/irritation: Skin-rabbit - Slight irritant.
Serious eye damage/irritation: Eyes-rabbit - Severe irritant.
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: (R) Reasonably anticipated to be a human carcinogen. [Phenolphthalein]
IARC classified: Group 2B: Possibly carcinogenic to humans. [Phenolphthalein]
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause dizziness, drowsiness, nausea, vomiting, inability to concentrate and irritation of the throat.
Ingestion: Ingestion causes dizziness, drowsiness, decreased reaction, euphoria, nausea, vomiting, staggering gait and coma.
Skin: Contact with skin causes irritation defatting on prolonged contact.
Eyes: Contact with eyes may cause blindness.
Signs and symptoms of exposure: See Potential health effects above. Risk of cancer depends on level and duration of exposure.
Additional information: RTECS #: KQ6300000 [Ethanol]

Section 12 Ecological Information

Toxicity to fish: Oncorhynchus mykiss (fish, fresh water), LC50 = 11,200 mg/l/24 hours [Ethanol]
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacia), EC50 = 10,800 mg/l/24 hours [Ethanol, 99.8% pure]
Toxicity to algae: Chlorella pyrenoidosa (Algae), EC50 = 9,310 mg/l/growth rate [Ethanol, absolute]
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1170
Shipping name: Ethanol solution
Hazard class: 3
Packing group: II
Reportable Quantity: 5,000 lbs (2270 kg)
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 1 L
ERG Guide # 127

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Ethanol	Listed	Not listed	D001	Listed	Not listed	B2; D2B
Methanol	Listed	5,000 lbs.	U154	Listed	Not listed	B2; D1B; D2A; D2B
Isopropanol	Listed	Not listed	Not listed	Listed	Not listed	B2; D2B
Phenolphthalein	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: September 17, 2014 **Supercedes:** November 26, 2013

Potassium Bisulfite

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/21/2015 Revision date: 01/30/2018 Supersedes: 01/30/2018 Version: 1.1

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	Potassium Bisulfite
Chemical name	:	Potassium Metabisulfite
CAS-No.	:	16731-55-8
Product code	:	LC18770
Formula	:	K2O5S2

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	For laboratory and manufacturing use only.
Recommended use	:	Laboratory chemicals
Restrictions on use	:	Not for food, drug or household use

1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number	:	CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS05

Signal word (GHS-US)	:	Danger
Hazard statements (GHS-US)	:	H318 - Causes serious eye damage
Precautionary statements (GHS-US)	:	P280 - Wear protective gloves, eye protection. P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P310 - Immediately call a poison center or doctor/physician.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification	:	Contact with acids liberates toxic gas.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Potassium Bisulfite (Main constituent)	(CAS-No.) 16731-55-8	100	Eye Dam. 1, H318

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after eye contact : Causes serious eye damage.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance. Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No fire hazard.

Explosion hazard : No direct explosion hazard.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Gloves.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep container closed when not in use.
Incompatible products	:	Strong acids.
Incompatible materials	:	Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Respiratory protection not required in normal conditions

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Powder.
Color	:	White to off-white
Odor	:	sharp Pungent
Odor threshold	:	No data available
pH	:	3.5 - 4.5 5% solution
Melting point	:	150 ℃
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapor pressure	:	No data available
Relative vapor density at 20 ℃	:	No data available
Relative density	:	No data available
Molecular mass	:	222.33 g/mol
Solubility	:	Soluble in water.

Log Pow	:	-4
Auto-ignition temperature	:	No data available
Decomposition temperature	:	150 °C
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids.

10.6. Hazardous decomposition products

Sulfur compounds. Potassium oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	:	Inhalation; Skin and eye contact
Acute toxicity	:	Not classified

Potassium Bisulfite (16731-55-8)	
LD50 oral rat	1800 - 2300 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.5 mg/l/4h
ATE US (oral)	1800 mg/kg body weight

Skin corrosion/irritation	:	Not classified pH: 3.5 - 4.5 5% solution
Serious eye damage/irritation	:	Causes serious eye damage. pH: 3.5 - 4.5 5% solution
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified
Specific target organ toxicity – repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Potential Adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met.
Symptoms/effects after eye contact	:	Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Potassium Bisulfite (16731-55-8)	
LC50 fish 1	220 - 460 mg/l 96 hr.

12.2. Persistence and degradability

Potassium Bisulfite (16731-55-8)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Potassium Bisulfite (16731-55-8)	
Log Pow	-4
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Potassium Bisulfite (16731-55-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Reactive hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Potassium Bisulfite (16731-55-8)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 01/30/2018

Other information : None.

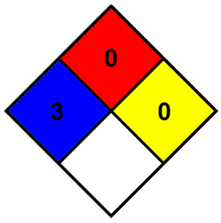
Full text of H-phrases: see section 16:

H318	Causes serious eye damage

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : B

B - Safety glasses, Gloves

SDS US LabChem

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.

MATERIAL SAFETY DATA SHEET

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9421004 9421006 9421104 9421106
Effective Date: September 09, 2002

SECTION I NAME

Product	Potassium Bromide
Chemical Synonyms	N/A
Formula	KBr
CAS No.	7758-02-3

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

NFPA

Health	1
Flammability	0
Reactivity	0

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Potassium bromide	100%	N/A
WARNING!		

SECTION III PHYSICAL DATA

Melting Point (°C)	760°C	Specific Gravity (H_2O = 1)	2.749 @ 25°C
Boiling Point (°C)	1435°C	Percent Volatile by Volume (%)	1% by weight
Vapor Pressure (mm Hg)	1 mm @ 795°C	Evaporation Rate (Butyl acetate =1)	N/A
Vapor Density (Air=1)	4.12		
Solubility in Water	53.5 g/100 ml water @ 20°C		
Appearance & Odor	White crystalline powder; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Non-flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

N/A

TDG **Not controlled under TDG.**

SECTION V REACTIVITY DATA

PP0400

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	
	No		
Hazardous Decomposition Products	Hydrogen bromide gas and/or bromine gas.		
Reactive under what conditions	Heating above 800°C.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Ingestion. Inhalation.
TLV	N/A
Toxicity for animals	N/A
Chronic effects on humans	Repeated or prolonged exposure to the substance can produce target organ damage. Target organs: None known.
Acute effects on humans	May be harmful if swallowed. May cause eye irritation, skin irritation.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep container dry. Keep in a cool place. Keep container tightly closed.
Precautions	Avoid contact with skin and eyes. DO NOT breathe dust. DO NOT ingest. If ingested, seek medical advice immediately.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Wash spill area with soap and water.
Protective Clothing	Safety glasses, lab coat, dust respirator, gloves.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No.	2	Date	September 09, 2002	Approved	Michael Raszeja

Fiche Signalétique

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS 9421004 9421006 9421104 9421106
Validé par: 09 septembre, 2002

SECTION I Identification

Produit	Bromure de potassium
Synonymes	Sans objet.
Formule	KBr
# CAS	7758-02-3

Telephone D'urgence

416-984-3000

NFPA

Santé	1
Flammabilité	0
Reactivité	0

Niveau de risque **WHMIS**

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

SECTION II Ingrédients Dangereux

Nom	%	TWA
Bromure de potassium	100%	Sans objet.
AVERTISSEMENT!		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	760°C	Gravité spécifique (Eau = 1)	2,749 @ 25°C
Point d'ebullition (°C)	1435°C	Volatilité % par volume	1% poids
Tension de vapeur (mm Hg)	1 mm @ 795°C	Taux d'évaporation (Acetate de butyl =1)	Sans objet.
Densité de la vapeur (Air=1)	4,12		
Solubilité	53,5 g/100 ml l'eau @ 20°C		
Odeur et apparence	Blanc cristalline poudre; inodore.		

SECTION IV Risques D'incendie ou D'explosion

Point d'éclair	Ininflammable.	Limites d'inflmmabilité % par volume	Sans objet.	Seuil minimal / Seuil maximal

Moyens d'extinction

Utiliser des poudres chimiques sèches, du CO_2, une mousse d'alcool ou de l'eau pulvérisée. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Sans objet.

TMD **Substance non réglementée par le TMD (Canada).**

SECTION V Données sur la Réactivité

PP0400

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	
	non		
Produits de decomposition dangereux	Gaz de bromure d'hydrogene et/ou gaz de brome.		
Conditions de Réactivité	Le chauffage au-dessus 800°C.		

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Ingestion. Inhalation.
LMP	Sans objet.
Toxicité pour les animaux	Sans objet.
Effets chroniques sur les humains	Une exposition répétée ou prolongée à la substance peut entraîner des troubles à certains organes cible. On ne connaît aucun organe de cible.
Effets aigué sur les humains	Peut être nocif si ingérer. Peut provoquer une irritation des yeux, une irritation de la peau.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Conserver le récipient à l'abri de l'humidité. Conserver dans un endroit frais. Conserver le récipient bien fermé.
Précautions	Éviter tout contact avec la peau et les yeux. NE PAS inhaler les poussières. NE PAS ingérer. En cas d'ingestion, consulter immédiatement un médecin.
Déversement ou fuite	Utiliser les instruments nécessaires pour mettre le solide répandu dans un contenant de récupération approprié. Bien laver la surface où le solide était répandu avec du savon et de l'eau.
Vêtements de protection	Lunettes de sécurité, blouse de laboratoire, respirateur anti-poussières, gants.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	2	Date	09 septembre, 2002	Vérifié par	Michael Raszeja

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: PP0480
Revision Date: September 5, 2013
Approved by: James A. Bertsch

MSDS No.: PP0480

Section 1 Chemical Product and Company Information

Product	**POTASSIUM CHROMATE**
Synonyms	Dipotassium Chromate; Neutral Potassium Chromate

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

DANGER! POISON ☠ STRONG OXIDIZER!
HARMFUL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN.
WARNING: This product contains a chemical known to the state of California to cause cancer. May cause rash or ulcers on open skin or mucous membranes. Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Target organs: Kidneys, liver, blood, respiratory system.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	4
Fire	0
Reactivity	2
Contact	3

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Potassium chromate	7789-00-6	100%	TWA: 0.5 mg/m^3 as Chromium

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Although not flammable, this chemical may intensify fire when in contact with combustible materials. Water runoff may contain chromium compounds and should not be allowed to enter sewers or waterways. May emit toxic fumes under fire conditions.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

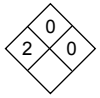
Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

(2008 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2008), GUIDE # 141)

Section 7 Handling & Storage — TOXIC STORAGE CODE BLUE

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Yellow crystals.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: N/A
Freezing / Melting point: 975°C (1787°F)
Decomposition temperature: N/A
Solubility: Complete.
Specific gravity (H_2O = 1): 2.732 @ 18°C
Percent volatile (%): N/A
Molecular formula: K_2CrO_4
Molecular weight: 194.21

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures and heat.
Hazardous polymerization: Will not occur.

Incompatibilities with other materials: Reducing agents. Most organic substances, bromides, iodides, chlorides, hypophosphites, sulfites, sulfides. Combustible materials, oxidizable materials.

Hazardous decomposition products: Potassium oxide.

Section 11 Toxicological Information

Effects of overexposure: WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER. Risk of cancer depends on level and duration of exposure. Chromium compounds in the form of chromates and dichromates have been found to be mutagenic in bacterial and mammalian cells, including those of the Chinese hamster. Recent studies indicate a significant risk of lung cancer among long-term employees of the chromate producing industry. May be fatal if inhaled, swallowed or absorbed through skin. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. May cause allergic respiratory and skin reactions. Contact with breaks in skin can cause ulceration (chrome sores). Exercise appropriate procedures to minimize potential hazards.
RTECS #: GB2940000
Oral-mouse LD50: 180 mg/kg; Intraperitoneal-mouse: LD50: 32 mg/kg; Intramuscular-rabbit: LD50: 11 mg/kg

Section 12 Ecological Information

Data not yet available. Do not flush into surface water or sanitary sewer system.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN3086
Shipping name: RQ, Toxic solid, oxidizing, n.o.s., (Potassium chromate)
Hazard class: 6.1, (5.1)
Packing group: II
Exceptions: Limited quantity equal to or less than 0.5 Kg; Reportable quantity equal to or more than 4.54 Kg.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (232-140-5), RCRA code D001, D007, DSL-listed, Ca Prop 65-listed.

Section 16 Additional Information

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: PP0516
Revision Date: October 29, 2013
Approved by: James A. Bertsch

MSDS No.: PP0516

Section 1 Chemical Product and Company Information

Product	**POTASSIUM DICHROMATE**
Synonyms	Potassium Bichromate

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

DANGER! CORROSIVE! STRONG OXIDIZER! POISON
MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. WARNING: This product contains a chemical known to the State of California to cause cancer. Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Store in a cool, dry place. Wash thoroughly after handling. Target organs: Kidneys, liver, blood.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	4
Fire	0
Reactivity	3
Contact	4

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Potassium dichromate	7778-50-9	100%	TWA: 0.05 mg/m$^{3(A1)}$ as Chromium

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Although not flammable, this chemical may intensify fire when in contact with combustible materials. Water runoff may contain chromium compounds and should not be allowed to enter sewers or waterways. May emit toxic fumes under fire conditions.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

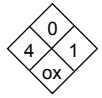
Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

(2008 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2008), GUIDE # 141)

Section 7 Handling & Storage — OXIDIZER STORAGE CODE YELLOW

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Orange-red crystals.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (= 1): N/A
Viscosity: N/A
Boiling point: N/A
Freezing / Melting point: 398°C (748°F)
Decomposition temperature: N/A
Solubility: Appreciable. (>10%)
Specific gravity (H_2O = 1): 2.67
Percent volatile (%): N/A
Molecular formula: $K_2Cr_2O_7$
Molecular weight: 294.19

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures and heat.
Hazardous polymerization: Will not occur.

Incompatibilities with other materials: Reducing agents, combustible materials, oxidizable materials. Avoid contact wtih organic materials.

Hazardous decomposition products: Not known.

Section 11 Toxicological Information

Effects of overexposure: Risk of cancer depends on level and duration of exposure. Chromium compounds in the form of chromates and dichromates have been found to be mutagenic in bacterial and mammalian cells, including those of the Chinese hamster. Recent studies indicate a significant risk of lung cancer among long-term employees of the chromate producing industry. INHALATION: May cause irritation of nasal septum and respiratory tract. Prolonged or repeated exposure may cause ulceration and perforation of the nasal septum. SKIN: Contact with broken skin may lead to formation of firmly marginated “chrome sores”. EYES: Overexposure will cause severe irritation and potential permanent damage to the eyes. Low level concentrations may cause moderate irritation or conjunctivitis. INGESTION: Can cause severe tissue destruction, kidneys failure and death. Exercise appropriate procedures to minimize potential hazards.

RTECS #: HX7680000
Oral-Rat LD50: 57 mg/kg; Dermal-Rabbit LD50: 1.17 g/kg; Inhalation-Rat LD50: 94 mg/m^3

Section 12 Ecological Information

Data not yet available. Do not flush into surface water or sanitary sewer system.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN3086
Shipping name: Toxic solids, oxidizing, n.o.s., (Potassium dichromate)
Hazard class: 6.1, (5.1)
Packing group: I
Exceptions: No exceptions. Reportable quantity equal to or more than 4.54 Kg (10 Lbs)

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (231-906-6), DSL-listed, Ca Prop 65-listed, WHMIS Classification-C; D1A; D2A; D2B.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

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MATERIAL SAFETY DATA SHEET

MSDS No.: PP0530
Revision Date: September 5, 2013
Approved by: James A. Bertsch

MSDS No.: PP0530

Section 1 Chemical Product and Company Information

Product	**POTASSIUM FERRICYANIDE**
Synonyms	Red Prussiate of Potash

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
MAY BE HARMFUL IF SWALLOWED.
Dangerous when heated to decomposition or on contact with acids or acid fumes, emitting highly toxic fumes of cyanides. Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Store in a cool, dry place. Wash thoroughly after handling. Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	0
Reactivity	1
Contact	1

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Potassium ferricyanide	13746-66-2	100%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Dangerous when heated to decompostion or on contact with acids or acid fume. Emits highly toxic fumes of cyanide gas which can form explosive mixture with air.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from light, acids and acid fumes.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Bright, orange-red crystals.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (= 1): N/A
Viscosity: N/A

Boiling point: Decomposes.
Freezing / Melting point: N/A
Decomposition temperature: 198.89°C (390°F)
Solubility: 33 g/100ml water @ 4°C
Specific gravity (H_2O = 1): 1.85 @ 17°C
Percent volatile (%): N/A
Molecular formula: $K_4Fe(CN)_6$
Molecular weight: 329.26

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Protect from light, heat, acids and acid fumes.

Incompatibilities with other materials: Strong oxidizers, acids and acid fumes.

Hazardous decomposition products: Oxides of nitrogen, cyanide fumes.

Section 11 Toxicological Information

Effects of overexposure: Ingestion may cause irritation and nausea. Product is not decomposed to cyanide in the body. Rapidly excreted in the urine, apparently whithout metabolic alteration. Slight short tem irritation of the skin, eyes and mucous membranes is possible. Exercise appropriate procedures to minimize potential hazards.

RTECS #: LJ8225000
ORL-MOUSE LD50: 2970 mg/kg

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (237-323-2), DSL-listed.

Section 16 Additional Information

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MATERIAL SAFETY DATA SHEET

MSDS No.: PP0550
Revision Date: October 3, 2013
Approved by: James A. Bertsch

MSDS No.: PP0550

Section 1 Chemical Product and Company Information

Product	**POTASSIUM FERROCYANIDE**
Synonyms	Yellow Prussiate of Potash

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
MAY BE HARMFUL IF SWALLOWED.
Dangerous when heated to decomposition or on contact with acids or acid fumes, emitting highly toxic fumes of cyanides. Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Store in a cool, dry place. Wash thoroughly after handling. Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	0
Reactivity	1
Contact	1

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Potassium ferrocyanide, trihydrate	14459-95-1	100%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Dangerous when heated to decompostion or on contact with acids or acid fume. Emits highly toxic fumes of hydrogen cyanide gas which can form explosive mixture with air.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from light, acids and acid fumes.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Yellow, crystalline powder.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: N/A
Freezing / Melting point: >70°C (158°F)
Decomposition temperature: >400°C (752°F)
Solubility: 28 g/100ml l'eau
Specific gravity (H_2O = 1): 1.853 @ 17°C
Percent volatile (%): N/A
Molecular formula: $K_4Fe(CN)_6 \cdot 3H_2O$
Molecular weight: 422.41

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Protect from light, heat, acids and acid fumes.

Incompatibilities with other materials: Strong oxidizers, acids and acid fumes.

Hazardous decomposition products: Oxides of nitrogen, cyanide fumes.

Section 11 Toxicological Information

Effects of overexposure: Ingestion may cause irritation and nausea. Product is not decomposed to cyanide in the body. Rapidly excreted in the urine, apparently whithout metabolic alteration. Slight short tem irritation of the skin, eyes and mucous membranes is possible. Exercise appropriate procedures to minimize potential hazards.

ORL-RAT LD50: 3616 mg/kg

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (237-722-2).

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

Potassium Hydroxide

MSDS # □□□□□

Section 1: Product and Company Identification

Potassium Hydroxide

Synonyms/General Names: Caustic Potash, Potassium Hydrate.
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White pellets or flakes, no odor.

HMIS (0 to 4)

Health	3
Fire Hazard	0
Reactivity	2

WARNING! Extremely corrosive to all body tissue and highly toxic by ingestion.
Target organs: None known.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Potassium Hydroxide (1310-58-3), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. ***Do not induce vomiting***. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Releases large amounts of heat when mixed with water. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage White

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in Corrosive Area [White Storage] with other corrosive items. Store in a dedicated corrosive cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines Potassium Hydroxide: OSHA PEL: N/A, ACGIH TLV: N/A, STEL: 2 mg/m^3 ceiling.

Section 9: Physical and Chemical Properties

Molecular formula	KOH.	**Appearance**	White pellets or flakes.
Molecular weight	56.11.	**Odor**	No odor.
Specific Gravity	2.04 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water, alcohol, glycerin.
Melting Point	361°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	1320°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Acids, organics, aluminum, halogen, magnesium, nitro compounds, acid chlorides, acid anhydrides, copper.
Shelf life: Fair shelf life, store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. ***Skin***: Redness, blistering, burning, itching, tissue destruction with slow healing. ***Ingestion***: Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. ***Inhalation***: Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.
Chronic Effects: Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.
Sensitization: none expected
Potassium Hydroxide: LD50 [oral, rat]; 273 mg/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; 50 mg/24hr/Severe
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer disposal after being neutralized to pH 7.

Section 14: Transport Information

DOT Shipping Name:	Potassium Hydroxide, solid.	**Canada TDG:**	Potassium Hydroxide, solid.
DOT Hazard Class:	8, pg II.	**Hazard Class:**	8, pg II.
Identification Number:	UN1813.	**UN Number:**	UN1813.

Section 15: Regulatory Information

EINECS: Listed (215-181-3).
TSCA: All components are listed or are exempt.
WHMIS Canada: D1B, E: Toxic material, Corrosive.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

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MATERIAL SAFETY DATA SHEET

MSDS No.: PP0601
Revision Date: September 20, 2013
Approved by: James A. Bertsch

MSDS No.: PP0601

Section 1 Chemical Product and Company Information

Product	**POTASSIUM IODATE**
Synonyms	Iodic Acid, Potassium Salt

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

DANGER! STRONG OXIDIZER!
HARMFUL IF SWALLOWED.
Heat, shock or friction may cause fire or explosion, especially if contaminated with other material. Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Store in a cool, dry place. Target organs: Kidneys.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	0
Reactivity	3
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Potassium iodate	7758-05-6	>99%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. This material is an oxidizer and greatly increases the burning rate of combutible materials.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.

Flash Point: Non-flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — OXIDIZER STORAGE CODE YELLOW

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, area. Avoid exposure to combustible and incompatible materials.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White crystalline powder.
Odor: Slightly acrid odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: >1000°C (1832°F)
Freezing / Melting point: 560°C (1040°F)
Decomposition temperature: N/A
Solubility: Complete.
Specific gravity (H_2O = 1): 3.9
Percent volatile (%): N/A
Molecular formula: KIO_3
Molecular weight: 214.00

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Avoid exposure to combustibles and excessive temperatures.

Incompatibilities with other materials: Combustibles, reducing agents and organic matter. Aluminum, arsenic, carbon, copper, phosphorous or sulfur products mixed with iodates may explode on heating.

Hazardous decomposition products: Toxic fumes of iodine, hydrogen iodide, potassium oxides.

Section 11 Toxicological Information

Effects of overexposure: Moderately toxic via oral route. May cause central nervous system failure. May cause gastrointestinal irritation and kidney damage. Ingestion may cause nausea, vomiting and diarrhea. Contact with skin and eyes may cause irritation, redness and pain. Inhalation may cause lung congestion, pulmonary edema, asphyxia and chemical pneumonitis. May cause irritation to the mucous membranes.

ORL-RAT LD50: 675 mg/kg
ORL-MOUSE LDLo: 531 mg/kg
SKN-RBT LD50: N/A

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1479
Shipping name: Oxidizing solid, n.o.s. (Potassium iodate)
Hazard class: 5.1
Packing group: PG III
Exceptions: Limited Quantity ≤ 5 Kg.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (231-831-9), RCRA code D001

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**POTASSIUM IODIDE**
Synonyms	None

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: GHS07
Target organs: Thyroid

GHS Classification:
Acute toxicity, oral (Category 5)
Skin sensitization (Category 1A)

GHS Label information: **Hazard statement:**
H303: May be harmful if swallowed.
H317: May cause an allergic skin reaction.

Precautionary statement:
P261: Avoid breathing dust.
P272: Contaminated work clothing should not be allowed out of the workplace.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P333+P313: If skin irritation or rash occurs: Get medical attention.
P312: Call a POISON CENTER or doctor if you feel unwell.
P362+P364: Take off contaminated clothing and wash it before reuse.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Potassium iodide	7681-11-0	100%	231-659-4

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with strong oxidizers may cause fire or explosion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dust. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particulates not otherwise classified	None established	TWA: 15 ppm total dust	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid, white crystals.
Odor: No odor.
Odor threshold: Data not available.
pH: 7.0
Melting / Freezing point: 680°C (1256°F)
Boiling point: 1330°C (2426°F)
Flash point: Non-combustible

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 3.12
Solubility(ies): Complete in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: KI
Molecular weight: 166.01

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Protect from light, air, moisture and excessive temperatures.

Incompatible materials: Reacts violently with alkaline metals, diazonium salts, oxidants, bromine and chlorine trifluorides, and fluorine perchlorate, and may cause explosion and/or fire. NOTE: Solutions of this product are corrosive to most metals.

Hazardous decomposition products: Yields iodine when in contact with air. Releases iodine, potassium monoxide, and hydrogen iodide, when in contact with moist air.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 4800 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May cause irritation of respiratory tract.
Ingestion: Large doses may cause gastrointestinal upset and weakness.
Skin: May cause mild irritation and redness on prolonged contact.
Eyes: Can be irritating with redness and pain.
Signs and symptoms of exposure: Hypothyroidism with possibility of goitre (hypertrophy of the throid gland), possible sensitization of skin. Chronic ingestion of iodides may produce "iodism" which may be characterized by skin rash, running nose, headache, and irritation of mucous membranes. Weakness, anemia, loss of weight, and general depression may also occur. **Additional information: RTECS #:** NN1575000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Potassium iodide	Listed	Not listed	Not listed	Listed	Not listed	D2A

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: October 1, 2013 **Supercedes:** January 4, 2012

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**POTASSIUM PHOSPHATE, DIBASIC**
Synonyms	Dipotassium hydrogenorthophosphate

Section 2 Hazards Identification

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: GHS07
Target organs: None known

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)
STOT SE (Category 3)

GHS Label information: **Hazard statement(s):**
H316: Causes mild skin irritation.
H320: Causes eye irritation.
H335: May cause respiratory irritation.

Precautionary statement(s):
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Nommé Chimique	# CAS	%	EINECS
Potassium phosphate, dibasic	7758-11-4	100%	231-834-5

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particulates not otherwise classified	None established.	TWA: 15 mg/m^3 total dust	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid, hygroscopic, white crystalline powder.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available
Melting / Freezing point: Data not available
Boiling point: Decomposes
Flash point: Data not available

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Not flammable
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): Data not available
Solubility(ies): 33 g/100 ml water @ 20°C

Partition coefficient: Data not available
Auto-ignition temperature: Not applicable
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: K_2HPO_4
Molecular weight: 174.18

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and moisture.

Incompatibilities with other materials: None known.

Hazardous decomposition products: Phosphorous oxides.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LDLo: 4640 mg/kg [Potassium phosphate, tribasic]
Skin corrosion/irritation: Skin-rabbit LD50: >4640 mg/kg [Potassium phosphate, tribasic]
Serious eye damage/irritation: Draize test: Eye-rabbit: 10 mg - moderate [Potassium phosphate, tribasic]
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation may cause irritation of the eyes, nose, and throat, coughing and choking.
Ingestion: Ingestion of large doses may cause diarrhea, nausea, cramps, and vomiting.
Skin: Repeated or prolonged contact may cause dermatitis.
Eyes: May cause mild irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: TC8450000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Potassium phosphate	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**PHOSPHATE DE POTASSIUM, DIBASIQUE**
Synonymes	Hydrogénoorthophosphate de dipotassium

Section 2 Identification De Risques

Cette substance ou un mélange n'a pas été classé à ce moment selon le Système général harmonisé (SGH) de classification et d'étiquetage des produits chimiques.

Mention d'avertissement: AVERTISSEMENT
Pictogrammes: GHS07
Les organes cibles: Aucun connu.

Classification par le GHS:
Skin irritation (Catégorie 3)
Eye irritation (Catégorie 2B)
STOT SE (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger(s):
H316: Provoque une légère irritation cutanée.
H320: Provoque une irritation des yeux.
H335: Peut irriter les voies respiratoires.

Déclarations de précaution(s):
P261: Éviter de respirer les poussières.
P264: Se laver les mains soigneusement après manipulation.
P271: Utiliser seulement en plein air ou dans un endroit bien ventilé.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P332+P313: En cas d'irritation cutanée: Obtenir des soins médicaux.
P337+P313: Si l'irritation oculaire persiste: Obtenir des soins médicaux.
P403+P233: Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Phosphate de potassium, dibasique	7758-11-4	100%	231-834-5

Section 4 Mesures De Premiers Soins

INGESTION: Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupérer pour usage s'il n'est pas contaminé. Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particules non classées ailleurs	Aucun établi.	TWA: 15 mg/m^3 total dust	Aucun établi.

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solides, hygroscopique, poudre cristalline blanche.
Odeur: Aucun odeur.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles
Point de fusion / congélation: Données non disponibles
Point d'ébullition: Se décompose
Point d'éclair: Données non disponibles

Taux d'évaporation (Eau = 1): Non applicable
Inflammabilité (solide / gaz): Ininflammable
Limites d'explosivité: Bas / Max: Non applicable
Pression de vapeur (mm Hg): Negligible
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): Données non disponibles
Solubilité (s): 33 g/100 ml l'eau @ 20°C.

Coefficient de partage: Données non disponibles
Auto-inflammation: Non applicable
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: K_2HPO_4
Poids moléculaire: 174.18

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Conditions à éviter: Les températures excessives et l'humidité.
Incompatibilités avec d'autres matériaux: Aucun connu.
Produits de décomposition dangereux: Oxydes de phosphore.
Polymérisation dangereuse: N'aura pas lieu.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LDLo: 4640 mg/kg [Phosphate de potassium, tribasique]
La corrosion de la peau et l'irritation: Skin-rabbit LD50: >4640 mg/kg [Phosphate de potassium, tribasique]
Des lésions oculaires graves / irritation: Draize test: Eye-rabbit: 10 mg - moderate [Phosphate de potassium, tribasique]
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: Données non disponibles.
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: L'inhalation peut causer l'iritation des yeux, nez et gorge, toussant et obstruant.
Ingestion: L'ingestion de grandes doses peut causer la diarrhée, la nausée, les crampes et le vomissement.
Peau: Le contact répété ou prolongé avec la peau peut causer la dermatite.
Yeux: Le contact avec des yeux peut causer l'irritation douce.
Les signes et les symptômes de l'exposition: Pour le meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été étudiées à fond. Les données spécifiques n'est pas disponible. Exercice des procédures appropriées afin de minimiser les dangers potentiels.
Informations complémentaires: RTECS #: TC8450000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Potentiel de bioaccumulation: Pas de données disponible
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: Non applicable
Nom d'expédition: Non réglé
Classe de danger: Non applicable
Groupe d'emballage: Non applicable
Quantité à déclarer: Non
Polluant marin: Non
Exceptions: Non applicable
2012 ERG Guide #: Non applicable

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Phosphate de potassium	Listed	Pas listed	Pas listed	Listed	Pas listed	Pas listed

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

Section 1 Chemical Product and Company Identification

ProlabScientific
2213 le Chatelier, Laval, Quebec, H7L 5B3
www.prolabscientific.com ✆ 1-800-556-5226
info@prolabscientific.com

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**POTASSIUM THIOCYANATE**
Synonyms	Thiocyanic Acid, Potassium Salt / Potassium Sulfocyanate / Potassium Rhodanide

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS07
Target organs: Central nervous system, Cardiovascular system, Thyroid

GHS Classification:
Acute toxicity, oral (Category 4)
Acute toxicity, dermal (Catégorie 4)
Acute toxicity, inhalation (Catégorie 4)
Aquatic chronic (Category 3)

GHS Label information: **Hazard statement:**
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H332: Harmful if inhaled.
H412: Harmful to aquatic life with long lasting effects.

Supplementary information:
EUH032: Contact with acids liberates very toxic gas.

Precautionary statement:
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330: IF SWALLOWED: Rinse mouth.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P362+P364: Take off contaminated clothing and wash it before reuse.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Potassium thiocyanate	333-20-0	100%	206-370-1

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Violent reactions have occurred when mixed with chlorates, nitrates and peroxides. Emits highly toxic fumes of cyanides upon decomposition.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Potassium thiocyanate	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White crystals
Odor: No odor
Odor threshold: Data not available.
pH: 5-7 (50 g/L)
Melting / Freezing point: 173°C (343°F)
Boiling point: 500°C (932°F)
Flash point: Not flammable

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): 3.36
Relative density (Specific gravity): 1.886
Solubility(ies): 177 g/100 ml in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: KSCN
Molecular weight: 97.18

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and formation of dust.

Incompatible materials: Strong oxidizers and acids.

Hazardous decomposition products: Ammonia, hydrogen sulphide, carbonyl sulphide, nitric oxides, sulfur oxides, hydrocyanic acid, thiourea. Carbon disulfide and hydrogen sulfide may form upon reaction with strong acids. Carbon disulfide is very reactive and may react violently with oxidizing agents causing fire or explosion.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 854 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Causes coughing.
Ingestion: Causes confusion, convulsions, nausea, vomiting, weakness.
Skin: Contact with skin may cause irritation on prolonged contact.
Eyes: Contact with eyes cause irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: XL1925000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: Not applicable
Shipping name: Not Regulated
Hazard class: Not applicable
Packing group: Not applicable
Reportable Quantity: No
Marine pollutant: No
Exceptions: Not applicable
2016 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Potassium thiocyanate	Listed	Not listed	Not listed	Listed	Not listed

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

75004062

Material Safety Data Sheet

Quick Identifier (In Plant Common Name)
BRITE STAINLESS STEEL CLEANER & POLISH (WB)

Manufactured For: Name & Address	**PRIME SOURCE™** P.O. Box 41911 ST. Louis, MO 63141
Emergency Telephone No.	800-424-9300 24 Hours

HMIS Symbol:

Health	**1**
Flammability	**1**
Reactivity	**0**

HMIS		NFPA
Minimal	0	Insignificant
Slight	1	Slight
Moderate	2	Moderate
Serious	3	High
Severe	4	Extreme

NFPA Symbol:

Date Prepared: September 22, 2004 **Prepared By:** V. Burnell **Date:** 9/23/04

SECTION 1 - IDENTITY

Common Name: (used on label) (Trade name & Synonyms)	Brite Stainless Steel Cleaner & Polish (WB)
Chemical Name	Mixture packaged in pressurized aerosol spray can.

SECTION 2 - HAZARDOUS INGREDIENTS

Principal Hazardous Component(s)	CAS No.	OSHA PEL	ACGIH TLV	Other Limits
Propane	74-98-6	Not Est.	1000 ppm	
Butane	106-97-8	Not Est.	800 ppm	
Petroleum Distillate	64742-47-8	Not Est.	Not Est.	100 ppm (mfr.) (525 mg/m^3) for 8 hr. TWA) (Company Rec.)
Petroleum Distillate	64741-44-2	Not Est.	400 ppm	

*Section 313 Supplier Notification - Indicates hazardous ingredients which are toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling Point	> 200°F	**Specific Gravity (H_20=1)**	0.91 - .99 g/mL	**Vapor Pressure (Propellant)**	N/A
% - VOC	20%	**Evaporation Rate (BuAc=1)**	< 1.00	**pH**	7.00 - 7.50
Solubility In Water	Soluble	**Appearance and Odor**	White, creamy milky opaque emulsion with lemon odor.		

SECTION 4 - FIRE & EXPLOSION DATA

Flammability (per flame projection)	Non-Flammable	Flame Projection	0”	**Extinguisher Media**	Alcohol Foam, CO_2, Dry Chemical (B-C), Water

Special Fire Fighting Procedures	Keep containers cool using water spray. Use proper equipment to protect personnel from bursting containers.
Unusual Fire and Explosion Hazards	Contents under pressure. Do not expose to temperatures exceeding 120° F as containers may vent, rupture or burst.

SECTION 5 - PHYSICAL HAZARDS

Stability	Unstable ☐ Stable ■	**Conditions to Avoid**	Open Flames; Temp. > 120°F.	**Hazardous Polymerization**	May Occur ☐ Will not Occur ■	**Conditions to Avoid**	None

Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	CO, CO_2

SECTION 6 - HEALTH HAZARDS

Routes of Entry	**Inhalation:**	Yes	**Eyes / Skin:**	Yes	**Ingestion:**	Unlikely
Signs and Symptoms of Exposure (Acute & Chronic)	May cause skin and eye irritation.					
Medical Conditions Generally Aggravated by Exposure	None Known					

Chemical Listed as Carcinogen or Potential Carcinogen	**National Toxicology Program**	Yes ☐ No ■	**I.A.R.C. Monographs**	Yes ☐ No ■	**OSHA**	Yes ☐ No ■

Emergency and First Aid Procedures

1. Inhalation
Remove victim to fresh air. Apply artificial respiration if necessary. Get medical attention.

2. Eyes
Flush eyes with water for at least 15 minutes. Get medical attention if irritation persists.

3. Skin
Wash affected areas with soap and water. Get medical attention if irritation persists.

4. Ingestion
Do not induce vomiting. Get medical attention.

SECTION 7 – SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)	None required for normal use.							
Ventilation	**Local Exhaust**	Maintain adequate ventilation.	**Mechanical (General)**	N/A	**Special**	N/A	**Other**	N/A
Protective Gloves	Wear gloves if skin contact causes irritation.		**Eye Protection**	Use when necessary to prevent eye contact.				
Other Protective Clothing or Equipment	Wash hands after use.							

SECTION 8 – SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be Taken Handling and Storage	Do not store at temperatures above 120°F. Do not puncture or incinerate containers. Keep out of reach of children. Store in accordance with NFPA 30B for Level 1 Aerosols.
Other Precautions	Read label precautions carefully. Follow label directions to avoid injury.
Steps to be Taken in Case Material is Released or Spilled	Soak up spilled liquid with absorbent material. Place in closed container.
Waste Disposal Methods	Dispose of in accordance with local, state, and federal regulations.
Transportation Info	UN 1950 Consumer Commodity ORM-D

SAFETY DATA SHEET

1. Identification

Product number	1000010680
Product identifier	**PROLINK BASEBOARD STRIPPER-FA003**
Company information	PRO-LINK 500 CHAPMAN STREET CANTON, MA 02021 United States
Emergency telephone US	1-866-836-8855
Emergency telephone outside US	1-952-852-4646
Version #	01
Recommended use	Not available.
Recommended restrictions	None known.

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage. Causes serious eye damage. Extremely flammable aerosol. May cause an allergic skin reaction.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid breathing gas. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Storage	Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
2-Butoxyethanol		111-76-2	20 - 40
Butane		106-97-8	2.5 - 10

Chemical name	Common name and synonyms	CAS number	%
Propane		74-98-6	2.5 - 10
Anhydrous Ammonia		7664-41-7	0.1 - 1
Pine Oil		8002-09-3	0.1 - 1
Other components below reportable levels			60 - 80

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Powder. Alcohol resistant foam. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Contents under pressure. Pressurized container may explode when exposed to heat or flame.

Special protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire-fighting equipment/instructions Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.

General fire hazards Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not get in eyes, on skin, or on clothing. Avoid breathing gas. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3
		50 ppm
Anhydrous Ammonia (CAS 7664-41-7)	PEL	35 mg/m3
		50 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3
		1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Anhydrous Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm
Butane (CAS 106-97-8)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	24 mg/m3
		5 ppm
Anhydrous Ammonia (CAS 7664-41-7)	STEL	27 mg/m3
		35 ppm
	TWA	18 mg/m3
		25 ppm
Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2-Butoxyethanol (CAS 111-76-2)	Skin designation applies.

US - Tennesse OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2)	Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2-Butoxyethanol (CAS 111-76-2)	Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Butoxyethanol (CAS 111-76-2)	Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended.

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Skin protection

Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state	Gas.
Form	Aerosol.
Color	Tan.
Odor	Pine
Odor threshold	Not available.
pH	11.5 - 12.5 estimated
Melting point/freezing point	Not available.
Initial boiling point and boiling range	177.72 °F (80.96 °C) estimated
Flash point	-156.0 °F (-104.4 °C) Propellant estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	60 - 70 psig @70F estimated
Vapor density	Not available.

Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	446 °F (230 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Specific gravity	0.997 - 1.006 estimated

10. Stability and reactivity

Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Do not mix with other chemicals. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Oxidizing agents. Nitrates. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns.
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction. 2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction.

Components	Species	Test Results
2-Butoxyethanol (CAS 111-76-2)		
Acute		
Dermal		
LD50	Guinea pig	230 ml/kg, 24 Hours
		7.3 ml/kg, 4 Days
	Rabbit	450 ml/kg, 24 Hours
		435 mg/kg, 24 Hours
		0.63 ml/kg
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rabbit	400 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
Oral		
LD100	Rabbit	695 mg/kg
LD50	Dog	> 695 mg/kg

Components	Species	Test Results
	Guinea pig	1200 mg/kg
	Rat	530 - 2800 mg/kg
Anhydrous Ammonia (CAS 7664-41-7)		
Acute		
Inhalation		
LC50	Mouse	4230 ppm, If <1L: Consumer Commodity Hours
	Rat	7939 mg/m3
		4000 ppm, If <1L: Consumer Commodity Hours
Oral		
LD50	Rat	350 mg/kg
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, 120 Minutes
		52 %, 120 Minutes
	Rat	1355 mg/l
Propane (CAS 74-98-6)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, 120 Minutes
		52 %, 120 Minutes
	Rat	1355 mg/l
		658 mg/l/4h

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

2-Butoxyethanol (CAS 111-76-2) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not likely, due to the form of the product.

Chronic effects Prolonged inhalation may be harmful. May be harmful if absorbed through skin.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
2-Butoxyethanol (CAS 111-76-2)			
Aquatic			
Fish	LC50	Inland silverside (Menidia beryllina)	1250 mg/l, 96 hours
Anhydrous Ammonia (CAS 7664-41-7)			
Aquatic			
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0.43 - 0.47 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)	
2-Butoxyethanol	0.83
Butane	2.89
Propane	2.36

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport information

DOT

UN number UN1950
UN proper shipping name Aerosols, flammable
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Label(s) 2.1
Packing group Not applicable.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Special provisions N82
Packaging exceptions 306
Packaging non bulk None
Packaging bulk None

This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2020, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/20 and may be used now in place of the "Consumer Commodity ORM-D" marking and both may be displayed concurrently.

IATA

UN number UN1950
UN proper shipping name Aerosols, flammable

Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.
Packaging Exceptions	LTD QTY

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Packaging Exceptions	LTD QTY
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

DOT

IATA; IMDG

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Anhydrous Ammonia (CAS 7664-41-7) Listed.

SARA 304 Emergency release notification

Anhydrous Ammonia (CAS 7664-41-7) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Anhydrous Ammonia	7664-41-7	100	500 lbs		
Ethylene Oxide	75-21-8	10	1000 lbs		

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Anhydrous Ammonia	7664-41-7	0.1 - 1
Ethylene Glycol	107-21-1	0.1 - 1
1,4-Dioxane	123-91-1	0.01 - 0.1
Ethylene Oxide	75-21-8	0.01 - 0.1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Anhydrous Ammonia (CAS 7664-41-7)
Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

2-Butoxyethanol (CAS 111-76-2)
Anhydrous Ammonia (CAS 7664-41-7)
Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

US. New Jersey Worker and Community Right-to-Know Act

2-Butoxyethanol (CAS 111-76-2)
Anhydrous Ammonia (CAS 7664-41-7)
Butane (CAS 106-97-8)
Pine Oil (CAS 8002-09-3)
Propane (CAS 74-98-6)

US. Pennsylvania Worker and Community Right-to-Know Law

2-Butoxyethanol (CAS 111-76-2)
Anhydrous Ammonia (CAS 7664-41-7)
Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

US. Rhode Island RTK

Anhydrous Ammonia (CAS 7664-41-7)
Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-Dioxane (CAS 123-91-1)	Listed: January 1, 1988
Ethylene Oxide (CAS 75-21-8)	Listed: July 1, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Ethylene Oxide (CAS 75-21-8)	Listed: August 7, 2009

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Ethylene Oxide (CAS 75-21-8)	Listed: February 27, 1987

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Ethylene Oxide (CAS 75-21-8)	Listed: August 7, 2009

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-20-2015

Version # 01

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

*** SAFETY DATA SHEET***

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: N-Propanol
CAS #: 71-23-8

MOLECULAR FORMULA: C3H80

MOLECULAR WEIGHT: 60.10

SYNONYMS: Propyl Alcohol, N-Propyl Alcohol, N-Propanol

SECTION 2: COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NO.	%	Exposure Limits
N-Propanol	71-23-8	100	OSHA PEL: 200 ppm ACGIH TLV: 100 ppm

SECTION 2 NOTES: FLAMMABLE LIQUID AND VAPOR

SECTION 3: HAZARDS IDENTIFICATION

ROUTES OF ENTRY: Inhalation, Skin Contact, Ingestion

POTENTIAL HEALTH EFFECTS

EYES: Risk of serious damage to eyes.

SKIN: May cause irritation. May be harmful in contact with skin.

INGESTION: Aspiration Hazard. May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

INHALATION: Inhalation may cause central nervous system effects. May cause irritation of respiratory tract.

ACUTE HEALTH HAZARDS: See above.

CHRONIC HEALTH HAZARDS: Tumorigenic effects have been reported in experimental animals. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse livereffects.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/A

CARCINOGENICITY:
OSHA: N/A **ACGIH:** N/A **NTP:** N/A **IARC:** N/A
OTHER: N/A

SECTION 3 NOTES: FLAMMABLE LIQUID AND VAPOR

SECTION 4: FIRST-AID MEASURES

EYES: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention required.

SKIN: Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occurs.

INGESTION: Do not induce vomiting. Get medicalattention.

INHALATION: Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: N/A

SECTION 4 NOTES: N/A

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: 13.7%
(% BY VOLUME) LOWER: 2.00%

FLASH POINT: 15°C (59°F)
METHOD USED: N/A

AUTOIGNITION TEMPERATURE: N/A

NFPA HAZARD CLASSIFICATION

HEALTH:	1	**FLAMMABILITY:**	3	**REACTIVITY:**	1	**OTHER:**	N/A

HMIS HAZARD CLASSIFICATION

HEALTH:	N/A	**FLAMMABILITY:**	N/A	**REACTIVITY:**	N/A	**PROTECTION:**	N/A

EXTINGUISHING MEDIA: Use water spray to cool fire-exposed containers. Use dry chemical, carbon dioxide, or alcohol-resistant foam. Do not use straight streams of water.

SPECIAL FIRE FIGHTING PROCEDURES: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes. Flammable liquid. Can release vapors for explosive mixtures at temperatures above the flashpoint. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes. Flammable liquid. Can release vapors for explosive mixtures at temperatures above the flashpoint. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide.

SECTION 5 NOTES: N/A

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Should not be released into the environment. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable and closed containers for disposal.

SECTION 6 NOTES: N/A

SECTION 7: HANDLING AND STORAGE

HANDLING: Wear personal protective equipment. Keep away from open flames, hot surfaces, and sources of ignition. Precautionary measures against static discharges. Do not breathe vapors or spray mist. Do not get in eyes, on skin or on clothing.

STORAGE: Keep containers tightly closed in a dry, cool, well-ventilated place. Keep away from heat and sources of ignition.

OTHER PRECAUTIONS: N/A

SECTION 7 NOTES: N/A

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: Local Exhaust.

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respirators.

EYE PROTECTION: Wear safety glasses or goggles.

SKIN PROTECTION: Wear chemical resistant gloves.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Wear appropriate protective clothing to minimize contact with skin.

WORK HYGIENIC PRACTICES: N/A

EXPOSURE GUIDELINES: Refer to Section 2.

SECTION 8 NOTES: N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR: Clear, colorless liquid; Alcohol-like odor.

PHYSICAL STATE: Liquid

pH AS SUPPLIED: N/A
pH (Other: N/A
BOILING POINT: 97°C
MELTING POINT: -127°C
FREEZING POINT: N/A
VAPOR PRESSURE (mmHg): 14.3
@ N/A
VAPOR DENSITY (AIR = 1): 2.1
@ N/A
SPECIFIC GRAVITY (H2O = 1): 0.8040
@ N/A
EVAPORATION RATE: N/A

BASIS (=1): N/A

SOLUBILITY IN WATER: Miscible.

PERCENT SOLIDS BY WEIGHT: N/A

PERCENT VOLATILE: N/A
BY WT/ N/A **BY VOL @** N/A

VOLATILE ORGANIC COMPOUNDS (VOC): N/A

WITH WATER: N/A **LBS/GAL**
WITHOUT WATER: N/A **LBS/GAL**

MOLECULAR WEIGHT: N/A
VISCOSITY: N/A
@ N/A

SECTION 9 NOTES: N/A

SECTION 10: STABILITY AND REACTIVITY

	STABLE	UNSTABLE
STABILITY:	X	

CONDITIONS TO AVOID (STABILITY): Avoid incompatible materials.

INCOMPATIBILITY (MATERIAL TO AVOID): Aldehydes, halides, halogenated organics, halogen, strong acids and strong oxidizers.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon Monoxide, Carbon Dioxide.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID (POLYMERIZATION): N/A

SECTION 10 NOTES: N/A

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: N/A

LD50/LC50: LD50 Oral, Rat; 1870 mg/kg

REPRODUCTIVE TOXICITY: Experiments have shown reproductive toxicity effects on laboratory animals.

IRRITANCY, SENSITIVITY: Severe eye irritant.

CARCINOGENICITY: No.

POTENTIAL HEALTH EFFECTS: Tumorigenic effects have been reported in experimental animals.

SECTION 11 NOTES: N/A

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Material is readily biodegradable. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50>100 mg/L in the most sensitive species tested).

SECTION 12 NOTES: N/A

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Observe all federal and state regulations.

RCRA HAZARD CLASS: N/A

SECTION 13 NOTES: N/A

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION
PROPER SHIPPING NAME: N-Propanol
HAZARD CLASS: 3
DOT SHIPPING ID NUMBER: UN1274
DOT PACKING GROUP: II
DOT LABEL STATEMENT: N/A

WATER TRANSPORTATION
PROPER SHIPPING NAME: N/A
HAZARD CLASS: N/A
ID NUMBER: N/A
PACKING GROUP: N/A
LABEL STATEMENTS: N/A

AIR TRANSPORTATION
PROPER SHIPPING NAME: N/A
HAZARD CLASS: N/A
ID NUMBER: N/A
PACKING GROUP: N/A
LABEL STATEMENTS: N/A

SECTION 14 NOTES: N/A

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS
TSCA (TOXIC SUBSTANCE CONTROL ACT): N/A

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): N/A

311/312 HAZARD CATEGORIES: N/A

313 REPORTABLE INGREDIENTS: N/A

STATE REGULATIONS: N/A

INTERNATIONAL REGULATIONS: N/A

SECTION 15 NOTES: N/A

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: N/A

PREPARATION INFORMATION: N/A

DISCLAIMER: This information relates onto to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. The information and recommendations contained herein are to the best of the manufacturer's knowledge and belief accurate and reliable as of the date indicated. No representation warranty or guarantee, however, is made with regards to accuracy, reliability or completeness. Conditions of use of the material are under the control of the user; therefore, it is the user's responsibility to satisfy itself as to the suitability and completeness of such information for its own particular use. Appropriate warnings and safe-handling procedures should be provided to handlers and users.

MATERIAL SAFETY DATA SHEET

FREQUENCY 256 Neutral
Disinfectant Cleaner
Ready to Use

MSDS No: 6087RTU
Date Prepared: 12/17/2001
Date Revised: 10/10/2003

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name/Use: FREQUENCY 256 Neutral Disinfectant Cleaner Ready to Use
A 1:256 dilution of FREQUENCY 256 Neutral Disinfectant Cleaner

Product Synonyms:
Practical Solutions FREQUENCY 256 Neutral Disinfectant Cleaner Ready-to-Use
A 1:256 dilution of Practical Solutions FREQUENCY 256 Neutral Disinfectant Cleaner
Single Solution FREQUENCY 256 Neutral Disinfectant Cleaner Ready-to-Use
A 1:256 dilution of Single Solution FREQUENCY 256 Neutral Disinfectant Cleaner Concentrate

MANUFACTURER
The Ramsey Company
8310 16th St.
Sturtevant, WI 53177-0902

Ramsey Telephone Number: 800-421-2768
Emergency Telephone (24 hours): 800-228-5635
CHEMTREC (U.S./Can.): 800-424-9300
CHEMTREC (Int'l): +1 703-527-3887

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS#	% BY WEIGHT	OSHA PEL/STEL	ACGIH TLV/STEL
Didecyl dimethyl ammonium chloride	7173-51-5	< 0.1	NA	NA
n-Alkyl dimethylbenzyl ammonium chloride	8001-54-5	< 0.1	NA	NA

NA - Not Available

OSHA REGULATORY STATUS: This product is classified as not hazardous under OSHA regulations.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Clear, Colorless Liquid . Slight Quat Odor. May Cause Eye Irritation.

POTENTIAL HEALTH EFFECTS *(See Section 11 for Toxicological Information)*

PRIMARY ROUTE(s) OF EXPOSURE: X Eye X Skin Contact __ Skin Absorption
__ Inhalation __ Ingestion

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: May cause eye irritation. Symptoms may include redness and pain.

SKIN: Non-irritating to the skin.

INGESTION: May cause temporary mouth, throat and stomach discomfort. Symptoms may include nausea.

INHALATION: Not expected to be irritating or harmful if inhaled.

EFFECTS OF CHRONIC EXPOSURE: None known.

MEDICAL CONDITIONS AGGRAVATED: None known.

4. FIRST AID MEASURES

EYES: Flush eyes with plenty of water while holding eyelids apart. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Do not put any medication in the victim's eyes unless instructed by a physician. Get medical attention if irritation develops.

SKIN: Flush with water, then wash with soap and water. Remove saturated clothing. Get medical attention if irritation develops.

INGESTION: Do not induce vomiting. Drink large quantities of water. Get medical attention.

INHALATION: Remove to fresh air. Get medical attention if symptoms persist.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD: > 93°C (200°F)TCC

FLAMMABLE LIMITS: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire.

HAZARDOUS COMBUSTION PRODUCTS: Normal products of combustion (carbon monoxide and carbon dioxide).

FIRE AND EXPLOSION HAZARDS: None known.

FIRE FIGHTING INSTRUCTIONS: This product is not flammable. As in any fire, MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear should be worn.

6. ACCIDENTAL RELEASE MEASURES

Contain spill. Use mop, absorbent, or wet vacuum to collect material for proper disposal. Rinse area with water.

7. HANDLING AND STORAGE

HANDLING: Use good personal hygiene practices. No special precautions are required for anticipated conditions of use. Remove saturated clothing.

STORAGE: No special storage practices are required. Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: No special controls are required.

PERSONAL PROTECTION

EYE: Not required under normal conditions of use.

SKIN: Not required under normal conditions of use.

RESPIRATORY: Not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
ODOR: Slight Quat
APPEARANCE: Clear, Colorless
pH: 7.06
PERCENT VOLATILE BY WEIGHT: 99.9
VAPOR PRESSURE: Not Available
VAPOR DENSITY: Not Available
BOILING POINT: Not Available
FREEZING/MELTING POINT: Not Available

SOLUBILITY IN WATER: Complete
EVAPORATION RATE: Not Available
SPECIFIC GRAVITY: .999
VISCOSITY: Water Thin
OCTANOL/WATER PARTITION COEFFICIENT: Not Available
ODOR THRESHOLD: Not Available

10. STABILITY AND REACTIVITY

STABILITY (CONDITIONS TO AVOID): Stable.

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None known.

INCOMPATIBLE MATERIALS: None known.

11. TOXICOLOGICAL INFORMATION

ACUTE DATA: This product causes mild eye irritation at strongest recommended dilution.

PRODUCT/INGREDIENT	ORAL LD_{50} (rat)	DERMAL LD_{50} (rabbit)	INHALATION LC_{50} (rat)
Didecyl dimethyl ammonium chloride	450 mg/kg	3342 mg/kg	Not Available
n-Alkyl dimethylbenzyl ammonium chloride	590 mg/kg	2000 mg/kg	Not Available

SENSITIZATION DATA: No data available.

CHRONIC DATA:
No data available.

REPRODUCTIVE/TERATOGENIC DATA: No data available.

CARCINOGENIC/MUTAGENIC DATA: Not listed as carcinogenic by NTP, IARC, or ACGIH or regulated as a carcinogen by OSHA.

SYNERGISTIC MATERIALS: No data available.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS

Disposal of this material should be in accordance with local, state or provincial and federal regulations. The unused product, at its recommended use dilution, is a RCRA non-hazardous waste in accordance with 40 CFR 261. The product has not been evaluated by the Toxicity Characteristic Leachate Procedure (TCLP). According to RCRA, it is the responsibility of the waste generator to ensure proper disposal.

14. TRANSPORT INFORMATION

DOT/TDG HAZARDOUS MATERIAL DESCRIPTION: Not regulated

15. REGULATORY INFORMATION

Not meant to be all-inclusive---selected regulations represented.

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: Under 40 CFR 370.2, this product meets the following hazard categories: None.

313 REPORTABLE INGREDIENTS: Ingredients in this product are not currently subject to notification.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: None of the ingredients in this product are reportable under CERCLA.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS: This product complies with all TSCA inventory requirements.

REGULATIONS

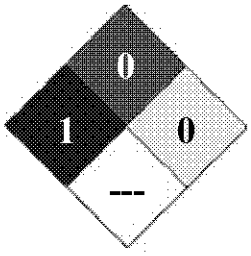
STATE REGULATIONS: Product contains a mixture of surfactant and quaternary ammonium compounds below State reporting requirements.

16. OTHER INFORMATION

HMIS RATING

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	-

NFPA CODES:



APPROVED BY: Product Safety & Regulatory

MSDS STATUS New MSDS

The information on this data sheet represents our current data and best opinion as to the proper use in handling of the product under normal foreseeable conditions. Any use of this product which is not in conformance with this data sheet or product label, or which involves using the product in combination with any other product or any other process is the responsibility of the user.

Material Safety Data Sheet (MSDS) — XIM Sealer 10 Black # 2105

Fiche technique de sécurité — XIM Sealer 10 Noir # 2105

Complies with OSHA's Hazard Communications Standard 29CFR 1910.1200

Quick Identifier, Common Name: (Used on Label and Data Sheet)
Identifiant rapide, appellation commune : (utilisée sur étiquette et fiche technique)

SECTION 1:

SUPPLIER INFORMATION:	INFORMATIONS DE FOURNISSEUR:
Manufacturer's Name: XIM Products, Inc.	**Nom du fabricant:** XIM Products, Inc.
Address: 1169 Bassett Road, Westlake, Ohio 44145	**Adresse:** 1169 Bassett Road, Westlake, Ohio 44145 USA
Emergency Calls: (800) 424-9300	**Appels d'urgence:** (800) 424-9300
Information Calls: (440) 871-4737	**Demandes d'informations:** (440) 871-4737

PRODUCT IDENTIFICATION	IDENTIFICATION DU PRODUIT
XIM Sealer 10 Black #2105	**XIM Sealer 10 Noir #2105**
Date Prepared: 01/01/12	**Date de préparation**: 01/01/12
Prepared By: J.E .Jarufe	**Préparé par:** J.E .Jarufe
Updated: 01/01/12	**Mise à jour:** 01/01/12
Product Class: Solvent modified alkyd	**Classe de produit: Alkyde** modifié par solvant

HMIS Codes

Health	2*
Flammability	3
Reactivity	0

HMIS Codes

Santé	2*
Inflammabilité	3
Réactivité	0

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	CAS NO.	INGREDIENT	UNITS
< 0.003	71-43-2	† Benzene	
		ACGIH TLV	0.50 ppm
		OSHA TLV	1.00 ppm
< 2.50	100-41-4	† Ethyl Benzene	
		ACGIH TLV	100 ppm
		OSHA TLV	100 ppm
< 27.00	108-88-3	Toluene	
		ACGIH TLV	20 ppm
		OSHA TLV	200 ppm
< 23.00	1330-20-7	Xylene	
		ACGIH TLV	150 ppm
		OSHA TLV	100 ppm
< 1.50	1332-58-7	Anhydrous Aluminum Silicate	
		ACGIH TLV	2 mg/m^3 (respirable)
		OSHA PEL	50 mccp (5 $mg/m^{3)}$ (respirable)
< 11.00	1317-65-3	Calcium Carbonate	
		ACGIH TLV	10 mg/m^3 (Total dust)
		OSHA PEL	5 mg/m^3 (respirable)
< 0.02	14808-60-7	† Crystalline Silica	
		ACGIH TLV	0.05 mg/m^3 (respirable)
		OSHA PEL	10 mg/m^3 (respirable) (SIO_2 +2)
< 8.00	14807-96-6	Magnesium Silicate Hydrate	
		ACGIH TLV	2 mg/m^3 (respirable)
		OSHA TLV	2 mg/m^3 (Mineral Dust)

† **These chemicals are not added by XIM to its products. These chemicals are naturally occurring chemicals in the solvents, pigments and/or additives used by XIM and the paint industry.**
Ces produits chimiques ne sont pas ajoutés par XIM dans ses produits. Ils apparaissent naturellement comme dans solvants, pigments et/ou additifs utilisés par XIM et l'industrie de la peinture.

SECTION 3:

PHYSICAL AND CHEMICAL PROPERTIES	PROPRIÉTÉS PHYSIQUES ET CHIMIQUES
Physical Form: Liquid	**Forme physique**: Liquide
Appearance and Odor: Black color liquid, solvent odor	**Apparence et odeur:** Liquide noir, odeur de solvant
Boiling Range: 245-288° F	**Limites d'ébullition:** 118-142° C
Vapor Pressure: 26 mm Hg @100°.F	**Pression de vapeur:** 26 mm Hg @ 38.8° C
Vapor Density: Heavier than air 3.8 (Air = 1)	**Densité de vapeur:** Plus lourd que l'air 3.8 (Air = 1)
Evaporation Rate: Slower than ether	**Taux d'évaporation :** Plus lent que l'éther
Weight per Gallon: 9.10 lb/gal	**Poids par gallon:** 1.08 kg / l
Solubility in Water: Negligible	**Solubilité dans l'eau:** Négligeable
VOC(coating): < 580 g/l , < 4.84 lb/gal (EPA Method #24)	**VOC (revêtement):** < 5.17 lb/gal, < 0.62 kg/l
VOC (material): < 580 g/l , < 4.84 lb/gal	**VOC (matériau):** < 5.17 lb/gal, < 0.62 kg/l
Percent Volatile: 66.7 % by Volume	**Pourcentage volatile:** 66.7 % by Volume

FIRE AND EXPLOSION DATA

Flash Point: 40-80° F TCC (ASTM D-56)
Flammability Limits: LEL - 1.0 % UEL – 7.0 %
Extinguishing Media: Dry Chemical, Carbon dioxide, Foam
Hazard Class: **DOT**: Flammable Liquid
OSHA: Class 1B

Special Fire Fighting Procedures: Wear protective equipment including NIOSH approved self-contained breathing apparatus. Isolate from heat, sparks, electrical equipment and open flame.

Unusual Fire and Explosion Hazards: During a fire, vapors may form an explosive mixture in air. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Vapors may build up and travel along the ground to an ignition source which may result in a flash back to the source of the vapors. Cool fire exposed containers with water. Heavy build up on filters, rags, etc. Can trap solvents and result in spontaneous combustion.

DONNÉES SUR INCENDIE ET EXPLOSION

Point d'éclair : 4.4-26.7° C TCC (ASTM D-56)
Limites d'inflammabilité : LEL - 1.0 % UEL – 7.0 %
Matériaux d'extinction : Poudre chimique, dioxyde de carbone, mousse
Classe de Hasard: DOT: Liquide inflammable
OSHA: Class 1B

Procédures spéciales de lutte contre le feu : Porter un équipement de protection incluant un appareil respiratoire autonome approuvé NIOSH. Garder à l'écart de chaleur, étincelles, équipement électrique et flamme nue.

Dangers inhabituels d'incendie et explosion : Durant un incendie, des vapeurs peuvent former un mélange explosif dans l'air. Des conteneurs fermés peuvent exploser s'ils sont exposés à une chaleur intense. Les vapeurs de solvants peuvent être plus lourdes que l'air. Elles peuvent s'accumuler et suivre le sol jusqu'à une source d'inflammation avec un retour jusqu'à leur source. Refroidir les conteneurs exposés avec de l'eau. Des dépôts épais sur filtres, chiffons, etc., peuvent capter des solvants et entraîner une combustion spontanée.

SECTION 5:

HEALTH HAZARD DATA

Routes of Entry: Inhalation, Skin Contact, Eye Contact from Liquid and vapors, Ingestion.

Effects of Overexposure:

Inhalation – ACUTE: Irritation of the nose, throat and eyes: Asthma-like breathing may be a delayed reaction. Other possible symptoms of overexposure may include headache, nausea, narcosis, fatigue and loss of appetite.

Inhalation – CHRONIC: Chronic exposure to solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

Eye Contact: Liquid and vapors are irritating to the eyes and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

Skin Contact: Repeated or prolonged skin contact can result in dry, defatted and cracked skin causing increased susceptibility to infection.

Ingestion: Ingestion can result in irritation in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may cause aspiration resulting in chemical pneumonitis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
Asthma, other respiratory disorders (bronchitis, etc.), skin allergies, eczema.

EMERGENCY AND FIRST AID PROCEDURES:

Eyes: Flush eyes with clean water for at least 15 minutes. Obtain medical attention.

Skin: Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Obtain medical attention if irritation develops or persists.

Inhalation: Remove from exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention.

Ingestion: DO NOT INDUCE VOMITING. Give 1-2 glasses of water to dilute. Consult a physician immediately.

DONNÉES SUR LES RISQUES POUR LA SANTÉ

Voies d'entrée : Inhalation, contact avec la peau, contact avec les yeux de liquide et vapeurs, ingestion

Effets d'une surexposition :

Inhalation – AIGUË : Irritation de nez, gorge et yeux : Une respiration de type asthmatique peut être une réaction avec retard. D'autres symptômes possibles peuvent inclure mal de tête, nausée, narcose, fatigue et perte d'appétit.

Inhalation – CHRONIQUE : Une exposition chronique aux solvants a été associée avec divers effets neurotoxiques dont des dommages permanents au cerveau et au système nerveux. Les symptômes incluent perte de mémoire, perte de capacité intellectuelle et perte de coordination.

Contact avec les yeux : Liquides et vapeurs dont des irritants pour les yeux et peuvent causer douleur, larmoiement, rougissement et gonflement. À défaut de soins, des dommages à la cornée peuvent arriver, et la blessure est longue à cicatriser. Cependant les dommages sont généralement réversibles.

Contact avec la peau : Un contact cutané répété ou prolongé peut amener assèchement, dégraissage et craquèlement de la peau, entraînant une sensibilité accrue aux infections.

Ingestion : Une ingestion peut amener une irritation de bouche, tissu stomacal et voies digestives. Les symptômes peuvent inclure irritation de gorge, douleur abdominale, nausée, vomissement et diarrhée. Le vomissement peut entraîner une aspiration causant une pneumonite chimique.

ÉTATS MÉDICAUX AGGRAVÉS PAR UNE EXPOSITION :
Asthme, autres désordres respiratoires (bronchite, etc.), allergies cutanées, eczéma

PROCÉDURES D'URGENCE ET DE PREMIERS SOINS :

Yeux : Rincer les yeux à l'eau propre pendant au moins 15 minutes. Obtenir une intervention médicale

Peau : Ôter immédiatement les vêtements contaminés. Laver les zones affectées soigneusement à l'eau et au savon. Obtenir immédiatement une intervention médicale si une irritation se développe et persiste.

Inhalation: Sortir du lieu d'exposition. Administrer oxygène ou respiration artificielle selon le besoin. Obtenir une intervention médicale.

Ingestion: NE PAS PROVOQUER LE VOMISSEMENT. Faire avaler 1-2 verres d'eau pour diluer le produit. Consulter immédiatement un médecin.

REACTIVITY DATA	DONNÉES SUR LA RÉACTIVITÉ
Stability: This material is stable	**Stabilité :** Ce matériau est stable.
Materials to avoid: Strong oxidizing agents.	**Matériaux à éviter :** Agents fortement oxydants.
Hazardous Polymerization: Will not occur.	**Polymérisation dangereuse :** Ne se produira pas.
Decomposition Products: By high heat and fire: CO2, CO and other toxic vapors and mist.	**Produits de décomposition :** En cas de forte chaleur ou de feu : CO2, CO et autres vapeurs et brouillards toxiques.

SECTION 7:

ACCIDENTAL RELEASE MEASURES	MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL
Precautions for handling and storage: Keep from fire, sparks and open flame. Do not smoke. Keep container tightly closed. Wash thoroughly after handling.	**Précautions de manutention et entreposage :** Garder à l'écart de feu, étincelles et flamme nue. Ne pas fumer. Garder le conteneur bien fermé. Se laver soigneusement après manutention.
Other precautions: Remove sources of ignition. Provide explosion proof ventilation and/or respiratory protection. Use non-sparking tools.	**Autres précautions :** Écarter les sources d'inflammation. Fournir une ventilation anti-déflagration et/ou une protection respiratoire. Utiliser des outils non générateurs d'étincelles.
Steps to take in case of spills: Pick up large spills with non-sparking tools; small spills with absorbent material. Wash down area with liquid decontaminant and flush spill area with water.	**Actions à mener en cas de déversement :** Récupérer les gros déversements avec des outils non générateurs d'étincelles, et les plus réduits avec de la matière absorbante. Laver la zone du déversement avec un décontaminant liquide, et bien la rincer à l'eau.
Waste Disposal Method: If discarded this material and containers should be treated as a hazardous waste, based on the Ignitability characteristics as defined under Federal RCRA Regulations (40 CFR 261). Dispose of in accordance with local, state, and federal regulations. DO NOT INCINERATE IN CLOSED CONTAINERS.	**Méthode de mise au rebut des déchets :** En cas de mise au rebut, matière et conteneurs doivent être traités comme des déchets dangereux, sur la base des caractéristiques d'inflammabilité définies par les exigences fédérales RCRA (40 CFR 261). Jeter en conformité avec les réglementations locales, provinciales et nationales. NE PAS INCINÉRER DE PRODUIT DANS DES CONTENEURS FERMÉS.
For further information, contact the United States Environmental Protection Agency RCRA hotline (800) 242-9342.	**Pour plus d'informations**, contacter l'agence américaine de protection de l'environnement sur la ligne d'urgence RCRA au (800) 242-9342

SECTION 8:

SPECIAL PROTECTION/SAFE HANDLING INFORMATION	INFORMATIONS SUR PROTECTION SPÉCIALE/MANUTENTION SÛRE
Special Sensitivity: Avoid exposing the container to high heat. This can cause sealed containers to pressurize and possibly rupture.	**Sensibilité spéciale :** Éviter l'exposition du conteneur à une forte chaleur. Cela peut amener à une montée en pression des conteneurs hermétiques avec possible rupture.
Handling and Storage: Keep away from heat, sparks and open flame. Ground the container during storage and transfer operations. When storing, tightly close containers to prevent moisture contamination. Do not reseal if contamination is suspected. Do not breathe vapors. Employee education and training in safe handling of this product are required under OSHA Hazard Communication Standard.	**Manutention et entreposage :** À garder à l'écart de chaleur, étincelles et flamme nue. Mettre le conteneur à la terre durant l'entreposage et les opérations de transfert. Durant le stockage bien fermer les conteneurs pour éviter une contamination par l'humidité. Ne pas refermer si de la contamination est suspectée. Ne pas respirer les vapeurs. Une formation des employés et un apprentissage pour une manipulation de ce produit sont exigés par la norme 0SHA de communication.
Respiratory Protection: Use air-purifying respirator that the respirator supplier has demonstrated to be effective for solvent vapors. Where overspray is present, or if the concentration of solvents is not known or exceeds the level at which the air purifying respirator is effective, a positive pressure air-supplied respirator (TC19C NIOSH) is recommended.	**Protection respiratoire :** Utiliser un appareil de protection respiratoire à adduction d'air filtré dont le fabricant a démontré l'efficacité pour protéger des vapeurs de solvants. S'il y a de la surpulvérisation ou si la concentration en solvants est inconnue ou dépasse le niveau pour lequel le respirateur reste efficace, il est recommandé d'utiliser un appareil respiratoire à apport d'air en pression positive (TC19C NIOSH)
Ventilation: Design and maintain to provide volume and pattern to prevent vapor concentration in excess of TLV or PEL	**Ventilation :** Concevoir et entretenir afin de fournir volume et configuration empêchant que la concentration de vapeur dépasse les seuils de VLE ou PEL.
Protective Gloves: Wear gloves which are recommended by glove supplier for protection against Materials in Section 2.	**Gants de protection :** Porter des gants de type recommandé par leur fournisseur pour se protéger des matières de la section 2.
Eye Protection: Wear safety glasses with unperforated side shields.	**Protection des yeux :** Porter des lunettes de sécurité avec des protections latérales non perforées.

TOXICOLOGY INFORMATION INFORMAION TOXICOLOGIQUE	**CAS NO.**	**LD50 RAT (oral)**	**LC50 RAT (inhalation)**
Benzene	71-43-2	930 mg/kg	Not Available (**Non disponible)**
Ethyl Benzene	100-41-4	3500 mg/kg	Not Available
Toluene	108-88-3	636 mg kg^{-1}	49 gm/m^3 (4hours)
Xylene	1330-20-7	4300 mg/kg	26800 ppm/m^3/8hr
Anhydrous Aluminum Silicate (Kaolin)	1332-58-7	> 5000 mg/kg	Not Available
Calcium Carbonate	1317-65-3	Not Available	Not Available
Crystalline Silica	14808-60-7	500 mg/kg	Not Available
Magnesium Silicate Hydrate	14807-96-6	Not Available	Not Available

Health Concerns: (Dangers pour la santé)

Crystalline Silica (Quartz, Crisobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.
La silice cristalline (quartz, cristobalite) est listée par IARC et NTP. Une exposition à long terme à des niveaux élevés de poussière de silice, qui ne peut survenir qu'en ponçant ou abrasant le film sec, peut affecter les poumons (silicose) et éventuellement être cause de cancer.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats, and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.
L'éthyle benzène est classé par l'IARC comme cancérigène possible pour les humains (2B), sur la base d'une évidence insuffisante pour les humains mais d'une évidence suffisante sur des animaux en laboratoire. Une exposition par inhalation à de fortes concentrations d'éthyle benzène durant toute la vie de rats et souris a entraînér l'augmentation de certains types de cancers, incluant des tumeurs rénales chez les rats, et des tumeurs du foie et des poumons chez les souris. Ces effets n'étaient pas observés sur des animaux exposés à de plus faibles concentrations. Il n'y a pas d'évidence que l'éthyle benzène cause le cancer chez l'homme.

California Proposition 65 (Proposition 65 de Californie)
Warning: This product contains chemicals known to the state of California to cause cancer and birth defects, or other reproductive harm.
Avertissement : Ce produit contient des produits chimiques reconnus par l'état de Californie pour causer des cancers ou anomalies congénitales, ou d'autres atteintes à la reproduction.

This product contains pigments that may be classified as nuisance particles which may present hazardous levels only during sanding or abrading. Inhaling of dust may aggravate existing respiratory disorders (i.e. asthma, emphysema, bronchitis…). Inhalation of inorganic dusts has been linked to the development of Fibrotic and Benign Pneumoconiosis
Ce produit contient des pigments pouvant être classés comme poussières nuisibles, qui peuvent présenter des niveaux dangereux uniquement lors de ponçage ou abrasion. L'inhalation de ces poussières peut aggraver des troubles respiratoires existants (comme asthme, emphysème, bronchite). L'inhalation de poussières minérales a été corrélée au développement de pneumoconiose fibreuse ou bénigne.
(www.bibalex.org/supercourse/supercoursePPT/32011-33001/32551.ppt)

This product does not contain asbestos
Ce produit ne contient pas d'amiante

IARC: Ethylbenzene: 2B (Groupe 2B)
Benzene, Silica: Group 1 (Groupe 1)

NTP: Benzene, Silica: Listed (Cotée)

TRANSPORTATION INFORMATION	**INFORMATIONS SUR LE TRANSPORT**
DOT INFORMATION: UN1263, Paint, 3, pg II, Ltd Qty – 1 Gallon UN1263, Paint, 3, pg II – Equal to or greater than 5 Gallons Consumer commodity, ORM-D - Less than Gallon **All raw materials in this product are listed on the Canadian DSL.** **All raw materials in this product are TSCA compliant.**	**INFORMATIONS DOT:** UN1263, Peinture, 3, pg II, Quantité Limitée – 3.79L UN1263, Peinture, 3, pg II - Égal à, Plus de 18.95L Bien de consummation, d'ORM-D – Moins de 3.79L **Toutes les matières premières contenues dans ce produit font Partie de la liste Canadienne DSL sur les substances Domestiques.** **Toutes les matières premières de ce produit sont conformes la TSCA.**

NOTE: **Read MSDS completely before use and follow all label instructions.**

REMARQUE: **Lire complètement la MSDS avant utilisation et suivre les instructions de l'étiquette**

The information contained in this MSDS is based on the present state of knowledge and is based on sources believed to be reliable. However, since the data safety standards and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, XIM Products makes no warranty, either express or implied, with respect to the information contained herein and disclaims all liability for reliance thereon.

Les informations contenues dans cette MSDS sont basées sur l'état actuel des connaissances, et sur des sources d'information réputées fiables. Cependant, comme les normes sur les données de sécurité et les réglementations gouvernementales sont sujettes à changements, et comme les conditions de manutention et d'utilisation ou de mésusage sont hors de notre contrôle, XIM Products ne donne aucune garantie, explicite ou implicite, à propos des informations contenues ici, et rejette toutes responsabilité quant à leur exactitude.

SAFETY DATA SHEET

M SAX TRUE FLOW ACRYLIC 01/30/2017

SECTION 1 – IDENTIFICATION

Material Name

Product Number

Company Information

SECTION 2 – HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Primary Routes of Entry:

Effects and Symptoms of Acute Exposure:

Effects and Symptoms of Chronic Exposure:

Carcinogen Listing: **NTP:** **IARC:** **OSHA:**

Medical Conditions Usually Aggravated by Over Exposure to this Product:

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC

SECTION 4 – FIRST AID MEASURES

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point (Method):

Autoignition Temperature:

Explosion Limits in Air (% by Volume):

Extinguishing Media:

Fire Fighting Procedures:

Unusual Fire & Explosion Hazards:

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case a Material is Spilled

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Respiratory Protection & Special Ventilation Requirements:
Protective Gloves:
Eye Protection:
Other Protective Equipment:

Engineering Controls:

Hygienic Work Practices

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: [illegible] **Specific Gravity (H2O=1):** [illegible]
Vapor Pressure: [illegible] **Melting Point:** [illegible]
Specific Vapor Density (AIR=1): [illegible]
Solubility in Water: [illegible] **Reactivity in Water:** [illegible]

SECTION 10 – STABILITY AND REACTIVITY

Stability (Conditions to Avoid): [illegible]
Incompatibility (Materials to Avoid): [illegible]
Hazardous Decomposition Products [illegible]
Hazardous Polymerization Products: [illegible]

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Effects Associated with the use of this material: [illegible]

[illegible]

SECTION 12 – ECOLOGICAL INFORMATION

[illegible]

SECTION 13 – DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261): [illegible]

Waste Disposal Method
[illegible]

SECTION 14 – TRANSPORT INFORMATION

U.S. DOT (49 CFR 172.101): [illegible]

SECTION 15 – REGULATORY INFORMATION

[illegible]

Section 302.4 Extremely Hazardous Substances (40 CFR 355): [illegible]

Section 313 Toxic Chemicals (40 CFR 372): [illegible]

[illegible]

International Regulations

Canadian WHMIS:

Supplemental State Compliance Information

US, New Jersey Right-to-Know

US, Washington Children's Safe Products Act

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling:

SECTION 16 – OTHER INFORMATION

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

FANTASTIK ® MULTI-SURFACE DISINFECTANT DEGREASER (EPA REG NO. 89900-3)

Version *1*.1 | Print Date 01/27/2020

Revision Date 10/02/2019 | SDS Number 350000032935
GEN_SOF Number 60803

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name	:	FANTASTIK ® MULTI-SURFACE DISINFECTANT DEGREASER (EPA REG NO. 89900-3)
Recommended use	:	Hard Surface Cleaner
Restrictions on use	:	Use only as directed on label
Manufacturer, importer, supplier	:	S.C. Johnson & Son, Inc. 1525 Howe Street Racine WI 53403-2236
Telephone	:	+1-800-558-5252
Emergency telephone number	:	24 Hour Medical Emergency Phone: (866)231-5406 24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification
This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.

Labelling

Precautionary statements
Keep out of reach of children.

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Weight percent
Diisopropanolamine	110-97-4	1.00 - 5.00
Alkyl dimethyl benzyl ammonium chloride	68424-85-1	0.10 - 1.00

The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact : No special requirements

Skin contact : No special requirements

Inhalation : No special requirements.

Ingestion : No special requirements

Most important symptoms and effects, both acute and delayed

Eyes : No adverse effects expected when used as directed.

Skin effect : No adverse effects expected when used as directed.

Inhalation : No adverse effects expected when used as directed.

Ingestion : No adverse effects expected when used as directed.

Indication of any immediate medical attention and special treatment needed

See Description of first aid measures unless otherwise stated.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific hazards during firefighting	:	Container may melt and leak in heat of fire.
Further information	:	Fight fire with normal precautions from a reasonable distance. Standard procedure for chemical fires. Wear full protective clothing and positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Wash thoroughly after handling.
Environmental precautions	:	Outside of normal use, avoid release to the environment.
Methods and materials for containment and cleaning up	:	Dike large spills. Clean residue from spill site.

7. HANDLING AND STORAGE

Handling

Precautions for safe handling	:	Avoid contact with skin, eyes and clothing. For personal protection see section 8. Use only as directed. KEEP OUT OF REACH OF CHILDREN AND PETS.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Personal protective equipment

Respiratory protection	:	No special requirements.
Hand protection	:	No special requirements.
Eye protection	:	No special requirements.
Skin and body protection	:	No special requirements.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquid
Color	:	colourless
Odour	:	Herbal
Odour Threshold	:	Test not applicable for this product type
pH	:	10.8
Melting point/freezing point	:	Test not applicable for this product type
Initial boiling point and boiling range	:	Test not applicable for this product type

Flash point	:	does not flash
Evaporation rate	:	Test not applicable for this product type
Flammability (solid, gas)	:	The product is not flammable.
Upper/lower flammability or explosive limits	:	Test not applicable for this product type
Vapour pressure	:	Test not applicable for this product type
Vapour density	:	Test not applicable for this product type
Relative density	:	0.998 g/cm3
Solubility(ies)	:	completely soluble
Partition coefficient: n-octanol/water	:	Test not applicable for this product type
Auto-ignition temperature	:	Test not applicable for this product type
Decomposition temperature	:	Test not applicable for this product type
Viscosity, dynamic	:	similar to water
Viscosity, kinematic	:	similar to water

Oxidizing properties	:	Test not applicable for this product type
Volatile Organic Compounds Total VOC (wt. %)*	:	0.1 % - additional exemptions may apply *as defined by US Federal and State Consumer Product Regulations
Other information	:	None identified

10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	If accidental mixing occurs and toxic gas is formed, exit area immediately. Do not return until well ventilated.
Conditions to avoid	:	Direct sources of heat.
Incompatible materials	:	Do not mix with bleach or any other household cleaners. Strong bases
Hazardous decomposition products	:	Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50 > 5000 mg/kg
Acute inhalation toxicity	:	LC50 > 10 mg/L
Acute dermal toxicity	:	LD50 > 5000 mg/kg

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	Oral
Acute toxicity	No classification proposed	Dermal
Acute toxicity	No classification proposed	Inhalation - Dust and Mist
Acute toxicity	No classification proposed	Inhalation - Vapour
Acute toxicity	No classification proposed	Inhalation - Gas
Skin corrosion/irritation	No classification proposed	-
Eye irritation	No classification proposed	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single exposure	No classification proposed	-
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : None known.

12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity
The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

Toxicity to fish

Components	End point	Species	Value	Exposure time
Diisopropanolamine	LC50	Danio rerio (zebra fish)	1,466 mg/l	96 h
Alkyl dimethyl benzyl ammonium chloride	LC50 Measured OECD Test Guideline 203	Pimephales promelas (fathead minnow)	0.28 mg/l	96 h
	NOEC	Pimephales promelas (fathead minnow)	0.03 mg/l	34 d

Toxicity to aquatic invertebrates

Components	End point	Species	Value	Exposure time
Diisopropanolamine	EC50	Daphnia magna Straus	277.7 mg/l	48 h
Alkyl dimethyl benzyl ammonium chloride	EC50 OECD Test Guideline 202	Daphnia magna (Water flea)	0.016 mg/l	48 h
	NOEC	Daphnia magna	0.0042 mg/l	21 d

Toxicity to aquatic plants

Components	End point	Species	Value	Exposure time
Diisopropanolamine	EC50	Desmodesmus subspicatus (green algae)	339 mg/l	72 h
Alkyl dimethyl benzyl ammonium chloride	EC50 OECD Test Guideline 201	Selenastrum capricornutum, Skeletonema costatum	0.026 mg/l	72 h

Persistence and degradability

Component	Biodegradation	Exposure time	Summary
Diisopropanolamine	94 %	28 d	Readily biodegradable.
Alkyl dimethyl benzyl ammonium chloride	95.5 %	28 d	Readily biodegradable.

Bioaccumulative potential

Component	Bioconcentration factor (BCF)	Partition Coefficient n-Octanol/water (log)
Diisopropanolamine	3.16 estimated	-0.79
Alkyl dimethyl benzyl ammonium chloride	79 Measured	3.91

Mobility

Component	End point	Value
Diisopropanolamine	Koc	43 estimated
Alkyl dimethyl benzyl ammonium chloride	No data available	

PBT and vPvB assessment

Component	Results
Diisopropanolamine	Not fulfilling PBT and vPvB criteria
Alkyl dimethyl benzyl ammonium chloride	Not fulfilling PBT and vPvB criteria

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

Land transport
Not classified as dangerous in the meaning of transport regulations.

Sea transport
Not classified as dangerous in the meaning of transport regulations.

Air transport
Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

FIFRA Labeling

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

Following is the hazard information as required on the pesticide label:

TO AVOID ELECTRICAL SHOCK DO NOT SPRAY AT OR NEAR ELECTRICAL LINES.

Notification status : All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Notification status : All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

California Prop. 65 : This product is not subject to the reporting requirements under California's Proposition 65.

16. OTHER INFORMATION

HMIS Ratings

Health	0
Flammability	0
Reactivity	0

NFPA Ratings

Health	0
Fire	0
Reactivity	0
Special	-

This information is being provided in accordance with the Occupational Safety and Health Administration (OSHA) regulation (29 CFR 1910.1200). The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)

Amylase, Bacterial Powder

MSDS # □□□□□

Section 1: Product and Company Identification

Amylase, Bacterial Powder

Synonyms/General Names: Diastase of Malt
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Off- white powder, no odor.

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

This material is not considered hazardous.
Target organs: None known.
□

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) if used properly.

Section 3: Composition / Information on Ingredients

Amylase, Bacterial Powder, (N/A), 100%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Amylase: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	N/A.	**Appearance**	Off-white powder.
Molecular weight	N/A.	**Odor**	No odor.
Specific Gravity	N/A.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble.
Melting Point	N/A.	**Evaporation rate**	N/A . *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A . *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Amylase: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (232-567-7) .
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Shoo-fly Wasp & Hornet Killer (Aerosol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: Shoo-fly Hornet & Wasp Jet Bomb II

Product code (Aerosol): 3546

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

Lynwood Laboratories, Inc
945 Great Plain Avenue
Needham, MA 02492
(T) 781.449.6776
www.lynwoodlabsshoofly.com

1.4. Emergency telephone number

Emergency number: CHEMTREC - 1 (800) 424-9300 and/or 1 (703) 527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Liq. 3 H226
Muta. 1B H340
Carc. 1B H350
STOT RE 1 H372

2.2. Label elements

GHS-US labeling:

Hazard pictograms (GHS-US)

GHS02 GHS08

Signal word (GHS-US): Danger

Hazard statements (GHS-US):
H226 - Flammable liquid and vapor.
H340 - May cause genetic defects.
H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-US):
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from ignition sources. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe mist.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/eye protection.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P314 - Get medical advice and attention if you feel unwell.
P370+P378 - In case of fire: Use Carbon Dioxide, Dry chemical, Foam, Water for extinction P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to in accordance with local/national regulations.

2.3. Other hazards

No additional information available.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

Mixture

Name	Product identifier	%	Classification (GHS-US)
Mineral Spirits	(CAS No) 8052-41-3	96.5	Flam. Liq. 3, H226 Muta. 1B, H340 Carc. 1B, H350 STOT RE 1, H372 Asp. Tox. 1, H304
PIPERONYL BUTOXIDE	(CAS No) 51-03-6	0.5	Not classified
permethrin	(CAS No) 52645-53-1	0.25	Not classified
TETRAMETHRIN	(CAS No) 7696-12-0	0.1	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Assure fresh air breathing. Allow the victim to rest.

First-aid measures after skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: May cause genetic defects. May cause cancer with prolonged/repested exposure.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media: Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Flammable liquid and vapor. Exposures to temperatures above 130 degrees F may cause bursting.

Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed:	Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling:	Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Take precautionary measures against static discharge. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Eliminate all ignition sources if safe to do so.
Hygiene measures:	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:	Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
Storage conditions:	Store in original container. Keep container tightly closed.
Incompatible products:	Strong bases. strong acids.
Incompatible materials:	Sources of ignition. Heat sources.

7.3. Specific end use(s)

No additional information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Mineral Spirits (8052-41-3)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA ACGIH	ACGIH STEL (ppm)	100 ppm

8.2. Exposure controls

Personal protective equipment:	Avoid all unnecessary exposure.
Hand protection:	Wear protective gloves.
Eye protection:	Chemical goggles or safety glasses.
Respiratory protection:	Wear approved mask.
Other information:	When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid.
Appearance:	Liquid.
Color:	Colorless.
Odor:	Odorless to faint deodorized kerosene odor.
Odor threshold:	No data available.
pH:	No data available.
Relative evaporation rate (butyl acetate=1):	No data available.
Melting point:	No data available.
Freezing point:	No data available.
Boiling point:	No data available.
Flash point:	192 °F
Self ignition temperature:	No data available.
Decomposition temperature:	No data available.
Flammability (solid, gas):	No data available.
Vapor pressure:	No data available.
Relative vapor density at 20 °C:	No data available.
Relative density:	No data available.
Solubility:	No data available.

Log Pow:	No data available.
Log Kow:	No data available.
Viscosity, kinematic:	No data available.
Viscosity, dynamic:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Explosive limits:	No data available.

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

Mineral Spirits (8052-41-3)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 3000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 5.5 mg/l/4h (Rat)

permethrin (52645-53-1)	
LD50 oral rat	> 383 mg/kg (Rat)
LD50 dermal rat	4000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation:	Not classified.
Serious eye damage/irritation:	Not classified.
Respiratory or skin sensitization:	Not classified.
Germ cell mutagenicity:	May cause genetic defects.
Carcinogenicity:	May cause cancer.

permethrin (52645-53-1)	
IARC group	3 - Not Classifiable.

Reproductive toxicity:	Not classified.
Specific target organ toxicity (single exposure):	Not classified.
Specific target organ toxicity (repeated exposure):	Causes damage to organs through prolonged or repeated exposure. Causes damage to organs through prolonged or repeated exposure
Aspiration hazard:	Not classified
Potential Adverse human health effects and symptoms:	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Permethrin (52645-53-1)	
LC50 fish 1	0.0025 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	0.00043 mg/l (48 h; Daphnia magna; Enzyme effect)
LC50 fish 2	0.016 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 2	0.290 mg/l (24 h; Lymnaea sp.)

12.2. Persistence and degradability

Bonide Wasp & Hornet Killer (Aerosol)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Bonide Wasp & Hornet Killer (Aerosol)	
Bioaccumulative potential	Not established.

Mineral Spirits (8052-41-3)	
Log Pow	-3.16 - 7.06
Bioaccumulative potential	Bioaccumable.

Permethrin (52645-53-1)	
BCF fish 1	560 Salmo gairdneri (Oncorhynchus mykiss)
BCF fish 2	480 (Cyprinodon variegatus)
BCF other aquatic organisms 1	0.1 mg/l (>24 h; Algae)
BCF other aquatic organisms 2	1900 (Ostreidae)
Log Pow	3.48 - 6.5
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

12.4. Mobility in soil

Mineral Spirits (8052-41-3)	
Surface tension	0.02 N/m (20 °C)

Permethrin (52645-53-1)	
Ecology - soil	Toxic to bees.

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to in accordance with local/national regulations.

Additional information: Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT.

No dangerous good in sense of transport regulations.

Additional information

Other information: No supplementary information available.

ADR

Transport document description: No supplementary information available.

Transport by sea

No additional information available.

Air transport

No additional information available.

SECTION 15: Regulatory information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Remove contaminated clothing and wash clothing before reuse.

15.1. US Federal regulations

Shoo-fly Wasp & Hornet Killer (Aerosol)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory.

15.2. International regulations

CANADA

No additional information available.

EU-Regulations

No additional information available.

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified.

15.2.2. National regulations

No additional information available.

15.3. US State regulations

No additional information available.

SECTION 16: Other information

Other information: None.

Full text of H-phrases: see section 16:

Asp. Tox. 1	Aspiration hazard Category 1.
Carc. 1B	Carcinogenicity Category 1B.
Flam. Liq. 3	Flammable liquids Category 3.
Muta. 1B	Germ cell mutagenicity Category 1B.
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1.
H226	Flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H340	May cause genetic defects.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

SDS US (GHS HazCom 2012) - Pesticides

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

SILICON

Section 1. Identification

GHS product identifier : SILICON

Chemical name : Metallic Silicon

Product code : Not available.

Other means of identification : Watergranulated Silicon - Crusher Dust

Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Alloying element, production of silicones, electronic, manufacturing of solar cells and semiconductors.

Supplier/Manufacturer : Quebec Silicon LP
6500 Yvon-Trudeau,
Bécancour, QC G9H 2V8
Tel: +1 819 294-6000
Email: info@quebecsilicium.com

Emergency telephone number (with hours of operation) : +1 (819) 294-6249
8:00 AM - 4:00 PM

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
AQUATIC HAZARD (LONG-TERM) - Category 4

GHS label elements

Signal word : Warning

Hazard statements : H320 - Causes eye irritation.
H413 - May cause long lasting harmful effects to aquatic life.

Precautionary statements

Prevention : P273 - Avoid release to the environment.
P264 - Wash hands thoroughly after handling.

Response : P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Metallic Silicon

Other means of identification : Watergranulated Silicon - Crusher Dust

CAS number/other identifiers

CAS number : 7440-21-3

Ingredient name	%	CAS number
Silicon	60 - 100	7440-21-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. If irritation persists, get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First aid measures

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : This material may cause long lasting harmful effects to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
Silicon	**NIOSH REL (United States, 10/2016).** TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total **OSHA PEL (United States, 6/2016).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust

Canada

Occupational exposure limits

Ingredient name	Exposure limits
Silicon	**CA British Columbia Provincial (Canada, 7/2016).** TWA: 3 mg/m³ 8 hours. Form: Respirable dust TWA: 10 mg/m³ 8 hours. Form: Total dust **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 20 mg/m³ 15 minutes. TWA: 10 mg/m³ 8 hours. **CA Quebec Provincial (Canada, 1/2014).** TWAEV: 10 mg/m³ 8 hours. Form: Total dust

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Section 8. Exposure controls/personal protection

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid.

Color : Gray. [Dark]

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Melting point : 1410°C (2570°F)

Boiling point : 2357°C (4274.6°F)

Flash point : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 100 g/m³

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 2.33

Solubility : Insoluble in the following materials: cold water and hot water.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis. Reactive with Hydrofluoric acid (HF) and Nitric acid (HNO_3).

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Silicon	LD50 Oral	Rat	3160 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Silicon	Eyes - Mild irritant	Rabbit	-	3 mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Eye contact.

Potential acute health effects

Eye contact : Causes eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	3160 mg/kg

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Silicon	57 to 77	-	high

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG : Not applicable

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

Composition/information on ingredients

Name	Classification
Silicon	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

SARA 313

There is no data available.

State regulations

Massachusetts : The following components are listed: Silicon

New York : None of the components are listed.

New Jersey : The following components are listed: Silicon

Pennsylvania : The following components are listed: Silicon

California Prop. 65

No products were found.

Canada

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Section 15. Regulatory information

Canada inventory (DSL NDSL) : All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B AQUATIC HAZARD (LONG-TERM) - Category 4	Calculation method Calculation method

History

Date of issue mm/dd/yyyy : 03/15/2018

Date of previous issue : 08/15/2015

Version : 3

Prepared by : KMK Regulatory Services Inc.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Silver Acetate

MSDS # □□□□□

Section 1: Product and Company Identification

Silver Acetate

Synonyms/General Names: N/A.
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White crystalline powder, slight acidulous odor.

HMIS (0 to 4)

Health	2
Fire Hazard	0
Reactivity	0

CAUTION! Moderately toxic by ingestion and body tissue irritant.
Target organs: None known.□
□
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Silver Acetate (563-63-3), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Silver Acetate: OSHA PEL: 0.01 mg/m^3, ACGIH: TLV: 0.01 mg/m^3, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	CH_3COOAg.	**Appearance**	White crystalline powder.
Molecular weight	166.92.	**Odor**	Slight acidulous odor.
Specific Gravity	3.25 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in hot water and nitric acid.
Melting Point	Decomposes.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Hydrogen peroxide, ammonia, acetylene or acids.
Shelf life: Indefinite shelf life, protect from light.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Silver Acetate: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Contains a heavy metal – Toxic to terrestrial and aquatic plants and animals. Do not release to the environment □

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Use a licensed chemical waste disposal firm for proper disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not listed.
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

MEDICAL EMERGENCIES ONLY (24 Hour Service): 1-800-328-0026
Medical Calls from Outside USA & Canada: 1-651-222-5352

Ecolab Inc.
370 N. Wabasha Street, St. Paul MN 55102
Product Information: 1-800-35-CLEAN Issue Date: December 12, 2012

1.0 IDENTIFICATION /

1.1 Test Kit Name: Master Test Kit #320
1.2 Purpose: Determination of product concentration in use solutions

2.0 REACTIVITY /

DO NOT MIX OR USE REAGENT SOLUTIONS EXCEPT AS DIRECTED. Certain mixtures may produce a toxic gas or generate enough heat to make the material spatter. Wear eye protection when using these reagents or other chemicals.

3.0 CLEANUP & DISPOSAL PROCEDURES /

3.1 Cleanup: Wear rubber gloves. Wipe up any spillage immediately and rinse the surface with water. Reagents can etch or stain surfaces.
3.2 Waste Disposal: Discard solutions by flushing down the drain unless directed otherwise in Section 6. Rinse emptied bottles before discarding them.

4.0 HEALTH HAZARD DATA /

This kit may contain reagents which are corrosive, poisonous or flammable. All should be handled as potentially hazardous. Do not let reagents contact skin, eyes, mouth or throat. The entries in Section 6 identify specific hazards of the individual reagents.

KEEP THESE CHEMICALS OUT OF THE REACH OF CHILDREN

5.0 FIRST AID/ GENERAL FIRST AID INSTRUCTIONS

See Section 6 for additional information.

5.1 Eyes: For any eye contact with chemicals flush immediately with plenty of cool water. Remove contact lenses if you wear them and flush well again.
Note: In case of a reagent marked CORROSIVE, continue to flush for at least fifteen (15) minutes, holding eyelids apart to ensure rinsing the entire eye. Call a physician immediately.
5.2 Skin: Immediately flush skin with plenty of cool water; then wash with soap and water. Wash contaminated clothing before reuse.
5.3 If Swallowed: Rinse mouth; then drink 1 or 2 large glasses of milk or water. DO NOT INDUCE VOMITING.

IF SWALLOWED OR IN CASE OF PERSISTENT EYE OR SKIN IRRITATION,
GET MEDICAL ATTENTION IMMEDIATELY

6.0 Test Kit Reagents /

001 Sodium hydroxide, 0.1N CAUTION * IRRITANT
Sodium hydroxide, 0.4% in water. Colorless liquid. In case of eye contact, flush eye for at least 15 minutes.
Health: 2 Flammability: 0 Reactivity: 1

002 Acid No. 2, Titrate 1 CAUTION * IRRITANT
Contains 0.36% hydrochloric acid. Colorless acidic solution; do not mix with hypochlorites (bleach); will form hazardous vapors.
Health: 2 Flammability: 0 Reactivity: 1

003 Barium chloride, 40% DANGER * POISON
If swallowed, drink 2 oz. magnesium (epsom salts) or sodium sulfate in water.
Health: 3 Flammability: 0 Reactivity: 0

005 Caustic/Carbonate Indicator CAUTION
0.04% Bromocresol Green and 0.1% Thymol Blue in 0.002N Sodium Hydroxide. Dark green liquid; stains skin and fabric.
Health 1 Flammability: 0 Reactivity: 0

007 Buffer Solution, Hardness 1 WARNING
2-Amino-2-methyl-1-propanol, 60%. Light yellow liquid. Possibly corrosive to eyes, an irritant on skin, especially to sensitive individuals
Health: 2 Flammability: 0 Reactivity: 1

011 Conveyor Lubricant Indicator CAUTION
Sodium salt of bromcresolgreen, 0.04% in water. Blue liquid.
Health: 1 Flammability: 0 Reactivity: 0

013 Hardness Indicator 2 DANGER*CORROSIVE*POISON
Hydroxylamine hydrochloride, 5% in isopropanol/water. Dark red, acidic solution; do not mix with hypochlorites (bleach); will form hazardous vapors.
Health: 2 Flammability: 0 Reactivity: 0

014 Indicator P CAUTION * IRRITANT * FLAMMABLE
Ethyl alcohol, 50%.
Health: 1 Flammability: 3 Reactivity: 2

018 Potassium Iodide Solution CAUTION * IRRITANT
Potassium iodide, 10% in water.
Health: 2 Flammability: 0 Reactivity: 1

==========

020 Methyl Orange CAUTION
Methyl orange, 0.05% in water. Orange liquid; stains skin and fabric.
Health: 1 Flammability: 0 Reactivty: 0

031 Silica Reagent DANGER * CORROSIVE
Hydrofluoric acid (HF), 5%, and phosphoric acid, 7.5%, in water. Red, acidic solution; do not mix with hypochlorites (bleach); will form hazardous vapors. HF penetrates intact skin readily to produce deep, painful burns that may not be felt immediately. Wash area of contact very well, especially around finger nails. Apply milk of magnesia or a paste of magnesium oxide and glycerine on skin. Get medical attention immediately.
Health: 3 Flammability: 0 Reactivity: 2

032 Silver Nitrate WARNING
Silver nitrate, 1.0% in water. Similar to sodium hydroxide in irritation to skin, mouth and eyes. Stains skin.
Health: 2 Flammability: 0 Reactivity: 0

034 Zinc Sulfate Titrate, N/5 CAUTION
Zinc Sulfate 1.1% (0.0384 M) in water. Colorless liquid.
Health: 1 Flammability: 0 Reactivity: 0

038 Starch Solution
Starch, 2% in water.
Health: 1 Flammability: 0 Reactivity: 0

040 Oxygen Catalyst CAUTION * Irritant
Ammonium paramolybdate, 7.1%
Can act as a strong irritant, especially on eyes.
Health: 2 Flammability: 0 Reactivity: 1

041 Quat Indicator CAUTION
Mixed indicator in water. Dark reddish/brown liquid; stains skin and fabric.
Health: 1 Flammability: 0 Reactivity: 0

042 Quat 10x Indicator CAUTION
Dodecyl sodium sulfate, 0.3% in water.
Health: 1 Flammability: 0 Reactivity: 1

043 Quat 50x Indicator CAUTION
Dodecyl sodium sulfate, 1.6% in water.
Health: 1 Flammability: 0 Reactivity: 1

047 Ammonium Buffer DANGER * CORROSIVE * STRONG IRRITANT
Ammonium Hydroxide (20.6%) and Ammonium Chloride (13.4%) in water. Colorless, strongly basic solution. Do not mix with anything but water. Do not breath fumes. Causes chemical burns; eye contact may cause blindness.
Health: 3 Flammability: 0 Reactivity: 2

048 5.0 N Hydrochloric Acid DANGER * CORROSIVE * IRRITANT
Hydrochloric acid, 15.4% (5.0 N) in water, colorless, strong acidic solution, do not mix with hypochlorites (bleach); will form hazardous vapors. Causes chemical burns; eye contact may cause blindness.
Health: 3 Flammability: 0 Reactivity: 2

049 Zinc Sulfate Titrate CAUTION
Zinc Sulfate, 5.5% (0.192 M) in water. Colorless liquid.
Health: 1 Flammability: 0 Reactivity: 0

052 Titrate 5 CAUTION * IRRITANT
Hydrochloric acid, 1.8% (0.5N) in water. Colorless acidic solution; do not mix with hypochlorites (bleach); will form hazardous vapors.
Health: 2 Flammability: 0 Reactivity: 2

054 Titrating Solution CAUTION * IRRITANT
Disodium ethylenediamine tetraacetate (EDTA), 4.4% in water.
Health: 1 Flammability: 0 Reactivity: 0

063 Caustic DANGER * CORROSIVE
Sodium hydroxide, 30% in water. Colorless liquid. Will cause SEVERE CHEMICAL BURNS to skin, throat and eyes; possible blindness. IMMEDIATE flushing with water is essential in case of eye contact. Can react violently with acids, spattering material.
Health: 3 Flammability: 0 Reactivity: 2

067 Sodium Thiosulfate, 1N CAUTION
Sodium thiosulfate, 15.8% in water.
Health: 0 Flammability: 0 Reactivity: 0

068 Titrate Super T CAUTION
Colorless liquid.
Health: 1 Flammability: 0 Reactivity: 0

069 Sodium Thiosulfate N/20 CAUTION
Sodium thiosulfate, 0.8% (0.05N) in water. Colorless liquid.
Health: 0 Flammability: 0 Reactivity: 0

070 Sodium Thiosulfate N/200 CAUTION
Sodium thiosulfate, 0.08% (0.005N) in water. Colorless liquid.
Health: 0 Flammability: 0 Reactivity: 0

071 Phosphoric Acid DANGER * CORROSIVE
Phosphoric acid, 53%. Causes chemical burns; eye contact may cause blindess. Colorless acidic solution; do not mix with hypochlorites (bleach); will form hazardous vapors.
Health: 2 Flammability: 0 Reactivity: 2

081 Victoria Indicator CAUTION * IRRITANT * FLAMMABLE
Reagent alcohol, 99%
Health: 3 Flammability: 4 Reactivity: 1

083 6M Potassium Hydroxide DANGER * CORROSIVE
6M potassium hydroxide, 34% in water. Will cause SEVERE CHEMICAL BURNS to skin, throat and eyes; possible blindness. IMMEDIATE flushing with water is essential in case of eye contact. Can react violently with acids, spattering material.
Health: 2 Flammability: 0 Reactivity: 2

086 1N Base/Sodium Hydroxide DANGER * CORROSIVE
Sodium hydroxide, 4% in water. Colorless liquid. Causes chemical burns; can cause blindness. In case of eye contact, IMMEDIATE flushing is essential.
Health: 2 Flammability: 0 Reactivity: 1

087 Iron Reagent DANGER
Sodium bisulfate and sodium hydrosulfite. White to tan powder; garlic odor. Avoid contact with strong acid; can form toxic gases.
Health: 1 Flammability: 3 Reactivity: 3

096 Staining Solution POISON * FLAMMABLE
Methanol, 45%; glacial acetic acid, 9%; Coomassie Blue R dye, 2.5%. Blue, flammable, acidic solution, do not mix with hypochlorites (bleach); will form hazardous vapors. IMMEDIATE flushing with water is essential in case of skin or eye contact.
Health: 3 Flammability: 4 Reactivity: 2

097 Rinsing Solution
Methanol, 5%; glacial acetic acid, 7.5%. Clear, colorless liquid. Flash point > 112 deg F. Do not mix with hypochlorites (bleach); will form hazardous vapors. IMMEDIATE flushing with water is essential.
Health: 2 Flammability: 3 Reactivity: 2

Section 1: IDENTIFICATION

Product Name: Simple Green® Industrial Cleaner & Degreaser
Additional Names:

Manufacturer's Part Number: **Please refer to Section 16*

Recommended Use: Cleaner & Degreaser for water tolerant surfaces.
Restrictions on Use: Do not use on non-rinsable surfaces.

Company: Sunshine Makers, Inc.
15922 Pacific Coast Highway
Huntington Beach, CA 92649 USA
Telephone: 800-228-0709 ● 562-795-6000 *Mon – Fri, 8am – 5pm PST*
Fax: 562-592-3830
Email: info@simplegreen.com
Emergency Phone: Chem-Tel 24-Hour Emergency Service: 800-255-3924

Section 2: HAZARDS IDENTIFICATION

This product is not classified as hazardous under 2012 OSHA Hazard Communication Standards (29 CFR 1910.1200).

OSHA HCS 2012
Label Elements
Signal Word: None **Hazard Symbol(s)/Pictogram(s):** None required

Hazard Statements: None
Precautionary Statements: None
Hazards Not Otherwise Classified (HNOC): None
Other Information: None Known

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent Range
Water	7732-18-5	> 84.998%*
Ethoxylated Alcohol	68439-46-3	< 5%*
Sodium Citrate	68-04-2	< 5%*
Tetrasodium *N,N*-bis(carboxymethyl)-L-glutamate	51981-21-6	< 1%*
Sodium Carbonate	497-19-8	< 1%*
Citric Acid	77-92-9	< 1%*
Isothiazolinone mixture	55965-84-9	0.002%
Fragrance	Proprietary Mixture	< 1%*
Colorant	Proprietary Mixture	< 1%*

**specific percentages of composition are being withheld as a trade secret*

Section 4: FIRST-AID MEASURES

Inhalation: Not expected to cause respiratory irritation. If adverse effect occurs, move to fresh air.
Skin Contact: Not expected to cause skin irritation. If adverse effect occurs, rinse skin with water.
Eye Contact: Not expected to cause eye irritation. If adverse effect occurs, flush eyes with water.
Ingestion: May cause upset stomach. Drink plenty of water to dilute. See section 11.

Most Important Symptoms/Effects, Acute and Delayed: None known.

Indication of Immediate Medical Attention and Special Treatment Needed, if necessary: Treat symptomatically

Section 5: FIRE-FIGHTING MEASURES

Suitable & Unsuitable Extinguishing Media: Use Dry chemical, CO2, water spray or "alcohol" foam. Avoid high volume jet water.
Specific Hazards Arising from Chemical: In event of fire, fire created carbon oxides may be formed.
Special Protective Actions for Fire-Fighters: Wear positive pressure self-contained breathing apparatus; Wear full protective clothing.

This product is non-flammable. See Section 9 for Physical Properties.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: *For non-emergency and emergency personnel:* See section 8 – personal protection. Avoid eye contact. Safety goggles suggested.

Environmental Precautions: Do not allow into open waterways and ground water systems.

Methods and Materials for Containment and Clean Up: Dike or soak up with inert absorbent material. See section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling: Ensure adequate ventilation. Keep out of reach of children. Keep away from heat, sparks, open flame and direct sunlight. Do not pierce any part of the container. Do not mix or contaminate with any other chemical. Do not eat, drink or smoke while using this product.

Conditions for Safe Storage including Incompatibilities: Keep container tightly closed. Keep in cool dry area. Avoid prolonged exposure to sunlight. Do not store at temperatures above 109°F (42.7°C). If separation occurs, mix the product for reconstitution.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values: No components listed with TWA or STEL values under OSHA or ACGIH.

Appropriate Engineering Controls: Showers, eyewash stations, ventilation systems

Individual Protection Measures / Personal Protective Equipment (PPE)
Eye Contact: Use protective glasses or safety goggles if splashing or spray-back is likely.
Respiratory: Use in well ventilated areas or local exhaust ventilations when cleaning small spaces.
Skin Contact: Use protective gloves (any material) when used for prolonged periods or dermally sensitive.
General Hygiene Considerations: Wash thoroughly after handling and before eating or drinking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Green Liquid
Odor: Added sassafras odor
Odor Threshold: Not determined
pH ASTM D-1293**:** 8.5 – 9.5
Freezing Point ASTM D-1177**:** 0-3.33°C (32-38°F)
Boiling Point & Range ASTM D-1120**:** 101°C (213.8°F)
Flash Point ASTM D-93**:** > 212°F
Evaporation Rate ASTM D-1901**:** ½ Butyl Acetate @ 25°C
Flammability (solid, gas): Not applicable
Upper/Lower Flammability or Explosive Limits: Not applicable
Vapor Pressure ASTM D-323**:** 0.60 PSI @77°F, 2.05 PSI @100°F
Vapor Density: Not determined

Partition Coefficient: n-octanol/water: Not determined
Autoignition Temperature: Non-flammable
Decomposition Temperature: 109°F
Viscosity: Like water
Specific Gravity ASTM D-891**:** 1.01 – 1.03
VOCs: ***Water & fragrance exemption in calculation*

SCAQMD 304-91 / EPA 24:	0 g/L	0 lb/gal	0%
CARB Method 310**:	2.5 g/L	0.021 lb/gal	0.25%
SCAQMD Method 313:	Not tested		

VOC Composite Partial Pressure: Not determined
Relative Density ASTM D-4017**:** 8.34 – 8.42 lb/gal
Solubility: 100% in water

Section 10: STABILITY AND REACTIVITY

Reactivity: Non-reactive.
Chemical Stability: Stable under normal conditions 70°F (21°C) and 14.7 psig (760 mmHg).
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Excessive heat or cold.
Incompatible Materials: Do not mix with oxidizers, acids, bathroom cleaners, or disinfecting agents.
Hazardous Decomposition Products: Normal products of combustion - CO, CO2.

Section 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:
Inhalation - Overexposure may cause headache.
Skin Contact - Not expected to cause irritation, repeated contact may cause dry skin.
Eye Contact - Not expected to cause irritation.
Ingestion - May cause upset stomach.

Symptoms related to the physical, chemical and toxicological characteristics: no symptoms expected under typical use conditions.
Delayed and immediate effects and or chronic effects from short term exposure: no symptoms expected under typical use conditions.
Delayed and immediate effects and or chronic effects from long term exposure: headache, dry skin, or skin irritation may occur.
Interactive effects: Not known.

Numerical Measures of Toxicity

Acute Toxicity:
Oral LD_{50} (rat) > 5 g/kg body weight
Dermal LD_{50} (rabbit) > 5 g/kg body weight
Calculated via OSHA HCS 2012 / Globally Harmonized System of Classification and Labelling of Chemicals

Skin Corrosion/Irritation: Non-irritant per Dermal Irritection® assay modeling. No animal testing performed.
Eye Damage/Irritation: Minimal irritant per Ocular Irritection® assay modeling. No animal testing performed.
Germ Cell Mutagenicity: Mixture does not classify under this category.
Carcinogenicity: No ingredients trigger or classify under this category under NTP, IARC or OSHA.
Reproductive Toxicity: Mixture does not classify under this category.
STOT-Single Exposure: Mixture does not classify under this category.
STOT-Repeated Exposure: Mixture does not classify under this category.
Aspiration Hazard: Mixture does not classify under this category.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Volume of ingredients used does not trigger toxicity classifications under the Globally Harmonized System of Classification and Labelling of Chemicals.
Aquatic: Aquatic Toxicity - Low, based on OECD 201, 202, 203 + Microtox: EC_{50} & IC_{50} ≥100 mg/L. Volume of ingredients used does not trigger toxicity classifications under the Globally Harmonized System of Classification and Labelling of Chemicals.
Terrestrial: Not tested on finished formulation.

Persistence and Degradability: Readily Biodegradable per OCED 301D, Closed Bottle Test
Bioaccumulative Potential: No data available.
Mobility in Soil: No data available.
Other Adverse Effects: No data available.

Section 13: DISPOSAL CONSIDERATIONS

Unused or Used Liquid: May be considered hazardous in your area depending on usage and tonnage of disposal – check with local, regional, and or national regulations for appropriate methods of disposal.

Empty Containers: May be offered for recycling.

Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

U.N. Number: Not applicable **U.N. Proper Shipping Name:** Cleaning Compound, Liquid NOI
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Marine Pollutant - NO
Transport in Bulk (according to Annex II of MARPOL 73/78 and IBC Code): Unknown.
Special precautions which user needs to be aware of/comply with, in connection with transport or conveyance either within or outside their premises: None known.

U.S. (DOT) / Canadian TDG: Not Regulated for shipping. **ICAO/ IATA:** Not classified as Hazardous
IMO / IDMG: Not classified as Hazardous **ADR/RID:** Not classified as Hazardous

Section 15: REGULATORY INFORMATION

All components are listed on: TSCA and DSL Inventory.

SARA Title III: Sections 311/312 Hazard Categories – Not applicable.
Sections 313 Superfunds Amendments and Reauthorizations Act of 1986 – Not applicable.
Sections 302 – Not applicable.

Clean Air Act (CAA): Not applicable
Clean Water Act (CWA): Not applicable

State Right To Know Lists: No ingredients listed
California Proposition 65: No ingredients listed
Texas ESL:

Ethoxylated Alcohol	68439-46-3	60 µg/m^3 long term	600 µg/m^3 short term
Sodium Citrate	68-04-2	5 µg/m^3 long term	50 µg/m^3 short term
Sodium Carbonate	497-19-8	5 µg/m^3 long term	50 µg/m^3 short term
Citric Acid	77-92-9	10 µg/m^3 long term	100 µg/m^3 short term

Section 16: OTHER INFORMATION

Size	UPC	Size	UPC
22 oz. Trigger	043318130229	2.5 Gallon	043318000041
24 oz. Trigger	043318000034	5 Gallon	043318000010
32 oz.	043318130328	55 Gallon	043318000027
1 Gallon	043318000003	15 Gallon	043318000225
1 Gallon w/ Dilution Bottle	043318001253	260 Gallon	043318130663
1 Gallon w/ Dilution Bottle	043318480416	275 Gallon	043318000102
1 Gallon w/ Dilution Bottle	043318000003		

USA items listed only. Not all items listed. USA items may not be valid for international sale.

NFPA:
Health – None Stability – Stable
Flammability – Non-flammable Special - None

Acronyms

NTP	National Toxicology Program	IARC	International Agency for Research on Cancer
OSHA	Occupational Safety and Health Administration	CPSC	Consumer Product Safety Commission
TSCA	Toxic Substances Control Act	DSL	Domestic Substances List

Prepared / Revised By: Sunshine Makers, Inc., Regulatory Department.
This SDS has been revised in the following sections: Exact Isothiazolinone amount disclosed

Boreal Quieting Solution

MSDS # □□□□□

Section 1: Product and Company Identification

Boreal Quieting Solution

Synonyms/General Names: Quieting solution for protozoan slowing
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Clear, thick liquid, no odor

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

This material is not considered hazardous
Target organs: None known.□
□
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) if used properly.

Section 3: Composition / Information on Ingredients

Methyl Cellulose (9004-67-5), 1.5%.
Water (7732-18-5), 98.4%.
Salicylic Acid (69-72-7), 0.1%,.

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Noncombustible solution. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill with sand or absorbent material and place in sealed bag or container for disposal. Ventilate and wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge.
Exposure guidelines: Methyl Cellulose: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	Mixture.	**Appearance**	Clear, thick liquid.
Molecular weight	N/A.	**Odor**	No odor.
Specific Gravity	1.02 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	N/A
Melting Point	N/A.	**Evaporation rate**	N/A . *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A *(log P_{OW}.)*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Methyl cellulose: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not Listed.
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

SODIUM ACETATE - COMMERICIAL PRODUCT
10437CR Revised 27-OCT-2006

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

CAS Number : 127-09-3
Formula : C2H402.Na
Molecular Weight : 82.04
CAS Name : ACETIC ACID, SODIUM SALT

Tradenames and Synonyms

ACETIC ACID, SODIUM SALT
ANHYDROUS SODIUM ACETATE
SODIUM ACETATE, TRIHYDRATE
SODIUM ACETATE, ANHYDROUS

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont Chemical Solutions Enterprise
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS
Product Information : 1-800-441-7515
Transport Emergency : CHEMTREC 1-800-424-9300
Medical Emergency : 1-800-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
SODIUM ACETATE	127-09-3	99

HAZARDS IDENTIFICATION

Potential Health Effects

Human health effects of overexposure to Sodium Acetate by skin contact may include skin irritation with discomfort or rash. Significant skin permeation, and systemic toxicity after contact appears unlikely. Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision.

Otherwise no acceptable information is available to confidently predict the effects of excessive human exposure to this compound. This compound is listed as "generally recognized as safe" by the FDA.

(HAZARDS IDENTIFICATION - Continued)

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

No specific intervention is indicated as compound is not likely to be hazardous by ingestion. Consult a physician if necessary.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : 607 C (1125 F)
Autoignition : 607-611 C (1125-1132 F)

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

Hazardous gases/vapors produced in fire are carbon monoxide, carbon dioxide.
Fire and Explosion Hazards:

May burn when exposed to heat or flame.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

(FIRE FIGHTING MEASURES - Continued)

Fire Fighting Instructions

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Cool tank/container with water spray.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity. Dike spill.

Spill Clean Up

Shovel or sweep up.

HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

Handling (Physical Aspects)

Avoid dust generation. Keep away from heat, sparks and flames.

Storage

Store in a well ventilated place. Store in a cool place. Keep container tightly closed.

Store in a dry place.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Keep container tightly closed.

Protect from mositure.

Use ventilation that isadequate to keep employee exposure to airborne concentrations below exposure limits.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses or coverall chemical splash goggles.

RESPIRATOR

A NIOSH approved air purifying respirator with particulate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a NIOSH approved positive pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING

Where there is potential for skin contact have available, and wear as appropriate, impervious gloves, apron, pants, and jacket.

Exposure Guidelines

Exposure Limits
SODIUM ACETATE - COMMERICIAL PRODUCT

PEL (OSHA)	:	None Established
TLV (ACGIH)	:	None Established
AEL * (DuPont)	:	10 mg/m3, 8 & 12 Hr. TWA, total dust 5 mg/m3, 8 & 12 Hr. TWA, respirable dust

* AEL is DuPont’s Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water	:	46.5 WT% @ 20 C (68 F) 76.2 WT% @ 0 C (32 F) FISHER SCIENTIFIC
pH	:	8.9 @ 25 deg C (77 deg F) 0.1 Molar solution = 77
Odor	:	Slight acetic acid
Form	:	Crystalline powder; monoclinic prisms; solid
Color	:	White, colorless
Specific Gravity	:	1.45
Boiling Point	:	253 F (123 C)
Melting Point	:	136 F (58 C)

(PHYSICAL AND CHEMICAL PROPERTIES - Continued)

Solvent Solubility: Soluble in ether; slightly soluble in alcohol

Sodium acetate becomes anhydrous at 120 deg C (248 deg F) and decomposes at higher temperatures.

The trihydrate melts at 58 deg. C and the anhydrous material at 324 deg. C.

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Avoid extreme heat and protect from moisture.

Incompatibility with Other Materials

Incompatible with strong oxidizing agents, fluorine, potassium nitrite, diketene.

Decomposition

Decomposes with heat.

Decomposition temperature: 120 C (248 F)

Hazardous gases/vapors produced are carbon monoxide, carbon dioxide, sodium oxide and acrid fumes.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Sodium Acetate:

Inhalation 1 hour ALC: > 30 mg/L in rats
Skin absorption LD50: > 10,000 mg/kg in rabbits
Oral LD50: 3530 mg/kg in rats

Sodium Acetate is a slight skin and eye irritant, and is untested for animal sensitization.

Toxic effects described in animals from single exposures to lethal levels by ingestion include labored breathing hyperactivity, hypothermia, anaesthetic effects, and nonspecific effects such as diarrhea, and sedation. Repeated

(TOXICOLOGICAL INFORMATION - Continued)

and long term exposures to levels up to 10% in the diet demonstrated no adverse effects.

No animal test reports are available to define carcinogenic, or reproductive hazards.

Tests in animals demonstrate no developmental toxicity.

Sodium Acetate does not produce genetic damage in bacterial and mammalian cell cultures but has not been tested in animals.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Aquatic Toxicity

24 hour TLM, bluegill sunfish: 5000 mg/L

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

Sodium acetate is biodegradeable. Dilute aqueous solutions may be disposed of in a permitted biological treatment facility.

TRANSPORTATION INFORMATION

Shipping Information

Not Regulated as a hazardous material by DOT, IMO, or IATA.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : No

(REGULATORY INFORMATION - Continued)

Reactivity : No
Pressure : No

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 1
Flammability : 0
Reactivity : 0

NPCA-HMIS Rating
Health : 1
Flammability : 0
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsible for MSDS : MSDS Coordinator
> : DuPont Chemical Solutions Enterprise
Address : Wilmington, DE 19898
Telephone : (800) 441-7515

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

Fisher Scientific CANADA
A Fisher Scientific International Company

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium Alginate

Catalog Numbers: S/2160/53

Synonyms: Sodium Alginate; Alginate Acid Sodium Salt.

Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#:	9005-38-3
Chemical Name:	Algenic acid, sodium salt
%:	ca 100
EINECS#:	unlisted

Hazard Symbols: None listed

Risk Phrases: None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Caution! The toxicological properties of this material have not been fully investigated. This is expected to be a low hazard for usual industrial handling. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. Target Organs: None.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Low hazard for usual industrial handling.

Inhalation: May cause respiratory tract irritation. Low hazard for usual industrial handling.

Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. Use extinguishing media appropriate to the surrounding fire. Substance is noncombustible.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

NFPA Rating: health: 1; flammability: 0; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Flush spill area with water. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage: Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Algenic acid, sodium salt	none listed	none listed	none listed

OSHA Vacated PELs: Algenic acid, sodium salt: None listed

Engineering Controls:

Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Color: white to light cream

Odor: Odorless.

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: > 300 deg C (> 572.00°F)

Decomposition Temperature:	Not available
Solubility in water:	Slightly soluble
Specific Gravity/Density:	Not available.
Molecular Formula:	Unknown
Molecular Weight:	Unknown

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Incompatible materials, ignition sources, dust generation, excess heat.
Incompatibilities with Other Materials	Not available
Hazardous Decomposition Products	Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#:	CAS# 9005-38-3: AZ5820000
LD50/LC50:	RTECS: **CAS# 9005-38-3:** Oral, rat: LD50 = >5 gm/kg; .
Carcinogenicity:	Algenic acid, sodium salt - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology:	Not available
Teratogenicity:	Not available
Reproductive:	Not available
Neurotoxicity:	Not available
Mutagenicity:	Not available
Other:	Not available

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 9005-38-3 is listed on the TSCA Inventory.

Health & Safety Reporting List	None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules	None of the chemicals in this product are under a Chemical Test Rule.

Section 12b	None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule	None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs	None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances	None of the chemicals in this product have a TPQ.
Section 313	No chemicals are reportable under Section 313.
Clean Air Act:	This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:	None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:	
STATE	Algenic acid, sodium salt is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California Prop 65	
California No Significant Risk Level:	None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:Not available

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 9005-38-3: 0

Canada

CAS# 9005-38-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: Not available

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 9005-38-3 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: 12/09/1998

Revision #3 Date 10/03/2005

MATERIAL SAFETY DATA SHEET

Sodium borate

This MSDS is valid for all grades and catalog #'s

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals

Synonyms: Sodium tetraborate decahydrate; Borates, tetra, sodium salt, Disodium tetraborate decahydrate; Borax;

Other means of identification: CAS No. 1303-96-4
EINECS No. 215-540-4

Recommended use of the chemical and restrictions on use:
Commonly used to formulate buffers.

Supplier Details:

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213

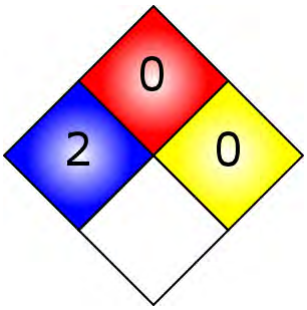
Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Emergency Contact: **CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)**

2. HAZARDS IDENTIFICATION

OSHA Hazards:
Reproductive hazard, Teratogen

NFPA



GHS label elements, including precautionary statements

Signal Word:
DANGER!

Hazard statement(s)

H303	May be harmful if swallowed.
H360	May damage fertility or the unborn child.

Precautionary statement(s)

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P201	Obtain special instructions before use.

GHS Classification(s)
Acute Toxicity, Oral (Category 5)
Reproductive toxicity (Category 1B)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Can be irritating to the eyes
Ingestion	Can be harmful if ingested.
Inhalation	Can be harmful if inhaled. possible respiratory tract irritation.
Skin	Can be harmful if exposed to skin. Can cause irritation.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity:	Sodium borate
Common name / Synonym:	Sodium tetraborate decahydrate; Borates, tetra, sodium salt, Disodium tetraborate decahydrate; Borax;
CAS number:	1303-96-4
EINECS number:	215-540-4
ICSC number:	0567
RTECS #:	VZ2275000
EC #:	005-011-01-1

% Weight	Material	CAS

<=100	Sodium Borate, decahydrate	1036-96-4

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. Contact a doctor. If irritation persists, get medical attention.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Flush eyes with water as a precaution.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Borane and boron oxides expected to be the primary hazards.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Flammable Properties

Classification

Not flammable or combustible

Autoignition temperature

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

Sweep up and place material in a convenient waste disposal container. Keep container closed.

---

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Take normal fire prevention measures.

Conditions for safe storage, including any incompatibilites:

Keep container tightly closed. Keep container in a cool, well-ventilated area.

---

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
Sodium borate	US (OSHA)	TWA	10 mg/m3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants
Sodium borate	US (ACGIH)	TWA	2mg/m3	ACGH Threshold Limit Value
Sodium borate	US (ACGIH)	STEL	6 mg/m3	ACGIH Threshold Limit Value

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:
Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance *(physical state, color, etc.)*	Solid. Crystalline. Powder.
Odor	Specific data not available
Odor threshold	Specific data not available
pH	9.2 at 10 g/L
Freezing point	62 °C (144 °F)
Initial boiling point and boiling range	Specific data not available
Flash point	Specific data not available
Evaporation rate	Specific data not available
Flammability (solid, gas)	Not flammable or combustible
Upper / Lower flammability or explosive limits	Specific data not available
Vapor pressure	Specific data not available
Vapor Density	Specific data not available
Relative Density	1.73 g/cm3 at 25 °C (77 °F)
Solubility(ies)	Soluble
Partition coefficient n-octanol/water(ies)	Specific data not available
Auto-ignition temperature	Specific data not available
Decomposition temperature	Specific data not available
Formula (SODIUM BORATE)	Na2B4O7.10(H2O)
Molecular Weight (SODIUM BORATE)	381.37 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No data available
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat and incompatible materials
Incompatible materials	Strong oxidizing agents, Strong reducing agents. Acids
Hazardous decomposition products	Borane, Boron oxides, and Sodium oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

Incompatabilities (SODIUM BORATE)	Incompatible with Zirconium. Borax + Zirconium explodes when heated. Incompatible with metallic salts, strong acids, strong reducing agents such a metal hydrides or alkali metals. Efflorescent in dry air. At 100 deg. C, it loses 5H2O; at 150 deg. C., it loses 9 H2O; it becomes anhydrous at 320 deg. C

11. TOXICOLOGICAL INFORMATION

- Sodium borate 1303-96-4

Product Summary:
Laboratory tests have shown reproductive toxicity. Laboratory tests have shown teratogenic effects. Laboratory tests have shown mutagenic effects of the product. No data available to designate the product as causing specific target organ toxicity through single or repeated exposure. No data available to designate product as an aspiration hazard.

Acute Toxicity:

LD50 (Dermal)	Rabbit	10,000 mg/kg	
LD50 (Oral)	Rat	4.500-5,000 mg/kg	

Irritation:

Eyes
No data available.

Respiratory or Skin Sensitization
No data available

Skin
No data available

Reproductive toxicity
Presumed human reproductive toxicant

Teratogenicity
Fetotoxicity; Presumed human reproductive toxicant

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.
ACGIH: No data is available.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen

or potential carcinogen by OSHA.

Other Hazards

Organ	Description
Eyes	Can be irritating to the eye
Ingestion	Can be harmful if ingested.
Inhalation	Can be harmful if inhaled. possible respiratory tract irritation.
Skin	Can be harmful if exposed to skin. Can cause irritation.

12. ECOLOGICAL INFORMATION

- Sodium borate 1303-96-4

Ecotoxicity (aquatic and terrestrial, where available):
Acute Fish Toxicity (SODIUM BORATE)
LC50 / 72 h / goldfish - 178mg/l

Acute toxicity to aquatic invertebrates (SODIUM BORATE)
EC50 / 48h / Water flea - 1,085-1,402 mg/l

Toxicity to Algae (BORAX)
IC50 / 96 hours Green Algae - 158 mg/L

Persistence and degradability:
No data available

Bioaccumulative potential:
No data available

Other adverse effects:
No data available

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Recycle to process, if possible. Consult your local or regional authorities.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	Not a dangerous good.

IMDG
UN-Number: Not a dangerous good.
Marine pollutant: No
IATA
UN-Number: Not a dangerous good.

---

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards
Reproductive hazard, Teratogen

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

CERCLA
No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA

Massachusetts Right To Know Components

Disodium tetraborate decahydrate CAS-No. 1303-96-4 Revision Date 1993-04-24

Pennsylvania Right To Know Components
Disodium tetraborate decahydrate CAS-No. 1303-96-4 Revision Date 1993-04-24

New Jersey Right To Know Components
Disodium tetraborate decahydrate CAS-No. 1303-96-4 Revision Date 1993-04-24

California Prop 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

Disclaimer
PHARMCO-AAPER believes that the information on this MSDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, PHARMCO-AAPER does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS information may not be applicable. Information is correct to the best of our knowledge at the date of the MSDS publication.

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: SS0340
Revision Date: February 5, 2014
Approved by: James A. Bertsch

MSDS No.: SS0340

Section 1 Chemical Product and Company Information

Product	**SODIUM BROMIDE**
Synonyms	Sedoneural

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
HARMFUL IF SWALLOWED OR INHALED.
Avoid contact with skin, eyes and clothing. Avoid inhalation of dusts.
Store in a cool, dry place. Wash thoroughly after handling.
Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	0
Reactivity	0
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Sodium bromide	7647-15-6	min. 99%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce highly corrosive hydrogen bromide gas and/or bromine gas.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White, crystalline powder.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): 1 mm @ 1483°F
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: 1391°C (2534°F)
Freezing / Melting point: 755°C (1391°F)
Decomposition temperature: N/A
Solubility: 95 g/100ml water @ 77°F
Specific gravity (H_2O = 1): 3.203 @ 25°C
Percent volatile (%): N/A
Molecular formula: NaBr
Molecular weight: 102.90

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Contact with acids can liberate hydrogen bromide. Contact with oxidizers can liberate bromine.

Incompatibilities with other materials: Strong oxidizers and acids.

Hazardous decomposition products: Hydrogen bromide gas and/or bromine gas.

Section 11 Toxicological Information

Effects of overexposure: Prolonged or excessive inhalation of dusts or ingestion of material may produce rash, depression, emaciation and in severe cases, psychoses and mental deterioration. Exercise appropriate procedures to minimize potential hazards.

ORAL-RAT LD50: 3.5 g/kg
INTRAPERITONEAL -MOUSE LD50: 5 g/kg

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (231-599-9), DSL-listed.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

ScholAR Chemistry™

MATERIAL SAFETY DATA SHEET

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9429706 9429708 9429806 9429808 9429809 9429907 9429903 9430107 9430207 9430307 9430406 9430408 9430603 9474000
Effective Date: January 6, 2003

SECTION I NAME

Product	Sodium Chloride
Chemical Synonyms	Common Salt; Rock Salt
Formula	NaCl
CAS No.	7647-14-5

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

NFPA

Health	1
Flammability	0
Reactivity	0

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Sodium chloride	100%	N/A
LOW HAZARD FOR USUAL LABORATORY HANDLING.		

SECTION III PHYSICAL DATA

Melting Point (°C)	804°C	Specific Gravity (H_2O = 1)	2.163 @ 25°C
Boiling Point (°C)	1413°C	Percent Volatile by Volume (%)	Negligible.
Vapor Pressure (mm Hg)	1 mm @ 865°C	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	1 g/2.8 ml water @ 25°C		
Appearance & Odor	White crystalline powder; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Non-flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume.

TDG **Not controlled under TDG.**

SECTION V REACTIVITY DATA

SS0430

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	Sulfuric acid, nitric acid.
	No		
Hazardous Decomposition Products	Electrolysis can produce chlorine gas.		
Reactive under what conditions	Wet conditions can cause product to cake.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Eyes.
TLV	N/A
Toxicity for animals	LD50: 3000 mg/kg oral-rat.
Chronic effects on humans	There is no known effects from chronic exposure to this product. Target organs: None known.
Acute effects on humans	Irritating to eyes.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep container dry. Keep in a cool place. Keep container tightly closed.
Precautions	Keep away from acids.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Wash spill area with soap and water.
Protective Clothing	Safety glasses, lab coat, dust respirator, gloves.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No. 3	Date January 6, 2003	Approved Michael Raszeja

ScholAR Chemistry™

Fiche Signalétique

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS: 9429706 9429708 9429806 9429808 9429809 9429907 9429903 9430107 9430207 9430307 9430406 9430408 9430603 9474000

Validé par: 6 janvier, 2003

SECTION I Identification

Produit	Chlorure de sodium
Synonymes	Sel commun; Sel de roche
Formule	NaCl
# CAS	7647-14-5

Telephone D'urgence

416-984-3000

NFPA

Santé	1
Flammabilité	0
Reactivité	0

Niveau de risque **WHMIS**

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

SECTION II Ingrédients Dangereux

Nom	%	TWA
Chlorure de sodium	100%	Sans objet.
FAIBLE RISQUE POUR HABITUAL LABORATOIRE MANIPULATION.		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	804°C	Gravité spécifique (Eau = 1)	2,163 @ 25°C
Point d'ebullition (°C)	1413°C	Volatilité % par volume	Négligeable.
Tension de vapeur (mm Hg)	1 mm @ 865°C	Taux d'évaporation (=1)	Sans objet.
Densité de la vapeur (Air=1)	Sans objet.		
Solubilité	1 g/2,8 ml l'eau@ 25°C		
Odeur et apparence	Blanc cristallin poudre; inodore.		

SECTION IV Risques D'incendie ou D'explosion

Point d'éclair	Ininflammable.	Limites d'inflmmabilité % par volume Sans objet.	Seuil minimal	Seuil maximal

Moyens d'extinction

Utiliser des poudres chimiques sèches, du CO_2, une mousse d'alcool ou de l'eau pulvérisée. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Le feu ou la chaleur excessive peut produire les produits dangereux de décomposition à produire comme poussière ou vapeur.

TMD **Substance non réglementée par le TMD (Canada).**

SECTION V Données sur la Réactivité

SS0430

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	Acide sulfurique et l'acide nitrique.
	non		

Produits de decomposition dangereux	Életrolyse peut produire une gaz de chlorure.
Conditions de Réactivité	Conditions humide pouvoir provoquer produit à pleines.

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Yeux.
LMP	Sans objet.
Toxicité pour les animaux	DL50: 3000 mg/kg oral-rat.
Effets chroniques sur les humains	Il n'y a aucun effet connu dû à une exposition chronique à ce produit. On ne connaît aucun organe de cible.
Effets aigué sur les humains	Irritant pour les yeux.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Conserver le récipient à l'abri de l'humidité. Conserver dans un endroit frais. Garder le récipient bien fermé.
Précautions	Tenir à l'écart de acides.
Déversement ou fuite	Utiliser les instruments nécessaires pour mettre le solide répandu dans un contenant de récupération approprié. Bien laver la surface où le solide était répandu avec du savon et de l'eau.
Vêtements de protection	Lunettes de sécurité, blouse de laboratoire, respirateur anti-poussières, gants.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	3	Date	6 janvier, 2003	Vérifié par	Michael Raszeja

SODIUM HYDROXIDE

Sigma-Aldrich

Chemwatch: **1823**
Version No: **10.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: **4**

Issue Date: **19/03/2014**
Print Date: **16/01/2015**
Initial Date: **Not Available**
L.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	SODIUM HYDROXIDE
Chemical Name	sodium hydroxide
Proper shipping name	SODIUM HYDROXIDE, SOLID
Chemical formula	H2O.HNaO|HNaO
Other means of identification	Not Available
CAS number	1310-73-2

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Component of alkali cleaners. Manufacture of soap, pulp and paper; rayon. Chemical manufacture. Neutralising agent in petroleum refining; manufacture of aluminium, detergents, textile processing, refining of vegetable oils. Laboratory reagent, for organic fusion, etching of metal. Used for regenerating ion exchange resins, lye peeling of fruits and vegetables in the food industry.

Details of the manufacturer/importer

Registered company name	Sigma-Aldrich
Address	3 Strathmore Road Natick 01760-2418 MA United States
Telephone	+1 508 651 8151
Fax	Not Available
Website	http://www.sigmaaldrich.com/sigma/product%20information%20sheet/c0926pis.pdf
Email	Not Available

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

Poisons Schedule	S6
GHS Classification [2]	Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1A
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI*

Label elements

GHS label elements	

SIGNAL WORD	DANGER

Hazard statement(s)

H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage

Precautionary statement(s) Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P234	Keep only in original container.

Continued...

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name
1310-73-2	>98	sodium hydroxide

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor. ▸ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▸ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▸ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▸ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. **This must definitely be left to a doctor or person authorised by him/her.** (ICSC13719)
Ingestion	▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:
- Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.
* Activated charcoal does not absorb alkali.
* Gastric lavage should not be used.

Supportive care involves the following:

Continued...

- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	▸ Water spray or fog. ▸ Foam. ▸ Dry chemical powder. ▸ BCF (where regulations permit). ▸ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use fire fighting procedures suitable for surrounding area. ▸ **Do not** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire. ▸ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	▸ Non combustible. ▸ Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of:, metal oxidesMay emit corrosive fumes.|Solid in contact with water or moisture reacts violently, and solutions are highly alkaline and may cause severe skin burns.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Use dry clean up procedures and avoid generating dust. ▸ Place in a suitable, labelled container for waste disposal. ▸ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▸ Check regularly for spills and leaks.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Consider evacuation (or protect in place). ▸ Stop leak if safe to do so. ▸ Contain spill with sand, earth or vermiculite. ▸ Collect recoverable product into labelled containers for recycling. ▸ Neutralise/decontaminate residue (see Section 13 for specific agent). ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area and prevent runoff into drains. ▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services.

	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ **WARNING:** To avoid violent reaction, **ALWAYS** add material to water and **NEVER** water to material. ▸ Avoid smoking, naked lights or ignition sources. ▸ Avoid contact with incompatible materials. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this MSDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Continued...

Other information	▸ Plastic bag ▸ **NOTE:** Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. ▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this MSDS. ▸ **DO NOT** store near acids, or oxidising agents ▸ No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Glass container is suitable for laboratory quantities ▸ **DO NOT** use aluminium, galvanised or tin-plated containers ▸ Lined metal can, lined metal pail/ can. ▸ Plastic pail. ▸ Polyliner drum. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks. For low viscosity materials ▸ Drums and jerricans must be of the non-removable head type. ▸ Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.): ▸ Removable head packaging; ▸ Cans with friction closures and ▸ low pressure tubes and cartridges may be used. - Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	Sodium hydroxide/ potassium hydroxide: ▸ reacts with water evolving heat and corrosive fumes ▸ reacts violently with acids, trans-acetylene dichloride, aminotetrazole, p-bis(1,3-dibromoethyl), benzene, bromoform, halogenated compounds, nitrogen-containing compounds, organic halogens, chlorine dioxide ((explodes), chloroform, cresols, cyclopentadiene, 4-chloro-2-methylphenol, cis-dichloroethylene, 2,2-dichloro-3,3-dimethylbutane, ethylene chlorohydrin, germanium, iodine pentafluoride, maleic anhydride, p-nitrotoluene,nitrogen trichloride, o-nitrophenol, phosphonium iodide, potassium peroxodisulfate, propylene oxide, 1,2,4,5-tetrachlorobenzene (highly toxic substance is forme), 2,2,3,3-tetrafluoro-1-propanol, tetrahydrofuran, thorium dicarbide, trichloroethanol, 2,4,6-trinitrotoluene, vinyl acetate ▸ reacts with fluorine, nitroalkanes, (forming explosive compounds) ▸ incompatible with acetic acid, acetaldehyde, acetic anhydride, acrolein, acrylonitrile, allyl chloride, organic anhydride, acrylates, alcohols, aldehydes, alkylene oxides, substituted allyls, ammonium chloroplatinate, benzanthrone, bromine, benzene-1,4-diol, carbon dioxide, cellulose nitrate, chlorine trifluoride, 4-chlorobutyronitrile, chlorohydrin, chloronitrotoluenes, chlorosulfonic acid, cinnamaldehyde, caprolactam solution, chlorocresols, 1,2-dichloroethylene, epichlorohydrin, ethylene cyanohydrin, formaldehyde (forms formic acid and flammable hydrogen gas), glycols, glyoxal, hexachloroplatinate, hydrogen sulfide, hydroquinone, iron-silicon, isocyanates, ketones, methyl azide, 4-methyl-2-nitrophenol, mineral acids (forming corresponding salt),nitrobenzene, N-nitrosohydroxylamine, nitrates pentol, phenols, phosphorus, phosphorus pentaoxide, beta-propiolactone, sodium, sulfur dioxide, tetrahydroborate, 1,1,1,2-tetrachloroethane, 2,2,2-trichloroethanol, trichloronitromethane, zirconium ▸ ignites on contact with cinnamaldehyde or zinc and reacts explosively with a mixture of chloroform and methane ▸ forms heat-, friction-, and/ or shock-sensitive- explosive salts with nitro-compounds, cyanogen azide, 3-ethyl-4-hydroxy-1,2,5-oxadiazole, 3-methyl-2-penten-4-yn-1-ol, N,N'-bis(2,2,2-trinitroethyl)urea, trichloroethylene (forms dichloroacetylene) ▸ increase the explosive sensitivity of nitromethane ▸ attacks some plastics, rubber, coatings and metals: aluminium, tin, zinc,etc, and their alloys, producing flammable hydrogen gas ▸ Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride. ▸ These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition. ▸ The state of subdivision may affect the results. ▸ In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas. ▸ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. ▸ Avoid contact with copper, aluminium and their alloys.

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	sodium hydroxide	Sodium hydroxide	Not Available	Not Available	2 mg/m3	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium hydroxide	Sodium hydroxide	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
sodium hydroxide	250 mg/m3	10 mg/m3

MATERIAL DATA

Continued...

for sodium hydroxide:
The TLV-C is recommended based on concentrations that produce noticeable but not excessive, ocular and upper respiratory tract irritation.

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:
(a): particle dust respirators, if necessary, combined with an absorption cartridge;
(b): filter respirators with absorption cartridge or canister of the right type;
(c): fresh-air hoods or masks.
Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
|If conditions where worker exposure potential is high, wear full-face air-supplied breathing apparatus and full protective suit.

Personal protection

Eye and face protection

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.
- Chemical goggles.whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Skin protection

See Hand protection below

Hands/feet protection

- Elbow length PVC gloves

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Body protection

See Other protection below

Continued...

Other protection	▸ Overalls. ▸ PVC Apron. ▸ PVC protective suit may be required if exposure severe. ▸ Eyewash unit. ▸ Ensure there is ready access to a safety shower.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
SODIUM HYDROXIDE

Material	CPI
BUTYL	A
NAT+NEOPR+NITRILE	A
NATURAL RUBBER	A
NATURAL+NEOPRENE	A
NEOPRENE	A
NEOPRENE/NATURAL	A
NITRILE	A
NITRILE+PVC	A
PE	A
PE/EVAL/PE	A
PVC	A
SARANEX-23	A
SARANEX-23 2-PLY	A
TEFLON	A
VITON/CHLOROBUTYL	A

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White hygroscopic, odourless, pellets, flakes, sticks or solid cast mass. Vigorously exotherms when mixed with water. Explosive boiling and spitting will occur if added to hot water. Reacts violently with acids. CAUSTIC alkali. Soluble in water, alcohol, ether, glycerol. In the presence of moisture, highly corrosive to aluminium, zinc and tin. HIGHLY reactive: with ammonium salts evolves ammonia gas. Rapidly picks up moisture from the air and with carbon dioxide in air forms sodium carbonate.

Physical state	Divided Solid	**Relative density (Water = 1)**	2.12 @ 20 C
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Applicable
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Applicable
Melting point / freezing point (°C)	318.4	**Viscosity (cSt)**	Not Applicable
Initial boiling point and boiling range (°C)	1390	**Molecular weight (g/mol)**	40
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	Not Applicable	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Applicable
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	< 2 (20 C)	**Gas group**	Not Available
Solubility in water (g/L)	Miscible	**pH as a solution(1%)**	12.7; (5%)
Vapour density (Air = 1)	2.3 (hydrate)	**VOC g/L**	Not Available

Continued...

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Inhalation of alkaline corrosives may produce irritation of the respiratory tract with coughing, choking, pain and mucous membrane damage. Pulmonary oedema may develop in more severe cases; this may be immediate or in most cases following a latent period of 5-72 hours. Symptoms may include a tightness in the chest, dyspnoea, frothy sputum, cyanosis and dizziness. Findings may include hypotension, a weak and rapid pulse and moist rales. Severe acute sodium hydroxide dust inhalation exposure may be fatal due to spasm, inflammation and oedema of the larynx and bronchi, chemical pneumonitis and severe pulmonary oedema. Symptoms of overexposure include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures. Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
Ingestion	Ingestion of alkaline corrosives may produce immediate pain, and circumoral burns. Mucous membrane corrosive damage is characterised by a white appearance and soapy feel; this may then become brown, oedematous and ulcerated. Profuse salivation with an inability to swallow or speak may also result. Even where there is limited or no evidence of chemical burns, both the oesophagus and stomach may experience a burning pain; vomiting and diarrhoea may follow. The vomitus may be thick and may be slimy (mucous) and may eventually contain blood and shreds of mucosa. Epiglottal oedema may result in respiratory distress and asphyxia. Marked hypotension is symptomatic of shock; a weak and rapid pulse, shallow respiration and clammy skin may also be evident. Circulatory collapse may occur and, if uncorrected, may produce renal failure. Severe exposures may result in oesophageal or gastric perforation accompanied by mediastinitis, substernal pain, peritonitis, abdominal rigidity and fever. Although oesophageal, gastric or pyloric stricture may be evident initially, these may occur after weeks or even months and years. Death may be quick and results from asphyxia, circulatory collapse or aspiration of even minute amounts. Death may also be delayed as a result of perforation, pneumonia or the effects of stricture formation. Accidental ingestion of the material may be damaging to the health of the individual. Ingestion of sodium hydroxide may result in severe burns to the mouth, throat and stomach, pain, nausea and vomiting, swelling of the larynx and subsequent suffocation, perforation of the gastro-intestinal tract. A 1% aqueous solution (pH 13.4)of sodium hydroxide failed to cause gastric, oesophageal or other damage in rabbits.
Skin Contact	The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Sodium hydroxide burns are not immediately painful; onset of pain may be delayed minutes or hours; thus care should be taken to avoid contamination of gloves and boots. A 5% aqueous solution of sodium hydroxide applied to the skin of rabbits for 4 hours produced severe necrosis. Instillation of a 1% solution into the conjunctival sac failed to produce ocular or conjunctival injury in rabbits provided the eye was promptly irrigated with copious amounts of water. Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. The material produces severe skin irritation; evidence exists, or practical experience predicts, that the material either: ▸ produces severe inflammation of the skin in a substantial number of individuals following direct contact, and/or ▸ produces significant and severe inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period. ▸ Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. **NOTE:** Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.
Eye	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation. Direct contact with alkaline corrosives may produce pain and burns. Oedema, destruction of the epithelium, corneal opacification and iritis may occur. In less severe cases these symptoms tend to resolve. In severe injuries the full extent of the damage may not be immediately apparent with late complications comprising a persistent oedema, vascularisation and corneal scarring, permanent opacity, staphyloma, cataract, symblepharon and loss of sight.
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

Continued...

	TOXICITY	IRRITATION
sodium hydroxide		Eye (rabbit): 0.05 mg/24h SEVERE
		Eye (rabbit):1 mg/24h SEVERE
		Eye (rabbit):1 mg/30s rinsed-SEVERE
		Skin (rabbit): 500 mg/24h SEVERE
	Not Available	Not Available

** Value obtained from manufacturer's msds*
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

SODIUM HYDROXIDE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration. Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

Acute Toxicity	⊘	**Carcinogenicity**	⊘
Skin Irritation/Corrosion	✔	**Reproductivity**	⊘
Serious Eye Damage/Irritation	⊘	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	⊘	**STOT - Repeated Exposure**	⊘
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend: ✔ *– Data required to make classification available*
✘ *– Data available but does not fill the criteria for classification*
⊘ *– Data Not Available to make classification*

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

NOT AVAILABLE

Ingredient	Endpoint	Test Duration	Effect	Value	Species	BCF
sodium hydroxide	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. Such ionic species may bind to dissolved ligands or sorb to solid particles in aquatic or aqueous media. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.
When released to dry soil most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice. Environmental processes may also be important in changing solubilities.
Even though many metals show few toxic effects at physiological pHs, transformation may introduce new or magnified effects.
A metal ion is considered infinitely persistent because it cannot degrade further.
The current state of science does not allow for an unambiguous interpretation of various measures of bioaccumulation.
The counter-ion may also create health and environmental concerns once isolated from the metal. Under normal physiological conditions the counter-ion may be essentially insoluble and may not be bioavailable.
Environmental processes may enhance bioavailability.
Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.
|Ecotoxicity: |Fish LC50 (96h): 43mg/l

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
sodium hydroxide	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
sodium hydroxide	LOW (LogKOW = -3.8796)

Continued...

Mobility in soil

Ingredient	Mobility
sodium hydroxide	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▸ Treat and neutralise at an approved treatment plant. ▸ Treatment should involve: Mixing or slurrying in water; Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material). ▸ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2W

Land transport (ADG)

UN number	1823
Packing group	II
UN proper shipping name	SODIUM HYDROXIDE, SOLID
Environmental hazard	No relevant data
Transport hazard class(es)	Class: 8 Subrisk: Not Applicable
Special precautions for user	Special provisions: Not Applicable Limited quantity: 1 kg

Air transport (ICAO-IATA / DGR)

UN number	1823
Packing group	II
UN proper shipping name	Sodium hydroxide, solid
Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class: 8 ICAO / IATA Subrisk: Not Applicable ERG Code: 8L
Special precautions for user	Special provisions: Not Applicable Cargo Only Packing Instructions: 863 Cargo Only Maximum Qty / Pack: 50 kg Passenger and Cargo Packing Instructions: 859 Passenger and Cargo Maximum Qty / Pack: 15 kg Passenger and Cargo Limited Quantity Packing Instructions: Y844 Passenger and Cargo Limited Maximum Qty / Pack: 5 kg

Sea transport (IMDG-Code / GGVSee)

Continued...

UN number	1823
Packing group	II
UN proper shipping name	SODIUM HYDROXIDE, SOLID
Environmental hazard	No relevant data
Transport hazard class(es)	IMDG Class: 8 IMDG Subrisk: Not Applicable
Special precautions for user	EMS Number: F-A , S-B Special provisions: Not Applicable Limited Quantities: 1 kg

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

sodium hydroxide(1310-73-2) is found on the following regulatory lists	"Australia Exposure Standards","Australia Inventory of Chemical Substances (AICS)","Australia Hazardous Substances Information System - Consolidated Lists"

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
sodium hydroxide	12200-64-5, 1310-73-2

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

end of SDS

MATERIAL SAFETY DATA SHEET

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9431504 9431506 9431602 9431604 9431606
Effective Date: September 13, 2002

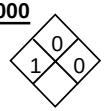
SECTION I NAME

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

Product	Sodium Iodide
Chemical Synonyms	N/A
Formula	NaI
CAS No.	7681-82-5

NFPA



Health	1
Flammability	0
Reactivity	1

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Sodium iodide	100%	N/A
WARNING!		

SECTION III PHYSICAL DATA

Melting Point (°C)	653°C	Specific Gravity (H_2O = 1)	3.667 @ 22°C
Boiling Point (°C)	1304°C	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	1 mm @ 767°C	Evaporation Rate (n-Butyl acetate =1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	1 g/0.5 ml water @ 25°C		
Appearance & Odor	White crystalline powder; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Non-flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume.

TDG **Not controlled under TDG.**

SECTION V REACTIVITY DATA

SS0620

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	Strong acids, strong oxidizers, metallic salts, chloral hydrate, perchloric acid, bromine trifluoride.
	No		
Hazardous Decomposition Products	Iodine, sodium oxide, hydrogen iodide.		
Reactive under what conditions	Heat and light, incompatible materials.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Inhalation. Ingestion. Skin contact.
TLV	N/A
Toxicity for animals	LD50: 4340 mg/kg oral-rat.
Chronic effects on humans	There is no known effects from chronic exposure to this product. Target organs: None known.
Acute effects on humans	Irritating to eyes, skin and respiratory system.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep container dry. Keep in a cool place. Keep container tightly closed. Keep away from heat, oxidizers.
Precautions	Avoid contact with skin and eyes. DO NOT breathe dust. DO NOT ingest. If ingested, seek medical advice immediately.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Wash spill area with soap and water.
Protective Clothing	Safety glasses, lab coat, dust respirator, gloves.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No.	2	Date	September 13, 2002	Approved	Michael Raszeja

Fiche Signalétique

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS: 9431504 9431506 9431602 9431604 9431606
Validé par: 13 septembre, 2002

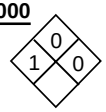
SECTION I Identification

Produit	Iodure de sodium
Synonymes	Sans objet.
Formule	NaI
# CAS	7681-82-5

Telephone D'urgence

416-984-3000

NFPA



Santé	1
Flammabilité	0
Reactivité	1

Niveau de risque

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

WHMIS

SECTION II Ingrédients Dangereux

Nom	%	TWA
Iodure de sodium	100%	Sans objet.
AVERTISSEMENT!		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	653°C	Gravité spécifique (Eau = 1)	3,667 @ 22°C
Point d'ebullition (°C)	1304°C	Volatilité % par volume	Sans objet.
Tension de vapeur (mm Hg)	1 mm @ 767°C	Taux d'évaporation (Acetate de n-butyl =1)	Sans objet.
Densité de la vapeur (Air=1)	Sans objet.		
Solubilité	1 g/0,5 ml de l'eau @ 25°C		
Odeur et apparence	Blanc cristallin poudre; inodore.		

SECTION IV Risques D'incendie ou D'explosion

			Seuil minimal	Seuil maximal
Point d'éclair	Ininflammable.	Limites d'inflmmabilité % par volume Sans objet.		

Moyens d'extinction

Utiliser des poudres chimiques sèches, du CO_2, une mousse d'alcool ou de l'eau pulvérisée. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Le feu ou la chaleur excessive peut produire les produits dangereux de décomposition à produire comme poussière ou vapeur.

TMD **Substance non réglementée par le TMD (Canada).**

SECTION V Données sur la Réactivité SS0620

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	Acides forte, comburante forte, sel métallique, chloral monohydrate, acide perchlorique, trufluorure de brome.
	non		
Produits de decomposition dangereux	Iodure, oxyde de sodium, iodure d'hydrogene.		
Conditions de Réactivité	Chaleur, lumière et matières incompatibles.		

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Inhalation. Ingestion. Contact cutane.
LMP	Sans objet.
Toxicité pour les animaux	DL50: 4340 mg/kg oral-rat.
Effets chroniques sur les humains	Il n'y a aucun effet connu dû à une exposition chronique à ce produit. On ne connaît aucun organe de cible.
Effets aigué sur les humains	Irritant pour les yeux, les voies respiratoires et la peau.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Conserver le récipient à l'abri de l'humidité. Tenir dans un endroit frais. Garder le récipient bien fermé. Tenir à l'écart de la chaleur, de oxydants.
Précautions	Éviter tout contact avec la peau et les yeux. NE PAS inhaler les poussières. NE PAS ingérer. En cas d'ingestion il faut consulter immédiatement un médecin.
Déversement ou fuite	Utiliser les instruments nécessaires pour mettre le solide répandu dans un contenant de récupération approprié. Bien laver la surface où le solide était répandu avec du savon et de l'eau.
Vêtements de protection	Lunettes de sécurité, blouse de laboratoire, respirateur anti-poussières, gants.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	2	Date	13 septembre, 2002	Vérifié par	Michael Raszeja

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**SODIUM LAURYL SULFATE**
Synonyms	Sodium Dodecyl Sulfate / SDS

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS02 / GHS05 / GHS06
Target organs: Respiratory system, Eyes, Skin

GHS Classification:
Flammable solid (Category 2)
Acute toxicity, oral (Category 4)
Acute toxicity, dermal (Category 3)
Skin irritation (Category 2)
Serious eye damage (Category 1)
STOT-SE (Category 3)
Aquatic toxicity, acute (Category 2)

GHS Label information: **Hazard statement:**
H228: Flammable solid.
H302: Harmful if swallowed.
H311: Toxic in contact with skin.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H401: Toxic to aquatic life.

Precautionary statement:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330: Rinse mouth.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P312: Call a POISON CENTER or doctor if you feel unwell.
P361+P364: Take off immediately all contaminated clothing and wash it before reuse.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor.
P370+P378: In case of fire: Use dry chemical, CO_2, sand, earth, water spray or regular foam to extinguish.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Sodium lauryl sulfate	151-21-3	100%	205-788-1

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: TOXIC IN CONTACT WITH SKIN. CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Dry chemical, CO_2, sand, earth, water spray or regular foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Combustible material. May be ignited by friction, heat, sparks or flame.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 133)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particles not otherwise classified	Not established	TWA: 15 mg/m^3 total dust	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Fine off-white powder
Odor: Slight fatty odor
Odor threshold: Data not available
pH: 7.2
Melting / Freezing point: 204-207°C (399-405°F)
Boiling point: Data not available
Flash point: 180°C (356°F)

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Combustible solid
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): Data not available
Solubility(ies): Soluble in water

Partition coefficient: (n-octanol / water): Log Pow: 1.6
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available
Viscosity: Data not available
Molecular formula: $CH_3(CH_2)_{11}OSO_3Na$
Molecular weight: 288.38

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Strong oxidizers, acids.

Hazardous decomposition products: Carbon oxides, sulfur oxides, and sodium.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 1288 mg/kg ; Inhalation-rat LC50: >3900 mg/m^3 ; Dermal-rabbit LD50: 580 mg/kg
Skin corrosion/irritation: Skin-rabbit - Slight irritant.
Serious eye damage/irritation: Eyes-rabbit - Severe irritant.
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Reproductive toxicity: Data not available
STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory effects.
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation causes cough, sore throat.
Ingestion: Ingestion causes nausea, vomiting, diarrhea.
Skin: Contact with skin causes redness irritation, and defatting on prolonged contact.
Eyes: Contact with eyes may cause irritation with redness and pain.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: WT1050000

Section 12 Ecological Information

Toxicity to fish: LC50: Oncorhynchus mykiss - 3.6 mg/L-96 hours
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: LOEC: Pseudokirchneriella subcapitata - 2.68 mg/L-6 days
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: Toxic to aquatic life.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1325
Shipping name: Flammable solids, organic, n.o.s., (Sodium lauryl sulfate)
Hazard class: 4.1
Packing group: III
Reportable Quantity: No
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 5 kg
2012 ERG Guide # 133

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Sodium lauryl sulfate	Listed	Not listed	Not listed	Listed	Not listed	D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: April 8, 2014 **Supercedes:** April 8, 2014

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**SULFATE SODIQUE DE LAURYLE**
Synonymes	Sulfate dodécylique de sodium / SDS

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS02 / GHS05 / GHS06
Les organes cibles: Le système respiratoire, les yeux, la peau

Classification par le GHS:
Flammable solid (Catégorie 2)
Acute toxicity, oral (Catégorie 4)
Acute toxicity, dermal (Catégorie 3)
Skin irritation (Catégorie 2)
Serious eye damage (Catégorie 1)
STOT-SE (Catégorie 3)
Aquatic toxicity, acute (Catégorie 2)

Renseignements sur l'étiquette GHS: Mention de danger:
H228: Matière solide inflammable.
H302: Nocif en cas d'ingestion.
H311: Toxique par contact cutané.
H315: Provoque une irritation cutanée.
H318: Provoque des lésions oculaires graves.
H335: Peut irriter les voies respiratoires.
H401: Toxique pour les organismes aquatiques.

Déclarations de précaution:
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer. P240: Mise à la terre/liaison équipotentielle du récipient et du matériel de réception. P241: Utiliser du matériel électrique/de ventilation/d'éclairage antidéflagrant. P261: Éviter de respirer les poussières. P264: Se laver les mains soigneusement après manipulation. P270: Ne pas manger, boire ou fumer en manipulant ce produit. P271: Utiliser seulement en plein air ou dans un endroit bien ventilé. P273: Éviter le rejet dans l'environnement. P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage. P301+P312: EN CAS D'INGESTION: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise. P330: Rincer la bouche. P302+P352: EN CAS DE CONTACT AVEC LA PEAU: Laver abondamment à l'eau et du savon. P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise. P361+P364: Enlever immédiatement tous les vêtements contaminés et les laver avant réutilisation. P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer. P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise. P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. P310: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin. P370+P378: En cas d'incendie: Utiliser un produit chimique sec, CO_2, sable, terre, eau pulvérisée ou mousse ordinaire pour l'extinction. P403+P233: Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche. P405: Garder sous clef. P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Sulfate sodique de lauryle	151-21-3	100%	205-788-1

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE DES LÉSIONS OCULAIRES GRAVES. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: TOXIQUE PAR CONTACT CUTANÉ. PROVOQUE UNE IRRITATION CUTANÉE. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Produit chimique sec, CO_2, sable, terre, eau pulvérisée ou mousse ordinaire.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Des matières combustibles. Peut être allumée par friction, la chaleur, des étincelles ou des flammes.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Enlever toute source d'ignition. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 133)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particules non classées ailleurs	Aucun établi	TWA: 15 mg/m^3 poussières totales	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Clair, liquide incolore
Odeur: Odeur caractéristique douce
Seuil de l'odeur: Données non disponibles
pH: 7.2
Point de fusion / congélation: 204-207°C (399-405°F)
Point d'ébullition: Données non disponibles
Point d'éclair: 180°C (356°F)

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Solide combustible
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Données non disponibles
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): Données non disponibles
Solubilité (s): Soluble dans l'eau

Coefficient de partage: (n-octanol / eau): Log Pow: 1.6
Auto-inflammation: Données non disponibles
Température de décomposition: Données non disponibles
Viscosité: Données non disponibles
Formule moléculaire: $CH_3(CH_2)_{11}OSO_3Na$
Poids moléculaire: 288.38

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Les températures excessives, la chaleur, étincelles, flamme nue et d'autres sources d'allumage.

Matières incompatibles: Comburantes fortes, acides.

Produits dangereux de décomposition: Oxydes de carbones, oxydes de soufre et le sodium.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 1288 mg/kg ; Inhalation-rat LC50: >3900 mg/m^3 ; Dermal-rabbit LD50: 580 mg/kg
La corrosion de la peau et l'irritation: Peau de lapin - Légèrement irritant.
Des lésions oculaires graves / irritation: Yeux-lapin - Irritant sévère.
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.
Toxicité pour la reproduction: Données non disponibles
STOT-exposition unique: La substance ou le mélange est classé comme toxique pour certains organes cibles, exposition unique, catégorie 3 avec des effets respiratoire.
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: L'inhalation provoque la toux, des maux de gorge.
Ingestion: L'ingestion provoque des nausées, des vomissements, de la diarrhée.
Peau: Le contact avec la peau provoque une irritation de la rougeur et de dégraissage de contact prolongé.
Yeux: Le contact avec les yeux peut provoquer une irritation avec rougeur et douleur.
Les signes et les symptômes de l'exposition: Au meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été à fond étudiées. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: WT1050000

Section 12 L'Information Écologique

Toxicité pour les poissons: LC50: Oncorhynchus mykiss - 3.6 mg/L-96 hours
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: LOEC: Pseudokirchneriella subcapitata - 2.68 mg/L-6 days
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Toxique pour les organismes aquatiques.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN1325 **Nom d'expédition:** Solides inflammables, organique, n.o.s., (Sulfate sodique de lauryle)
Classe de danger: 4.1 **Groupe d'emballage:** III **Quantité à déclarer:** No **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 kg **2012 ERG Guide #:** 133

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Sulfate sodique de lauryle	Listed	Not listed	Not listed	Listed	Not listed	D2B

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 8 avril, 2014 **Remplace:** 8 avril, 2014

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: SS0790
Revision Date: September 17, 2013
Approved by: James A. Bertsch

MSDS No.: SS0790

Section 1 Chemical Product and Company Information

Product	**SODIUM PHOSPHATE, TRIBASIC**
Synonyms	Trisodium Phosphate Dodecahydrate; TSP

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
HARMFUL IF SWALLOWED OR INHALED.
CAUSES SKIN AND EYE IRRITATION.
Avoid contact with skin, eyes and clothing. Avoid inhalation of dusts.
Store in a cool, dry place. Wash thoroughly after handling. Target organs: Eyes, respiratory system.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	2
Fire	0
Reactivity	1
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Sodium phosphate, tribasic	10101-89-0	100%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. CAUTION! A strong caustic material. Dangerous when heated to decomposition, it emits highly toxic fumes of phosphorus oxides.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White crystals.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: N/A
Freezing / Melting point: N/A
Decomposition temperature: N/A
Solubility in water: 33 @ 25°C
Specific gravity (H_2O = 1): 0.9 g/ml
Percent volatile (%): N/A
Molecular formula: $Na_3PO_4 \cdot 12H_2O$
Molecular weight: 380.12

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Excessive temperatures and heat.
Hazardous polymerization: Will not occur.
Incompatibilities with other materials: Strong acids.
Hazardous decomposition products: Phosphorous oxides.

Section 11 Toxicological Information

Effects of overexposure: INGESTION: Harmful if swallowed. May cause severe damage to gastrointestinal tract, nausea, vomiting, diarrhea. EYES: Causes irritation. Prolonged contact may result in corneal injury. SKIN: Prolonged or repeated contact may cause irritation. INHALATION: Dust may cause upper respiratory tract irritation resulting in cough, chest pain and difficulty breathing. Exercise appropriate procedures to minimize potential hazards.

ORL-RAT LD50: N/A

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

SAFETY DATA SHEET

Version 4.10
Revision Date 02/28/2015
Print Date 02/19/2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Sodium tetraborate
Product Number	:	229946
Brand	:	Aldrich
Product Use	:	For laboratory research purposes.
Supplier	:	Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA
Telephone	:	+1 9058299500
Fax	:	+1 9058299292
Emergency Phone # (For both supplier and manufacturer)	:	+1-703-527-3887 (CHEMTREC)
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

Manufacturer	:	Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA

2. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Central nervous system, Kidney, Testes.

WHMIS Classification

D2A	Very Toxic Material Causing Other Toxic Effects	Teratogen
D2B	Toxic Material Causing Other Toxic Effects	Reproductive hazard Moderate eye irritant

GHS Classification

Acute toxicity, Oral (Category 5)
Acute toxicity, Dermal (Category 5)
Serious eye damage/eye irritation (Category 2A)
Reproductive toxicity (Category 1B)
Acute aquatic toxicity (Category 3)
Chronic aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H303 + H313	May be harmful if swallowed or in contact with skin.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P273	Avoid release to the environment.

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Borax, fused

Formula : $B_4Na_2O_7$
Molecular weight : 201.22 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Disodium tetraborate			
1330-43-4	215-540-4	005-011-00-4	<=100%

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Borane/boron oxides, Sodium oxides

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Disodium tetraborate	1330-43-4	TWAEV	2.000000 mg/m3	Canada. Ontario OELs
		STEV	6.000000 mg/m3	Canada. Ontario OELs
		TWA	2.000000 mg/m3	Canada. British Columbia OEL
Remarks	Adverse reproductive effect			
		STEL	6.000000 mg/m3	Canada. British Columbia OEL
	Adverse reproductive effect			
		TWA	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Not classifiable as a human carcinogen			
		STEL	6.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Not classifiable as a human carcinogen			
		TWA	1.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		STEL	3.000000 ppm	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWAEV	1.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure

				values for airborne contaminants
		TWAEV	2.000000 mg/m3	Canada. Ontario OELs
		STEV	6.000000 mg/m3	Canada. Ontario OELs
		TWA	2.000000 mg/m3	Canada. British Columbia OEL
		STEL	6.000000 mg/m3	Canada. British Columbia OEL
		TWA	2.000000 mg/m3	Canada. British Columbia OEL
		STEL	6.000000 mg/m3	Canada. British Columbia OEL
		TWA	2.000000 mg/m3	Canada. British Columbia OEL
		STEL	6.000000 mg/m3	Canada. British Columbia OEL
		TWA	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		STEL	6.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	2.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		STEL	6.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		STEL	6.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls
Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	powder
Colour	white

Safety data

pH	No data available
Melting point/freezing point	Melting point/range: 741 °C (1,366 °F) - lit.
Boiling point	No data available
Flash point	Not applicable
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	No data available
Density	2.367 g/mL at 25 °C (77 °F)
Water solubility	No data available
Partition coefficient: n-octanol/water	log Pow: -1.529 at 22 °C (72 °F)
Relative vapour density	No data available
Odour	odourless
Odour Threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
No data available

Materials to avoid
Potassium, Acid anhydrides

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Borane/boron oxides, Sodium oxides
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - Rat - 2,400 - 2,600 mg/kg

Inhalation LC50
No data available

Dermal LD50
LD50 Dermal - Rabbit - > 2,000 mg/kg

Other information on acute toxicity
No data available

Skin corrosion/irritation
Skin - Rabbit - No skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit - Moderate eye irritation - OECD Test Guideline 405

Respiratory or skin sensitisation
Buehler Test - Guinea pig - Does not cause skin sensitisation. - OECD Test Guideline 406

Germ cell mutagenicity
No data available

Carcinogenicity

No data available

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
Reproductive toxicity - Rat - Oral
Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Presumed human reproductive toxicant

No data available

Teratogenicity

fetotoxicity Presumed human reproductive toxicant

Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, anderythematous lesions on the skin and mucous membranes. Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional Information
RTECS: ED4588000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Limanda limanda - 74 mg/l - 96 h

Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

Product
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

WHMIS Classification

D2A	Very Toxic Material Causing Other Toxic Effects	Teratogen
D2B	Toxic Material Causing Other Toxic Effects	Reproductive hazard
		Moderate eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

FLINN SCIENTIFIC INC.

"Your Safer Source for Science Supplies"

Material Safety Data Sheet (MSDS)

MSDS #: 768.00
Revision Date: April 2, 2001

Section 1 — Chemical Product and Company Identification

Sodium Thiosulfate

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Section 2 — Composition, Information on Ingredients

Sodium Thiosulfate
Synonym: sodium hyposulfite
CAS#: 10102-17-7

Section 3 — Hazards Identification

White, translucent crystals or powder; deliquescent. Odorless.
Slightly toxic by ingestion. Body tissue irritant. Avoid all body tissue contact.

FLINN AT-A-GLANCE
Health-1
Flammability-0
Reactivity-0
Exposure-1
Storage-1

0 is low hazard, 3 is high hazard

Section 4 — First Aid Measures

Call a physician, seek medical attention for further treatment, observation and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped give artificial respiration immediately.
Eye: Immediately flush with fresh water for 15 minutes.
External: Wash continuously with fresh water for 15 minutes.
Internal: Give large quantities of water. Call a physician or poison control at once.

Section 5 — Fire Fighting Measures

Non flammable solid.
When heated to decomposition, emits toxic fumes of Na2O and SOx.
Fire Fighting Instructions: Use triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
None established

Section 6 — Accidental Release Measures

Restrict unprotected personnel from area. Sweep up, place in sealed bag or container and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

Section 7 — Handling and Storage

Flinn Suggested Chemical Storage Pattern: Inorganic #2. Store with acetates, halides, sulfates, sulfites, thiosulfates and phosphates. Store in a cool, dry place. Deliquescent, store in a Flinn Chem-Saf bag.

Section 8 — Exposure Controls , Personal Protection

Avoid contact with eyes, skin and clothing. Wear chemical splash goggles, chemical-resistant gloves and chemical-resistant apron.

Section 9 — Physical and Chemical Properties

White, translucent crystals or powder; deliquescent. Odorless.
Solubility: Water; not alcohol.
Formula: Na2S2O3 5H2O
Formula Weight: 248.19

Specific Gravity: 1.729 (5 hydrate)
Melting Point: 48 C

Section 10 — Stability and Reactivity

Avoid contact with strong acids, strong oxidizers, lead, silver, mercury salts and iodines.
Shelf Life: Poor, deliquescent.

Section 11 — Toxicological Information

Acute effects: Irritant
Chronic effects: N.A.
Target organs: N.A.

ORL-HUM LD50: 0.5-2 gm/kg
IHL-RAT LC50: N.A.
SKN-RBT LD50: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

Section 12 — Ecological Information

Data not yet available.

Section 13 — Disposal Considerations

Please consult with state and local regulations.
Flinn Suggested Disposal Method #12b is one option.

Section 14 — Transport Information

Shipping Name: Not regulated
Hazard Class: N/A
UN Number: N/A

N/A = Not applicable

Section 15 — Regulatory Information

EINECS-listed (231-867-5).

Section 16 — Other Information

Consult your copy of the Flinn Scientific Catalog/Reference Manual for additional information about laboratory chemicals. This Material Safety Data Sheet (MSDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. Flinn Scientific Inc. assumes no legal responsibility for use or reliance upon this data.

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(800) 452-1261 Fax (866) 452-1436

Safety Data Sheet
Spartan Chemical Company, Inc.

Revision Date: 26-Nov-2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **CITRO SHIELD FURNITURE POLISH**
Product Number: 6120
Recommended Use: Furniture polish
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable Aerosols	Category 1
Gases Under Pressure	Liquefied gas

GHS Label Elements

Signal Word: **Danger**

Symbols:

Hazard Statements:

Extremely flammable aerosol.
Contains gas under pressure; may explode if heated

Precautionary Statements:

Prevention: Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Do not spray on an open flame or other ignition source
Pressurized container: Do not pierce or burn, even after use
Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal

Response:
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C) Store in a well-ventilated place
Disposal: Not Applicable

Hazards Not Otherwise Classified: Not Applicable

Other Information:

- May be harmful if swallowed.
- May cause eye irritation.
- May cause skin irritation.
- Inhalation of vapors or mist may cause respiratory irritation.
- Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	60-100
Dimethicone	63148-62-9	1-5
Isobutane	75-28-5	1-5
Propane	74-98-6	0.1-1
Copernicia Cerifera Wax	8015-86-9	0.1-1
Ammonium Hydroxide	1336-21-6	<0.1
Fragrance	PROPRIETARY	<0.1
Orange Terpenes	68647-72-3	<0.1
Cymbopogon Flexuosus Oil	91844-92-7	<0.1
Citral	5392-40-5	<0.1

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

-Skin Contact: Wash with soap and water. If skin irritation occurs: Get medical attention.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or physician if you feel unwell.

-Ingestion: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.

Note to Physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water spray (fog), Foam

Specific Hazards Arising from the Chemical: Extremely flammable aerosol. Exposure to high temperature may cause containers to burst. Bursting aerosol containers may be propelled from fire at high speed. EXTREMELY FLAMMABLE.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wash thoroughly after handling.

Storage Conditions: NFPA 30B Level 1 Aerosol. Do not store in direct sunlight or above 122 F° / 50 C°. Exposure to high temperature may cause containers to burst. Keep out of the reach of children.

Suggested Shelf Life: Minimum of 2 years from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
Isobutane 75-28-5	STEL: 1000 ppm	-	TWA: 800 ppm TWA: 1900 mg/m³
Propane 74-98-6	: See Appendix F: Minimal Oxygen Content	TWA: 1000 ppm TWA: 1800 mg/m³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m³	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m³
Citral 5392-40-5	TWA: 5 ppm inhalable fraction and vapor S*	-	-

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.

Personal Protective Equipment

Eye/Face Protection: Not required with expected use.

Skin and Body Protection: Not required with expected use.

Respiratory Protection: Not required with expected use.
If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Aerosol
Color:	White emulsion
Odor:	Lemon
pH:	6.5-7.5
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	99 °C / 210 °F (Product without propellant)
Flash Point:	< -18 °C / < 0 °F (Propellant-estimated)
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	0.96 (Product without propellant)
Solubility(ies):	No information available.
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.
Chemical Stability: Stable under normal conditions.
Possibility of Hazardous Reactions: Not expected to occur with normal handling and storage.
Conditions to Avoid: Extremes of temperature and direct sunlight.
Incompatible Materials: Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:
-Eye Contact: Pain and redness.
-Skin Contact: Drying of the skin.
-Inhalation: Nasal discomfort and coughing.
-Ingestion: Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects
Product Information: Data not available or insufficient for classification.

Target Organ Effects: Central nervous system.
Numerical Measures of Toxicity
The following acute toxicity estimates (ATE) are calculated based on the GHS document.
.
ATEmix (dermal): 40650 mg/kg
ATEmix (inhalation-gas): 6524651 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
Dimethicone 63148-62-9	> 24 g/kg (Rat)	Not Available	Not Available
Isobutane 75-28-5	Not Available	Not Available	= 658 mg/L (Rat) 4 h
Propane 74-98-6	Not Available	Not Available	= 658 mg/L (Rat) 4 h
Ammonium Hydroxide 1336-21-6	= 350 mg/kg (Rat)	Not Available	Not Available
Citral 5392-40-5	= 4960 mg/kg (Rat)	= 2250 mg/kg (Rabbit)	Not Available

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Ammonium Hydroxide 1336-21-6	Not Available	8.2: 96 h Pimephales promelas mg/L LC50	Not Available	0.66: 48 h water flea mg/L EC50 0.66: 48 h Daphnia pulex mg/L EC50
Citral 5392-40-5	16: 72 h Desmodesmus subspicatus mg/L EC50 19: 96 h Desmodesmus subspicatus mg/L EC50	Not Available	Not Available	7: 48 h Daphnia magna mg/L EC50

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Pressurized container: Do not pierce or burn, even after use. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT:
UN/ID No: UN1950
Proper Shipping Name: Aerosols
Hazard Class: 2.1
Special Provisions: This product meets the exception requirements of section 49 CFR 173.306 as a limited quantity and may be shipped as a limited quantity.

IMDG:
UN/ID No: UN1950
Proper Shipping Name: Aerosols
Hazard Class: 2.1
Additional information: Limited Quantity

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product does not contain listed substances above the "de minimus" level

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	Yes
Sudden release of pressure hazard:	Yes
Reactive Hazard:	No

California Proposition 65
This product is not subject to warning requirements under California Proposition 65.

16. OTHER INFORMATION

NFPA	**Health Hazards:** 1	**Flammability:** 1	**Instability:** 0	**Special:** N/A
HMIS	**Health Hazards:** 1	**Flammability:** 2	**Physical Hazards:** 2	

Revision Date: 26-Nov-2019
Reasons for Revision: Section, 3

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet
Spartan Chemical Company, Inc.

Revision Date: 09-Feb-2020

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **DAMP MOP**
Product Number: 3016
Recommended Use: Cleaning agent
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification
Serious Eye Damage/Eye Irritation: Category 2A

GHS Label Elements
Signal Word: **Warning**
Symbols:

Hazard Statements: Causes serious eye irritation
Precautionary Statements:
Prevention: Wash hands and any exposed skin thoroughly after handling.
Wear eye / face protection

Response:
-Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Not Applicable
Disposal: Not Applicable

Hazards Not Otherwise Classified: Not Applicable

Other Information:
- May be harmful if swallowed.
- May cause skin irritation.
- Inhalation of vapors or mist may cause respiratory irritation.
- Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	60-100
C9-11 Pareth-6	68439-46-3	1-5
Isopropyl Alcohol	67-63-0	1-5
Tetrasodium EDTA	64-02-8	0.1-1
Sodium Caprylyl Sulfonate	5324-84-5	0.1-1
Citrus Terpenes	68608-34-4	<0.1
Orange Terpenes	68647-72-3	<0.1
Citric Acid	77-92-9	<0.1
Methylchloroisothiazolinone	26172-55-4	<0.1
Fragrance	PROPRIETARY	<0.1
Acid Yellow 36	587-98-4	<0.1
Methylisothiazolinone	2682-20-4	<0.1
CI 74180	1330-38-7	<0.1

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

-Skin Contact: Wash with soap and water. If skin irritation occurs: Get medical attention.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or physician if you feel unwell.

-Ingestion: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.

Note to Physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire

Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.

Suggested Shelf Life: Minimum of 2 years from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
Isopropyl Alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m³ STEL: 500 ppm STEL: 1225 mg/m³
CI 74180 1330-38-7	TWA: 1 mg/m³ Cu dust and mist	-	IDLH: 100 mg/m³ Cu dust and mist TWA: 1 mg/m³ Cu dust and mist

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles.
Skin and Body Protection: Not required with expected use.
Respiratory Protection: Not required with expected use.
If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.
General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Yellow
Odor:	Lemon
pH:	7.0-8.0
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	82 °C / 180 °F
Flash Point:	None / Pensky-Martens Closed Cup (PMCC)
Evaporation Rate:	< 1 (BuAc = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.000
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.
Chemical Stability: Stable under normal conditions.
Possibility of Hazardous Reactions: Not expected to occur with normal handling and storage.
Conditions to Avoid: Extremes of temperature and direct sunlight.
Incompatible Materials: Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:
-Eye Contact: Pain, redness, swelling of the conjunctiva and blurred vision.
-Skin Contact: Drying of the skin.
-Inhalation: Nasal discomfort and coughing.
-Ingestion: Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects
Product Information: Data not available or insufficient for classification.

Target Organ Effects: -Eyes. Respiratory System. -Skin.
Numerical Measures of Toxicity
The following acute toxicity estimates (ATE) are calculated based on the GHS document.
.
ATEmix (oral): 37002 mg/kg
ATEmix (dermal): 57376 mg/kg
ATEmix (inhalation-dust/mist): 4789.1 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
C9-11 Pareth-6 68439-46-3	= 1400 mg/kg (Rat)	Not Available	Not Available
Isopropyl Alcohol 67-63-0	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m³ (Rat) 4 h
Tetrasodium EDTA 64-02-8	= 1658 mg/kg (Rat)	Not Available	Not Available
Citric Acid 77-92-9	= 3 g/kg (Rat)	Not Available	Not Available
Methylchloroisothiazolinone 26172-55-4	= 481 mg/kg (Rat)	Not Available	= 1.23 mg/L (Rat) 4 h
Acid Yellow 36 587-98-4	= 5000 mg/kg (Rat)	Not Available	Not Available
CI 74180 1330-38-7	> 5 g/kg (Rat)	Not Available	Not Available

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Isopropyl Alcohol 67-63-0	1000: 96 h Desmodesmus subspicatus mg/L EC50 1000: 72 h Desmodesmus subspicatus mg/L EC50	9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static 1400000: 96 h Lepomis macrochirus µg/L LC50	Not Available	13299: 48 h Daphnia magna mg/L EC50
Tetrasodium EDTA 64-02-8	1.01: 72 h Desmodesmus subspicatus mg/L EC50	41: 96 h Lepomis macrochirus mg/L LC50 static 59.8: 96 h Pimephales promelas mg/L LC50 static	Not Available	Not Available
Citric Acid 77-92-9	Not Available	1516: 96 h Lepomis macrochirus mg/L LC50 static	Not Available	Not Available

Methylchloroisothiazolinone 26172-55-4	0.11 - 0.16: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.03 - 0.13: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	1.6: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	Not Available	4.71: 48 h Daphnia magna mg/L EC50 0.12 - 0.3: 48 h Daphnia magna mg/L EC50 Flow through 0.71 - 0.99: 48 h Daphnia magna mg/L EC50 Static

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT: Not Regulated
Proper Shipping Name: Non Hazardous Product
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG: Not Regulated
Proper Shipping Name: Non Hazardous Product

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product contains the following listed substances:

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

16. OTHER INFORMATION

NFPA	**Health Hazards:** 2	**Flammability:** 0	**Instability:** 0	**Special:** N/A
HMIS	**Health Hazards:** 2	**Flammability:** 0	**Physical Hazards:** 0	

Revision Date: 09-Feb-2020
Reasons for Revision: Section, 3, 8, 9, 11, 12, and, 13

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet
Spartan Chemical Company, Inc.

Revision Date: 22-Oct-2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **SHINELINE EMULSIFIER PLUS**
Product Number: 0084
Recommended Use: Stripping solution
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity - Oral:	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin Corrosion/Irritation:	Category 1 Sub-category B
Serious Eye Damage/Eye Irritation:	Category 1
Corrosive to Metals:	Category 1

GHS Label Elements

Signal Word: **Danger**

Symbols:

Hazard Statements:
Harmful if swallowed.
Harmful if inhaled.
Causes severe skin burns and serious eye damage.
May be corrosive to metals.

Precautionary Statements:

Prevention:
Wash hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe mist, vapors or spray.
Wear protective gloves. Wear eye / face protection. Wear protective clothing.
Keep in original or other corrosion resistant container.

Response: **IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.**

-Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

-Skin IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.

-Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
-Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Spill: Absorb spillage to prevent material damage.
Storage: Store locked up. Store in corrosion resistant container.
Disposal: Dispose of contents and container in accordance with local, state and federal regulations.

Hazards Not Otherwise Classified: Not Applicable

Other Information:
- Corrosive.
- Harmful or fatal if swallowed.
- Harmful contact may not cause immediate pain.
- Take off and destroy contaminated shoes.
- Keep out of reach of children.
- NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	30-60
Butoxyethanol	111-76-2	10-30
Ethanolamine	141-43-5	1-5
Sodium Xylenesulfonate	1300-72-7	1-5
Sodium Hydroxide	1310-73-2	1-5
C9-11 Alkyl Glucoside	132778-08-6	1-5
Benzyl Benzoate	120-51-4	<0.1
Fragrance	PROPRIETARY	<0.1

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.
-Skin Contact: Take off immediately all contaminated clothing and shoes. Rinse with water or shower for at least 15 minutes. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Wash contaminated clothing before reuse. Discard or destroy contaminated shoes.
-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.
-Ingestion: Rinse mouth. Do NOT induce vomiting. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Never give anything by mouth to an unconscious person.
Note to Physicians: NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire
Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.
Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.
Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.
Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.
Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.
Suggested Shelf Life: Minimum of 2 years from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
Butoxyethanol 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m^3 (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m^3
Ethanolamine 141-43-5	STEL: 6 ppm TWA: 3 ppm	TWA: 3 ppm TWA: 6 mg/m^3 (vacated) TWA: 3 ppm (vacated) TWA: 8 mg/m^3 (vacated) STEL: 6 ppm (vacated) STEL: 15 mg/m^3	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m^3 STEL: 6 ppm STEL: 15 mg/m^3
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m^3	TWA: 2 mg/m^3 (vacated) Ceiling: 2 mg/m^3	IDLH: 10 mg/m^3 Ceiling: 2 mg/m^3

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.
Eye wash stations and shower facilities should be readily accessible in areas where the product is handled.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles. For severe use-conditions, wear a face shield over the goggles.
Skin and Body Protection: Wear rubber or other chemical-resistant gloves and solvent / alkali resistant boots. The use of other protective equipment should be considered in order to prevent or minimize contact with this product.
Respiratory Protection: Not required with expected use.
If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.
General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Clear
Odor:	Fresh
pH:	13.5-14.0
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	100 °C / 212 °F
Flash Point:	> 100 °C / > 212 °F ASTM D56
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.035
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.
Chemical Stability: Stable under normal conditions.
Possibility of Hazardous Reactions: Contact with aluminum or other reactive metals may release hydrogen gas.
Conditions to Avoid: Extremes of temperature and direct sunlight.
Incompatible Materials: Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:
-Eye Contact: Pain, redness, swelling of the conjunctiva and tissue damage. Eye contact may cause permanent damage.
-Skin Contact: Pain, redness, blistering and possible chemical burn.
-Inhalation: Irritation or damage to the mucus membranes of the respiratory tract. Nasal discomfort and coughing.
-Ingestion: Damage or chemical burns to mouth, throat and stomach. Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects
Product Information: Data not available or insufficient for classification.

Target Organ Effects: Blood. Central nervous system. -Eyes. hematopoietic system. kidney. Liver. Respiratory System. -Skin.
Numerical Measures of Toxicity
The following acute toxicity estimates (ATE) are calculated based on the GHS document.
.
ATEmix (oral): 1478 mg/kg
ATEmix (dermal): 3227 mg/kg
ATEmix (inhalation-dust/mist): 4.8 mg/l
ATEmix (inhalation-vapor): 7.9 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available

Butoxyethanol 111-76-2	= 470 mg/kg (Rat)	= 99 mg/kg (Rabbit)	= 450 ppm (Rat) 4 h
Ethanolamine 141-43-5	= 1720 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	Not Available
Sodium Xylenesulfonate 1300-72-7	= 1000 mg/kg (Rat)	Not Available	Not Available
Sodium Hydroxide 1310-73-2	Not Available	= 1350 mg/kg (Rabbit)	Not Available
Benzyl Benzoate 120-51-4	= 500 mg/kg (Rat)	= 4000 mg/kg (Rabbit)	Not Available

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Butoxyethanol 111-76-2	Not Available	1490: 96 h Lepomis macrochirus mg/L LC50 static 2950: 96 h Lepomis macrochirus mg/L LC50	Not Available	1000: 48 h Daphnia magna mg/L EC50
Ethanolamine 141-43-5	15: 72 h Desmodesmus subspicatus mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	Not Available	65: 48 h Daphnia magna mg/L EC50
Sodium Hydroxide 1310-73-2	Not Available	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	Not Available	Not Available

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.
US EPA Waste Number: D002

14. TRANSPORT INFORMATION

DOT:
UN/ID No: UN 1760
Proper Shipping Name: Corrosive liquids, n.o.s., (contains sodium hydroxide)
Hazard Class: 8
Packing Group: II
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG:
UN/ID No: UN 1760

Proper Shipping Name:	Corrosive liquids, n.o.s., (contains sodium hydroxide)
Hazard Class:	8
Packing Group:	II

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product contains the following listed substances:
Butoxyethanol
CAS No 111-76-2 applies to R-(OCH2CH2)n-OR', where n = 1, 2, or 3, R=Alkyl C7 or less, or R = Phenyl or Alkyl substituted phenyl, R' = H or Alkyl C7 or less, or OR' consisting of Carboxylic acid ester, Sulfate, Phosphate, Nitrate, or SulfonateChemical Category N230

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	Yes
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

California Proposition 65
This product is not subject to warning requirements under California Proposition 65.

16. OTHER INFORMATION

NFPA	**Health Hazards:** 3	**Flammability:** 0	**Instability:** 0	**Special:** N/A
HMIS	**Health Hazards:** 3*	**Flammability:** 0	**Physical Hazards:** 0	

Revision Date:	22-Oct-2019
Reasons for Revision:	Section, 2, 3, 8, and, 11

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Spartan Chemical Company, Inc.
WHMIS Safety Data Sheet

Revision Date: 15-Sep-2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **SUNNY-SIDE**
Product Number: 4045C
Recommended Use: Floor Finish
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier:
Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

Canadian Agent:
Perley-Robertson, Hill & McDougal, LLP
340 Albert Street, Suite 1400
Ottawa, ON, Canada K1R 0A5

Medical Emergency/Information: 888-314-6171 (24 Hour)

2. HAZARDS IDENTIFICATION

GHS Classification
Not Classified

Not classified as hazardous by WHMIS HazCom-GHS

GHS Label Elements
Signal Word: **No signal word**
Symbols: None
Hazard Statements: No hazard statements
Precautionary Statements:
Prevention: Not Applicable
Response:
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Not Applicable
Disposal: Not Applicable

Hazards Not Otherwise Classified: Not Applicable

Other Information:
- May cause skin irritation.
- May cause eye irritation.
- May be harmful if swallowed.
- Inhalation of vapors or mist may cause respiratory irritation.
- Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
water	7732-18-5	75.0-77.5
acrylate copolymer	63744-68-3	12.5-15.0
diethylene glycol monoethyl ether	111-90-0	2.5-5.0
modified rosin ester	68152-55-6	1.0-2.5
tributoxyethyl phosphate	78-51-3	1.0-2.5

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

-Skin Contact: Wash with soap and water. If skin irritation occurs: Get medical attention.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or physician if you feel unwell.

-Ingestion: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.

Note to Physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire

Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: None established.

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.

Personal Protective Equipment

Eye/Face Protection: Not required with expected use.

Skin and Body Protection: Not required with expected use.

Respiratory Protection: Not required with expected use.
If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	White emulsion
Odor:	Slight ammonia odor
pH:	8.7-9.1
Melting Point / Freezing Point:	No information available.

Boiling Point / Boiling Range:	100 °C / 212 °F
Flash Point:	> 99 °C / > 210 °F ASTM D56
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.03
Solubility(ies):	Miscible in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.
Chemical Stability: Stable under normal conditions.
Possibility of Hazardous Reactions: Not expected to occur with normal handling and storage.
Conditions to Avoid: Extremes of temperature and direct sunlight.
Incompatible Materials: Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:
-Eye Contact: Pain and redness.
-Skin Contact: Drying of the skin.
-Inhalation: Nasal discomfort and coughing.
-Ingestion: Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects
Product Information: Data not available or insufficient for classification.

Numerical Measures of Toxicity
The following acute toxicity estimates (ATE) are calculated based on the GHS document.
.
ATEmix (oral): 23153 mg/kg
ATEmix (dermal): 40524 mg/kg
ATEmix (inhalation-dust/mist): 45.9 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
diethylene glycol monoethyl ether 111-90-0	= 1920 mg/kg (Rat)	= 4200 µL/kg (Rabbit) = 6 mL/kg (Rat)	> 5240 mg/m³ (Rat) 4 h
tributoxyethyl phosphate 78-51-3	= 3000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 6.4 mg/L (Rat) 4 h

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea

diethylene glycol monoethyl ether 111-90-0	Not Available	11400 - 15700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 11600 - 16700: 96 h Pimephales promelas mg/L LC50 flow-through 10000: 96 h Lepomis macrochirus mg/L LC50 static 19100 - 23900: 96 h Lepomis macrochirus mg/L LC50 flow-through 13400: 96 h Salmo gairdneri mg/L LC50 flow-through	Not Available	3940 - 4670: 48 h Daphnia magna mg/L EC50
tributoxyethyl phosphate 78-51-3	Not Available	10.4 - 12.0: 96 h Pimephales promelas mg/L LC50 flow-through	Not Available	Not Available

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

TDG / DOT: Not Regulated
Proper Shipping Name: Non-Hazardous Products
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG: Not Regulated
Proper Shipping Name: Non-Hazardous Products

15. REGULATORY INFORMATION

DSL / NDSL Status: (Domestic Substances List / Non-Domestic Substances List)
The chemical substances in this product are included on or exempt from listing on the Canadian DSL / NDSL.

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product contains the following listed substances:
diethylene glycol monoethyl ether
CAS No 111-90-0 applies to R-(OCH2CH2)n-OR', where n = 1, 2, or 3, R=Alkyl C7 or less, or R = Phenyl or Alkyl substituted phenyl, R' = H or Alkyl C7 or less, or OR' consisting of Carboxylic acid ester, Sulfate, Phosphate, Nitrate, or Sulfonate, Chemical Category N230

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

16. OTHER INFORMATION

NFPA	**Health Hazards:** 1	**Flammability:** 0	**Instability:** 0	**Special:** N/A
HMIS	**Health Hazards:** 1	**Flammability:** 0	**Physical Hazards:** 0	

Revision Date: 15-Sep-2016
Reasons for Revision: No information available.

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

01/11/2018

SECTION I - IDENTIFICATION

Material Name

SPECTRUM LOW FIRE OPAQUE GLOSS GLAZES (700 SERIES)

Company Information

Spectrum Glazes Inc.
273 Bowes Rd, Unit A1
Concord, ON L4K 1H8
Phone: 905-695-8355
Fax: 905-695-8354
Email: sales@spectrumglazes.com

For transportation emergencies only call: 905-695-8355.

For health emergencies call the Poison Control Center: 1-800-222-1222.

SECTION II - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200 Not a hazardous substance.

GHS Label Elements

Signal Word(s)

No signal word.

Hazard Statement(s)

No known significant effects or critical hazards.

General

Read label before use. If medical advice is needed, have product container or label at hand. Avoid excessive dust generation. Avoid breathing dust

Hazards not Otherwise Classified

Not an acute hazard. May cause mechanical eye or skin irritation. Prolonged inhalation may cause lung injury. Liquid form is unlikely to generate dust under normal conditions of use.

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Substance/Mixture

Mixture

Hazardous Ingredients	CAS/EC #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC
None					

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURE: If swallowed, get prompt medical attention.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
EXPOSION LIMITS IN AIR (% BY VOLUME): NOT EXPOLSIVE
EXTINGUISHING MEDIA: NO SPECIAL METHOD REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE $ EXPLOSION HAZARDS: NOT COMBUSTIBLE

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal see Section XIII.

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: Use a locally exhausting hood appropriate for the operation. Use with ventilation adequate to keep exposure within published exposure limits (SEE SECTION III). Use NIOSH certified mask for dusts or mists if exposure levels exceed published exposure limits (SEE SECTION III).
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC.): None required.
WORK/HYGIENE PRACTICES: Avoid prolonged contact with skin. Wash hands immediately after use. When using do not eat, drink, or smoke.
ENGINEERING CONTROLS: Keep in original container.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
MELTING POINT: N/A
VAPOUR PRESSURE: N/A
SPECIFIC VAPOUR DENSITY
SPECIFIC GRAVITY: N/A
SOLUBILITY IN WATER: N/A
REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: N/A
STABILITY (STABLE CONDITIONS TO AVOID): N/A
INCOMPATIBILITY (MATERIALS TO AVOID): N/A
HAZARDOUS DECOMPOSITION PRODUCTS: N/A

SECTION XI - TOXOLOGICAL INFORMATION

MAY BE HARMFUL BY BREATHING DUSTS OR MISTS. MAY BE HARMFUL IF SWALLOWED.
This product is not considered to be a carcinogen by the Occupational Safety and Health Administration (OSHA).

SECTION XII - ECOLOGICAL INFORMATION

ECOTOXICITY	No Data
DEGRADABILITY	No Data
MOBILITY	No Data
BIOACCUMUATIVE	No Data

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE.
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

U.S.DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.

EPA SARA TITLE III CHEMICAL LISTINGS:
SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS NOT A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:
NONE

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATIOJN TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN FLORIDA'S TOXIC SUBSTANCE LIST:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MAINE'S PRIORITY CHEMICAL LIST:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) CONSIDERED BY VERMONT AS BEING OF VERY HIGH CONERN TO CHILDREN:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MASSACHUSETTS' HAZARDOUS SUBSTANCE LIST:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MICHIGAN'S CRITICAL MATERIALS REGISTER:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED ON MINNESOTA'S HAZARDOUS SUBSTANCES LIST:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN PENNSYLVANIA'S HAZARDOUS SUBSTANCES LIST:
NONE

Under CPSC's consumer products regulations (16 CFR 1500.3 and 1500.14), this product has the following required acute and chronic hazard labelling:

FIRST AID TREATMENT: If swallowed or inhaled, get prompt medical attention.
For further health information contact a poison control center or call 1-800-970-1970.

SECTION XVI - OTHER INFORMATION

Disclaimer: We believe the statements, technical information, and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to the specific materials as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

COLOR INFORMATION

THIS SDS APPLIES TO THE FOLLOWING COLORS WHICH ARE ASSOCIATED WITH HAZARDOUS AND/OR NON-HAZARDOUS INGREDIENTS.

Product Number & Color	Hazardous Ingredient
700 Clear	None
701 Snow White	None
702 Porcelain	None
703 Light Gray	None
704 Charcoal	None
705 Black	None
706 Royal Blue	None
707 Azure	None
708 Baby Blue	None
709 Powder Blue	None
710 Wedgwood	None

Product Number & Color		Hazardous Ingredient
711	Navy Blue	None
712	Teal Blue	None
713	Hunter Green	None
714	Sea Spray	None
715	Mint	None
716	Jade	None
717	Forest Green	None
718	Mahogany	None
721	Desert Sand	None
723	Chocolate Brown	None
724	Mango	None
726	Ivory	None
727	Flesh	None
730	Deep Pink	None
731	Rose	None
732	Powder Pink	None
734	Butter Yellow	None
735	Canary Yellow	None
736	Purple	None
737	Lilac	None
738	Baby Pink	None
740	Raspberry	None
741	Burgundy	None
742	Dark Red	None
743	Bright Red	None
744	Bright Orange	None
745	Bright Green	None
746	Bright Purple	None
747	Dark Purple	None
748	Fire Engine Red	None
749	Christmas Red	None
750	Neon Orange	None
751	Hot Pink	None
752	Violet	None
753	Bright Yellow	None
754	Marmalade	None
755	Really Red	None
756	Hot Saffron	None
757	Mulberry	None
759	SEE INDIVIDUAL SDS FOR THIS COLOR	
760	Chrome Green	None
761	Grass Green	None
762	Dove Gray	None
763	Black Velvet	None

MATERIAL SAFETY DATA SHEET

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

MSDS No.: SS0990
Revision Date: October 4, 2013
Approved by: James A. Bertsch

MSDS No.: SS0990

Section 1 Chemical Product and Company Information

Product	**STEARIC ACID**
Synonyms	Octadecanoic Acid

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

CAUTION!
MAY CAUSE IRRITATION.
Avoid contact with skin and eyes. Do not inhale dusts.
Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	1
Reactivity	1
Contact	2

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Stearic acid	57-11-4	100%	None established. (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Dust dispersed in air becomes explosive when exposed to ignition source. Melted stearic acid should be handled like a grease fire with knowledge that it can float on water and spread.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.

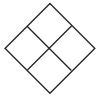
Flash Point: 190°C (374°F) COC

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Remove all sources of ignition. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White flakes or powder.
Odor: Tallow-like odor.
pH: N/A
Vapor pressure (mm Hg): N/A.
Vapor Density (Air = 1): N/A
Evaporation rate (= 1): N/A
Viscosity: N/A

Boiling point: >315°C (600°F)
Freezing / Melting point: 53-56°C (127-133°F)
Decomposition temperature: N/A
Solubility: Insoluble.
Specific gravity (H_2O = 1): 0.847 @ 20°C
Percent volatile (%): N/A
Molecular formula: $CH_3(CH_2)_{16}COOH$
Molecular weight: 284.49

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Avoid excessive temperatures. Slowly volatilizes @ 90-100°C.

Incompatibilities with other materials: Strong oxidizers and bases.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Effects of overexposure: May cause irritation of the upper respiratory tract. May cause irritation of the eyes. Exercise appropriate procedure to minimize potential hazards.

RTECS #: WI2900000
ORL-RAT LD50: N/A
INV-MUS LD50: 23 mg/kg
INV-RAT LD50: 2.5 mg/kg

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (200-313-4)

Section 16 Additional Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

FICHE SIGNALÉTIQUE

 # MSDS: SS0990
Date de révision: 4 octobre, 2013
Vérifié par: James A. Bertsch

MSDS #: SS0990

Section 1 L'information de produit chimique et de compagnie

Produit	**ACIDE STEARIQUE**
Synonymes	Acide octadecanoique

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300

Section 2 Identification De Risques

Vue d'ensemble de secours

ATTENTION!
PEUT CAUSER L'IRRITATION.
Évitez le contact avec la peau et les yeux. N'inhalez pas époussette.
On ne connaît aucun organe de cible.

0 = Minimal
1 = Léger
2 = Modéré
3 = Sérieux
4 = Sévère

Santé	1
Inflammabilité	1
Réactivité	1
Contact	2

HMIS *

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	TLV Units
Acide stearique	57-11-4	100%	Aucune établi. (ACGIH 2001)

Section 4 Mesures De Premiers Soins

INGESTION: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié.

INHALATION: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

CONTACT OCULAIRE: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale.

CONTACT CUTANE: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif.

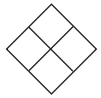
Section 5 Mesures De Lutte Contre l'Incendie

Informations générales: En états du feu, portez un appareil respiratoire de NIOSH/MSHA-approved art de l'auto-portrait-contained et une pleine vitesse protectrice. Pendant un feu, l'irritation et les gaz fortement toxiques peuvent être produits par décomposition ou combustion thermique. Employez le jet d'eau pour maintenir les récipients feu-exposés frais. La poussière en air devient explosive une fois exposée à une source d'allumage. L'acide stéarique fondu devrait être manipulé comme un feu de graisse avec la connaissance qu'il peut flotter sur l'eau et écarter.

S'éteindre des médias: Anhydride carbonique, produit chimique sec, jet d'eau, mousse d'alcool.
Point d'éclair: 190°C (374°F) COC
La température d'auto-allumage: Sans objet.
Limites d'explosion: Seuil minimal: Sans objet. **Seuil maximal:** Sans objet.

NFPA

0 = Minimal
1 = Léger
2 = Modéré
3 = Sérieux
4 = Sévère



Aucune liste.

Section 6 Mesures De Déchargement Accidentel

Utilisez le matériel de protection personnel approprié comme indiqué dans la section 8. Enlevez toutes les sources d'allumage. Fournissez à ventilation proportionnée. Récupérez pour l'usage si non souillé. Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Secteur de flaque de lavage avec de l'eau le savon et. Évitez l'écoulement dans donnent l' assaut à les égouts et les fossés qui mènent aux voies d'eau.

Section 7 Manipulation Et Stockage — GÉNÉRAL CODE D'ENTREPOSAGE VERT

Étiquette lue sur le récipient avant utilisation. Ne portez pas les verres de contact en travaillant avec des produits chimiques. Récipient de subsistance étroitement fermé. Pour l'usage de laboratoire seulement. Pas pour l'usage de drogue, de nourriture ou de ménage. Subsistance hors de portée des enfants.
Manipulation: Utilisation avec à ventilation proportionnée. Évitez le contact avec les yeux, la peau et l'habillement. Évitez l'ingestion. N'inhalez pas les poussières. Lavage complètement après manipulation. Habillement de lavage avant réutilisation.
Stockage: Magasin dans un secteur frais, sec, bien-aéré loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Commandes de technologie: Des équipements stockant ou utilisant ce matériel devraient être équipés d'un service d'eyewash et une douche et un feu de sûreté s'éteignant le matériel. Personnel devraient porter des verres de sûreté, des lunettes, ou le masque de protection, le manteau de laboratoire ou le tablier, gants protecteurs appropriés, le feu s'éteignant le matériel. Employez à ventilation proportionnée pour maintenir des concentrations aéroportées basses. **Protection respiratoire:** Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. En cas de les conditions poussiéreuses, travaillez dans le capot de vapeur ou portez un respirateur de NIOSH/MSHA-approved.

Section 9 Propriétés Physiques Et Chimiques

État physique: Solide.
Apparence: Flocons ou poudre de blanc.
Odeur: Suif-comme l'odeur.
pH: Sans objet.
Pression de vapeur (mm Hg): Sans objet.
Densité De Vapeur (air = 1): Sans objet.
Taux d'évaporation (= 1): Sans objet.
Viscosité: Sans objet.

Point d'ébullition: >315°C (600°F)
Point de congélation/de fusion: 53-56°C (127-133°F)
La température de décomposition: Sans objet.
Solubilité: Insoluble.
Gravité spécifique (Eau = 1): 0,847 @ 20°C
Pour cent volatils (%): Sans objet.
Formule moléculaire: $CH_3(CH_2)_{16}COOH$
Poids moléculaire: 284.49

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: Ne se produira pas.
Conditions à éviter: Évitez les températures excessives. Volatilise lentement @ 90-100°C.

Incompatibilités avec d'autres matériaux: Comburante fortes et bases.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Effets de surexposition: Peut causer une irritation de l'appareil respiratoire supérieure. Peut causer une irritation des yeux. Procédures appropriées d'exercice pour réduire au minimum des risques.

RTECS #: WI2900000
ORL-RAT LD50: N/A
INV-MUS LD50: 23 mg/kg
INV-RAT LD50: 2.5 mg/kg

Section 12 L'Information Écologique

Données pas encore disponibles.

Section 13 Considérations De Disposition

Ces directives de disposition sont prévues pour la disposition des quantités de catalogue-taille seulement. Les règlements fédéraux peuvent appliquer au récipient vide. L'état et/ou les règlements locaux peuvent être différents. Débarassez-vous selon tous les gens du pays, état et règlements fédéraux ou contrat avec une agence chimique autorisée de disposition. Le matériel propre peut être débarassé dans un remblai sanitaire ou être débarassé dans un incinérateur approuvé.

Section 14 L'Information De Transport

Nombre d'UN/NA: Sans objet.
Nom d'expédition: **Non réglé.**
Classe de risque: Sans objet.
Groupe d'emballage: Sans objet.
Exceptions: Sans objet.

Section 15 L'Information De Normalisation

TSCA-listed, EINECS-listed (200-313-4)

Section 16 L'Information Additionnelle

SAFETY DATA SHEET

Version 3.6
Revision Date 08/16/2014
Print Date 12/23/2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Strontium chloride
Product Number	:	451282
Brand	:	Aldrich
Product Use	:	For laboratory research purposes.
Supplier	:	Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA
Telephone	:	+1 9058299500
Fax	:	+1 9058299292
Emergency Phone # (For both supplier and manufacturer)	:	+1-703-527-3887 (CHEMTREC)
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification

D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant Moderate respiratory irritant Moderate eye irritant

GHS Classification

Acute toxicity, Oral (Category 5)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Specific target organ toxicity - single exposure (Category 3)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H303	May be harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2
Flammability: 0
Physical hazards: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : Cl_2Sr
Molecular weight : 158.53 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Strontium chloride			
10476-85-4	233-971-6	-	<=100%

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Strontium oxides

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

hygroscopic Store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls
Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Beads

Colour	No data available

Safety data

pH	No data available
Melting point/freezing point	Melting point/range: 874 °C (1,605 °F) - lit.
Boiling point	No data available
Flash point	Not applicable
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	No data available
Density	3 g/mL at 25 °C (77 °F)
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
Avoid moisture.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Strontium oxides
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - Rat - 2,250 mg/kg

Inhalation LC50
Dermal LD50
No data available

Other information on acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

Genotoxicity in vivo - Mouse - Oral
Cytogenetic analysis

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

No data available

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional Information
RTECS: WK8400000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Austropotamobius pallipes pall - 440 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 94 mg/l - 48 h

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

WHMIS Classification

D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant Moderate respiratory irritant Moderate eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**STRONTIUM NITRATE**
Synonyms	None listed

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS03 / GHS07
Target organs: Liver, Kidneys, Blood, Heart, Spleen, Central nervous system, Lungs

GHS Classification:
Oxidizing solid (Category 2)
Acute toxicity, oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
STOT-SE (Category 3)

GHS Label information: **Hazard statement:**
H272: May intensify fire; oxidizer.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Precautionary statement:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220: Keep away from clothing/incompatible/combustible materials.
P221: Take any precaution to avoid mixing with combustibles/acids/oxidizers.
P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P332+P313: If skin irritation occurs: Get medical attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Strontium nitrate	10042-76-9	100%	233-131-9

Section 4 First Aid Measures

INGESTION: HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 140)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from combustibles/acids/oxidizers.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Strontium nitrate	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid white crystalline powder
Odor: No odor
Odor threshold: Data not available
pH: Data not available
Melting / Freezing point: 570°C (1058°F)
Boiling point: Data not available
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 2.986 @ 20°C
Solubility(ies): 66 g/100 ml water @ 20°C

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: 645°C (1193°F)
Viscosity: Data not available
Molecular formula: $Sr(NO_3)_2$
Molecular weight: 211.63

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: May be explosive when mixed with reducing agents, mixtures may detonate by heat and shock.

Incompatible materials: Reducing agents, combustible materials, organic materials, metals and alloys.

Hazardous decomposition products: Nitrogen oxides and carbon dioxide gas.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 2750 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: May cause respiratory irritation.
Ingestion: Harmful if swallowed.
Skin: Causes skin irritation.
Eyes: Causes serious eye irritation.
Signs and symptoms of exposure: May cause nausea, vomiting, diarrhea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, bluish skin color and coma. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: WK9800000

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1507 **Shipping name:** Strontium nitrate
Hazard class: 5.1 **Packing group:** III **Reportable Quantity:** No **Marine pollutant:** No
Exceptions: Limited quantity equal to or less than 5 Kg **2012 ERG Guide #** 140

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Strontium nitrate	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: January 29, 2014 **Supercedes:** October 28, 2013

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**NITRATE DE STRONTIUM**
Synonymes	Aucun listé

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS03 / GHS07
Les organes cibles: Le foie, les reins, le sang, le coeur, le rate, le système nerveux central, les poumons

Classification par le GHS:
Oxidizing solid (Catégorie 2)
Acute toxicity, oral (Catégorie 4)
Skin irritation (Catégorie 2)
Eye irritation (Catégorie 2A)
STOT-SE (Catégorie 3)

Renseignements sur l'étiquette GHS: Mention de danger:
H272: Peut aggraver un incendie; comburant.
H302: Nocif en cas d'ingestion.
H315: Provoque une irritation cutanée.
H319: Provoque une sévère irritation des yeux.
H335: Peut irriter les voies respiratoires.

Déclarations de précaution:
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P220: Tenir à l'écart des vêtements / incompatibilités / matières combustibles.
P221: Prendre toutes précautions pour éviter de mélanger avec des matières combustibles / acides / oxydants.

Déclarations de précaution (continue):
P261: Éviter de respirer les poussières.
P264: Se laver les mains soigneusement après manipulation.
P270: Ne pas manger, boire ou fumer en manipulant ce produit.
P271: Utiliser seulement en plein air ou dans un endroit bien ventilé.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P370+P378: En cas d'incendie: Utiliser un produit chimique sec, mousse anti-alcool, dioxyde de carbone ou eau pulvérisée pour l'extinction.
P301+P330+P331: EN CAS D'INGESTION: Rincer la bouche. Ne PAS faire vomir.
P302+P352: EN CAS DE CONTACT AVEC LA PEAU: Laver abondamment à l'eau et du savon.
P332+P313: En cas d'irritation cutanée: Obtenir des soins médicaux.
P362+P364: Enlever les vêtements contaminés et les laver avant réutilisation.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P337+P313: Si l'irritation oculaire persiste: Obtenir des soins médicaux.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P312: Appeler un CENTRE ANTIPOISON ou un médecin en cas de malaise.
P403+P233: Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Nitrate de strontium	10042-76-9	100%	233-131-9

Section 4 Mesures De Premiers Soins

INGESTION: NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT CAUSER UNE IRRITATION DE LA VOIES RESPIRATOIRE. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE UNE SÉVÈRE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: PROVOQUE UNE IRRITATION CUTANÉE. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Utilisez des supports adaptés pour éteindre le feu à l'appui.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Cette substance est un oxydant et sa chaleur de réaction avec des agents réducteurs ou combustibles peut provoquer l'inflammation..

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Récupèrent pour s'il n'est pas contaminé. Enlever toute source d'ignition. Balayer à sec ou sous vide et placer dans un récipient approprié pour l'élimination. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 140)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les poussières. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Tenir à l'écart des matières combustibles / acides / oxydants.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Nitrate de strontium	Aucun établi	Aucun établi	Aucun établi

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. Si les conditions poussiéreuses prévaloir, travailler dans la hotte ou de porter un masque respiratoire approuvé NIOSH / MSHA.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Solide poudre cristalline blanche
Odeur: Aucun odeur
Seuil de l'odeur: Données non disponibles
pH: Données non disponibles
Point de fusion / congélation: 570°C (1058°F)
Point d'ébullition: Données non disponibles
Point d'éclair: Données non disponibles

Taux d'évaporation (= 1): Données non disponibles
Inflammabilité (solide / gaz): Données non disponibles
Limites d'explosivité: Bas / Max: Données non disponibles
Pression de vapeur (mm Hg): Négligeable
Densité de vapeur (Air = 1): Données non disponibles
Densité relative (gravité spécifique): 2.986 @ 20°C
Solubilité (s): 66 g/100 ml l'eau @ 20°C

Coefficient de partage: Données non disponibles
Auto-inflammation: Données non disponibles
Température de décomposition: 645°C (1193°F)
Viscosité: Données non disponibles
Formule moléculaire: $Sr(NO_3)_2$
Poids moléculaire: 211.63

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: Peut être explosif lorsqu'il est mélangé avec des agents réducteurs, les mélanges peuvent exploser à la chaleur et aux chocs.

Matières incompatibles: Les agents réducteurs, les matières combustibles, les substances organiques, les métaux et alliages.

Produits dangereux de décomposition: Les oxydes d'azote et du dioxyde de carbone.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 2750 mg/kg
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène probable, possible ou confirmé par IARC.
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
CA Prop 65: Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer ou de toxicité reproductive.
Toxicité pour la reproduction: Données non disponibles
STOT-exposition unique: Données non disponibles
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Données non disponibles
Effets d'une surexposition:
Inhalation: Peut irriter les voies respiratoires.
Ingestion: Nocif en cas d'ingestion.
Peau: Provoque une irritation cutanée.
Yeux: Provoque une sévère irritation des yeux.
Les signes et les symptômes de l'exposition: Peut causer des nausées, des vomissements, de la diarrhée, difficulté à respirer, rythme cardiaque irrégulier, maux de tête, de la somnolence, des étourdissements, de la couleur de la peau bleutée et coma. Procédures appropriées d'exercice pour réduire au minimum des risques
Informations complémentaires: RTECS #: WK9800000

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Pas de données disponible
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport (US DOT / CANADA TMD)

Numéro UN / NA: UN1507 **Nom d'expédition:** Nitrate de strontium
Classe de danger: 5.1 **Groupe d'emballage:** III **Quantité à déclarer:** No **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 5 Kg **2012 ERG Guide #:** 140

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Nitrate de strontium	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Date de révision: 29 janvier, 2014 **Remplace:** 28 octobre, 2013

SUCROSE

ChemWatch Company

Chemwatch: **21998**
Version No: **6.1.1.1**
Material Safety Data Sheet according to NOHSC and ADG requirements

Chemwatch Hazard Alert Code: **1**

Issue Date: **01/01/2013**
Print Date: **03/19/2015**
Initial Date: **Not Available**
S.Local.AUS.EN.RISK

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	SUCROSE
Chemical Name	sucrose
Synonyms	BEET SUGAR, C12-H22-O11, D(+)-Saccharose, D-(+)-Sucrose, D-SUCROSE, NCI=C56597, SUCROSE, SUCROSE ULTRA PURE, 821713, SUCROSE ULTRA PURE, 821721, Sugar, WHITE SUGAR (CRYSTALLINE), White Sugar (crystalline), alpha-D-Glc-(1->2)-beta-D-Fru, alpha-D-Glucopyranosyl beta-D-fructofuranoside, alpha-D-glucopyranosyl beta-D-fructofuranoside, alpha-D-glucopyranosyl, beta-D, beet sugar cane, beta-D-Fructofuranosyl-alpha-D-glucopyranoside, beta-D-fructofuranoside, alpha-D-glucopyranosyl, castor icing, confectioner's sugar carbohydrate, fructofuranoside, glucopyranoside, beta-D-fructofuranosyl, alpha-D, granulated sugar, rock candy, saccharose, saccharum, sucrose AnalaR 10274, sugar - brown, sugar castor, table sugar
Chemical formula	C12H22O11
Other means of identification	Not Available
CAS number	57-50-1

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Sweetener in foods and soft drinks, manufacture of syrups, source of invert sugar, confectionery, preserves and jams, demulcent, pharmaceutical products, caramel, chemical intermediate for detergents, emulsifying agents. Also used as intermediate for other sucrose derivatives.

Details of the manufacturer/importer

Registered company name	CSR	Merck
Address	9 Help Street Chatswood 2067 NSW Australia	207 Colchester Road Kilsyth 3137 VIC Australia
Telephone	+61 2 9235 8000; 1800 807 668	+61 3 9728 7600; 1800 337 460
Fax	+61 2 9235 8044	+61 3 9728 1351
Website	http://www.csr.com.au/msds/	http://203.221.251.46/msds/msds.aspx
Email	Not Available	admin@merck.com.au

Emergency telephone number

Association / Organisation	Not Available	Not Available
Emergency telephone numbers	Not Available	Not Available
Other emergency telephone numbers	Not Available	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

CHEMWATCH HAZARD RATINGS

Continued...

		Min	Max
Flammability	1		
Toxicity	0		
Body Contact	0		
Reactivity	1		
Chronic	0		

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	Not Applicable
Risk Phrases	Not Applicable **LIMITED EVIDENCE*
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI*

Not Applicable

Relevant risk statements are found in section 2

Indication(s) of danger	Not Applicable

SAFETY ADVICE

Not Applicable

Other hazards

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name
57-50-1	100	Sucrose

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ▸ Wash out immediately with water. ▸ If irritation continues, seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If dust is inhaled, remove from contaminated area. ▸ Encourage patient to blow nose to ensure clear passage of breathing. ▸ If irritation or discomfort persists seek medical attention.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	▸ Water spray or fog. ▸ Foam. ▸ Dry chemical powder. ▸ BCF (where regulations permit).

Special hazards arising from the substrate or mixture

Continued...

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water courses. ▸ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	▸ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. ▸ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). ▸ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Wear impervious gloves and safety glasses. ▸ Use dry clean up procedures and avoid generating dust.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Control personal contact with the substance, by using protective equipment and dust respirator. ▸ Prevent spillage from entering drains, sewers or water courses.

	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Limit all unnecessary personal contact. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Avoid contact with incompatible materials.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Lined metal can, lined metal pail/ can. ▸ Plastic pail. ▸ Polyliner drum. ▸ Packing as recommended by manufacturer.
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. ▸ Avoid reaction with oxidising agents

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	Sucrose	Sucrose (a)	10 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sucrose	Sucrose	30 mg/m3	980 mg/m3	5900 mg/m3

Ingredient	Original IDLH	Revised IDLH
Sucrose	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. **OTHERWISE:** ▸ Overalls. ▸ Barrier cream. ▸ Eyewash unit.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
SUCROSE Not Available

Material	CPI

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Continued...

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Odourless, hard, white, dry crystals, lumps or powder with sweet taste. Soluble in water, slightly soluble in alcohol.

Physical state	Divided Solid	**Relative density (Water = 1)**	1.59
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not available.
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not available.
Melting point / freezing point (°C)	160	**Viscosity (cSt)**	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	342.34
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Applicable	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not available.	**Surface Tension (dyn/cm or mN/m)**	Not Applicable
Lower Explosive Limit (%)	0.045 g/l	**Volatile Component (%vol)**	Not Applicable
Vapour pressure (kPa)	Not Applicable	**Gas group**	Not Available
Solubility in water (g/L)	Miscible	**pH as a solution**	7
Vapour density (Air = 1)	Not Applicable	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. Extremely large oral doses of sucrose may cause gastro-intestinal disturbance. It has been estimated from oral rat LD50's that the equivalent of a pound of candy would produce symptoms of acute gastroenteritis in a 25 pound child.

Continued...

Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Sucrose reportedly causes skin disease in bakers, candy makers and related occupations. High uncontrolled glucose levels in pregnant women are related with an increased rate of miscarriage and an early increase in death rate and illness in newborns.

	TOXICITY	IRRITATION
Sucrose	Oral (rat) LD50: 29700 mg/kgd[2]	Not Available
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

Acute Toxicity	⊘	**Carcinogenicity**	⊘
Skin Irritation/Corrosion	⊘	**Reproductivity**	⊘
Serious Eye Damage/Irritation	⊘	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	⊘	**STOT - Repeated Exposure**	⊘
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend:
✔ – *Data required to make classification available*
✘ – *Data available but does not fill the criteria for classification*
⊘ – *Data Not Available to make classification*

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

ThOD : 1.12

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Sucrose	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
Sucrose	LOW (LogKOW = -3.7)

Mobility in soil

Ingredient	Mobility
Sucrose	LOW (KOC = 10)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails)

Continued...

	This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

Sucrose(57-50-1) is found on the following regulatory lists	"Australia Exposure Standards","Australia Inventory of Chemical Substances (AICS)"

Chemical Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (Sucrose)
Korea - KECI	Y
New Zealand - NZIoC	Y
Phillipes - PICCS	Y
USA - TSCA	Y
Legend:	*Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

end of SDS

MATERIAL SAFETY DATA SHEET

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

MSDS No.: SS1040
Revision Date: February 5, 2014
Approved by: James A. Bertsch

MSDS No.: SS1040

Section 1 Chemical Product and Company Information

Product	**SUDAN III**
Synonyms	Solvent Red 23 (C.I. No. 26100)

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.
MAY CAUSE IRRITATION.
Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Store in a cool, dry place. Wash thoroughly after handling. Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	0
Reactivity	0
Contact	1

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Sudan III, C.I. # 26100	85-86-9	100%	None established. (ACGIH 2001)

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.

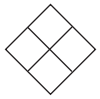
Flash Point: Non-flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from light.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Dark, red-brown powder.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): N/A
Vapor Density (Air = 1): N/A
Evaporation rate (= 1): N/A
Viscosity: N/A

Boiling point: N/A
Freezing / Melting point: >212°F (100°C)
Decomposition temperature: N/A
Solubility in water: Insoluble.
Specific gravity (H_2O = 1): 0.34
Percent volatile (%): N/A
Molecular formula: $C_{22}H_{16}N_4O$
Molecular weight: 352.40

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures. Protect from light.
Incompatibilities with other materials: Strong oxidizers.
Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Effects of overexposure: May be harmful if swallowed, inhaled or absorbed through skin. Contact may cause irritation to the skin and eyes. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

RTECS #: QK425000

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (201-638-4), DSL-listed.

Section 16 Additional Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

FICHE SIGNALÉTIQUE

 # MSDS: SS1040
Date de révision: 5 février, 2014
Vérifié par: James A. Bertsch

MSDS #: SS1040

Section 1 L'information de produit chimique et de compagnie

Produit	**SUDAN III**
Synonymes	Rouge dissolvant 23 (C.I. No. 26100)

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300

Section 2 Identification De Risques

Vue d'ensemble de secours

AVERTISSEMENT!
PEUT ÊTRE NOCIF EN CAS D'INGESTION, EN CAS D'INHALATION OU ABSORBÉ À TRAVERS LE PEAU. PEUT CAUSER UNE IRRITATION.
Évitez le contact avec la peau, les yeux et l'habillement. Employez avec à ventilation proportionnée. Conserver dans un endroit frais et sec. Lavez complètement après manipulation. On ne connaît aucun organe de cible.

0 = Minimal
1 = Léger
2 = Modéré
3 = Sérieux
4 = Sévère

Santé	1
Inflammabilité	0
Réactivité	0
Contact	1

HMIS *

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	TLV Units
Sudan III, C.I. # 26100	85-86-9	100%	Aucun établi. (ACGIH 2001)

Section 4 Mesures De Premiers Soins

INGESTION: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié.

INHALATION: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

CONTACT OCULAIRE: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale.

CONTACT CUTANE: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif.

Section 5 Mesures De Lutte Contre l'Incendie

Informations générales: En états du feu, portez un appareil respiratoire de NIOSH/MSHA-approved art de l'auto-portrait-contained et une pleine vitesse protectrice. Pendant un feu, l'irritation et les gaz fortement toxiques peuvent être produits par décomposition ou combustion thermique. Employez le jet d'eau pour maintenir les récipients feu-exposés frais.

S'éteindre des médias: Anhydride carbonique, produit chimique sec, jet d'eau, mousse d'alcool.
Point d'éclair: Ininflammable.
La température d'auto-allumage: Sans objet.
Limites d'explosion: Seuil minimal: Sans objet. **Seuil maximal:** Sans objet.

NFPA

0 = Minimal
1 = Léger
2 = Modéré
3 = Sérieux
4 = Sévère

Aucune liste.

Section 6 Mesures De Déchargement Accidentel

Utilisez le matériel de protection personnel approprié comme indiqué dans la section 8. Fournissez à ventilation proportionnée. Récupérez pour l'usage si non souillé. Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Secteur de flaque de lavage avec de l'eau le savon et. Évitez l'écoulement dans donnent l' assaut à les égouts et les fossés qui mènent aux voies d'eau.

Section 7 Manipulation Et Stockage — GÉNÉRAL CODE D'ENTREPOSAGE VERT

Étiquette lue sur le récipient avant utilisation. Ne portez pas les verres de contact en travaillant avec des produits chimiques. Récipient de subsistance étroitement fermé. Pour l'usage de laboratoire seulement. Pas pour l'usage de drogue, de nourriture ou de ménage. Subsistance hors de portée des enfants.
Manipulation: Utilisation avec à ventilation proportionnée. Évitez le contact avec les yeux, la peau et l'habillement. Évitez l'ingestion. N'inhalez pas les poussières. Lavage complètement après manipulation. Habillement de lavage avant réutilisation.
Stockage: Magasin dans un secteur frais, sec, bien-aéré loin des substances incompatibles. Protégez contre la lumière.

Section 8 Commandes D'Exposition / Protection Personnelle

Commandes de technologie: Des équipements stockant ou utilisant ce matériel devraient être équipés d'un service d'eyewash et une douche et un feu de sûreté s'éteignant le matériel. Personnel devraient porter des verres de sûreté, des lunettes, ou le masque de protection, le manteau de laboratoire ou le tablier, gants protecteurs appropriés, le feu s'éteignant le matériel. Employez à ventilation proportionnée pour maintenir des concentrations aéroportées basses. **Protection respiratoire:** Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. En cas de les conditions poussiéreuses, travaillez dans le capot de vapeur ou portez un respirateur de NIOSH/MSHA-approved.

Section 9 Propriétés Physiques Et Chimiques

État physique: Solide.
Apparence: Poudre foncée et rouge-brun.
Odeur: Aucun odeur.
pH: Sans objet.
Pression de vapeur (mm Hg): Sans objet.
Densité De Vapeur (air = 1): Sans objet.
Taux d'évaporation (= 1): Sans objet.
Viscosité: Sans objet.
Point d'ébullition: Sans objet.
Point de congélation/de fusion: >212°F (100°C)
La température de décomposition: Sans objet.
Solubilité dans l'eau: Insoluble.
Gravité spécifique (Eau = 1): 0,34
Pour cent volatils (%): Sans objet.
Formule moléculaire: $C_{22}H_{16}N_4O$
Poids moléculaire: 352,40

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: Ne se produira pas.
Conditions à éviter: Les températures excessives. Protégez contre la lumière.

Incompatibilités avec d'autres matériaux: Comburante fortes.

Produits dangereux de décomposition: Oxydes de carbone.

Section 11 L'Information Toxicologique

Effets de surexposition: Peut être nocif en cas d'ingestion, en cas d'inhalation ou absorbé à travers le peau. Le contact peut causer une irritation de la peau et des yeux. Au meilleur de notre connaissance, au démuni chimique, physique et toxicologique de propriétés à fond étudié. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.

RTECS #: QK425000

Section 12 L'Information Écologique

Données pas encore disponibles.

Section 13 Considérations De Disposition

Ces directives de disposition sont prévues pour la disposition des quantités de catalogue-taille seulement. Les règlements fédéraux peuvent appliquer au récipient vide. L'état et/ou les règlements locaux peuvent être différents. Débarassez-vous selon tous les gens du pays, état et règlements fédéraux ou contrat avec une agence chimique autorisée de disposition. Le matériel propre peut être débarassé dans un remblai sanitaire ou être débarassé dans un incinérateur approuvé.

Section 14 L'Information De Transport

Nombre d'UN/NA: Sans objet.
Nom d'expédition: **Non réglé.**
Classe de risque: Sans objet.
Groupe d'emballage: Sans objet.
Exceptions: Sans objet.

Section 15 L'Information De Normalisation

TSCA-listed, EINECS-listed (201-638-4), DSL-listed.

Section 16 L'Information Additionnelle

SAFETY DATA SHEET

Version 5.5
Revision Date 08/13/2014
Print Date 02/19/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Sulfur
Product Number	:	84680
Brand	:	Fluka
Index-No.	:	016-094-00-1
CAS-No.	:	7704-34-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word	Warning
Hazard statement(s)	
H315	Causes skin irritation.
Precautionary statement(s)	
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	S
Molecular weight	:	32.07 g/mol
CAS-No.	:	7704-34-9
EC-No.	:	231-722-6
Index-No.	:	016-094-00-1

Hazardous components

Component	Classification	Concentration
Sulfur		
	Skin Irrit. 2; H315	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Moisture sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: flakes Colour: light yellow
b)	Odour	slight
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 112.8 °C (235.0 °F) Melting point/range: 117 - 120 °C (243 - 248 °F) - lit. Melting point/range: 119.0 °C (246.2 °F) Melting point/range: 117 - 120 °C (243 - 248 °F)
f)	Initial boiling point and boiling range	444.7 °C (832.5 °F) - lit.
g)	Flash point	207 °C (405 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	May form combustible dust concentrations in air
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 6.83 %(V) Lower explosion limit: 0.17 %(V)
k)	Vapour pressure	10 hPa (8 mmHg) at 246 °C (475 °F) 1 hPa (1 mmHg) at 183.8 °C (362.8 °F)
l)	Vapour density	No data available
m)	Relative density	2.07 g/cm3 at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	240 °C (464 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	8 mm2/s at 140 °C (284 °F) -
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Avoid moisture. Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agentsAmines, Bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LDLO Oral - Rabbit - 175 mg/kg

LD50 Oral - Rat - > 2,000 mg/kg

LC50 Inhalation - Rat - 4 h - > 9.23 mg/l

LD50 Dermal - Rabbit - > 2,000 mg/kg

LDLO Intravenous - Rat - 8 mg/kg

LDLO Intravenous - Rabbit - 5 mg/kg

LDLO Intraperitoneal - Guinea pig - 55 mg/kg

LDLO Intravenous - Dog - 10 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: WS4250000

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting., Dermatitis

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - > 180 mg/l - 96 h
	LC50 - other fish - 866 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - > 5,000 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1350 Class: 4.1 Packing group: III
Proper shipping name: Sulfur
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1350 Class: 4.1 Packing group: III EMS-No: F-A, S-G
Proper shipping name: SULPHUR
Marine pollutant: No

IATA
UN number: 1350 Class: 4.1 Packing group: III
Proper shipping name: Sulphur

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Sulfur	7704-34-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Sulfur	7704-34-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Sulfur	7704-34-9	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H315	Causes skin irritation.
Skin Irrit.	Skin irritation

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	2
Physical Hazard	2

NFPA Rating

Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	2

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.5 Revision Date: 08/13/2014 Print Date: 02/19/2015

SAFETY DATA SHEET

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

Product ID:	Sulfuric acid		
Product Name:	Sulfuric acid		
Revision Date:	Sep 29, 2015	**Date Printed:**	Dec 15, 2017
Version:	2.0	**Supersedes Date:**	Nov 04, 2014
Manufacturer's Name:	Saconix LLC		
Address:	560 West Crossville Road, Suite 204 Roswell, GA, US, 30075		
Emergency Phone:	CHEMTREC (800) 424-9300		
Information Phone Number:	678-461-0456		
Fax:			
Product/Recommended Uses:	Industrial uses		

SECTION 2) HAZARDS IDENTIFICATION

Classification

Corrosive to metals - Category 1

Specific Target Organ Toxicity - Single Exposure - Category 1

Skin Corrosion - Category 1A

Serious Eye Damage - Category 1

Acute aquatic toxicity - Category 3

Chronic aquatic toxicity - Category 3

Acute toxicity Inhalation - Category 4

Pictograms

Signal Word

Danger

Hazardous Statements - Physical

H290 - May be corrosive to metals

Hazardous Statements - Health

H370 - Causes damage to organs.

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H332 - Harmful if inhaled

Hazardous Statements - Environmental

H402 - Harmful to aquatic life

H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - General

P101 - If medical advice is needed, have product container or label at hand.

P102 - Keep out of reach of children.

P103 - Read label before use.

Precautionary Statements - Prevention

P273 - Avoid release to the environment.

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

P264 - Wash with soap and water thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P234 - Keep only in original packaging.

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P271 - Use only outdoors or in a well-ventilated area.

Precautionary Statements - Response

P308 + P311 - IF exposed or concerned: Call a POISON CENTER/doctor.

P321 - Specific treatment (see First-aid measures on this label).

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P363 - Wash contaminated clothing before reuse.

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 - Immediately call a POISON CENTER or doctor.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P390 - Absorb spillage to prevent material damage.

P312 - Call a POISON CENTER/doctor if you feel unwell.

Precautionary Statements - Storage

P405 - Store locked up.

P406 - Store in a corrosive resistant/… container with a resistant inner liner.

Precautionary Statements - Disposal

P501 - Dispose of contents/container to disposal recycling center. Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws.

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0007664-93-9	SULFURIC ACID	72% - 98%
0007732-18-5	WATER	8% - 18%

Specific chemical identity and/or exact percentage (concentration) of the composition has been withheld to protect confidentiality.

SECTION 4) FIRST-AID MEASURES

Inhalation

Remove source of exposure or move person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing has stopped, trained personnel should begin rescue breathing or, if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillator.

If breathing is difficult, trained personnel should administer emergency oxygen. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary edema may be delayed.

Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment, use the buddy system).

Skin Contact

Take off immediately all contaminated clothing, shoes, and leather goods (e.g., watchbands, belts). Rinse skin with plenty of lukewarm, gently flowing water for a duration of 30-60 minutes or until medical aid is available.DO NOT INTERRUPT FLUSHING.If it can done safely, continue flushing during transport to hosiptal. Immediately call a POISON CENTER/doctor. Double bag, seal and label contaminated clothing for safe disposal.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if nesscary. Immediately rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. If a contact lens is present, DO NOT delay flushing or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. Continue rinsing for 30 - 60 minutes or until medical aid is available. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor. If necessary, continue flushing during transport to hospital.

Ingestion

Immediately call a POISON CENTER/doctor. Rinse mouth. Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position.

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical, carbon dioxide or foam is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Unsuitable Extinguishing Media

Do not use water or water-based extinguishing agents. ONLY use water to keep non-leaking, fire-exposed containers cool.

Specific Hazards in Case of Fire

Releases sulfur dioxide at extremely high temperatures. Sulfuric acid vapors, mists and sulfur trioxide may be released.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Stay upwind and avoid smoke and fumes. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel.

Neutralize runoff with lime, soda ash or other suitable neutralizing agents.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Fire-fighting Procedures

Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

Specific hazards arising from chemical

Contact with water causes violent frothing and spattering. Reacts with metals to produce highly flammable hydrogen gas.Hydrogen can accumulate to explosive concentrations. May ignite other combustible materials. Closed containers may rupture violently when heated releasing contents. In a fire, the following hazardous materials may be generated: corrosive sulfur oxides.

Special Protective Actions

Wear protective pressure self-contained breathing apparatus (SCBA) and full turnout gear.

For fighting fire in close proximity to spill or vapors, use acid-resistant personal protective equipment.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure

Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material.
Stay upwind; keep out of low areas.

Immediately stop leak if possible without risk. Cover with DRY earth, sand or other non-combustible material or absorb with inert DRY material. Place in appropriate waste disposal container and dispose of water material at an approved waste treatment/disposal facility, in accordance with applicable regulations. Do not dispose waste in normal garbage or sewer systems. Ensure adequate decontamination of tools and equipment following clean up.

If necessary, Consider neutralizing the residue with sodium carbonate, lime or other suitable neutralizing agent.

Recommended equipment

Positive pressure, full-facepiece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (NIOSH approved).

In case of emergency or where there is a strong possibility of considerable exposure, wear a complete acid suit with hood, boots and gloves.

Personal Precautions

Avoid breathing vapor. Avoid contact with skin, eye or clothing. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use explosive proof equipment. Avoid inhalation of dust and contact with skin and eyes. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

SECTION 7) HANDLING AND STORAGE

General

Wash hands after use.
Do not get in eyes, on skin or on clothing.
Do not breathe vapors or mists.
Use good personal hygiene practices.
Eating, drinking and smoking in work areas is prohibited.
Remove contaminated clothing and protective equipment before entering eating areas.
Eyewash stations and showers should be available in areas where this material is used and stored.

Good general ventilation should be provided to keep vapor and mist concentrations below the exposure limits. Strong inorganic acid mists containing sulfuric acid can be carcinogenic.

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source. Provide mechanical ventilation for confined spaces. Use explosion-proof ventilation equipment.

Strong inorganic mists containing sulfuric acid can be carcinogenic.

Storage Room Requirements

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty containers retain residue and may be dangerous.

CAUTION: Hydrogen a flammable gas, can accumulate to explosive concentrations inside drums, or any types of steel containers or tanks upon storage. Metal and, specifically carbon steel, storage tanks must be vented due to hydrogen release.

Use EXTREME care when diluting with water. Always add acid to water never the reverse. People working with this chemical should be properly trained regarding its hazards and its safe use.

Keep ignition sources away from sulfuric acid storage, handling and transportation equipment.

SECTION 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids.If additional protection is needed for entire face, use in combination with a face shield.

Skin protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over- boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization.The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Where there is a danger of spilling or splashing, acid resistant aprons or suits should be worn. Trouser legs should be worn outside (not tucked in) rubber boots.

Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

Respiratory protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed. Check with respiratory protective equipment suppliers. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Use a NIOSH/MSHA approved air-purfying respirator equipped with acid gas/fume, dust, mist cartridges for concentrations up to 10 mg/m3.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold

limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

The most effective measures are the total enclosure of processes and the mechanization of handling procedure to prevent all personal contact with sulfuric acid.

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH TWA (ppm)	NIOSH TWA (mg/m3)	NIOSH STEL (ppm)	NIOSH STEL (mg/m3)	NIOSH Carcinogen
SULFURIC ACID		1			1				1			

Chemical Name	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)	ACGIH Carcinogen	ACGIH Notations	ACGIH TLV Basis
SULFURIC ACID		0.2 (T)			A2	A2 (M)	Pulm func

(C) - Ceiling limit, (T) - Thoracic fraction, A2 - Suspected Human Carcinogen, func - Function, pulm - Pulmonary

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density	15.39 lb/gal
Density VOC	0.00 lb/gal
% VOC	0.00%
Specific Gravity	1.84

Appearance	Clear to amber, heavy, oily liquid.
Odor Threshold	N.A.
Odor Description	N.A.
pH	0.3 (1N solution at 78°F)
Water Solubility	Easy soluble in cold water (with liberation of much heat).
Flammability	Will not burn
Flash Point Symbol	N.A.
Flash Point	N.A.
Viscosity	N.A.
Lower Explosion Level	N.A.
Upper Explosion Level	N.A.
Vapor Pressure	0.002 mmHg
Vapor Density	3.4
Freezing Point	30 °F
Melting Point	30 °F
Low Boiling Point	626 °F
High Boiling Point	N.A.
Auto Ignition Temp	N.A.
Decomposition Pt	N.A.
Evaporation Rate	N.A.
Coefficient Water/Oil	N.A.

SECTION 10) STABILITY AND REACTIVITY

Stability

Stable, but reacts violently with water and organic materials with evolution of heat.

Conditions to Avoid

Avoid heat, sparks, flame, contact with incompatible materials, water, moisture and humidity.

Hazardous Polymerization

Will not occur.

Incompatible Materials

Highly reactive. Reacts violently with cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III) oxide, powdered metals.Vigorous reactions with water, alkaline solutions, carbides, fulminates, nitrates, picrates, cyanides, chlorates, alkali halides, Zinc salts, permanganates, e.g. potassium permanganate, Hydrogen peroxide, Azides, Perchlorates., Nitromethane, phosphorous, strong oxidizing, reducing or combustible organic materials. Hazardous gases are evolved in contact with chemicals such as cyanides, sulfides and carbides.

Hazardous Decomposition Products

Releases sulfur dioxide at extremely high temperatures.

SECTION 11) TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation

Concentrated solutions may cause second or third degree burns with severe necrosis. Prolonged and repeated exposure to dilute solutions may cuase irritation, redness, pain, drying and cracking of skin.

Causes severe skin burns and eye damage

Serious Eye Damage/Irritation

Immediate pain, severe burns and corneal damage, which may result in permanent blindness.

Causes serious eye damage

Respiratory/Skin Sensitization

No Data Available

Germ Cell Mutagenicity

No Data Available

Carcinogenicity

Strong inorganic acid mists containing sulfuric acid is carcinogenic to man, causing cancer of the larynx.

Reproductive Toxicity

Slightly embryotoxic in rabbits (a minor, rare skeletal variation).

Specific Target Organ Toxicity - Single Exposure

Causes damage to organs.

Specific Target Organ Toxicity - Repeated Exposure

No Data Available

Aspiration Hazard

No Data Available

Acute Toxicity

If inhaled, can cause respiratory irritation and chemical burns to respiratory tract. At high concentrations may cause severe injury, burns, or death. Can cause life-threatening accumulation of fluid in the lungs (pulmonary edema). Inhalation may be fatal as a result of spasm, inflammation , edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. May also affect teeth (changes in teeth and supporting structures - erosion, discoloration).

Breathing of vapors or sprays (mists) may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

If ingested, May cause permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the stomach, GI bleeding, edema of the glottis, necrosis and scarring, and sudeen circulatory collapse. It may also cause systemic toxicity with acidosis.

Harmful if inhaled

0007664-93-9 SULFURIC ACID

LC50 (rat): 510 mg/m3 (2 hour-exposure) (255 mg/m3 - equivalent 4-hour exposure) (1)
LC50 (mouse): 320 mg/m3 (2-hour exposure) (160 mg/m3 - equivalent 4-hour exposure) (1)

LD50 (oral, rat): 2140 mg/kg (2)

SECTION 12) ECOLOGICAL INFORMATION

Toxicity

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

Persistence and Degradability

No Data Available.

Bio-accumulative Potential

No Data Available.

Mobility in Soil

No Data Available.

Other Adverse Effects

No Data Available.

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal

Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws.

Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

SECTION 14) TRANSPORT INFORMATION

For Domestic Shipments - Bulk Packaging

Packaging References should be 49CFR, Sections 172.101, 173.154, 173.202,and 173.242
Note: Hazardous Substance - 1000 lbs/454 kg RQ

International Shipments

U.S. DOT - ID# UN 1830 - Proper Shipping Name is Sulfuric Acid - Hazard Class is 8 - Packaging Group is II
IMDG - ID# UN 1830 - Proper Shipping Name is SULPHURIC ACID - Hazard Class is 8 - Packaging Group is II
IATA - ID# UN 1830 - Proper Shipping Name is SULPHURIC ACID - Hazard Class is 8 - Packaging Group is II
Packaging References - 855, 851, Y840
Note: Hazardous Substance - 1000 lbs/454 kg RQ

SECTION 15) REGULATORY INFORMATION

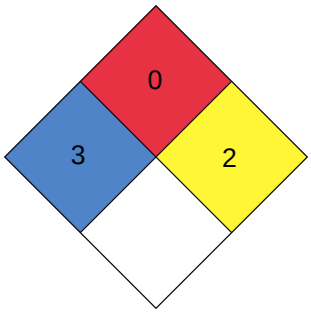
CAS	Chemical Name	% By Weight	Regulation List

SECTION 16) OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

Glossary

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG- Canadian Transportation of Dangerous Goods; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center (US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL- Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self-Contained Breathing Apparatus; STEL- Short Term Exposure Limit; TCEQ- Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA- Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

NFPA



Version 2.0:

Revision Date: Sep 29, 2015

Changes made on: Section 1, Section 2, Section 9 and Section 11
Please contact the supplier for further information on the version history

DISCLAIMER

This SDS is prepared to comply with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) as prescribed by the United States (US) Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).

Information provided in this Safety Data Sheet is considered accurate and reliable based on information issued from internal and outside sources to the best of Saconix LLC's knowledge; however, Saconix LLC makes no representations, guarantees or warranties, expressed or implied, of merchantability or fitness for the particular purpose, regarding the accuracy of such
information or the result to be obtained from the use thereof or as to the sufficiency of information herein presented. Saconix LLC assumes no responsibility for injury to recipient or to third persons or for any damage to any property and recipient assumes all
such risks.

This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, Saconix LLC, must rely upon information provided by the material manufacturers or distributors.

ProlabScientific
www.prolabscientific.com
✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: TT0010
Revision Date: September 16, 2013
Approved by: James A. Bertsch

MSDS No.: TT0010

Section 1 Chemical Product and Company Information

Product	**TANNIC ACID**
Synonyms	Tannin; Gallotannic Acid; Pyrogallol Tannin

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

WARNING!
IRRITANT TO SKIN AND EYES.
Avoid contact with skin, eyes and clothing. Do not breathe dust. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.
Target organs: Liver.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	1
Fire	1
Reactivity	0
Contact	1

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Tannic acid	1401-55-4	100%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Use water spray to keep fire-exposed containers cool.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

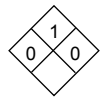
Flash Point: N/A

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from light and air.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Yellow to light tan powder.
Odor: Faint characteristic odor.
pH: N/A
Vapor pressure (mm Hg): Negligible.
Vapor Density (Air = 1): N/A
Evaporation rate (= 1): N/A
Viscosity: N/A
Boiling point: Decomposes.
Freezing / Melting point: 210-215°C (410-419°F)
Decomposition temperature: N/A
Solubility: Complete.
Specific gravity (H_2O = 1): >1.0
Percent volatile (%): N/A
Molecular formula: $C_{76}H_{52}O_{46}$
Molecular weight: 1701.23

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and heat. Darkens on exposure to air or light. Protect from light and air.

Incompatibilities with other materials: Strong alkalies.

Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Effects of overexposure: May cause eye, skin and respiratory tract irritation. Skin contact may cause discoloration. Ingestion of large amounts may cause respiratory failure. Tannic acid in contact with cuts or burns may be carried to the liver via the blood stream and produce tumors. Exercise appropriate procedures to minimize potential hazards.

RTECS #: WW5075000
Oral-mouse LD50: 2000 mg/kg

Section 12 Ecological Information

Aquatic toxicity: Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: Not Regulated.
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (215-753-2), DSL-listed.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

SAFETY DATA SHEET

Version 3.3
Revision Date 03/13/2014
Print Date 05/27/2014

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	:	Thymol Blue
Product Number	:	89340
Brand	:	Fluka
REACH No.	:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS-No.	:	76-61-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	:	Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Thymolsulfonphthalein
Formula	:	$C_{27}H_{30}O_5S$
Molecular Weight	:	466.59 g/mol
CAS-No.	:	76-61-9
EC-No.	:	200-973-3

No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Sulphur oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed.Normal measures for preventive fire protection.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: dark brown
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	no data available
e)	Melting point/freezing	Melting point/range: 221 - 224 °C (430 - 435 °F)

	point	
f)	Initial boiling point and boiling range	no data available
g)	Flash point	no data available
h)	Evapouration rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapour pressure	no data available
l)	Vapour density	no data available
m)	Relative density	0.979 g/cm3
n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available
t)	Oxidizing properties	no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available

Inhalation: no data available

Dermal: no data available

no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

REACH No.	:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Thymol Blue	76-61-9	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Thymol Blue	76-61-9	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling

or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.3 Revision Date: 03/13/2014 Print Date: 05/27/2014

Tin (II) Chloride

MSDS # □□□□□

Section 1: Product and Company Identification

Tin (II) Chloride

Synonyms/General Names: Stannous Chloride, Dihydrate
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White flakes or crystals; slight odor.

HMIS (0 to 4)

Health	2
Fire Hazard	0
Reactivity	0

WARNING! Corrosive to body tissue irritant and moderately toxic by ingestion.
Target organs: Kidneys, liver, respiratory tract.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Stannous Chloride, Dihydrate, (10025-69-1), 100%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. ***Do not induce vomiting***. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage White

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in Corrosive Area [White Storage] with other corrosive items. Store in a dedicated corrosive cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines Tin Chloride: OSHA PEL: 2 mg/m^3, ACGIH TLV: 2 mg/m^3, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	$SnCl_2 \cdot 2H_2O$.	**Appearance**	White flakes or crystals.
Molecular weight	225.36.	**Odor**	Slight odor.
Specific Gravity	2.71 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	118 g/100 ml water @ 103°C.
Melting Point	38°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Stability: Stable under normal conditions of use and storage.
Incompatibility: Sodium, potassium, bromine trifluoride, calcium carbide, calcium acetylide, ethylene oxide and nitrates. Strong oxidizers or alkalis will generate heat and fumes
Shelf life: Poor shelf life, absorbs oxygen and moisture to form tin oxides. Store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. ***Skin***: Redness, blistering, burning, itching, tissue destruction with slow healing. ***Ingestion***: Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. ***Inhalation***: Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.
Chronic Effects: Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision. **Sensitization:** none expected
Tin Chloride: LD50 [oral, rat]; 700 mg/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined □

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer disposal after being neutralized to pH 7.

Section 14: Transport Information

DOT Shipping Name:	Corrosive Solid, Acidic, Inorganic, n.o.s., (Stannous Chloride and Hydrochloric Acid).	**Canada TDG:**	Corrosive Solid, Acidic, Inorganic, n.o.s. (Stannous Chloride and Hydrochloric Acid).
DOT Hazard Class:	8, pg II .	**Hazard Class:**	8, pg II .
Identification Number:	UN3260 .	**UN Number:**	UN3260 .

Section 15: Regulatory Information

EINECS: Not listed.
WHMIS Canada: Not WHMIS Controlled..
TSCA: All components are listed or are exempt.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

ProlabScientific
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✆ 1-800-556-5226
LAVAL OTTAWA CALGARY

MATERIAL SAFETY DATA SHEET

MSDS No.: TT0170
Revision Date: October 4, 2013
Approved by: James A. Bertsch

MSDS No.: TT0170

Section 1 Chemical Product and Company Information

Product	**TIN METAL**
Synonyms	N/A

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Tin metal	7440-31-5	99.85%	TWA: 2 mg/m^3(air) (ACGIH 2001)

Section 3 Hazards Identification

Emergency Overview

CAUTION!
HARMFUL IF INHALED AS DUST OR FUME.
May cause irritation to skin and eyes. Avoid contact with acids or acid fumes. Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	0
Fire	0
Reactivity	0
Contact	1

HMIS *

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Non-flammable and non-combustible solid, but air-born dust may ignite. Molten metals produce fume, vapor and/or dust that may be toxic and/or respiratory irritants. In contact with acids, emits hydrogen gas. This gas if flammable and can cause explosion. Do not use water to fight fires involving this material.

Extinguishing Media: Use triclass, dry chemical fire extinguisher. Do not use water.

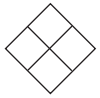
Flash Point: Non-flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe



None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dust. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None needed in normal laboratory handling. If dusty conditions prevail, work in a ventilation hood or wear a NIOSH/MSHA-approved dust mask.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: Silvery, metallic granular.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): 1 mm @ 1492°C
Vapor Density (Air = 1): 4.11
Evaporation rate (Butyl acetate = 1): N/A
Viscosity: N/A
Boiling point: 2270°C (4118°F)
Freezing / Melting point: 231.9°C (449°F)
Decomposition temperature: N/A
Solubility: Insoluble.
Specific gravity (H_2O = 1): 7.31 @ 20°C
Percent volatile (%): N/A
Molecular formula: Sn
Molecular weight: 118.69

Section 10 Stability & Reactivity

Chemical stability: Stable
Conditions to avoid: Contact with acids.
Hazardous polymerization: Will not occur.

Incompatibilities with other materials: Strong oxidizers, chlorine, cupric nitrate, potassium, sodium peroxide, sulfur, halogens, sulfuric chlorosulfuric and pyrosulfuric acid.

Hazardous decomposition products: Oxides of tin may be present. Reacts with acids, causing evolution of flammable hydrogen gas.

Section 11 Toxicological Information

Effects of overexposure: Material may be irritating to mucous membranes and upper respiratory tract. If product gets into eyes, corneal abrasions may occur. May cause abrasions on contact with skin. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

RTECS No: XP7320000
ORL-RAT LD50: N/A

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: **Not Regulated.**
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (231-141-8), RCRA code D001

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

SAFETY DATA SHEET

1. Identification

Product identifier **TOLUENE**

Other means of identification

CAS number 108-88-3

Recommended use General purpose solvent.

Recommended restrictions Use in accordance with manufacturer's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company Name Greenfield Global USA Inc.

Address 1101 Isaac Shelby Drive
Shelbyville, KY 40065
USA

Telephone 502.232.7600

Fax 502.633.6100

Company Name Greenfield Global USA Inc.

Address 58 Vale Road
Brookfield, CT 06804
USA

Telephone 203.740.3471

Fax 203.740.3481

Emergency phone number

USA CHEMTREC: 1.800.424.9300 (CCN 17213)

International CHEMTREC: +1.703.527.3887 (CCN 17213)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (auditory organs, central nervous system)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 3

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Highly flammable liquid and vapor. Causes skin irritation. Causes eye irritation. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May cause damage to organs (auditory organs, central nervous system) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If exposed or concerned: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

Storage Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Toluene		108-88-3	100

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed Aspiration may cause pulmonary edema and pneumonitis. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure. May cause drowsiness and dizziness. Narcosis. Headache. Nausea, vomiting. Behavioral changes. Decrease in motor functions. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information Take off all contaminated clothing immediately. Wash contaminated clothing before reuse. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Carbon dioxide (CO_2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. The product is insoluble in water. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Material	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Material	Type	Value
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Toluene (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3) Skin designation applies.

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles are recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Viton gloves are recommended. Other suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-135.4 °F (-93 °C)
Initial boiling point and boiling range	231.8 °F (111 °C)
Flash point	39.2 °F (4.0 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.1 % v/v
Flammability limit - upper (%)	7.1 % v/v
Vapor pressure	29.1 hPa at 20 °C
Vapor density	3
Relative density	0.865 g/ml
Relative density temperature	77 °F (25 °C)
Solubility(ies)	
Solubility (water)	Not soluble.
Auto-ignition temperature	896 °F (480 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Molecular formula	C7-H8
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes eye irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Aspiration may cause pulmonary edema and pneumonitis. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure. May cause drowsiness and dizziness. Narcosis. Headache. Nausea, vomiting. Behavioral changes. Decrease in motor functions. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Product	Species	Test Results
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12200 mg/kg
Inhalation		
Vapor		
LC50	Rat	28.1 mg/l, 4 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Toluene (CAS 108-88-3) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (auditory organs, central nervous system) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Product		Species	Test Results
Toluene (CAS 108-88-3)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	11.5 mg/l, 48 hours
Fish	LC50	Oncorhynchus kisutch	5.5 mg/l, 96 hours
Chronic			
Crustacea	NOEC	Ceriodaphnia dubia	0.74 mg/l, 7 days
Fish	NOEC	Oncorhynchus kisutch	1.4 mg/l, 40 days

Persistence and degradability No data is available on the degradability of this substance.

Bioaccumulative potential

Mobility in soil The product is insoluble in water.

Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Toluene (CAS 108-88-3)	U220

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1294
UN proper shipping name	Toluene (Toluene RQ = 1000 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1294
UN proper shipping name	Toluene
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1294
UN proper shipping name	TOLUENE
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Toluene (CAS 108-88-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard
Hazard not otherwise classified (HNOC)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Toluene	108-88-3	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Toluene (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)
Hazardous substance
Priority pollutant
Toxic pollutant

Safe Drinking Water Act (SDWA)
1 mg/l
1 mg/l

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Toluene (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Toluene (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Toluene (CAS 108-88-3) 594

US state regulations

US. Massachusetts RTK - Substance List

Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

Toluene (CAS 108-88-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Toluene (CAS 108-88-3)

US. Rhode Island RTK

Toluene (CAS 108-88-3)

California Proposition 65

WARNING: This product can expose you to Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Developmental toxin

Toluene (CAS 108-88-3) Listed: January 1, 1991

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Toluene (CAS 108-88-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	08-August-2018
Revision date	-
Version #	01
HMIS® ratings	Health: 3* Flammability: 3 Physical hazard: 0
Disclaimer	This product is subject to Greenfield Global USA Inc.'s terms and conditions, which can be found at http://www.greenfield.com/tc-po-us/. Greenfield cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.

Toluidine Blue O

MSDS # □□□□□

Section 1: Product and Company Identification

Toluidine Blue O

Synonyms/General Names: Basic Blue 17; Tolonium Chloride
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Dark green powder, no odor.

HMIS (0 to 4)

Health	2
Fire Hazard	0
Reactivity	0

CAUTION! Moderately toxic by ingestion.
Target organs: Blood.□
□
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Toluidine Blue O (92-31-9), 100%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

When heated to decomposition, emits acrid fumes of chlorine, NOx, SOx.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an dust cartridge. Exposure guidelines: Toluidine: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	$C_{15}H_{16}ClN_3S$.	**Appearance**	Dark green powder.
Molecular weight	296.70.	**Odor**	No odor.
Specific Gravity	N/A.	**Odor Threshold**	N/A.
Vapor Density (air=1)	10.5.	**Solubility**	Soluble in water.
Melting Point	N/A.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers□
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Toluidine: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.
□

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (202-146-2).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

FLINN SCIENTIFIC, INC.
Safety Data Sheet (SDS)

SDS #: 839.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

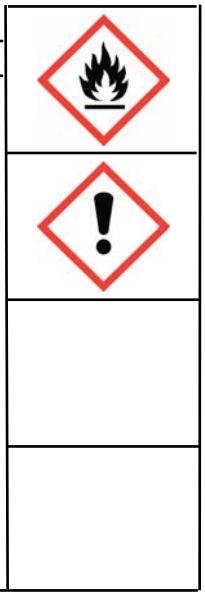
Universal Indicator Solution

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Flammable liquids (Category 3). Flammable liquid and vapor (H226). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Acute toxicity, oral and dermal (Category 5). May be harmful if swallowed or in contact with skin (H303+H313).

Hazard class: Serious eye damage or irritation (Category 2B). Causes eye irritation (H320).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Methyl red	845-10-3	$C_{15}H_{14}N_3O_2Na$	291.28	<0.05%
Bromthymol blue, sodium salt	34722-90-2	$C_{27}H_{27}Br_2O_5S$	646.38	<0.05%
Phenolphthalein	77-09-8	$NaC_{20}H_{14}O_4$	318.31	<0.05%
Sodium hydroxide	1310-73-2	NaOH	39.997	<0.05%
Ethyl alcohol, denatured	64-17-5	C_2H_5OH	46.07	55%
Water	7732-18-5	H_2O	18.00	45%

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313). **If on skin (or hair):** Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353). **If swallowed:** Rinse mouth. Give large quantities of water for dilution. Call a physician or poison control at once, product contains denatured ethyl alcohol.

SECTION 5 — FIRE FIGHTING MEASURES

Class IC flammable liquid.
Flash point: 24 °C
When heated, releases flammable fumes.
In case of fire: Use a tri-class dry chemical fire extinguisher (P370+P378).

NFPA CODE
H-2
F-3
R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #9. Store with dyes, indicators and stains.
Keep container tightly closed and cool (P233+P235). Use explosion-proof electrical and ventilating equipment (P241). Take precautionary measures against static discharge (P243).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Will stain skin, clothing, and surfaces.
Exposure guidelines: (as ethyl alcohol) PEL 1000 ppm (OSHA), Ceiling 1000 ppm (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

The color of this solution depends entirely on the pH of the solution. Slight alcohol odor.

pH indicator solution.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with open flame, sparks or other sources of ignition.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Eye irritation, nausea, dizziness, headache.
Chronic effects: Liver damage, reproductive, teratogenic effects, carcinogen.
Target organs: Eyes, skin, central nervous system, liver, reproductive system.

ORL-MAN TLD_0: 29 mg/kg (as phenolphthalein)
IHL-RAT LC_{50}: 20,000 ppm/10H (as ethyl alcohol)
SKN-RBT LD_{50}: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Ethyl alcohol solution. Hazard class: 3, Flammable liquid. UN number: UN1170.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

[illegible]

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 21, 2014

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**CHROMATOGRAPHY SOLVENT**
Synonyms	Petroleum Ether / Acetone (9:1)

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS02 / GHS07 / GHS08
Target organs: Central nervous system

GHS Classification:
Flammable liquid (Category 2)
Aspiration hazard (Category 1)
Eye irritation (Category 2A)
STOT-SE (Category 3)
Germ cel mutagenicity (Category 1B)
Carcinogenicity (Category 1B)

GHS Label information: **Hazard statement(s):**
H225: Highly flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.

Precautionary statement(s):
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.

Precautionary statement(s)(continued)**:**
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P261: Avoid breathing mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310+P331: IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313: IF exposed or concerned: Get medical attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide to extinguish.
P403+P233+P235: Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Supplemental Information:
EUH066: Repeated exposure may cause skin dryness or cracking.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Petroleum ether	8032-32-4	90%	232-453-7
Acetone	67-64-1	10%	200-662-2

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 128)

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Petroleum distillates, Naphtha	None listed	TWA: 500 ppm / 2000 mg/m^3	TWA: 350 ppm / C 1800 mg/m^3

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.
Odor: Gasoline or kerosene-like odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: <-73°C (-99°F)*
Boiling point: 20-75°C (68-167°F)*
Flash point: -18°C (0°F) CC*

Evaporation rate (Butyl acetate **= 1):** Ca 10*
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: 1.1% / 5.9%*
Vapor pressure (mm Hg): Ca 40 @ 20°C*
Vapor density (Air = 1): 2.5*
Relative density (Specific gravity): 0.60-0.75*
Solubility(ies): Insoluble in water.

Partition coefficient: Data not available
Auto-ignition temperature: 288°C (550°F)*
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Mixture
Molecular weight: Mixture

*Petroleum ether

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Heat and sunlight can cause instability. Avoid heat, flame, ignition sources, sunlight and incompatibles.

Incompatible materials: Strong oxidizers. Will attack some forms of plastics, rubber and coatings.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC classified: Group 3: Not classifiable as to its carcinogenicity to humans. [Petroleum ether]
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.
STOT-repeated exposure: Data not available
Aspiration hazard: Yes
Potential health effects:
Inhalation: May cause symptoms of intoxication and peripheral nerve disorders and central nervous system depression. Symptoms include loss of appetite, muscle weakness, impairment of motor action, dizziness, and drowsiness. May cause throat irritation.
Ingestion: Causes local irritation with burning sensation in mouth, esophagus, and stomach. Vomiting, blurred vision, and diarrhea may also occur. Cases of chemical pneumonia have been reported from ingestion of this substance. Nervous system disorders paralleling those from inhalation exposure may also occur.
Skin: Contact with skin may cause irritation and defatting on prolonged contact.
Eyes: Vapors may cause irritation. Splashes may cause redness and pain.
Signs and symptoms of exposure: See Potential health effects above.
Additional information: RTECS #: OI6180000 [Petroleum ether]

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: Selenastrum capricornutum (Algae) EC50: 4,700 mg/l/72 hours [Petroleum ether]
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1993
Shipping name: Flammable liquids, n.o.s., (Petroleum ether, Acetone)
Hazard class: 3
Packing group: II
Reportable Quantity: See below
Marine pollutant: No
Exceptions: Limited quantity equal to or less than 1 L
2012 ERG Guide # 128

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Petroleum ether	Listed	Not listed	Not listed	Listed	Not listed	Not listed
Acetone	Listed	5,000 lbs.	U002	Listed	Not listed	B2; D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

Revision Date: January 14, 2013 **Supercedes:** December 3, 2011

Section 1 L'information de produit chimique et de compagnie

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Numéros De Téléphone
De Secours D'Heure (800) 424-9300
Pour l'usage de laboratoire seulement.
Pas pour l'usage de drogue, de nourriture
ou de ménage.

Produit	**SOLVANT DE CHROMATOGRAPHIÉ**
Synonymes	Éther de pétrole / Acétone (9:1)

Section 2 Identification De Risques

Mention d'avertissement: DANGER
Pictogrammes: GHS02 / GHS07 / GHS08
Les organes cibles: Le système nerveux central

Classification par le GHS:
Flammable liquid (Catégorie 2)
Aspiration hazard (Catégorie 1)
Eye irritation (Catégorie 2A)
STOT-SE (Catégorie 3)
Germ cel mutagenicity (Catégorie 1B)
Carcinogenicity (Catégorie 1B)

Renseignements sur l'étiquette GHS: Mention de danger(s):
H225: Liquide et vapeurs très inflammables.
H304: Peut être mortel en cas d'ingestion et de pénétration dans les voies respiratoires.
H319: Provoque une sévère irritation des yeux.
H336: Peut provoquer somnolence ou des vertiges.
H340: Peut induire des anomalies génétiques.
H350: Peut provoquer le cancer.

Precautionary statement(s):
P201: Se procurer les instructions avant utilisation.
P202: Ne pas manipuler avant d'avoir lu et compris toutes les précautions de sécurité.
P210: Tenir à l'écart la chaleur/des étincelles/des flammes nues/des surfaces chaudes. Ne pas fumer.
P233: Maintenir le récipient fermé de manière étanche.
P240: Mise à la terre/liaison équipotentielle du récipient et du matériel de réception.

Déclarations de précaution(s) (suite)**:**
P241: Utiliser du matériel électrique/de ventilation/d'éclairage antidéflagrant.
P242: Ne pas utiliser d'outils produisant des étincelles.
P243: Prendre des mesures de précaution contre les décharges électrostatiques.
P261: Éviter de respirer les brouillards/vapeurs/aérosols.
P264: Se laver les mains soigneusement après manipulation.
P271: Utiliser seulement en plein air ou dans un endroit bien ventilé.
P280: Porter des gants de protection / des vêtements de protection / un équipement de protection des yeux / du visage.
P301+P310+P331: EN CAS D'INGESTION: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin. Ne PAS faire vomir.
P303+P361+P353: EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tout vêtement souillé ou éclaboussé. Rincer la peau à l'eau/se doucher.
P304+P340: EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.
P308+P313: En cas d'exposition prouvée ou suspectée: Consulter un médecin.
P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
P337+P313: Si l'irritation oculaire persiste: Obtenir des soins médicaux.
P370+P378: En cas d'incendie: Utiliser un produit chimique sec, mousse anti-alcool, dioxyde de carbone pour l'extinction.
P403+P233+P235: Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche. Tenir au frais.
P405: Garder sous clef.
P501: Éliminer le contenu / récipient dans une agence agréée d'élimination chimique conformément à la réglementation locale / régionale / nationale.

Supplemental Information:
EUH066: L'exposition répétée peut provoquer dessèchement ou gerçures de la peau.

CA Prop 65 - Ce produit ne contient pas de produits chimiques connus à l'État de Californie pour causer le cancer, des malformations congénitales, ou toute autre atteinte à la reproduction.

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	EINECS
Éther de pétrole	8032-32-4	90%	232-453-7
Acétone	67-64-1	10%	200-662-2

Section 4 Mesures De Premiers Soins

INGESTION: PEUT ÊTRE NOCIF EN CAS D'INGESTION. Appeler un médecin ou un centre antipoison immédiatement. Provoquer le vomissement seulement si elle est informée par le personnel compétent médicaux. Ne jamais rien donner par la bouche à une personne inconsciente.

INHALATION: PEUT ÊTRE NOCIF EN CAS D'INHALATION. IRRITE LES VOIES RESPIRATOIRES. Sortir au grand air. Si elle ne respire pas, pratiquer la respiration artificielle. Si la respiration est difficile, donner de l'oxygène. Obtenir des soins médicaux.

CONTACT AVEC LES YEUX: PROVOQUE UNE SÉVÈRE IRRITATION DES YEUX. Vérifier et enlever les lentilles de contact. Rincer abondamment à l'eau pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps en temps. Obtenez une attention médicale immédiate.

ABSORPTION PAR LA PEAU: L'EXPOSITION RÉPÉTÉE PEUT PROVOQUER DESSÈCHEMENT OU GERÇURES DE LA PEAU. Enlever les vêtements contaminés. Rincer soigneusement avec du savon doux et d'eau. En cas d'irritation, consulter un médecin.

Section 5 Mesures De Lutte Contre l'Incendie

Moyens d'extinction: Dioxyde de carbone, produit chimique sec, du sable sec, mousse anti-alcool.

Actions de protection pour les sapeurs-pompiers: En cas d'incendie, porter un appareil respiratoire NIOSH / MSHA approuvé autonome et un équipement complet de protection. Utiliser un jet d'eau pour maintenir incendie refroidir les conteneurs exposés.

Dangers spécifiques: En cas d'incendie, des gaz irritants et très toxiques peuvent être générés par la décomposition thermique ou la combustion. Les vapeurs formées de ce produit sont plus lourdes que l'air et peuvent voyager le long de la terre à une source d'ignition et voyagez dos immédiatement. La flamme peut ne pas être évidente en jour.

Section 6 Mesures De Déchargement Accidentel

Précautions personnelles: Évacuer le personnel vers la zone sûre. Utiliser un équipement de protection personnelle comme indiqué dans la Section 8. Assurer une ventilation adéquate.

Précautions environnementales: Éviter tout ruissellement vers les égouts pluviaux et les fossés qui aboutissent aux voies navigables.

Confinement et de nettoyage: Absorbez avec le matériel sec inerte, balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Laver la zone de déversement avec du savon et de l'eau.

(GUIDE DE MESURES D'URGENCES (GMU2012), (PHH50-ERG2012), GUIDE # 128)

Section 7 Manipulation Et Stockage

Précautions pour la manutention en toute sécurité: Lire l'étiquette sur le contenant avant d'utiliser. Ne pas porter de lentilles cornéennes lorsque vous travaillez avec des produits chimiques. Tenir hors de portée des enfants. Éviter tout contact avec les yeux, la peau et les vêtements. Ne pas inhaler les vapeurs, les embruns ou le brouillard. Utiliser avec une ventilation adéquate. Éviter l'ingestion. Bien se laver après la manipulation. Retirer et laver les vêtements avant de les réutiliser.

Conditions de stockage: Stocker dans un endroit frais, sec et bien aéré, loin des substances incompatibles. Subsistance loin des sources d'allumage.

Section 8 Commandes D'Exposition / Protection Personnelle

Limites d'exposition:

Nommé Chimique	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Distillats de pétrole, naphta	Aucun liste	TWA: 500 ppm / 2000 mg/m^3	TWA: 350 ppm / C 1800 mg/m^3

Contrôles d'ingénierie: Les installations d'entreposage ou d'utilisation de ce matériel doit être équipé d'une douche oculaire et une douche de sécurité et le matériel d'extinction d'incendie. Le personnel doit porter des lunettes de sécurité, des lunettes, ou un écran facial, une blouse de laboratoire ou tablier, des gants protecteurs appropriés. Utiliser une ventilation adéquate pour maintenir les concentrations atmosphériques faible.
Protection respiratoire: Utilisez un capot chimique de vapeur et/ou portez un respirateur de NIOSH/MSHA-approved.

Section 9 Propriétés Physiques Et Chimiques

Apparence: Clair, liquide incolore.
Odeur: Odeur d'essence ou de kérosène comme.
Seuil de l'odeur: Données non disponibles.
pH: Données non disponibles.
Point de fusion / congélation: <-73°C (-99°F)*
Point d'ébullition: 20-75°C (68-167°F)*
Point d'éclair: -18°C (0°F) CC*

Taux d'évaporation (Acetate de butylique = 1): Ca 10*
Inflammabilité (solide / gaz): Données non disponibles.
Limites d'explosivité: Bas / Max: 1.1% / 5.9%*
Pression de vapeur (mm Hg): Ca 40 @ 20°C*
Densité de vapeur (Air = 1): 2.5*
Densité relative (gravité spécifique): 0.60-0.75*
Solubilité (s): Insoluble dans l'eau.

Coefficient de partage: Données non disponibles
Auto-inflammation: 288°C (550°F)*
Température de décomposition: Données non disponibles.
Viscosité: Données non disponibles.
Formule moléculaire: Mélange
Poids moléculaire: Mélange

*Éther de pétrole

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: N'aura pas lieu.
Conditions à éviter: La chaleur et la lumière du soleil peuvent causer l'instabilité. Évitez la chaleur, la flamme, les sources d'allumage, la lumière du soleil et les incompatibles.

Matières incompatibles: Oxydants forts. Attaquera quelques formes de plastiques, de caoutchouc et d'enduits.

Produits dangereux de décomposition: Oxydes de carbones.

Section 11 L'Information Toxicologique

Toxicité aiguë: Données non disponibles
La corrosion de la peau et l'irritation: Données non disponibles
Des lésions oculaires graves / irritation: Données non disponibles
Respiratoire ou sensibilisation de la peau: Données non disponibles
Mutagénicité des cellules germinales: Données non disponibles
Cancérogène: Données non disponibles
NTP: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène reconnu ou présumé par NTP.
IARC classés: Group 3: L'agent est inclassable quant à sa cancérogénicité pour l'homme. [Éther de pétrole]
OSHA: Aucun composant de ce produit présent à des niveaux supérieurs ou égaux à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par OSHA.
Reproductive toxicity: Données non disponibles
STOT-exposition unique: La substance ou le mélange est classé comme toxique pour certains organes cibles, exposition unique, catégorie 3 avec des effets narcotiques.
STOT-une exposition répétée: Données non disponibles
Risque d'aspiration: Oui
Effets d'une surexposition:
Inhalation: Peut causer des symptômes d'intoxication et de troubles du système nerveux périphérique et du système nerveux central. Les symptômes comprennent la perte d'appétit, une faiblesse musculaire, des troubles de l'action motrice, des étourdissements et de la somnolence. Peut causer une irritation de la gorge.
Ingestion: Provoque une irritation locale avec sensation de brûlure dans la bouche, de l'œsophage et de l'estomac. Vomissements, troubles de la vision et de la diarrhée peuvent également survenir. Des cas de pneumonie chimique ont été rapportés suite à l'ingestion de cette substance. Troubles du système nerveux similaires à ceux de l'inhalation peut également se produire.
Peau: Le contact avec la peau peut provoquer une irritation et une délipidation de contact prolongé.
Yeux: Les vapeurs peuvent provoquer une irritation. Des éclaboussures peuvent provoquer des rougeurs et de la douleur.Les signes et les symptômes de **l'exposition:** Voir les effets sanitaires potentiels ci-dessus.
Informations complémentaires: RTECS #: OI6180000 [Éther de pétrole]

Section 12 L'Information Écologique

Toxicité pour les poissons: Pas de données disponible
Toxicité pour les daphnies et autres invertébrés aquatiques: Pas de données disponible
Toxicité pour les algues: Selenastrum capricornutum (Algae) EC50: 4,700 mg/l/72 hours [Éther de pétrole]
Persistance et dégradabilité: Pas de données disponible
Potentiel de bioaccumulation: Pas de données disponible
Mobilité dans le sol: Pas de données disponibles
Évaluation PBT et vPvB: Pas de données disponibles
Autres effets indésirables: Un danger pour l'environnement ne peut pas être exclu dans l'éventualité d'une manipulation ou d'élimination.

Section 13 Considérations De Disposition

Ces lignes directrices sont destinées à l'élimination de la disposition d'un catalogue de taille seules les quantités. Les règlements fédéraux peuvent s'appliquer aux contenants vides. Des réglementations nationales et / ou local peut être différent. Éliminer conformément à toutes les réglementations locales, provinciales et fédérales ou d'un contrat avec une agence élimination des produits chimiques sous licence.

Section 14 L'Information De Transport

Numéro UN / NA: UN1993 **Nom d'expédition:** Liquides inflammables, n.o.s., (Éther de pétrole, Acétone)
Classe de danger: 3 **Groupe d'emballage:** II **Quantité à déclarer:** No **Polluant marin:** No
Exceptions: Quantité limitée égale à ou moins de 1 L **2012 ERG Guide #:** 128

Section 15 L'Information De Normalisation

Un produit chimique est considéré comme inscrit si le numéro CAS pour la forme anhydre est sur la liste d'inventaire.

Composant	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	Classification SIMDUT
Petroleum ether	Listed	Not listed	Not listed	Listed	Not listed	Not listed
Acetone	Listed	5,000 lbs.	U002	Listed	Not listed	B2; D2B

Section 16 L'Information Additionnelle

Les informations contenues dans ce document sont fournis sans garantie d'aucune sorte. Les employeurs devraient considérer cette information seulement comme complément à d'autres informations recueillies par eux et doivent prendre des décisions indépendantes de la pertinence et l'exhaustivité de l'information de toutes les sources afin d'assurer une utilisation correcte de ces matériaux et de la sécurité et la santé des employés. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

Date de révision: 14 janvier, 2013 **Remplace:** 3 decembre, 2011

Safety Data Sheet

1 - Chemical Product and Company Identification

Manufacturer: WD-40 Company **Address:** 9715 Businesspark Ave San Diego, CA , USA **Post code:** 92131 **Telephone:** +1-800-448-9340 +1-858-251-5600 **24 Hour Emergency Phone Number:** **1-888-324-7596 (PROSAR)** **Chemical Spills:** **1-800-424-9300 (Chemtrec)** **1-703-527-3887 (International Calls)**	**Chemical Name: Organic Mixture** **Trade Name: WD-40 Aerosol** **Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion** **SDS Date Of Preparation: April 12, 2018**

2 – Hazards Identification

GHS Classification:

[illegible]

DANGER [illegible]

[illegible]

Prevention

[illegible]

Response

[illegible]

Storage

[illegible]

Disposal

[illegible]

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	GHS Classification
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	M[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

4 – First Aid Measures

Ingestion (Swallowed): [illegible]

Eye Contact: [illegible]

Skin Contact: [illegible]

Inhalation (Breathing): [illegible]

Most Important Symptoms (acute and delayed): [illegible]

Indication of Immediate Medical Attention or Special Treatment: [illegible]

5 – Fire Fighting Measures

Extinguishing Media: [illegible]

Special Fire Fighting Procedures: [illegible]

Unusual Fire and Explosion Hazards: [illegible]

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: [illegible]

Environmental Precautions: [illegible]

Methods and Materials for Containment/Cleanup: [illegible]

7 – Handling and Storage

Precautions for Safe Handling: [illegible]

Conditions for Safe Storage, including any incompatibilities: [illegible]

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

The Following Controls are Recommended for Normal Consumer Use of this Product
Engineering Controls: [illegible]
Personal Protection:
Eye Protection: [illegible]
Skin Protection: [illegible]
Respiratory Protection: [illegible]

For Bulk Processing or Workplace Use the Following Controls are Recommended
Engineering Controls: [illegible]
Personal Protection: [illegible]
Eye Protection: [illegible]
Skin Protection: [illegible]
Respiratory Protection: [illegible]
Work/Hygiene Practices: [illegible]

9 – Physical and Chemical Properties

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

10 – Stability and Reactivity

Reactivity: [illegible]
Chemical Stability: [illegible]
Possibility of Hazardous Reactions: [illegible]
Conditions to Avoid: [illegible]
Incompatible Materials: [illegible]
Hazardous Decomposition Products: [illegible]

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: [illegible]
Skin Contact: [illegible]
Eye Contact: [illegible]
Ingestion: [illegible]

Chronic Effects: [illegible]

Carcinogen Status: [illegible]

Reproductive Toxicity [illegible]

Numerical Measures of Toxicity [illegible]

12 – Ecological Information

Ecotoxicity: [illegible]

Persistence and Degradability: [illegible]

Bioaccumulative Potential: [illegible]

Mobility in Soil: [illegible]

Other Adverse Effects: [illegible]

13 - Disposal Considerations

[illegible]

14 – Transportation Information

[illegible]

15 – Regulatory Information

China Regulations on the Control over Safety of Dangerous Chemicals: [illegible]

16 – Other Information

Indication of changes; [illegible]

Training instructions: [illegible]

Further information: [illegible]

Notice to Reader: [illegible]

Safety Data Sheet

[illegible]

WINDEX® CLEANER ORIGINAL

[illegible]

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name : [illegible]

Recommended use [illegible]

Restrictions on use [illegible]

Manufacturer, importer, supplier [illegible]

Telephone [illegible]

Emergency telephone number [illegible]

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification [illegible]

Labelling

Precautionary statements

Other hazards [illegible]

3. COMPOSITION/INFORMATION ON INGREDIENTS

[illegible]

[illegible]

WINDEX® CLEANER ORIGINAL

[illegible]rs[illegible]n[illegible]1[illegible]

[illegible]r[illegible]n[illegible]

[illegible]s[illegible]n[illegible]

[illegible] b[illegible]r[illegible]

4. FIRST AID MEASURES

Description of first aid measures

Eye contact [illegible]s[illegible]r[illegible]r[illegible]n[illegible]s[illegible]

Skin contact [illegible]s[illegible]r[illegible]r[illegible]n[illegible]s[illegible]

Inhalation [illegible]s[illegible]r[illegible]r[illegible]n[illegible]s[illegible]

Ingestion [illegible]s[illegible]r[illegible]r[illegible]n[illegible]s[illegible]

Most important symptoms and effects, both acute and delayed

[illegible]s[illegible] [illegible]d[illegible]rs[illegible]s[illegible]d[illegible]n[illegible]s[illegible]d[illegible]s[illegible]d[illegible]r[illegible]d[illegible]

[illegible]n[illegible] [illegible]d[illegible]rs[illegible]s[illegible]d[illegible]n[illegible]s[illegible]d[illegible]s[illegible]d[illegible]r[illegible]d[illegible]

[illegible]n[illegible]n[illegible] [illegible]d[illegible]rs[illegible]s[illegible]d[illegible]n[illegible]s[illegible]d[illegible]s[illegible]d[illegible]r[illegible]d[illegible]

[illegible]n[illegible]s[illegible]n[illegible] [illegible]d[illegible]rs[illegible]s[illegible]d[illegible]n[illegible]s[illegible]d[illegible]s[illegible]d[illegible]r[illegible]d[illegible]

Indication of any immediate medical attention and special treatment needed

[illegible]s[illegible]r[illegible]n[illegible]rs[illegible]d[illegible]s[illegible]r[illegible]s[illegible]n[illegible]ss[illegible]r[illegible]s[illegible]s[illegible]d[illegible]

5. FIREFIGHTING MEASURES

Suitable extinguishing media [illegible]s[illegible]r[illegible]s[illegible]r[illegible]r[illegible]s[illegible]s[illegible]n[illegible]dr[illegible]r[illegible]rb[illegible]n[illegible]d[illegible]d[illegible]

Specific hazards during firefighting [illegible]n[illegible]n[illegible]r[illegible]nd[illegible]n[illegible]r[illegible]

Further information [illegible]r[illegible]n[illegible]r[illegible]r[illegible]ns[illegible]r[illegible]r[illegible]s[illegible]n[illegible]b[illegible]d[illegible]s[illegible]n[illegible]nd[illegible]r[illegible]d[illegible]r[illegible]r[illegible]r[illegible]r[illegible]n[illegible]nd[illegible]s[illegible]r[illegible]ss[illegible]r[illegible]s[illegible]n[illegible]n[illegible]d[illegible]br[illegible]n[illegible]r[illegible]s[illegible]

WINDEX® CLEANER ORIGINAL

rs n 1

r n

s n b r

6. ACCIDENTAL RELEASE MEASURES

Personal precautions s r nd n

Environmental precautions s d n r s d r s n r n n

Methods and materials for containment and cleaning up r s s n r s d r s s

7. HANDLING AND STORAGE

Handling

Precautions for safe handling d n s n s nd n rs n r n s s n

Advice on protection against fire and explosion r s r s r r n r r n

Storage

Requirements for storage areas and containers n n r s d n n n s

Other data b nd r n r nd ns

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

s r s n b n s b s d r s r d r r r b n r d n s n ss n d n b b

Personal protective equipment

Respiratory protection s r r n s

Hand protection s r r n s

Eye protection s r r n s

Skin and body protection s r r n s

WINDEX® CLEANER ORIGINAL

rs n 1

r n

s n b r

Hygiene measures nd n rd n d nd s r n nd s r s r r nd n

9. PHYSICAL AND CHEMICAL PROPERTIES

Form d

Color b

Odour r

Odour Threshold s n b r s r d

pH

Melting point/freezing point

Initial boiling point and boiling range

Flash point d s n s

Evaporation rate s n b r s r d

Flammability (solid, gas) s n s s n b s n

Upper/lower flammability or explosive limits s n b r s r d

Vapour pressure d

Vapour density s n b r s r d

WINDEX® CLEANER ORIGINAL

rs n 1 r n

s n b r

Relative density	
Solubility(ies)	s b
Partition coefficient: n-octanol/water	s n b r s r d
Auto-ignition temperature	s n b r s r d
Decomposition temperature	n n r s rd s s s
Viscosity, dynamic	s r r
Viscosity, kinematic	s r r
Oxidizing properties	s n b r s r d
Volatile Organic Compounds Total VOC (wt. %)*	dd n ns s d n d b d r nd ns r r d ns
Other information	n d n d

10. STABILITY AND REACTIVITY

Reactivity	d n r s r n n n nd r nd ns n r s
Chemical stability	b nd r r nd d s r nd ns
Possibility of hazardous reactions	d n rs nd s s r d r d n r rn n n d

WINDEX® CLEANER ORIGINAL

rs n 1

r n

s n b r

Conditions to avoid r s r s

Incompatible materials n b r n r s d n rs r n b s s

Hazardous decomposition products r d s n n d r s rr n s s nd rs

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity
Acute inhalation toxicity
Acute dermal toxicity

GHS Properties	Classification	Routes of entry
	ss n r s d	r
	ss n r s d	r
	ss n r s d	n n s nd Ms
	ss n r s d	n n r
	ss n r s d	n n s
n rr s n rr n	ss n r s d	
r s d rr n	ss n r s d	
n s ns s n	ss n r s d	
s r r s ns s n	ss n r s d	
r n	ss n r s d	
r n n	ss n r s d	

WINDEX® CLEANER ORIGINAL

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Aggravated Medical Condition [illegible]

12. ECOLOGICAL INFORMATION

Product : [illegible]

Toxicity
[illegible]

No environmental data required.

Other adverse effects : [illegible]

13. DISPOSAL CONSIDERATIONS

[illegible]

14. TRANSPORT INFORMATION

[illegible]

Land transport
[illegible]

WINDEX® CLEANER ORIGINAL

rs n 1

r n

s n

b r

Sea transport

ss d s d n r s n n r ns r r ns

Air transport

ss d s d n r s n n r ns r r ns

15. REGULATORY INFORMATION

Notification status

n r d n s r d r s d r r d d r s n n bs n s n r bs n n n r

Notification status

n r d n s r d bs n s n r r r n s nd r n d n n r n n r n

California Prop. 65

s r d d s n n n n s n n r b r d s r n r r r d r

State Right To Know

n n s r s b M ss s s n		
n n s r s b M nn s " n "		
n n s r s b rs " n "		
nns n r		
	n dr d	

16. OTHER INFORMATION

HMIS Ratings [illegible]

Health [illegible]	[illegible]
Flammability [illegible]	[illegible]
Reactivity [illegible]	[illegible]

NFPA Ratings [illegible]

Health [illegible]	[illegible]
Fire	[illegible]
Reactivity [illegible]	[illegible]
Special	[illegible]

[illegible]

Further information

[illegible]

[illegible]	[illegible]

Section 1 Chemical Product and Company Information

80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	**ZINC METAL**
Synonyms	Zinc / Zinc Metal Mossy

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: Not classified
Pictograms: Not classified
Target organs: None known

GHS Classification: Not classified
GHS Label information: **Hazard statement(s):** Not classified
Precautionary statement(s): Not classified

Supplemental information:
SHARP EDGES! ABRASIVE TO SKIN. USE CARE WHEN HANDLING.
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Nommé Chimique	# CAS	%	EINECS
Zinc, mossy	7440-66-6	100%	231-175-3

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: HARMFUL IF INHALED AS FUME. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE MECHANICAL IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE DERMATITIS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use triclass, dry chemical fire extinguisher. Do NOT use water on fire where molten metal is present.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Small chips, turnings, and dust with ignite readily. Dust cloud may be explosive.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale fumes from molten metals. Wash thoroughly after handling. Remove and wash clothing before reuse.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Particulates not otherwise classified	None established	TWA: 5 mg/m^3 respirable fraction	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Metallic silver-gray
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 419°C (787°F)
Boiling point: 907°C (1665°F)
Flash point: Not applicable

Evaporation rate (= 1): Not applicable
Flammability (solid/gas): Not applicable
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 7.12
Solubility(ies): Insoluble

Partition coefficient: Data not available
Auto-ignition temperature: Not applicable
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: Zn
Molecular weight: 65.38

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures. Hydrogen may evolve when in contact with water or damp air.

Incompatibilities with other materials: Strong acids, halogens, acids, alkalies and water.

Hazardous decomposition products: Zinc oxides and zinc fumes. Reacts with water, acids or alkalies to generate hydrogen gas.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
Inhalation: Inhalation of dust or fume may cause irritation to eyes, nose, throat, and cause a metallic taste in the mouth. May cause metal fume fever or produce flu-like symptoms.
Ingestion: May be harmful if swallowed.
Skin: May cause dermatitis.
Eyes: Contact with eyes may cause mechanical irritation.
Signs and symptoms of exposure: Over-heating of alloy can produce metal fumes and oxides. Over-exposure to dust and fumes may cause mouth, eye, and nose irritation.
Additional information: RTECS #: None assigned

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
PBT and vPvB assessment: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: None assigned
Shipping name: Not Regulated.
Hazard class: None assigned **Packing group:** None assigned **Reportable Quantity:** No **Marine pollutant:** No **Exceptions:** No

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Zinc	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

MATERIAL SAFETY DATA SHEET

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9812303 9812307 9812404 9812406 9812506
Effective Date: October 18, 2002

SECTION I NAME

Product	Zinc Nitrate
Chemical Synonyms	Nitrate Acid; Zinc Salt
Formula	$Zn(NO_3)_2 \cdot 6H_2O$
CAS No.	10196-18-6

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

NFPA

Health	1
Flammability	0
Reactivity	3

HAZARD RATING **WHMIS**

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Zinc nitrate	100%	5 mg/m^3 as Zinc metal fumes
DANGER! STRONG OXIDIZER!		

SECTION III PHYSICAL DATA

Melting Point (°C)	36.4°C	Specific Gravity (H_2O = 1)	2.07
Boiling Point (°C)	Decomposes @ 105°C	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	Negligible.	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	200 g/100 ml @ 20°C		
Appearance & Odor	White crystalline flakes; slight odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Not flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Flammable in the presence of reducing materials, combustible materials and heat.

TDG **Class 5.1 Oxidizing substance. UN1514**

SECTION V REACTIVITY DATA

ZZ0080

Chemical Stability	Yes	X	If no, under what conditions?
	No		
Incompatible with Other products	Yes	X	Reducing agents, combustible materials, organic materials, metal powders, alkalies, stannous chloride, phosphorous, thiocyanates, cyanides, sodium hypophosphite.
	No		
Hazardous Decomposition Products	Oxides of nitrogen and zinc.		
Reactive under what conditions	Extremely reactive or incompatible with reducing agents. Highly reactive with alkalis. Slightly reactive to reactive with organic materials, metals. Very slightly to slightly reactive with acids.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Inhalation. Ingestion.
TLV	TWA: 5 mg/m^3 as zinc metal fume.
Toxicity for animals	N/A
Chronic effects on humans	There are no known effects from chronic exposure to this product. Target organs: None known.
Acute effects on humans	Harmful if inhaled or swallowed. Contact causes burns.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep container in a cool, well ventilated place. Keep away from heat. Keep away from incompatible materials. Keep away from sources of ignition and open flames.
Precautions	Avoid contact with skin and eyes. Do not breathe dust. Use with adequate ventilation. Do not ingest. If ingested, seek immediate medical attention.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Wash spill area with soap and water.
Protective Clothing	Gloves, safety glasses, lab coat, dust respirator.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No.	6	Date	October 18, 2002	Approved	Michael Raszeja

Fiche Signalétique

ScholAR Chemistry™

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS 9812303 9812307 9812404 9812406 9812506
Validé par: 18 octobre, 2002

SECTION I Identification

Produit	Nitrate de zinc
Synonymes	Acide de nitrate; Sel de zinc
Formule	$Zn(NO_3)_2 \cdot 6H_2O$
# CAS	10196-18-6

Telephone D'urgence

416-984-3000

NFPA

Santé	1
Flammabilité	0
Reactivité	3

Niveau de risque

Minime	Légere	Modéré	Serieux	Extréme
0	1	2	3	4

WHMIS

SECTION II Ingrédients Dangereux

Nom	%	TWA
Nitrate de zinc	100%	5 mg/m^3 comme fumées du zinc métal
DANGER! COMBURANTE FORTE!		

SECTION III Caractéristiques Physiques

Point de fusion (°C)	36,4°C	Gravité spécifique (Eau = 1)	2,07
Point d'ebullition (°C)	Se décompose @ 105°C	Volatilité % par volume	Sans objet.
Tension de vapeur (mm Hg)	Négligeable.	Taux d'évaporation (=1)	Sans objet.
Densité de la vapeur (Air=1)	Sans objet.		
Solubilité	200 g/100 ml @ 20°C		
Odeur et apparence	Flocons cristallin blanc; inodore.		

SECTION IV Risques D'incendie ou D'explosion

Point d'éclair	Ininflammable.	Limites d'inflmmabilité % par volume Sans objet.	Seuil minimal	Seuil maximal

Moyens d'extinction

Utiliser des poudres chimiques sèches, du CO_2, une mousse d'alcool ou de l'eau pulvérisée. En cas de feu, sapeur-pompeir devra porter en masque adéquate ou un respirateur autonome.

Inflammabilité et risques d'explosion

Le feu ou la chaleur excessive peut produire les produits dangereux de décomposition à produire comme poussière ou vapeur. Inflammable en présence de matières réducteurs, de matières combustibles et de chaleur.

TMD **Classe 5,1 Matière comburante. UN1514**

SECTION V Données sur la Réactivité ZZ0080

Chimique Stabilité	oui	X	Si non, dans quelles condition?
	non		
Incompatibilité avec d'autres produits	oui	X	Agents reducteurs, matières combustible, matières organiques, poussières de metals, alcalis, chlorure stanneux, phosphoreux, thiocyanates, cyanures, hypophosphitede sodium.
	non		

Produits de decomposition dangereux	Oxydes d'azote et le zinc.
Conditions de Réactivité	Extrêmement réactif ou incompatible avec les agents réducteurs. Très réactif avec les alcalis. Légèrement réactif à réactif avec les substances organiques, les métaux. Très légèrement à légèrement réactif avec les acides.

SECTION VI Propriétés Toxicologiques

Voies d'absorption	Inhalation. Ingestion.
LMP	TWA: 5 mg/m^3 comme fumées du zinc métal
Toxicité pour les animaux	Sans objet.
Effets chroniques sur les humains	Il n'y a aucun effet connu dû exposition chronique à ce produit. On ne connaît aucun organe de cible.
Effets aigué sur les humains	Nuisible en cas d'inhalation ou en cas d'ingestion. Le contact causer une brûlures.

SECTION VII Mesures Préventives

Élimination des résidus	Consulter vos autorités locales ou régionales.
Entreposage	Conserver le récipient dans un endroit frais et bien aéré. Conserver à l'écart de la chaleur. Conserver à l'écart des matières incompatibles. Conserver à l'écart de toute source d'ignition et toute flamme nue.
Précautions	Éviter tout contact avec la peau et les yeux. Ne pas inhaler les poussières. Utilsez la ventilation adéquate. Ne pas ingérer. En cas d'ingestion il faut obtenir immédiatement de l'aide médicale.
Déversement ou fuite	Utiliser les instruments nécessaires pour mettre le solide répandu dans un contenant de récuperation approprié. Bien laver la surface où le solide était répandu avec du savon et de l'eau.
Vêtements de protection	Gants, lunettes de sécurité, blousse de laboratoire, respirateur anti-poussières.

SECTION VIII Premiers Soins

Premier Soins Particuliers à Administrer

Ingestion: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale. Contact cutane: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif. Inhalation: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

SECTION IX Renseignements sur la Préparation de la FS

# Rev.	6	Date	18 octobre, 2002	Vérifié par	Michael Raszeja

MATERIAL SAFETY DATA SHEET

Product Zinc Sulfate Monohydrate

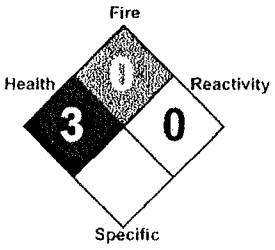
1. Chemical Product and Company Identification

Product Zinc Sulfate Monohydrate , ZINC SULFATE HEPTAHYDRATE.

Synonyms: Dried Zinc Sulfate, White Vitriol, Sulfuric Acid, Zinc Salt (1:1), Monohydrate, Zinc Vitriol

SUPPLIER: HARCROS CHEMICALS, INC.
5200 Speaker Road
Kansas City, KS 66106-1095
913-321-3131

Transportation Emergency Telephone Number: 1-800-424-9300



2. Composition and Information on Ingredients

Ingredient	CAS Number	Weight %	ACGIH TLV	PEL	STEL
ZINC SULFATE MONOHYDRATE	7446-19-7	100 %			
ZINC SULFATE HEPTAHYDRATE	7446-20-0				

3. Hazard Identification

Ingestion
Can burn mouth, throat, and stomach. Harmful if swallowed. May cause vomiting. Ingestion in large quantities may lead to convulsions.

Inhalation
Can cause severe respiratory irritation. May cause breathing difficulties, followed by delayed onset of pulmonary edema.

Eye
Severely irritating. If not removed promptly, will injure eye tissue, which may result in permanent damage.

Skin
Contact causes severe skin irritation and possible burns.

Target organ
Prolonged or repeated exposure may cause liver and kidney damage.

4. First Aid Information

Eye
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

Skin
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Thoroughly wash (or discard) clothing and shoes before reuse.

Inhalation
Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention.

Ingestion
If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures

Flammable Properties
This material is not considered a fire hazard. Combustion generates toxic fumes .

Extinguishing Media
Use dry chemical, alcohol foam or carbon dioxide.

Fire fighting instructions
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Move product from fire area if you can without risk. Do not use water directly on material. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. Accidental Release Measures

Clean-up
Ventilate and evacuate area. Vacuum or sweep up material and place in a disposal

container. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Do not flush to sewer.

7. Handling and Storage

Handling

Wash thoroughly after handling. Use with adequate ventilation. Avoid breathing (dust, vapor, mist, gas). Avoid contact with eyes, skin, and clothing.

Storage

Store in a cool dry place. Protect from heat, sparks, flame and isolated from incompatible materials. Keep container closed when not in use. Keep away from food and drinking water.

8. Exposure Controls and Personal Protection

Engineering controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Respirators

A NIOSH-approved air purifying respirator with the appropriate cartridge or canister for the hazards may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other clothing

Wear safety glasses with side shields (or goggles) and a face shield. Use gloves, and other body coverings, recommended for this material by manufacturers or suppliers based on test data showing adequate permeation and penetration resistance.

9. Physical and Chemical Properties

Physical State	Granular Solid
Specific Gravity	3.28
Color/Appearance	White
Odor	Odorless
pH	5.9 @ 10% Soln
Boiling/Cond. Point	D >500 C
Melting/Freezing Point	Looses H2O >238 C
Solubility	50% by wt
Percent Volatile	<1
Molecular Formula	ZnSO4-H2O
Molecular Weight	179.46

10. Stability and Reactivity

Thermal Stability

Stable under normal conditions of use and storage.

Incompatibility
Contact with strong oxidizers may result in fire or explosion hazard.

Conditions to Avoid
Excessive heat, humidity or sunlight. Incompatibles.

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
Thermal decomposition may release toxic fumes of zinc oxide. When heated to decomposition it emits toxic fumes of oxides of sulfur.

11. Toxicological Information

Carcinogen
NTP: No
IARC: No
OSHA: No

There is no experimental toxicity data for this product. Refer to the data listed below for relative toxicity assessment.

TOXICITY DATA: (ANHYDROUS ZINC SULFATE)
Oral Toxicity: LD50: 2949 Mg/Kg (Rat)
LD 50: 57 Mg/Kg (Mouse)
TDLo: 106 Mg/Kg (Human) Cardiovascular, Gastrointestinal, Pulmonary Effects.
TDLo: 45 Mg/Kg/7D (Human) Cardiovascular, Gastrointestinal, Blood Effects.

Subcutaneous Toxicity: LDLo: 330 Mg/Kg (Rat)
LDLo: 1500 Ug/Kg (Mouse)
LDLo: 78 Mg/Kg (Dog)

Intraperitoneal: LD50: 71750 ug/Kg (Mouse)

Intravenous Toxicity: LDLo: 50 Mg/Kg (Rat)
LDLo: 66 Mg/Kg (Dog)

Eye: 420 ug MOD (Rabbit)

12. Ecological Information

Keep out of waterways.

13. Disposal Considerations

Disposal Method
Dispose in accordance with applicable federal, state, local environmental and regulatory requirements.

14. Transportation Information

This product is not regulated in surface transportation in non-bulk quantities. The information below is for shipments exceeding 1,000 pounds in a single package, container, tank.

DOT Shipping Name: Environmentally Hazardous Substance, solid, N.O.S. (Zinc Sulfate Monohydrate)
DOT Hazard Class: 9
Hazardous Ingredients: Zinc Sulfate Monohydrate
Identification Number:UN 3077
Packing Group: III
Label: Class 9

Note: During an incident involving this material, use of DOT Emergency Response Guide No. 171 is also recommended.

15. Regulatory Information

Toxic Substances Control Act(TSCA)
Chemical ingredients are on the TSCA inventory.

Superfund Reportable Quantity (RQ)
1000#/454 KG - $ZnSO_4$

Hazardous Waste No.
Not Regulated.

Sara Title III (Section 313)
This product contains a zinc compound which is subject to reporting.

State Lists
This material contains ingredients that are listed for reporting or disclosure in the states of California, Connecticut, Illinois, Louisiana, Massachusetts, New Jersey, New York or Pennsylvania. Please check with the appropriate state agencies.

For States Not Listed
Please check with the appropriate agencies.

California Proposition 65 Warning
This product may contain chemicals known to the state of California to cause cancer, or birth defects or other reproductive harm.

Canadian Lists

DSL/NDSL
The ingredients are on the Domestic Substances List.

WHMIS

Zinc Sulfate is item number 1726 from the ingredient disclosure list and is subject to reporting at 1% threshold.

16. Other Information

The information provided in this Material Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals, Inc., provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals, Inc., knows of no medical condition other than those noted on this Material Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.

MATERIAL SAFETY DATA SHEET

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

MSDS No.: ZZ0125
Revision Date: September 5, 2013
Approved by: James A. Bertsch

MSDS No.: ZZ0125

Section 1 Chemical Product and Company Information

Product	**ZINC SULFIDE**
Synonyms	Sachtolith

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Hazards Identification

Emergency Overview

CAUTION!
MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES AND MUCOUS MEMBRANES.
Contact with acids liberates poisonous and flammable gas. Do not breathe dust. Keep container closed and away from acids, combustible materials and heat. Wash thoroughly after handling. Target organs: None known.

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Health	0
Fire	0
Reactivity	0
Contact	0

HMIS *

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Zinc sulfide	1314-98-3	98-100%	None established.
Barium sulfate	7727-43-7	~1%	None established.

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume. Use water spray to keep fire-exposed containers cool.

Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: Not flammable.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A **Upper:** N/A

NFPA

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

None listed.

Section 6 Accidental Release Measures

Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Recover for use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage — GENERAL STORAGE CODE GREEN

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dusts. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from moisture.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Solid.
Appearance: White powder.
Odor: No odor.
pH: N/A
Vapor pressure (mm Hg): Negligible.
Vapor Density (Air = 1): N/A
Evaporation rate (Water = 1): <1
Viscosity: N/A
Boiling point: N/A
Freezing / Melting point: N/A
Decomposition temperature: N/A
Solubility in water: Insoluble.
Specific gravity (H_2O = 1): 4.0
Percent volatile (%): N/A
Molecular formula: ZnS
Molecular weight: 97.45

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures and heat.

Incompatibilities with other materials: Strong acids, iodine monochloride. Contact with acids liberates poisonous and flammable gas.

Hazardous decomposition products: Zinc oxides, sulfur oxides and hydrogen sulfide.

Section 11 Toxicological Information

Effects of overexposure: The toxicity of zinc sulfide has not been quantified. Zinc sulfide may irritate the skin, eyes and mucous membranes. To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

RTECS #: ZH5400000
Oral-rat: LD50: >2 gm/kg
Inhalation-rat: LC50: >5,040 mg/m^3/4 hour
Skin-rat: LD50: >2 gm/kg

Section 12 Ecological Information

Aquatic toxicity: Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: N/A
Shipping name: Not Regulated.
Hazard class: N/A
Packing group: N/A
Exceptions: N/A

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

TSCA - listed, **EINECS** - listed (215-251-3), **DSL** - listed.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards.

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FICHE SIGNALÉTIQUE

 # MSDS: ZZ0125
Date de révision: 5 septembre, 2013
Vérifié par: James A. Bertsch

MSDS #: ZZ0125

Section 1 L'information de produit chimique et de compagnie

Produit	**SULFURE DE ZINC**
Synonymes	Sachtolith

CHEMTREC 24 Numéros De Téléphone De Secours D'Heure (800) 424-9300

Section 2 Identification De Risques

Vue d'ensemble de secours

ATTENTION!
PEUT ETRE NOCIF EN CAS D'INGESTION. PEUT CAUSER L'IRRITATION DE LA PEAU, LES YEUX ET LES MEMBRUNES MUQUEUSE.
Le contact avec des acides libère le gaz toxique et inflammable. Ne respirez pas la poussière. Maintenez le récipient fermé et à partir des acides, des matériaux combustibles et de la chaleur. Lavez complètement après manipulation. On ne connaît aucun organe de cible.

0 = Minimal
1 = Léger
2 = Modéré
3 = Sérieux
4 = Sévère

Santé	0
Inflammabilité	0
Réactivité	0
Contact	0

HMIS *

Section 3 Composition / Information Sur Des Ingrédients

Nommé Chimique	# CAS	%	TLV Units (ACGIH 2001)
Sulfure de zinc	1314-98-3	98-100%	Aucun établi.
Sulfate de baryum	7727-43-7	~1%	Aucun établi.

Section 4 Mesures De Premiers Soins

INGESTION: Consulter une médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié.

INHALATION: Sortir la victime à l'air frais. Si elle ne respire plus il faut lui donner de la respiration artificielle. Si la respiration est difficile, donnez l'oxygène. Assurez-vous que la victime se repose dans un endroit bien aéré. Obtenir immédiatement de l'aide médicale.

CONTACT OCULAIRE: Vérifer si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immèdiatement à l'eau courante pendant au moins 15 minutes en gardant les paupiéres ouvertes. Obtenir de l'aide médicale.

CONTACT CUTANE: Laver doucement et entièrement la peau contaminée à l'eau courante avec un savon doux et non-abrasif.

Section 5 Mesures De Lutte Contre l'Incendie

Informations générales: En états du feu, portez un appareil respiratoire de NIOSH/MSHA-approved art de l'auto-portrait-contained et une pleine vitesse protectrice. Le feu ou la chaleur excessive peut produire les produits dangereux de décomposition à produire comme poussière ou vapeur. Employez le jet d'eau pour maintenir les récipients feu-exposés frais.

S'éteindre des médias: Employez tous les médias appropriés pour s'éteindre le feu de support.
Point d'éclair: Ininflammable.
La température d'auto-allumage: Sans objet.
Limites d'explosion: Seuil minimal: Sans objet. **Seuil maximal:** Sans objet.

NFPA

0 = Minimal
1 = Léger
2 = Modéré
3 = Sérieux
4 = Sévère

Aucune liste.

Section 6 Mesures De Déchargement Accidentel

Évacuez le personnel hors de danger. Utilisez le matériel de protection personnel approprié comme indiqué dans la section 8. Fournissez à ventilation proportionnée. Récupérez pour l'usage si non souillé. Balayez ou nettoyez à l'aspirateur vers le haut et placez dans un récipient approprié pour la disposition appropriée. Secteur de flaque de lavage avec de l'eau le savon et. Évitez l'écoulement dans donnent l' assaut à les égouts et les fossés qui mènent aux voies d'eau.

Section 7 Manipulation Et Stockage — GÉNÉRAL CODE D'ENTREPOSAGE VERT

Étiquette lue sur le récipient avant utilisation. Ne portez pas les verres de contact en travaillant avec des produits chimiques. Récipient de subsistance étroitement fermé. Pour l'usage de laboratoire seulement. Pas pour l'usage de drogue, de nourriture ou de ménage. Subsistance hors de portée des enfants.
Manipulation: Utilisation avec à ventilation proportionnée. Évitez le contact avec les yeux, la peau et l'habillement. Évitez l'ingestion. N'inhalez pas les poussières. Lavage complètement après manipulation. Habillement de lavage avant réutilisation. **Stockage:** Magasin dans un secteur frais, sec, bien-aéré loin des substances incompatibles. Protégez contre l'humidité.

Section 8 Commandes D'Exposition / Protection Personnelle

Commandes de technologie: Des équipements stockant ou utilisant ce matériel devraient être équipés d'un service d'eyewash et une douche et un feu de sûreté s'éteignant le matériel. Personnel devraient porter des verres de sûreté, des lunettes, ou le masque de protection, le manteau de laboratoire ou le tablier, gants protecteurs appropriés, le feu s'éteignant le matériel. Employez à ventilation proportionnée pour maintenir des concentrations aéroportées basses. **Protection respiratoire:** Aucun ne devrait être nécessaire dans le laboratoire normal manipulant aux températures ambiantes. En cas de les conditions poussiéreuses, travaillez dans le capot de vapeur ou portez un respirateur de NIOSH/MSHA-approved.

Section 9 Propriétés Physiques Et Chimiques

État physique: Solide.
Apparence: Poudre blanche.
Odeur: Aucune odeur.
pH: Sans objet.
Pression de vapeur (mm Hg): Négligeable.
Densité De Vapeur (air = 1): Sans objet.
Taux d'évaporation (L'eau = 1): <1
Viscosité: Sans objet.
Point d'ébullition: Sans objet.
Point de congélation/de fusion: Sans objet.
La température de décomposition: Sans objet.
Solubilité dans l'eau: Insoluble.
Gravité spécifique (Eau = 1): 4,0
Pour cent volatils (%): Sans objet.
Formule moléculaire: ZnS
Poids moléculaire: 97,45

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable
Polymérisation dangereuse: Ne se produira pas.
Conditions à éviter: Les températures excessives et la chaleur.

Incompatibilités avec d'autres matériaux: Acides forts, monochlorure d'iode. Le contact avec des acides libère le gaz toxique et inflammable.

Produits dangereux de décomposition: Oxydes de zinc, oxydes de soufre et sulfure d'hydrogène.

Section 11 L'Information Toxicologique

Effets de surexposition: La toxicité du sulfure de zinc n'a pas été mesurée. Le sulfure de zinc peut irriter la peau, les yeux et les membrunes muqueuses. Au meilleur de notre connaissance les propriétés chimiques, physiques et toxicologiques n'ont pas été à fond étudiées. Les données spécifiques ne sont pas disponibles. Procédures appropriées d'exercice pour réduire au minimum des risques.

RTECS #: ZH5400000
Oral-rat: LD50: >2 gm/kg
Inhalation-rat: LC50: >5,040 mg/m^3/4 hour
Skin-rat: LD50: >2 gm/kg

Section 12 L'Information Écologique

Toxicité aquatique: Données pas encore disponibles.

Section 13 Considérations De Disposition

Ces directives de disposition sont prévues pour la disposition des quantités de catalogue-taille seulement. Les règlements fédéraux peuvent appliquer au récipient vide. L'état et/ou les règlements locaux peuvent être différents. Débarassez-vous selon tous les gens du pays, état et règlements fédéraux ou contrat avec une agence chimique autorisée de disposition. Le matériel propre peut être débarassé dans un remblai sanitaire ou être débarassé dans un incinérateur approuvé.

Section 14 L'Information De Transport

Nombre d'UN/NA: Sans objet.
Nom d'expédition: Non réglé.
Classe de risque: Sans objet.
Groupe d'emballage: Sans objet.
Exceptions: Sans objet.

Section 15 L'Information De Normalisation

Un produit chimique est considéré être listed si le nombre de CAS pour la forme anhydre est sur la liste d'inventaire.

TSCA - listed, **EINECS** - listed (215-251-3), **DSL** - listed.

Section 16 L'Information Additionnelle