

Section 1 Chemical Product and Company Information

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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
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Synonyms	DPIP / Dichloroindophenol
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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.

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.	Evaporation rate (= 1): Data not available	Partition coefficient: Data not available
Odor: No odor.	Flammability (solid/gas): Not applicable	Auto-ignition temperature: Data not available
Odor threshold: Data not available	Explosion limits: Lower / Upper: Not applicable	Decomposition temperature: Data not available
pH: Data not available	Vapor pressure (mm Hg): Negligible	Viscosity: Data not available
Melting / Freezing point: Data not available	Vapor density (Air = 1): Data not available	Molecular formula: C ₁₂ H ₆ Cl ₂ NNaO ₂
Boiling point: Decomposes	Relative density (Specific gravity): >1	Molecular weight: 290.08
Flash point: Not applicable	Solubility(ies): Soluble in water.	

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

Carcinogenicity: 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.

Section 1 L'information de produit chimique et de compagnie

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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
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Synonymes	DPIP / Dichloroindophénol
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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 supplémentaires:

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.

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	Taux d'évaporation (= 1): Données non disponibles	Coefficient de partage: Données non disponibles
Odeur: Aucun odeur	Inflammabilité (solide / gaz): Non applicable	Auto-inflammation: Données non disponibles
Seuil de l'odeur: Données non disponibles.	Limites d'explosivité: Bas / Max: Non applicable	Température de décomposition: Données non disponibles
pH: Données non disponibles.	Pression de vapeur (mm Hg): Négligeable	Viscosité: Données non disponibles
Point de fusion / congélation: Données non disponibles	Densité de vapeur (Air = 1): Données non disponibles	Formule moléculaire: C ₁₂ H ₆ Cl ₂ NNaO ₂
Point d'ébullition: Se décompose	Densité relative (gravité spécifique): >1	Poids moléculaire: 290.08
Point d'éclair: Non applicable	Solubilité (s): Soluble dans l'eau.	

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: Comburentes 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

Mutagenicité 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 cancérogène 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 cancérogène 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 cancérogène ni comme cancérogène 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.



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

NorthStar AR Adhesive Remover

1.2. Recommended use and restrictions on use

Recommended use

Adhesive Remover

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Aerosol: Category 1.

Gas Under Pressure: Dissolved gas.

Simple Asphyxiant.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Gas cylinder | Exclamation mark | Health Hazard |

Pictograms

**Hazard Statements**

Extremely flammable aerosol.

Contains gas under pressure; may explode if heated.

May cause drowsiness or dizziness.

May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

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.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear eye/face protection.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

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.

If eye irritation persists: Get medical advice/attention.

IF exposed: Call a POISON CENTER or doctor/physician.

Specific treatment (see Notes to Physician on this label).

Storage:

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

Keep container tightly closed.

Store locked up in a well-ventilated place.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

Supplemental Information:

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Heavy Alkylate Naphtha	64741-65-7	40 - 70 Trade Secret *
Cyclohexane	110-82-7	10 - 30 Trade Secret *

Isobutane	75-28-5	1 - 20 Trade Secret *
Propane	74-98-6	5 - 15 Trade Secret *

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. Get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance

Formaldehyde
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and

could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR - AFFF type foam is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with detergent and water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	
Naphtha	64741-65-7	OSHA	TWA:400 mg/m3(100 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	simple asphyxiant
Propane	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	
Isobutane	75-28-5	ACGIH	STEL:1000 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
 AIHA : American Industrial Hygiene Association
 CMRG : Chemical Manufacturer's Recommended Guidelines
 OSHA : United States Department of Labor - Occupational Safety and Health Administration
 TWA: Time-Weighted-Average
 STEL: Short Term Exposure Limit
 CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust

ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

Half facepiece or full facepiece supplied-air respirator

Organic vapor respirators may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Aerosol
Odor, Color, Grade:	Clear; strong solvent odor.
Odor threshold	<i>No Data Available</i>
pH	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Boiling Point	-44 °F
Flash Point	-156 °F
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>
Vapor Pressure	<i>No Data Available</i>
Vapor Density	1.6 [Ref Std: AIR=1]
Density	0.65 - 0.70 g/ml
Specific Gravity	0.65 - 0.70
Solubility in Water	Moderate
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>

Viscosity	No Data Available
Hazardous Air Pollutants	0 % weight
Volatile Organic Compounds	100 %

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Sparks and/or flames
Heat

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

May be harmful if inhaled.

Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Single exposure, above recommended guidelines, may cause:

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE20 - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Heavy Alkylate Naphtha	Dermal	Rat	LD50 > 3,000 mg/kg
Heavy Alkylate Naphtha	Inhalation-Vapor (4 hours)	Rat	LC50 > 9.3 mg/l
Heavy Alkylate Naphtha	Ingestion	Rat	LD50 > 7,500 mg/kg
Isobutane	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Heavy Alkylate Naphtha	Rabbit	Minimal irritation
Isobutane	Professional judgement	No significant irritation

Cyclohexane	Rabbit	Mild irritant
Propane	Rabbit	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Heavy Alkylate Naphtha	Rabbit	No significant irritation
Isobutane	Professional judgement	No significant irritation
Cyclohexane	Rabbit	Mild irritant
Propane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Heavy Alkylate Naphtha	Guinea pig	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Heavy Alkylate Naphtha	In Vitro	Not mutagenic
Heavy Alkylate Naphtha	In vivo	Not mutagenic
Isobutane	In Vitro	Not mutagenic
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Propane	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Heavy Alkylate Naphtha	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Heavy Alkylate Naphtha	Inhalation	Not classified for development	Rat	NOAEL 900 ppm	during organogenesis
Cyclohexane	Inhalation	Not classified for female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for development	Rat	NOAEL 6.9 mg/l	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Heavy Alkylate Naphtha	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Not available	NOAEL Not available	
Heavy Alkylate Naphtha	Inhalation	respiratory irritation	Some positive data exist, but the	Not	NOAEL Not	

			data are not sufficient for classification	available	available	
Heavy Alkylate Naphtha	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Not available	NOAEL Not available	
Isobutane	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
Isobutane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isobutane	Inhalation	respiratory irritation	Not classified	Mouse	NOAEL Not available	
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Heavy Alkylate Naphtha	Dermal	bone marrow	Not classified	Rat	NOAEL 2,000 mg/kg/day	4 weeks
Heavy Alkylate Naphtha	Dermal	hematopoietic system	Not classified	Rat	NOAEL 2,000 mg/kg	4 weeks
Heavy Alkylate Naphtha	Inhalation	hematopoietic system liver kidney and/or bladder	Not classified	Rat	NOAEL 10.2 mg/l	13 weeks
Heavy Alkylate Naphtha	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 2,000 mg/kg/day	4 weeks
Isobutane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4,500 ppm	13 weeks
Cyclohexane	Inhalation	liver	Not classified	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Not classified	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Not classified	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 8.6 mg/l	30 weeks

Aspiration Hazard

Name	Value
Heavy Alkylate Naphtha	Aspiration hazard
Cyclohexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Facility must be capable of handling aerosol cans. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact manufacturer for more information

EPCRA 311/312 Hazard Classifications:

Physical Hazards

Flammable (gases, aerosols, liquids, or solids)

Gas under pressure

Health Hazards

Simple Asphyxiant

Specific target organ toxicity (single or repeated exposure)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient
Cyclohexane

C.A.S. No
110-82-7

% by Wt
Trade Secret 10 - 30

15.2. State Regulations

Contact manufacturer for more information

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact manufacturer for more information

15.4. International Regulations

Contact manufacturer for more information

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 4 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	30-8564-4	Version Number:	5.00
Issue Date:	05/22/18	Supersedes Date:	02/19/18

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3M USA SDSs are available at www.3M.com

Acetic Acid



MSDS # 4.00

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**

ScholarAR 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/m³ and ACGIH: 10 ppm TLV, 15 ppm as STEL.

Section 9: Physical and Chemical Properties

Molecular formula	CH ₃ COOH.	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) .**WHMIS Canada:** CLASS B-3: Combustible; CLASS E: Corrosive liquid.**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:** 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.

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.	ORL-MUS LD ₅₀ : >24 g/kg
Chronic effects: N.A.	IHL-RAT LC ₅₀ : N.A.
Target organs: 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

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

Revision Date: February 6, 2014

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017**Revision:** 10.18.2017**Trade Name:** Alconox**I Identification of the substance/mixture and of the supplier****I.1 Product identifier****Trade Name:** Alconox**Synonyms:****Product number:** Alconox**I.2 Application of the substance / the mixture :** Cleaning material/Detergent**I.3 Details of the supplier of the Safety Data Sheet**

Manufacturer	Supplier
Alconox, Inc. 30 Glenn Street White Plains, NY 10603 1-914-948-4040	

Emergency telephone number:**ChemTel Inc**

North America: 1-800-255-3924

International: 01-813-248-0585

2 Hazards identification**2.1 Classification of the substance or mixture:**

In compliance with EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments.

Hazard-determining components of labeling:

Tetrasodium Pyrophosphate
Sodium tripolyphosphate
Sodium Alkylbenzene Sulfonate

2.2 Label elements:

Skin irritation, category 2.
Eye irritation, category 2A.

Hazard pictograms:**Signal word:** Warning**Hazard statements:**

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with 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.
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.
P501 Dispose of contents and container as instructed in Section 13.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017**Revision:** 10.18.2017**Trade Name:** Alconox**Additional information:** None.**Hazard description****Hazards Not Otherwise Classified (HNOC):** None**Information concerning particular hazards for humans and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

3 Composition/information on ingredients**3.1 Chemical characterization :** None**3.2 Description :** None**3.3 Hazardous components (percentages by weight)**

Identification	Chemical Name	Classification	Wt. %
CAS number: 7758-29-4	Sodium tripolyphosphate	Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	12-28
CAS number: 68081-81-2	Sodium Alkylbenzene Sulfonate	Acute Tox. 4; H303 Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	8-22
CAS number: 7722-88-5	Tetrasodium Pyrophosphate	Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	2-16

3.4 Additional Information : None.**4 First aid measures****4.1 Description of first aid measures****General information:** None.**After inhalation:**

Maintain an unobstructed airway.

Loosen clothing as necessary and position individual in a comfortable position.

After skin contact:

Wash affected area with soap and water.

Seek medical attention if symptoms develop or persist.

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes.

Remove contact lens(es) if able to do so during rinsing.

Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly.

Seek medical attention if irritation, discomfort, or vomiting persists.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017

Revision: 10.18.2017

Trade Name: **Alconox****4.2 Most important symptoms and effects, both acute and delayed**

None

4.3 Indication of any immediate medical attention and special treatment needed:

No additional information.

5 Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

For safety reasons unsuitable extinguishing agents : None**5.2 Special hazards arising from the substance or mixture :**

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters**Protective equipment:**

Wear protective eye wear, gloves and clothing.

Refer to Section 8.

5.4 Additional information :

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols.

Avoid contact with skin, eyes and clothing.

6 Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures :**

Ensure adequate ventilation.

Ensure air handling systems are operational.

6.2 Environmental precautions :

Should not be released into the environment.

Prevent from reaching drains, sewer or waterway.

6.3 Methods and material for containment and cleaning up :

Wear protective eye wear, gloves and clothing.

6.4 Reference to other sections : None**7 Handling and storage****7.1 Precautions for safe handling :**

Avoid breathing mist or vapor.

Do not eat, drink, smoke or use personal products when handling chemical substances.

7.2 Conditions for safe storage, including any incompatibilities :

Store in a cool, well-ventilated area.

7.3 Specific end use(s):

No additional information.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017

Revision: 10.18.2017

Trade Name: **Alconox****8 Exposure controls/personal protection****8.1 Control parameters :**

- a) 7722-88-5, Tetrasodium Pyrophosphate, OSHA TWA 5 mg/m³
- b) Dusts, non-specific OEL, Irish Code of Practice
 - (i) Total inhalable 10 mg/m³ (8hr)
 - (ii) Respirible 4mg/m³ (8hr)
 - (iii) Tetrasodium Pyrophosphate, OSHA TWA 5 mg/m³, (8hr)

8.2 Exposure controls**Appropriate engineering controls:**

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Respiratory protection:

Not needed under normal use conditions.

Protection of skin:

Select glove material impermeable and resistant to the substance or preparation. Protective gloves recommended to comply with EN 374. Take note of break through times, permeability, and special workplace conditions, such as mechanical strain, duration of contact, etc. Protective gloves should be replaced at the first sign of wear.

Eye protection:

Safety goggles or glasses, or appropriate eye protection. Recommended to comply with ANSI Z87.1 and/or EN 166.

General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

9 Physical and chemical properties

Appearance (physical state, color):	White and cream colored flakes - powder	Explosion limit lower: Explosion limit upper:	Not determined or not available. Not determined or not available.
Odor:	Not determined or not available.	Vapor pressure at 20°C:	Not determined or not available.
Odor threshold:	Not determined or not available.	Vapor density:	Not determined or not available.
pH-value:	9.5 (aqueous solution)	Relative density:	Not determined or not available.
Melting/Freezing point:	Not determined or not available.	Solubilities:	Not determined or not available.
Boiling point/Boiling range:	Not determined or not available.	Partition coefficient (n-octanol/water):	Not determined or not available.
Flash point (closed cup):	Not determined or not available.	Auto/Self-ignition temperature:	Not determined or not available.
Evaporation rate:	Not determined or not available.	Decomposition	Not determined or not available.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017**Revision:** 10.18.2017**Trade Name:** Alconox

Flammability (solid, gaseous):	Not determined or not available.	Viscosity:	a. Kinematic: Not determined or not available. b. Dynamic: Not determined or not available.
Density at 20°C:	Not determined or not available.		

10 Stability and reactivity

- 10.1 Reactivity :** None
- 10.2 Chemical stability :** None
- 10.3 Possibility hazardous reactions :** None
- 10.4 Conditions to avoid :** None
- 10.5 Incompatible materials :** None
- 10.6 Hazardous decomposition products :** None

11 Toxicological information**11.1 Information on toxicological effects :****Acute Toxicity:****Oral:**

: LD50 > 5000 mg/kg oral rat - Product .

Chronic Toxicity: No additional information.**Skin corrosion/irritation:**

Sodium Alkylbenzene Sulfonate: Causes skin irritation. .

Serious eye damage/irritation:

Sodium Alkylbenzene Sulfonate: Causes serious eye irritation .

Tetrasodium Pyrophosphate: Rabbit - Risk of serious damage to eyes .

Respiratory or skin sensitization: No additional information.**Carcinogenicity:** No additional information.**IARC (International Agency for Research on Cancer):** None of the ingredients are listed.**NTP (National Toxicology Program):** None of the ingredients are listed.**Germ cell mutagenicity:** No additional information.**Reproductive toxicity:** No additional information.**STOT-single and repeated exposure:** No additional information.**Additional toxicological information:** No additional information.**12 Ecological information**

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017**Revision:** 10.18.2017**Trade Name:** Alconox**12.1 Toxicity:**

Sodium Alkylbenzene Sulfonate: Fish, LC50 1.67 mg/l, 96 hours.

Sodium Alkylbenzene Sulfonate: Aquatic invertebrates, EC50 Daphnia 2.4 mg/l, 48 hours. Sodium

Alkylbenzene Sulfonate: Aquatic Plants, EC50 Algae 29 mg/l, 96 hours.

Tetrasodium Pyrophosphate: Fish, LC50 - other fish - 1,380 mg/l - 96 h.

Tetrasodium Pyrophosphate: Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 391 mg/l - 48 h.

12.2 Persistence and degradability: No additional information.**12.3 Bioaccumulative potential:** No additional information.**12.4 Mobility in soil:** No additional information.**General notes:** No additional information.**12.5 Results of PBT and vPvB assessment:****PBT:** No additional information.**vPvB:** No additional information.**12.6 Other adverse effects:** No additional information.**13 Disposal considerations****13.1 Waste treatment methods (consult local, regional and national authorities for proper disposal)****Relevant Information:**

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities. (US 40CFR262.11).

14 Transport information

14.1 UN Number: ADR, ADN, DOT, IMDG, IATA	None						
14.2 UN Proper shipping name: ADR, ADN, DOT, IMDG, IATA	None						
14.3 Transport hazard classes: ADR, ADN, DOT, IMDG, IATA	<table> <tr> <td>Class:</td> <td>None</td> </tr> <tr> <td>Label:</td> <td>None</td> </tr> <tr> <td>LTD. QTY:</td> <td>None</td> </tr> </table>	Class:	None	Label:	None	LTD. QTY:	None
Class:	None						
Label:	None						
LTD. QTY:	None						
US DOT							
Limited Quantity Exception:	None						
Bulk:	Non Bulk:						
RQ (if applicable): None	RQ (if applicable): None						
Proper shipping Name: None	Proper shipping Name: None						
Hazard Class: None	Hazard Class: None						
Packing Group: None	Packing Group: None						
Marine Pollutant (if applicable): No additional information.	Marine Pollutant (if applicable): No additional information.						

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017

Revision: 10.18.2017

Trade Name: **Alconox**

Comments: None	Comments: None
14.4 Packing group: ADR, ADN, DOT, IMDG, IATA	None
14.5 Environmental hazards :	None
14.6 Special precautions for user:	None
Danger code (Kemler):	None
EMS number:	None
Segregation groups:	None
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.	
14.8 Transport/Additional information:	
Transport category:	None
Tunnel restriction code:	None
UN "Model Regulation":	None

15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.****North American****SARA****Section 313 (specific toxic chemical listings):** None of the ingredients are listed.**Section 302 (extremely hazardous substances):** None of the ingredients are listed.**CERCLA (Comprehensive Environmental Response, Clean up and Liability Act) Reportable****Spill Quantity:** None of the ingredients are listed.**TSCA (Toxic Substances Control Act):****Inventory:** All ingredients are listed.**Rules and Orders:** Not applicable.**Proposition 65 (California):****Chemicals known to cause cancer:** None of the ingredients are listed.**Chemicals known to cause reproductive toxicity for females:** None of the ingredients are listed.**Chemicals known to cause reproductive toxicity for males:** None of the ingredients are listed.**Chemicals known to cause developmental toxicity:** None of the ingredients are listed.**Canadian****Canadian Domestic Substances List (DSL):**

All ingredients are listed.

EU**REACH Article 57 (SVHC):** None of the ingredients are listed.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 10.18.2017**Revision:** 10.18.2017**Trade Name:** Alconox**Germany MAK:** Not classified.**EC 648/2004** – This is an industrial detergent. Contains >30% phosphate, 15-30% anionic surfactant, <5% EDTA salts**EC 551/2009** – This is not a laundry or dishwasher detergent**EC 907/2006** – Contains no enzymes, optical brighteners, perfumes, allergenic fragrances, or preservative agents**Asia Pacific****Australia****Australian Inventory of Chemical Substances (AICS):** All ingredients are listed.**China****Inventory of Existing Chemical Substances in China (IECSC):** All ingredients are listed.**Japan****Inventory of Existing and New Chemical Substances (ENCS):** All ingredients are listed.**Korea****Existing Chemicals List (ECL):** All ingredients are listed.**New Zealand****New Zealand Inventory of Chemicals (NZOIC):** All ingredients are listed.**Philippines****Philippine Inventory of Chemicals and Chemical Substances (PICCS):** All ingredients are listed.**Taiwan****Taiwan Chemical Substance Inventory (TSCI):** All ingredients are listed.**16 Other information****Abbreviations and Acronyms:** None**Summary of Phrases****Hazard statements:**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

NFPA: 1-0-0**HMIS:** 1-0-0**Precautionary statements:**

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 If on skin: Wash with 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.

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.

P501 Dispose of contents and container as instructed in Section 13.

Manufacturer Statement:

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 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.

Section 1 Chemical Product and Company Information

Page E1 of E2



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 CO₂ 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/in³

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

Carcinogenicity: 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	$Al_2(SO_4)_3 \cdot 18H_2O$	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 °C

Specific gravity: 1.69

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers.

When heated to decomposition, emits toxic fumes of SO_x.

Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: N.A.

Chronic effects: N.A.

Target organs: N.A.

ORL-RAT LD₅₀: 6207 mg/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 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

This Safety Data Sheet (SDS) 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. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

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: Gum Solution

Product Code: Gum Solution

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: Gum Solution

Product Class: Formulated Product

Product Size: 16oz., 1 gal.

AMACO Gum Solution

Section II – Hazardous Ingredients

Reportable Components

CAS#

Vapor Pressure
Mm Hg @ Temp

Weight
Percent

No reportable quantities of hazardous ingredients.

This product carries the “AP” Seal. Labeling conforms to ASTM D 4236/LHAMA.

Section III – Physical / Chemical Characteristics

Boiling Range: NA

Specific Gravity (H2O=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 Hazards

Inhalation Health Risks and Symptoms of Exposure: None

Eye and Skin 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.

Product Code: Gum Solution

Skin Absorption Health Risks and Symptoms of Exposure: None

Ingestion Health Risks and Symptoms of Exposure: None

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 you 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 in trash. 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 container. Uncovered material 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 for those that may be contained in our written acknowledgement.

Prepared by: L. Jenkins
1/2015

MSDS No.: AA0210

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

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

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.

NFPA

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



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 (H₂O = 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

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 Identification

Page E1 of E2



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

Boreal Science
399 Vansickle Road
St. Catharines, 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.

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 NH₃ 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: NH₄Cl

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

Carcinogenicity: 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

Material Name: **CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT**

SDS ID: **CRAY-053**

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

Safety Data Sheet

Material Name: **CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT**

SDS ID: **CRAY-053**

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 ASTM 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.

Safety Data Sheet

Material Name: CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT

SDS ID: CRAY-053

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

Safety Data Sheet

Material Name: CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT

SDS ID: CRAY-053

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.

Safety Data Sheet

Material Name: CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT

SDS ID: CRAY-053

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

Safety Data Sheet

Material Name: **CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT**

SDS ID: **CRAY-053**

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

Safety Data Sheet

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SDS ID: CRAY-053

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:

Safety Data Sheet

Material Name: CRAYOLA® PREMIER& ARTISTA II® TEMPERA PAINT

SDS ID: CRAY-053

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.



Sensitive Eyes Sterile Saline Spray

MATERIAL SAFETY DATA SHEET

Effective Date: 11/07/05 Supersedes: 9/29/00

Page 1 of 6

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sensitive Eyes Sterile Saline Spray
Product Code: 620732, 620728
Chemical Family: NA
Manufacturer: Bausch & Lomb, Incorporated
Address: 1400 N. Goodman Street
 Rochester, New York 14609

For Information: 1-800-553-5340
For Emergency: 1-800-535-5053

Section 2: COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	COMPONENT NAME	% W/V	OCCUPATIONAL EXPOSURE LIMITS / GUIDELINES										UNITS
			OSHA PEL		ACGIH TLV		NIOSH REL		IRELAND		HSE		
			TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	TWA /STEL	
10043-35-3	Boric Acid	< 5	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NA
1303-96-4	Sodium Borate	< 1	NE	NE	5	NE	5	NE	5	NE	5	NE	mg/m ³
7647-14-5	Sodium Chloride	0.4	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NA
7727-37-9	Nitrogen (Propellant)	≤ 110 psi	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NA
7732-18-5	Purified Water, USP	q.s 100	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NA
TOTAL		100											

N/E: Not Established
 TWA: 8-Hour Time-Weighted Average
 N/A: Not Applicable
 ACGIH: American Conference of Governmental Industrial Hygienists
 NIOSH: National Institute for Occupational Safety & Health
 q.s.: Sufficient Quantity

OSHA: Occupational Safety & Health Administration
 MG/M3: Milligrams Per Cubic Meter
 STEL: Short-Term Exposure Limit
 C: Ceiling Limit
 REL: Recommended Exposure Limit

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Colorless to pale yellow, odorless liquid. This product is intended to be administered to soft (hydrophilic) contact lenses and is not intended to be ingested or administered through any other routes of exposure. Keep this and all drugs out of the reach of children.

Sensitive Eyes Sterile Saline Spray

MATERIAL SAFETY DATA SHEET

Page 2 of 6

Section 3: HAZARDS IDENTIFICATION (cont.)

PRECAUTIONS:

This product is intended to be administered to soft (hydrophilic) contact lenses. If any discomfort develops, immediately discontinue use of this product. If discomfort persists, contact your eye care professional immediately. Use in accordance with product literature.

If you are allergic to any ingredient in this product, **DO NOT USE**.

POTENTIAL HEALTH EFFECTS

EYE:

Non-irritating to the eyes when used as directed.

SKIN:

Non-irritating to skin or mucous membranes when used as directed.

INGESTION:

Small amounts (a tablespoonful) swallowed are not likely to cause injury; swallowing larger amounts may cause gastrointestinal irritation.

INHALATION:

No hazard when used as directed.

CHRONIC HEALTH EFFECTS

No known chronic hazards.

CARCINOGENICITY:

NTP: No ingredients listed.

IARC: No ingredients listed.

OSHA: No ingredients listed.

Section 4: FIRST AID MEASURES

EYES:

If discomfort or irritation develops, immediately discontinue product use and contact your eye care professional.

SKIN:

No specific treatment is necessary since this material is not likely to be hazardous by contact with the skin or mucous membranes.

Sensitive Eyes Sterile Saline Spray

MATERIAL SAFETY DATA SHEET

Page 3 of 6

Section 4: FIRST AID MEASURES (cont.)

INGESTION:

No specific treatment is necessary since this material is not likely to be hazardous by ingestion. If large quantities are accidentally ingested (greater than a tablespoon), get medical attention immediately.

INHALATION:

No specific treatment is necessary since this material is not likely to be hazardous by inhalation. If exposed to excessive levels of mists, remove to fresh air and get medical attention if cough or other symptoms develop.

Section 5: FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: Non-Combustible

Method: NA

EXTINGUISHING MEDIA:

Water spray, carbon dioxide, dry chemical powder or appropriate foam for surrounding fire.

HAZARDOUS COMBUSTION PRODUCTS:

None identified.

SPECIAL FIRE FIGHTING INSTRUCTIONS:

Caution: Product container is under pressure. As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

General Information:

Contain spill and absorb with a suitable inert material, then place in a chemical waste container. Dispose of in accordance with Section 13.

Section 7: HANDLING AND STORAGE

HANDLING:

No special handling is required. Use in accordance with product literature. **Do not puncture or incinerate product container.**

STORAGE:

Store at 59-86° F (15-30° C) to maintain product stability.

Sensitive Eyes Sterile Saline Spray

MATERIAL SAFETY DATA SHEET

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Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION:

No special controls or personal protection required under conditions of intended use.

SKIN PROTECTION:

No special controls or personal protection required under conditions of intended use.

EYE PROTECTION:

No special controls or personal protection required under conditions of intended use.

ADDITIONAL PROTECTIVE CLOTHING & EQUIPMENT:

NA

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES:

Appearance / Physical State: Colorless, To Pale Yellow Liquid
Odor: Odorless

CHEMICAL PROPERTIES:

Boiling Point:	Not Determined	Melting Point:	Not Applicable
Vapor Pressure:	Not Determined	Vapor Density:	Not Determined
Solubility In Water:	Highly Soluble	Specific Gravity (H2O = 1):	1.0
pH:	7.1 – 7.5	Freezing Point:	Not Determined

Molecular Weight: Mixture, Not Applicable

Section 10: STABILITY AND REACTIVITY

GENERAL:

Stable under normal conditions.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Avoid excessive heat, product container is under pressure.

HAZARDOUS POLYMERIZATION:

Will not occur.

HAZARDOUS DECOMPOSITION:

None identified.

Sensitive Eyes Sterile Saline Spray

MATERIAL SAFETY DATA SHEET

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Section 11: TOXICOLOGICAL INFORMATION

RTECS No.: ED4550000

Boric Acid

Toxicity Data: ORL-RAT LD50: 2660 MG/KG
ORL-HUMAN LDLO: 429 MG/KG

Irritation Data: SKN-HUMAN 15 MG/3D (MILD)

RTECS No.: SC7310000

Sodium Borate

Toxicity Data: ORL-MOUSE LD50: 3250 MG/KG

RTECS No.: VZ4725000

Sodium Chloride

Toxicity Data: ORL-RAT LD50: 3 GM/KG
ORL-MOUSE LD50: 4 GM/KG

NOTE: Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12: ECOLOGICAL INFORMATION

No data available on the environmental impact of this product.

Section 13: DISPOSAL CONSIDERATIONS

All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the sole responsibility of the waste generator.

Section 14: TRANSPORT INFORMATION

	US DOT	IATA	IMO	RID/ADR	Canadian DG
Shipping Name:	Consumer Commodity*	Consumer Commodity	No Information Available	No Information Available	No Information Available
Hazard Class:	ORM-D	9			
UN Number:	NA	ID 8000			
Package Group:	NA	910 (Packaging Instructions)**			

* For air shipments, marking must be "ORM-D Air". Shipping papers must be prepared.

** Maximum carton weight 25 kilograms.

Sensitive Eyes Sterile Saline Spray

MATERIAL SAFETY DATA SHEET

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Section 15: REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200):

Sensitive Eyes Sterile Saline Spray is considered non-hazardous under the Occupational Safety & Health Administration Hazard Communication Standard.

TOXIC SUBSTANCE CONTROL ACT (TSCA):

CAS# 10043-35-3 is listed on the TSCA Inventory.
CAS# 1303-96-4 is listed on the TSCA Inventory.
CAS# 7647-14-5 is listed on the TSCA Inventory.
CAS# 7727-37-9 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.

SARA TITLE III (Superfund Amendments and Reauthorization Act):

SECTION 302 (Extremely Hazardous Substances): No Components Listed
SECTION 311, 312 (Hazard Categories): NA
SECTION 313 (Toxic Chemicals): No Components Listed

CALIFORNIA PROPOSITION 65:

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels that would require a warning under the statute.

Section 16: OTHER INFORMATION

To the best of our knowledge, the information contained herein is accurate. However, neither Bausch & Lomb Incorporated 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. NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE IS MADE. In no event shall Bausch & Lomb Incorporated or any of its subsidiaries be liable for any special, incidental or consequential damages.

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: Benedicts Qualitative Solution
Catalog Numbers: S71366R
Synonyms: None
Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
For information in the US, call: 201-796-7100
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#: 5968-11-6
Chemical Name: Sodium carbonate monohydrate
%: 10
EINECS#: unlisted
Hazard Symbols:
Risk Phrases:

CAS#: 6132-04-3
Chemical Name: Trisodium citrate dihydrate
%: 15
EINECS#: unlisted
Hazard Symbols:
Risk Phrases:

CAS#: 7732-18-5
Chemical Name: Water
%: 73.5
EINECS#: 231-791-2
Hazard Symbols:
Risk Phrases:

CAS#: 7758-99-8
Chemical Name: Cupric sulfate pentahydrate
%: 1.5
EINECS#: unlisted

Hazard Symbols:

Risk Phrases:

Text for R-phrases: see Section 16

Hazard Symbols: None listed

Risk Phrases: None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Causes respiratory tract irritation. Causes skin irritation. This substance has caused adverse reproductive and fetal effects in animals. Causes severe eye irritation. May cause liver and kidney damage. Target Organs: Kidneys, liver.

Potential Health Effects

- Eye:** Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities.
- Skin:** Causes skin irritation.
- Ingestion:** May cause severe digestive tract irritation with abdominal pain, nausea, vomiting and diarrhea. May cause hemorrhaging of the digestive tract.
- Inhalation:** May cause respiratory tract irritation. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities.
- Chronic:** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause liver and kidney damage. May cause reproductive and fetal effects.

Section 4 - First Aid Measures

- Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
- Skin:** Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
- 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.
- Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
 - Autoignition** Not applicable.
 - Temperature:**
 - Flash Point:** Not available
 - Explosion Limits:** Not available
 - Lower:**
 - Explosion Limits:** Not available
 - Upper:**

NFPA Rating: NFPA Rating:

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.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale.
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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Trisodium citrate anhydrous	none listed	none listed	none listed
Sodium carbonate anhydrous	none listed	none listed	none listed
Sodium carbonate monohydrate	none listed	none listed	none listed
Trisodium citrate dihydrate	none listed	none listed	none listed
Water	none listed	none listed	none listed
Cupric sulfate anhydrous	none listed	1 mg/m ³ TWA (as Cu, except Copper fume) (listed under Copper compounds, n.o.s.)	none listed
Cupric sulfate pentahydrate	none listed	1 mg/m ³ TWA (as Cu, except Copper fume) (listed under Copper compounds, n.o.s.)	none listed

OSHA Vacated PELs: Trisodium citrate anhydrous: None listed Sodium carbonate anhydrous: None listed Sodium carbonate monohydrate: None listed Trisodium citrate

dihydrate: None listed Water: None listed Cupric sulfate anhydrous: None listed Cupric sulfate pentahydrate: None listed

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 natural rubber gloves, apron, and/or clothing.
- 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:** Liquid
- Color:** clear blue
- Odor:** none reported
- pH:** Not available
- Vapor Pressure:** Not available
- Vapor Density:** Not available
- Evaporation Rate:** Not available
- Viscosity:** Not available
- Boiling Point:** 212 deg F (100.00°C)
- Freezing/Melting Point:** Not available
- Decomposition Temperature:** Not available
- Solubility in water:** Freely Soluble
- Specific Gravity/Density:** 1.2
- Molecular Formula:** Mixture
- Molecular Weight:** 0

Section 10 - Stability and Reactivity

- Chemical Stability:** Stable.
- Conditions to Avoid:** High temperatures, incompatible materials.
- Incompatibilities with Other Materials:** Not available
- Hazardous Decomposition Products:** Irritating and toxic fumes and gases.
- Hazardous Polymerization:** Has not been reported.

Section 11 - Toxicological Information

- RTECS#:** CAS# 68-04-2: GE8300000
CAS# 497-19-8: VZ4050000
CAS# 5968-11-6: None listed
CAS# 6132-04-3: None listed
CAS# 7732-18-5: ZC0110000
CAS# 7758-98-7: GL8800000
CAS# 7758-99-8: GL8900000
- LD50/LC50:** RTECS: Not available. RTECS:
CAS# 497-19-8: Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, eye: 50 mg Severe;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 1200 mg/m³/2H;
Inhalation, rat: LC50 = 2300 mg/m³/2H;
Oral, mouse: LD50 = 6600 mg/kg;
Oral, mouse: LD50 = 6600 mg/kg;
Oral, rat: LD50 = 4090 mg/kg;

RTECS:
CAS# 5968-11-6:
RTECS:
CAS# 6132-04-3:
RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;

RTECS:
CAS# 7758-98-7: Oral, mouse: LD50 = 369 mg/kg;
Oral, mouse: LD50 = 87 mg/kg;
Oral, rat: LD50 = 300 mg/kg;
Oral, rat: LD50 = 960 mg/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: Trisodium citrate anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Sodium carbonate anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Sodium carbonate monohydrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Trisodium citrate dihydrate - 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.
Cupric sulfate anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Cupric sulfate pentahydrate - 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

Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Please contact Fisher Scientific for shipping information

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name: Not available

Hazard Class:

UN Number:

Packing Group:

USA RQ: CAS# 7758-98-7: 10 lb final RQ; 4.54 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 68-04-2: 0

CAS# 497-19-8: 1

CAS# 5968-11-6: 1

CAS# 6132-04-3: 0

CAS# 7732-18-5: Not available

CAS# 7758-98-7: 2

CAS# 7758-99-8: 2

Canada

CAS# 68-04-2 is listed on Canada's DSL List

CAS# 497-19-8 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

CAS# 7758-98-7 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# 68-04-2 is not listed on Canada's Ingredient Disclosure List.

CAS# 497-19-8 is listed on Canada's Ingredient Disclosure List

CAS# 5968-11-6 is not listed on Canada's Ingredient Disclosure List.

CAS# 6132-04-3 is not listed on Canada's Ingredient Disclosure List.

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7758-98-7 is listed on Canada's Ingredient Disclosure List

CAS# 7758-99-8 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 68-04-2 is listed on the TSCA Inventory.

CAS# 497-19-8 is listed on the TSCA Inventory.

CAS# 5968-11-6 is not listed on the TSCA Inventory because it is considered a hydrate. It is considered to be listed on the TSCA Inventory because the CAS number for the anhydrous form is on the TSCA Inventory (40CFR72.101(u)(2)).

CAS# 613
04-3 is no
on the TS
Inventory
because it
a hydrate.
is consider
to be listed
the CAS
number for
the
anhydrous
form in on
the Invent
(40CFR72
(u)(2)).

CAS# 773
18-5 is list
on the TS
Inventory.

CAS# 775
98-7 is list
on the TS
Inventory.

CAS# 775
99-8 is no
on the TS
Inventory
because it
a hydrate.
is consider
to be listed
the CAS
number for
the
anhydrous
form in on
the Invent
(40CFR72
(u)(2)).

Section 16 - Other Information

MSDS Creation Date: 9/02/1997

Revision #5 Date 3/31/2009

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 event 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.

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 Pharmaceuticaaan 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 is 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 is on the Inventory (40CFR720.3(u)(2)).

Section 16 - Other Information

MSDS Creation Date: 2/25/2002

Revision #3 Date 1/11/2007

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 event 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.

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, BROMOTHYMOL 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).
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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
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Label elements

GHS label elements	Not Applicable
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SIGNAL WORD	NOT APPLICABLE
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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	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ 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	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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**

	<ul style="list-style-type: none"> ▶ Foam. ▶ Dry chemical powder. ▶ BCF (where regulations permit). ▶ Carbon dioxide.
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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
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ 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...

BROMOTHYMOL BLUE

Safe handling	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ Polyethylene or polypropylene container. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ▶ 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	<p>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.</p> <p>The basic types of engineering controls are:</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> ▶ 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	<p>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.</p> <p>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.</p> <p>Suitability and durability of glove type is dependent on usage.</p>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ 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...

BROMOTHYMOL BLUE

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	<ul style="list-style-type: none"> ▶ 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
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BROMOTHYMOL BLUE

	Not Available	Not Available
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* 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.
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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 or chlorine. Bromide may be oxidized 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: <ul style="list-style-type: none"> ▶ 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.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
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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"
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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.

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SAFETY DATA SHEET

1. Identification

Product identifier	Butane
Other means of identification	
SDS number	WC026
Recommended use	Hand Torch Fuel
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer/Supplier	Worthington Industries Incorporated
Address	200 Old Wilson Bridge Road Columbus, OH 43085 United States
Email:	cylinders@worthingtonindustries.com
Telephone Number:	866-928-2657
CHEMTREC - 24 HOURS:	
Within US and Canada	800-424-9300
Outside US and Canada	+1 703-741-5970 (collect calls accepted)

2. Hazard(s) identification

Physical hazards	Flammable gases Gases under pressure	Category 1 Liquefied gas
Health hazards	Not classified.	
OSHA defined hazards	Simple asphyxiant	
Label elements		
Signal word	Danger	
Hazard statement	Extremely flammable gas. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.	
Precautionary statement		
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Wear respiratory protection.	
Response	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.	
Storage	Protect from sunlight. Store in a well-ventilated place.	
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	CAS number	%
Isobutane	75-28-5	60-80
Butane	106-97-8	20-40

Composition comments	Gas concentrations are in percent by volume.
4. First-aid measures	
Inhalation	Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.
Skin contact	Not likely, due to the form of the product. If frostbite occurs, immerse affected area in warm water (not exceeding 105°F/41°C). Keep immersed for 20 to 40 minutes. Get medical attention immediately.
Eye contact	Not likely, due to the form of the product. If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention promptly if symptoms persist or occur after washing.
Ingestion	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
Most important symptoms/effects, acute and delayed	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.
Indication of immediate medical attention and special treatment needed	Exposure may aggravate pre-existing respiratory disorders. Provide general supportive measures and treat symptomatically.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Dry chemical powder. Carbon dioxide (CO ₂). Water fog. Foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Extremely flammable gas. Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. 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	Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	Extremely flammable gas. Contents under pressure. Pressurized container may explode when exposed to heat or flame.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment (See Section 8).
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. Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. For waste disposal, see section 13 of the SDS.
Environmental precautions	Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Do not breathe gas. Avoid prolonged exposure. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO₂ = 135 mmHg). Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Do not store, incinerate, or heat this material above 120 degrees Fahrenheit. Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Protect cylinders from damage. Stored containers should be periodically checked for general condition and leakage. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Isobutane (CAS 75-28-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m ³ 800 ppm
Isobutane (CAS 75-28-5)	TWA	1900 mg/m ³ 800 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Follow standard monitoring procedures.

Appropriate engineering controls

Provide adequate ventilation and minimize the risk of inhalation of gas.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved safety glasses or goggles.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear protective clothing appropriate for the risk of exposure.

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.

Thermal hazards

Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance

Physical state Gas (Liquefied).

Form Compressed liquefied gas.

Color Colorless.

Odor Faint. Gasoline-like.

Odor threshold Not available.

pH	Not available.
Melting point/freezing point	-216.76 °F (-138.2 °C)
Initial boiling point and boiling range	-11.7 °F (-24.28 °C)
Flash point	-76.3 °F (-60.2 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Extremely flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.8 %
Flammability limit - upper (%)	8.4 %
Vapor pressure	28 psig (Approximate)
Vapor density	> 2 (Air = 1)
Relative density	0.57 (H ₂ O = 1)
Solubility(ies)	
Solubility (water)	< 0.1 % in water at 70°F
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	548.33 °F (286.85 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	100 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Polymerization will not occur. May form explosive mixture with air. This product may react with oxidizing agents.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Strong acids. Halogens. Nitrates.
Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Inhalation	High concentrations: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Skin contact	Contact with liquefied gas may cause frostbite.
Eye contact	Contact with liquefied gas may cause frostbite.
Ingestion	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
Symptoms related to the physical, chemical and toxicological characteristics	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themself.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Not classified.

Serious eye damage/eye irritation	Not classified.
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.
IARC Monographs. Overall Evaluation of Carcinogenicity	Not listed.
NTP Report on Carcinogens	Not listed.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not regulated.
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	Exposure over a long period of time may cause central nervous system effects.

12. Ecological information

Ecotoxicity	The product is not expected to be hazardous to the environment.
Persistence and degradability	Not applicable.
Bioaccumulative potential	Not applicable.
Partition coefficient n-octanol / water (log Kow)	
Butane (CAS 106-97-8)	2.89
Isobutane (CAS 75-28-5)	2.76
Mobility in soil	Not relevant, due to the form of the product.
Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions	Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose in accordance with all applicable regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1011
UN proper shipping name	Butane
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.
Special provisions	T50

Packaging exceptions 306
Packaging non bulk 304
Packaging bulk 314, 315

IATA

UN number UN1011
UN proper shipping name Butane
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.

IMDG

UN number UN1011
UN proper shipping name Butane
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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Butane (CAS 106-97-8) LISTED
Isobutane (CAS 75-28-5) 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

Not listed.

SARA 311/312 Hazardous chemical Yes

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)

Butane (CAS 106-97-8)
 Isobutane (CAS 75-28-5)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

Butane (CAS 106-97-8)
 Isobutane (CAS 75-28-5)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)
 Isobutane (CAS 75-28-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Butane (CAS 106-97-8)
 Isobutane (CAS 75-28-5)

US. Rhode Island RTK

Butane (CAS 106-97-8)
 Isobutane (CAS 75-28-5)

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)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
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
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	28-May-2015
Revision date	30-May-2016
Version #	02
Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
HMIS® ratings	Health: 1 Flammability: 4 Physical hazard: 1

NFPA ratings

References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens (2004)
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2009)
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

All information in this Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

MSDS No.: CC0060
 Revision Date: August 30, 2013
 Approved by: James A. Bertsch

MSDS No.: CC0060

Section 1 Chemical Product and Company Information

Product	CALCIUM CARBONATE
Synonyms	Marble Chips, Boiling Chips

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

Section 2 Hazards Identification

Emergency Overview	
--------------------	--

0 = Minimal	Health	0
1 = Slight	Fire	0
2 = Moderate	Reactivity	0
3 = Serious	Contact	0
4 = Severe		

HMIS *

CAUTION!

Use extreme care in the use of marble chips in generating CO₂. Avoid contact with skin and eyes. Store in a cool, dry place away from acids and acid fumes. Target organs: None known.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Calcium carbonate	1317-65-3	≥ 99%	TWA: 10 mg/m ³ (powder)
Quartz	14808-60-7	0.1-1.0%	TWA: 0.025 mg/m ³ (respirable) (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. The fumes evolved by burning calcium carbonate in air is composed of calcium oxide (quick lime). This material is irritating to the skin, eyes and mucous membranes.

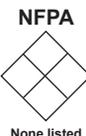
Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Flash Point: N/A

Autoignition temperature: N/A

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

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. 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.

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, stone chips.

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: 826°C (1520°F)

Solubility: 0.001% @ 0°C; 0.002% @ 100°C

Specific gravity (H₂O = 1): 2.85

Percent volatile (%): N/A

Molecular formula: CaCO₃

Molecular weight: 100.09

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Acids.

Incompatibilities with other materials: Reacts with acids.

Hazardous decomposition products: Carbon dioxide.

Section 11 Toxicological Information

Effects of overexposure: *Respirable dust particles containing crystalline silica may be generated by crushing. There are no known hazards associated with this material when used as recommended.*

This product may contain crystalline silica (suspect cancer hazard), which is considered a hazard by inhalation in respirable form. May aggravate pre-existing upper respiratory and lung diseases such as bronchitis, emphysema, asthma, etc. Prolonged inhalation of the dust may cause scarring of the lungs, with cough and shortness of breath. A delayed lung injury, silicosis, may result from breathing free silica. Silicosis is a form of disabling, progressive and sometimes fatal pulmonary fibrosis characterized by the presence of typical modulation in the lungs. Crystalline silica is listed with IARC as a Group 1 carcinogen.

RTECS #: FF9335000

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 (215-279-6), WHMIS-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. * Hazardous Materials Industrial Standards.

Section 1 Chemical Product and Company Information

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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 HYDROXIDE
Synonyms	Hydrated Lime / Slaked Lime / Caustic Lime / Calcium Hydrate

Section 2 Hazards Identification

Signal word: DANGER**Pictograms:** GHS05**Target organs:** Eyes, Skin, Respiratory system**GHS Classification:**

Skin corrosion (Category 1B)

Eye damage (Category 1)

GHS Label information: Hazard statement:

H314: Causes severe skin burns and eye damage.

Precautionary statement:

P260: Do not breathe dust.

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
Calcium hydroxide	1305-62-0	>98%	215-137-3

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 SEVERE BURNS AND 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: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES 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 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.

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 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 dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White to yellow powder.

Odor: No odor.

Odor threshold: Data not available.

pH: Data not available.

Melting / Freezing point: as CaO 2850°C (5162°F)

Boiling point: as CaO 579°C (1076°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): Data not available

Vapor density (Air = 1): Data not available

Relative density (Specific gravity): 2.24

Solubility(ies): 0.185% @ 0°C in water.

Partition coefficient: Data not available

Auto-ignition temperature: Data not available

Decomposition temperature: Data not available.

Viscosity: Data not available.

Molecular formula: Ca(OH)₂

Molecular weight: 74.10

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Absorbs CO₂ from air to form calcium carbonate.

Incompatible materials: Acids, fluorine.

Hazardous decomposition products: None known.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 7340 mg/kg

Skin corrosion/irritation: Skin-rabbit - Irritant.

Serious eye damage/irritation: Eyes-rabbit - Severe irritant

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: 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 sore throat, burning sensation.

Ingestion: Ingestion may cause burning sensation, abdominal pain, abdominal cramps, vomiting.

Skin: Contact with skin causes redness, roughness, pain, dry skin, burns, blisters.

Eyes: Contact with eyes causes redness, pain, severe deep burns.

Signs and symptoms of exposure: Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: EW2800000

Section 12 Ecological Information

Toxicity to fish: *Gambusia affinis* (fish, fresh water), LC50 = 220 mg/L/48 hours

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
Calcium hydroxide	Listed	Not listed	D002	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.

Section 1 L'information de produit chimique et de compagnie

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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	HYDROXYDE DE CALCIUM
Synonymes	Chaux hydraté / Chaux éteinte / Chaux vive / Calcium hydraté

Section 2 Identification De Risques

Mention d'avertissement: DANGER

Pictogrammes: GHS05

Les organes cibles: Les yeux, la peau et le système respiratoire



Classification par le GHS:

Skin corrosion (Catégorie 1B)

Eye damage (Catégorie 1)

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 poussières.

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
Hydroxyde de calcium	1305-62-0	>98%	215-137-3

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 BRÛLURES GRAVES ET 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: PEUT ÊTRE NOCIF EN CAS D'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: 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.

Preca
P260:
P264:
P280:
P301:
CAS
P303:
clothi
P363:
avant
P304:
breath
P310:
CENT
P305:
Remo
P405:
P501:
accor

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)
	Hydroxyde de calcium	TWA: 5 mg/m ³	TWA: 5 mg/m ³ Fraction respirable	TWA: 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 blanche à jaune.	Taux d'évaporation (= 1): Données non disponibles	Coefficient de partage: Données non disponibles
Odeur: Aucun odeur.	Inflammabilité (solide / gaz): Données non disponibles.	Auto-inflammation: Données non disponibles
Seuil de l'odeur: Données non disponibles.	Limites d'explosivité: Bas / Max: Données non disponibles	Température de décomposition: Données non disponibles.
pH: Données non disponibles.	Pression de vapeur (mm Hg): Données non disponibles	Viscosité: Données non disponibles.
Point de fusion / congélation: comme CaO 2850°C (5162°F)	Densité de vapeur (Air = 1): Données non disponibles	Formule moléculaire: Ca(OH) ₂
Point d'ébullition: comme CaO 579°C (1076°F)	Densité relative (gravité spécifique): 2.24	Poids moléculaire: 74.10
Point d'éclair: Ininflammable	Solubilité (s): 0.185% @ 0°C dans l'eau.	

Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable

Polymérisation dangereuse: N'aura pas lieu.

Conditions à éviter: Absorbe le CO₂ de l'air pour former le carbonate de calcium.

Matières incompatibles: Acides, fluor.

Produits dangereux de décomposition: Aucune connu.

Section 11 L'Information Toxicologique

Toxicité aiguë: Oral-rat LD50: 7340 mg/kg

La corrosion de la peau et l'irritation: Peau de lapin - Irritant

Des lésions oculaires graves / irritation: Yeux-lapin - Irritant sévère

Respiratoire ou sensibilisation de la peau: Données non disponibles

Mutagenicité 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 cancérogène 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 cancérogène 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 cancérogène ni comme cancérogène 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 des maux de gorge, sensation de brûlure.

Ingestion: L'ingestion peut provoquer une sensation de brûlure, des douleurs abdominales, des crampes abdominales, des vomissements.

Peau: Le contact avec la peau provoque des rougeurs, rugosité, la douleur, la peau sèche, des brûlures, des cloques.

Yeux: Le contact avec les yeux provoque des rougeurs, des douleurs, brûlures profondes graves.

Les signes et les symptômes de l'exposition: Procédures appropriées d'exercice pour réduire au minimum des risques

Informations complémentaires: RTECS #: EW2800000

Section 12 L'Information Écologique

Toxicité pour les poissons: Gambusia affinis (fish, fresh water), LC50 = 220 mg/L/48 hours

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
Hydroxyde de calcium	Listed	Not listed	D002	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.

SAFETY DATA SHEET

14-May-2019

1. IDENTIFICATION

Product identifier

Product Name Comet with Bleach

Other means of identification

Product Code 40000831

Recommended use of the chemical and restrictions on use

Recommended Use Consumer use. Cleaning agent.
Uses advised against Do not mix with other chemicals

Details of the supplier of the safety data sheet

Supplier Address

HomeCare Labs, Inc.
P.O. Box 491150
Lawrenceville, GA 30049-1002
Telephone: (800) 949-7946

Emergency telephone number

Emergency Telephone Chemtrec (Transportation) 1-800-424-9300, 703-527-3887
Poison Control Center (Medical) : (877) 800-5553

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation

Category 2

Label elements

Emergency Overview

Warning

Hazard statements

Causes serious eye irritation



Color white

Physical state Solid

Odor Pine

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
 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

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

99.15% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical Name	CAS No.	Weight-%
Calcium carbonate	1317-65-3	80-100
Sodium carbonate	497-19-8	4-8
Trichloroisocyanuric acid	87-90-1	0.1-1.5

4. FIRST AID MEASURES

Description of first aid measures

General advice	Immediate medical attention is required.
Eye contact	Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

The product causes irritation of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Avoid creating dust. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Calcium carbonate 1317-65-3	-	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Pine
Appearance	powder	Odor threshold	No information available
Color	white		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	11.5	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	No information available	
Water solubility	No information available	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Density	No information available	
Bulk density	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point No information available
 Molecular weight No information available
 VOC Content (%) No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Avoid contact with eyes. Irritating to eyes.

Skin contact Substance may cause slight skin irritation.

Ingestion Do not taste or swallow.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium carbonate 497-19-8	= 4090 mg/kg (Rat)	-	= 2300 mg/m ³ (Rat) 2 h
Trichloroisocyanuric acid 87-90-1	= 406 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	>50 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

94.84% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sodium carbonate 497-19-8	242: 120 h Nitzschia mg/L EC50	300: 96 h Lepomis macrochirus mg/L LC50 static 310 - 1220: 96 h Pimephales promelas mg/L LC50 static	265: 48 h Daphnia magna mg/L EC50
Trichloroisocyanuric acid 87-90-1	-	0.13 - 0.5: 96 h Lepomis macrochirus mg/L LC50 static 0.06 - 0.11: 96 h Oncorhynchus mykiss mg/L LC50 static	0.16 - 0.18: 48 h Daphnia magna mg/L EC50 Static 0.21: 48 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.

14. TRANSPORT INFORMATION

DOT	Not regulated
IATA	Not regulated
IMDG	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

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

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Calcium carbonate 1317-65-3	X	X	X
Trichloroisocyanuric acid 87-90-1	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number This product does not contain any substances regulated as pesticides

Difference between SDS and CPSC label

This product is regulated under Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act (16 CFR Part 1500) . These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace product labels.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards 2	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Affairs
Revision Date 14-May-2019
Revision Note No information available
Disclaimer

The information provided in this Material 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

Congo Red

MSDS # 207.00

Section 1: Product and Company Identification

Congo Red

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
Red-brown crystalline powder; no odor.

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.

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

Section 3: Composition / Information on Ingredients

Congo Red, (573-58-0), 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

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: Congo Red: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	C ₃₂ H ₂₂ N ₆ Na ₂ O ₆ S ₂ .	Appearance	Red-brown crystalline powder.
Molecular weight	696.68.	Odor	No odor.
Specific Gravity	1 g/mL @ 20°C.	Odor Threshold	N/A.
Vapor Density (air=1)	N/A.	Solubility	Soluble .
Melting Point	N/A.	Evaporation rate	N/A (<i>Butyl acetate = 1</i>).
Boiling Point/Range	N/A.	Partition Coefficient	N/A (<i>log P_{OW}</i>).
Vapor Pressure (20°C)	N/A.	pH	pH indicator, 3.0 blue to 5.0 red.
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:** May react or be incompatible with oxidizing materials.**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*Congo Red:* LD50 [oral, rat]; 15,200 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 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.

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: 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.

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12/20/2011

MSDS # 231.00

Copper Powder



Section 1: Product and Company Identification

Copper Powder

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

*Reddish brown powder, no odor.***HMIS (0 to 4)****CAUTION!** Combustible solid. Dust dispersed in air becomes explosive when exposed to ignition source.
Target organs: Liver, kidneys

Health	0
Fire Hazard	1
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Copper Metal (7440-50-8), 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

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 a dust cartridge. Exposure guidelines: Copper : OSHA PEL: 1 mg/m³, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	Cu.	Appearance	Reddish brown powder.
Molecular weight	63.55.	Odor	No odor.
Specific Gravity	8.92 g/mL @ 20°C.	Odor Threshold	N/A.
Vapor Density (air=1)	N/A.	Solubility	N/A.
Melting Point	1083°C.	Evaporation rate	N/A. (<i>Butyl acetate = 1</i>).
Boiling Point/Range	2595°C.	Partition Coefficient	N/A. (<i>log P_{ow}</i>).
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, acids, bromates, chlorates, iodates, acetylene and halogens.

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

Copper : 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 (231-159-6).

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.

Material Safety Data Sheet

Cupric Chloride



1. Product and company identification

Product name : Cupric Chloride
Product code : 2731
Supplier : EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown, NJ 08027
856-423-6300 Technical Service
Monday-Friday: 8:00 -5:00 PM
Synonym : Copper (II) Chloride Dihydrate
Material uses : Other non-specified industry: Analytical reagent.
Validation date : 1/22/2009.
In case of emergency : 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

2. Hazards identification

Emergency overview : WARNING!
HARMFUL IF SWALLOWED.
CAUSES SEVERE EYE IRRITATION.
CAUSES RESPIRATORY TRACT AND SKIN IRRITATION.
MAY BE HARMFUL IF INHALED.
Toxic to aquatic organisms, may cause long-term adverse effect in the aquatic environment.
Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Physical state : Solid. [Crystals.]

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

Routes of entry : Inhalation. Ingestion.

Potential acute health effects

Inhalation : Irritating to respiratory system.
Ingestion : Toxic if swallowed.
Skin : Irritating to skin.
Eyes : Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

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.

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3 . Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>% by weight</u>
Cupric Chloride	10125-13-0	100

4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. 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. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5 . Fire-fighting measures

- Flammability of the product** : No specific fire or explosion hazard.
- Extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides
- 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.

6 . Accidental release measures

- Personal precautions** : 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 (see section 8).
- 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 for cleaning up**
- Spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, 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.

7. Handling and storage

- Handling** : Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
- Storage** : Store in accordance with local regulations. Store in original container, protected from direct sunlight. Keep container tightly closed and sealed until ready for use.

8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.
- Hands** : 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. Recommended: neoprene
- Eyes** : 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 or dusts. Recommended: safety glasses with side-shields
- Skin** : 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.
Recommended: lab coat
- 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.

9. Physical and chemical properties

- Physical state** : Solid. [Crystals.]
- Color** : Blue-green
- Odor** : Not available.
- Molecular weight** : 170.48 g/mole
- Molecular formula** : Cu-Cl₂.2H₂O
- pH** : Not available.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : Not available.
- Relative density** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Odor threshold** : Not available.

9 . Physical and chemical properties

Evaporation rate : Not available.
Solubility : Soluble in the following materials: water

10 . Stability and reactivity

Chemical stability : The product is stable.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid : No specific data.
Materials to avoid : No specific data.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Test Route	Species	Result
Cupric Chloride	TDLo Subcutaneous	Rat	1483 ug/kg

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.
Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN2802	COPPER CHLORIDE	8	III		-

PG* : Packing group

15 . Regulatory information

United States

- HCS Classification** : Toxic material
Irritating material
- U.S. Federal regulations** : **United States inventory (TSCA 8b)**: This material is listed or exempted.
TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Cupric Chloride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Cupric Chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: Cupric Chloride
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
- DEA List I Chemicals (Precursor Chemicals)** : Not listed
- DEA List II Chemicals (Essential Chemicals)** : Not listed
- New Jersey Hazardous Substances** : This material is listed.
- Pennsylvania RTK Hazardous Substances** : This material is listed.

Canada

- WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic).
- Canadian lists** : **CEPA Toxic substances**: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.
- CEPA DSL / CEPA NDSL** : This material is listed or exempted.

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.

EU regulations

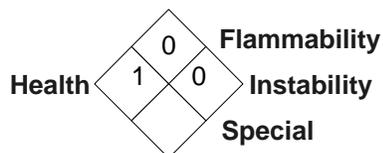
- Risk phrases** : This product is not classified according to EU legislation.

International regulations

- International lists** : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory (ENCS): This material is listed or exempted.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): This material is listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.

16 . Other information

National Fire Protection Association (U.S.A.) :



Notice to reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data 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, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

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 ₆ H ₁₂ O ₆ Molecular weight: 180.16
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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
Carcinogenicity: 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
Mobility in soil: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Bioaccumulative potential: No data available
PBT and vPvB assessment: No data 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: Not applicable
Hazard class: Not applicable
Exceptions: Not applicable
Shipping name: Not Regulated
Packing group: Not applicable
2012 ERG Guide #: Not applicable
Reportable Quantity: No
Marine pollutant: 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
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

Supersedes: 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
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Synonymes	D-Glucose
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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 supplémentaires:

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 ₆ H ₁₂ O ₆ Poids moléculaire: 180.16
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Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable

Polymérisation dangereuse: N'aura pas lieu.

Conditions à éviter: Les températures excessives.

Matières incompatibles: Comburentes 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

Mutagenicité 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 cancérogène 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 cancérogène 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 cancérogène ni comme cancérogène 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 disponibles

Potentiel de bioaccumulation: Pas de données disponibles

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



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: Canadian Headquarters
 JohnsonDiversey, Inc. JohnsonDiversey - Canada, Inc.
 8310 16th St. 2401 Bristol Circle
 Sturtevant, Wisconsin 53177-0902 Oakville, Ontario L6H 6P1
 Phone: 1-888-352-2249 Phone: 1-800-668-3131
 MSDS Internet Address:
 www.johnsondiversev.com

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
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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

Page 1 of 5

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 unconscious person.

Notes to Physician : Probable mucosal damage may contraindicate the use of gastric lavage.



MATERIAL SAFETY DATA SHEET

According to 91/155/EEC, 93/112/EC, 2001/58/EC

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 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.

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/m ³ (TWA)	1000 ppm (TWA) 1900 mg/m ³ (TWA)



MATERIAL SAFETY DATA SHEET

According to 91/155/EEC, 93/112/EC, 2001/58/EC

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 :



MATERIAL SAFETY DATA SHEET

According to 91/155/EEC, 93/112/EC, 2001/58/EC

Product Name : Virex II 256

Carcinogenic effects : None known
Mutagenic 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



MATERIAL SAFETY DATA SHEET

According to 91/155/EEC, 93/112/EC, 2001/58/EC

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.*

SAFETY DATA SHEET

Date: 05/21/15



SECTION 1 - IDENTIFICATION

GHS Product Identifier: DUOSEAL PUMP OIL

Synonyms: 1407K DUOSEAL Vacuum Pump Oil
Highly-Refined Petroleum Lubricant Oil

Supplier's Details: Welch Vacuum, Gardner Denver Thomas, Inc.
5621 West Howard Street
Niles, IL 60714
Phone: (847) 676-8800
gdwelchvacuum@gardnerdenver.com

Telephone Number: Technical Contact: (847) 676-8800

SECTION 2 – HAZARDS IDENTIFICATION

OSHA/HCS status: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the Substance or mixture: Not classified.

GHS label elements

Signal word: No signal word.

Hazard statements: No known significant effects or critical hazards.

Precautionary statements

General: Avoid contact with eyes, skin and clothing. MAY BE HARMFUL IF SWALLOWED. IF IN EYES: Rinse cautiously with water for several minutes. Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention: Not applicable.

Response: Not applicable.

Storage: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified: None known.

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE.

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SAFETY DATA SHEET

Date: 05/21/15

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Substance

Other means of Identification: Lubricating oil

CAS number/other identifiers

CAS number: Not available

Ingredient name	%	CAS number
Distillates (petroleum), hydro treated heavy paraffinic	100	64742-54-7

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

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. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute Potential acute health effects

Eye contact: No known significant effects or critical hazards.
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: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
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: Treat symptomatically and supportively.

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE.

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SAFETY DATA SHEET

Date: 05/21/15



by Gardner Denver

SECTION 4 - FIRST AID MEASURES CONTINUED

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

SECTION 5 - FIRE FIGHTING MEASURES

Specific hazards arising from the chemical: In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable extinguishing Media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing Media: None known.

Hazardous thermal decomposition products: No specific data.

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. Put on appropriate personal protective equipment.

For emergency responders: If specialised 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 nonemergency 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).

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE.

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SAFETY DATA SHEET

Date: 05/21/15



by Gardner Denver

SECTION 6 - ACCIDENTAL RELEASE MEASURES CONTINUED

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. 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. 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. 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).

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.

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.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

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by Gardner Denver

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydro treated heavy paraffinic	ACGIH TLV (United States, 6/2013). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction ACGIH (United States). TWA: 5 mg/m ³ 8 hours. STEL: 10 mg/m ³ 15 minutes. OSHA (United States). TWA: 5 mg/m ³ 8 hours. OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.

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. In some cases, vapor controls, 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 glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. 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 inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection:

Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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.

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SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION CONTINUED

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: Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.
Color: Light amber
Odor: Mild petroleum odor
Ph: Not available.
Boiling point: Not available.
Flash point: Open cup: 244°C (471.2°F) [Cleveland.]
Lower and upper explosive (flammable) limits: Not available
Vapor pressure: <0.0013 kPa (<0.01 mm Hg) [room temperature]
Vapor density: Not available.
Relative density: 0.88
Density lbs/gal: 7.2 lbs/gal
Gravity, °API: 32.3
Viscosity: Kinematic (40°C (104°F)): 0.68 cm²/s (68 cSt)
Viscosity SUS: 340 SUS @100 F

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).

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: No specific data.

Hazardous decomposition Products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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by Gardner Denver

SECTION 11 – TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), Hydro treated heavy paraffinic	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary:

Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.

Irritation/Corrosion

Skin: No additional information.
Eyes: No additional information.
Respiratory: No additional information.

Sensitization

Skin: No additional information.
Respiratory: No additional information.

Mutagenicity

Conclusion/Summary: No additional information.

Carcinogenicity

Conclusion/Summary: No additional information.

Reproductive toxicity

Conclusion/Summary: No additional information.

Teratogenicity

Conclusion/Summary: No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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SECTION 11 – TOXICOLOGICAL INFORMATION CONTINUED

Information on the likely routes of exposure: Not available.

Potential acute health effects

Eye contact: No known significant effects or critical hazards.
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: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

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.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity
Conclusion/Summary: Not available

Persistence and degradability
Conclusion/Summary: Not available

Bio accumulative potential
Not available

Mobility in soil
Soil/water partition coefficient (K_{oc}): Not available

Other adverse effects: No known significant effects or critical hazards.

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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. This material and its container must be disposed of in a safe way. 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	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No	No	No
Additional 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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

SECTION 15 – REGULATORY INFORMATION

U.S. Federal regulations: **United States inventory (TSCA 8b):** All components are listed or exempted. This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ: Not applicable.

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SECTION 15 – REGULATORY INFORMATION CONTINUED

SARA 311/312

Classification: Not applicable.
Composition/information on ingredients

State regulations

Massachusetts: None of the components are listed.
New York: None of the components are listed.
New Jersey: None of the components are listed.
Pennsylvania: None of the components are listed.

International regulations

International lists:

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Canada inventory: All components are listed or exempted.
EU Inventory: All components are listed or exempted.
WHMIS (Canada): Not controlled under WHMIS (Canada).

SECTION 16 – OTHER INFORMATION

National Fire Protection Association (U.S.A.)



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SECTION 16 – OTHER INFORMATION CONTINUED

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 issue/Date of

Revision:

12/8/2014.

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 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Notice to reader

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THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

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Type:

TECHNICAL SPECIFICATION

Title:

MATERIAL SAFETY DATA SHEET - MSDS
ETHYL ALCOHOL

Doc. nº: DPLO1-ET-027

Version: 01

Emission: 10/06/10

Page: 1 de 8

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.

Type:

TECHNICAL SPECIFICATION

Title:

**MATERIAL SAFETY DATA SHEET - MSDS
ETHYL ALCOHOL**Doc. nº: **DPLO1-ET-027**Version: **01**Emission: **10/06/10**Page: **2 de 8****3- HAZARDS IDENTIFICATION****MAIN HAZARDS****Health**

Eyes: redness, tearing, 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.

Type:

TECHNICAL SPECIFICATION

Title:

**MATERIAL SAFETY DATA SHEET - MSDS
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Unknown antidote. Treatment must be symptomatic.

5- MEASURES OF PREVENTION AND FIRE COMBAT**Extinguishing media**

Dry chemical dust, special foam for polar solvent and CO₂.

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.

Type:

TECHNICAL SPECIFICATION

Title:

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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.

Type:

TECHNICAL SPECIFICATION

Title:

**MATERIAL SAFETY DATA SHEET - MSDS
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Incompatible products

Permanganic Acid, Sulfuric acid, Acid Nitric, Silver Nitrate, Phosphoric Oxide, Acetyl Bromide, Caustics, Amine Aliphatic and Isocyanates.

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/m ³

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).

Type:

TECHNICAL SPECIFICATION

Title:

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9- PHYSICAL CHEMICAL CHARACTERISTICS**Physical state:** liquid.**Odor:** characteristic.**Color:** colorless.**pH:** $7,0 \pm 1,0$.**Boiling point:** 78,4 °C.**Freezing point:** no available.**Melting point:** - 114,4 °C.**Decomposition temperature:** unknown.**Flash point:** 13 °C.**Auto ignition temperature:** 363,0 °C.**Explosivity limits**

- **Lower explosivity limit:** 3,3 %.
- **Higher explosivity limit:** 19,0 %.

Vapor pressure: 40 mmHg (a 19 °C).**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 Isocyanates, liberating great amount of heat.

No reported cases of polymerization at normal conditions of temperature and pressure.

Type:

TECHNICAL SPECIFICATION

Title:

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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.

Type:

TECHNICAL SPECIFICATION

Title:

**MATERIAL SAFETY DATA SHEET - MSDS
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- **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.



SAFETY DATA SHEET



SECTION 1: PRODUCT IDENTIFIER

PRODUCT NAME: Gel Heat™ Methanol Gel Chafing Fuel

PRODUCT NUMBER: #GHBLUE

TRADE NAMES AND SYNONYMS: Solid Fuel, Chafing Dish Fuel

RECOMMENDED USE: A gelled methyl alcohol food warming fuel.

USES ADVISED AGAINST: No information available

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: Hollowick Inc.

Address: 100 Fairgrounds Drive
Manlius, NY 13104

Telephone: 800-367-3015 or 315-682-2163

Fax: 1-315-682-6948

Emergency Telephone Number

Emergency Phone: 1-800-424-9300 (CHEMTREC)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture:

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 3)

Acute toxicity, Inhalation (Category 3)

Acute toxicity, Dermal (Category 3)

Specific target organ toxicity - single exposure (Category 1)

Target Organs: Eyes, Kidney, Liver, Heart, Central nervous system



Pictograms

GHS Label elements, including precautionary statements

Signal word: **Danger**

Hazard statement(s)

H225 Highly flammable liquid and vapor.

H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled

H370 Causes damage to organs.

Precautionary statement(s)

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/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P310 IF SWALLOWED: Immediately call a **POISON CENTER** or doctor/physician.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

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.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: INGREDIENTS

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
Methanol	67-56-1	70-72	Flammable liquids (Category 2)
	EC-No.200-659-6		Acute toxicity, Oral (Category 3)
	Index# 603-001-00-X		Acute toxicity, Inhalation (Category 3)
			Acute toxicity, Dermal (Category 3)
			STOT-SE (Category 1)
All other hazardous components		Are less than 1%	

SECTION 4: FIRST-AID PROCEDURES

INHALATION: METHYL ALCOHOL (METHANOL): NARCOTIC/NEUROTOXIN.

****FIRST AID-** Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration, if breathing is difficult give oxygen. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT: METHYL ALCOHOL (METHANOL): IRRITANT/NARCOTIC/NEUROTOXIN.

****FIRST AID-** Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

EYE CONTACT: METHYL ALCOHOL (METHANOL): IRRITANT.

****FIRST AID-** Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Remove contact lenses, if worn, after initial flush. Get medical attention immediately

INGESTION: METHYL ALCOHOL (METHANOL): NARCOTIC/NEUROTOXIN.

****FIRST AID-** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention immediately.

****ANTIDOTE**:** The following antidote(s) have been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel.

METHANOL POISONING:

Give ethanol, 50% (100 proof), 1.5 ml/kg orally initially, diluted to no more than 5% solution, followed by 0.5-1.0 ml/kg every 2 hours orally or intravenously for 4 days in order to reduce metabolism of methanol and to allow time for its excretion. Blood ethanol level should be in the range of 1-1.5 mg/ml (Dreisbach, Handbook of Poisoning, 12th ed.). Antidote should be administered by qualified medical personnel. Oral or intravenous administration of 4-methylpyrazole inhibits alcohol dehydrogenase and has been used effectively as an antidote for methanol or ethylene glycol poisoning (Ellenhorn and Barceloux, Medical Toxicology).

SECTION 5: FIRE FIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

FIRE AND EXPLOSION HAZARD: DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK.

Flash Point: 78°F TCC
Auto-ignition Temp: 890°F

LEL %:5.87
UEL %:35.2

SUITABLE EXTINGUISHING MEDIA: Foam--> x CO2--> x Dry Chemical--> x Water-fog--> x Other-->

CONDITIONS OF FLAMMABILITY: Flammable in the presence of a source of ignition when the temperature is above the flash point.

ADVICE FOR FIREFIGHTERS: Shut off source. Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind do not spray pool fires directly. A solid stream of water or foam directed into hot burning liquid can cause frothing. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Water fog may be used to cool closed containers to prevent pressure build up and possible auto ignition or explosion when exposed to extreme heat. Cool containers with water-fog from as far a distance as possible. Wear NIOSH approved self-contained breathing apparatus for confined spaces. Use full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep containers tightly closed. Flammable Solid; isolate from all sources of ignition. Closed containers exposed to flame and heat may erupt, scattering fragments.

COMBUSTION PRODUCTS: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides and other unidentified organic compounds evolve when this material undergoes combustion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE MEASURES: Flammable Solid; Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations. For large spills evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate.

METHODS FOR CONTAINMENT AND CLEAN UP: Use explosion proof equipment. Shut off valves, contain spill, keep out of water sources and sewers, for smaller spills add non-flammable absorbent in spill area. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent. Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations.

SECTION 7: HANDLING AND STORAGE

PERSONAL PRECAUTIONARY MEASURES: This material presents a fire hazard. Liquid quickly evaporates and forms vapor (fumes), which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources, such as pilot lights, welding equipment, and electrical motors and switches. Vapor is heavier than air and can travel considerable

distance to a source of ignition and flash back. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Avoid contact with eyes, skin and clothing.

HANDLING INFORMATION: Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

STATIC HAZARD: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to OSHA Standard 29CFR 1910.106 “Flammable and Combustible Liquids” and National Fire Protection Association (NFPA 77) “Recommended Practice on Static Electricity”.

CONDITIONS FOR SAFE STORAGE: Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Do not store above 120EF. Store large quantities only in cool, dry areas in buildings designed to comply with OSHA 1910.106. Keep containers tight and upright to prevent leakage. Do not contact with oxidizing materials. Keep containers closed when not in use. Do not take internally.

CONTAINER WARNINGS: Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re- conditioner.

SECTION 8: EXPOSURE CONTROL (PERSONAL PROTECTION)

EXPOSURE GUIDELINES:

Ingredient	CAS No.	% by WT. Range	Exposure Limits
Methanol	67-56-1	70-72	200ppm TLV(ACGIH)
			250ppm STEL(ACGIH)
			200ppm TWA(OSHA)
			200ppm TWA(NIOSH)
			6000ppm(IDLH)
All other hazardous components		Are less than 1%.	

Key:

- (PEL) = Permissible Exposure Limit OSHA
- (TLV) = Threshold Limit Value OSHA & ACGIH
- (STEL) = Short Term Exposure Limit ACGIH
- (WEEL) = USA. Workplace Environmental Exposure Levels
- (TWA) = Time Weighted Average
- CAS = Chemical Abstracts Registry Number
- IDLH = Immediate Danger to Life and Health
- N.E. =None Established

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS: Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION: For vapor concentrations 1 to 10 times ACGIH TLV and air purifying NIOSH/MSHA Approved respirator with full face-piece and organic vapor cartridges. For concentrations over 10 times ACGIH TLV and in confined areas use an approved positive pressure full face-piece supplied air respirator.

BODY CLOTHING: No protective equipment is needed under normal use conditions. However employees must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance. Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse.

SKIN PROTECTION: No protective equipment is needed under normal use conditions. However employees must wear appropriate protective gloves to prevent contact with this substance. Rubber or neoprene chemical resistant gloves.

EYE/FACE PROTECTION: No protective equipment is needed under normal use conditions. However employees should use safety eyewear with splash guards or face shield.

Emergency shower and eyewash should be easily accessible to the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE, COLOR AND ODOR: A gelled methyl alcohol with blue color and an alcohol odor.

Odor Threshold	No data available
pH	7.5 – 8.5
Volatile	98%
Melting/Freezing Point	No data available
Boiling Range	148-180°F
Specific Gravity	0.802@20°C
Vapor Pressure	No data available
Vapor Density (air=1)	No data available
Water Solubility	Soluble
Partition Coefficient n-Octanol/Water	No data available
Evaporation Rate (Butyl Acetate=1)	2.1
Flash Point	78 °F - closed cup
Upper Flammability Limit	37.2% (V)
Lower Flammability Limit	5.87% (V)
Auto-Ignition Temperature	890°F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No data available
Oxidizing Properties	No data available
Other Information	No data Available

SECTION 10: STABILITY AND REACTIVITY INFORMATION

CHEMICAL STABILITY: Unstable () **Stable (X)**

POSSIBILITY OF HAZARDOUS REACTIONS: Vapors may form explosive mixtures with air.

CONDITIONS TO AVOID: Heat, Sparks, Pilot Lights, Static Electricity, and Open Flame.

INCOMPATIBLE MATERIALS: Strong oxidants such as liquid chlorine, oxygen, sodium hypochlorite, inorganic acids e.g. hydrochloric acid and hydrogen peroxide.

HAZARDOUS DECOMPOSITION PRODUCTS: Fumes, Smoke, Carbon Monoxide, Aldehydes and other decomposition products where combustion is not complete.

HAZARDOUS POLYMERIZATION: May occur () **Will not occur (X)**

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye> Irritant upon direct contact;

Skin> Contact with liquid may cause irritation. Skin absorption may occur and cause metabolic acidosis and effects on the eyes and central nervous system as detailed in acute ingestion.

Inhalation> Burn product in a well ventilated area; Upon exposure to fumes, irritation of the respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or coma.

Ingestion> Loss of coordination, dizziness, headache, nausea, CNS depression.

Chronic: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Typical symptoms are cardiovascular disorders, sweetish taste in the mouth, nausea, vomiting, loss of appetite, strong thirst, burning of eyes and bleeding from the nose. Damage may occur to the kidney or liver.

Medical Conditions Aggravated by Exposure> Skin contact may aggravate an existing dermatitis.

ACUTE TOXICITY:

The effects of overexposure shown in Section II are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50(Rat)	Skin LD50(Rabbit)	Inhalation LC50
Methanol	1187-2769mg/kg	17100mg/kg	128mg/L/4hr

METHANOL:

MUTAGENIC EFFECTS: No data available

CARCINOGEN STATUS: 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, OSHA or ACGIH.

REPRODUCTIVE TOXICITY: No data available

Specific target organ toxicity (STOT-SE)- single exposure (Globally Harmonized System): Causes damage to organs.

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

ASPIRATION HAZARD: No data available

ADDITIONAL INFORMATION: No data available

SECTION 12: ECOLOGICAL INFORMATION

No information on this gelled product is available at this time.

For METHANOL the following is available:

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS May be dangerous if it enters water intakes.

Notify local health and wildlife officials. Notify operators of nearby water intakes.

AQUATIC TOXICITY:

Toxicity to fish:

LC50 - Lepomis macrochirus (Bluegill) - 15,400.0 mg/l - 96 h

NOEC - Oryzias latipes - 7,900 mg/l - 200 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - > 10,000.00 mg/l - 48 h

Toxicity to algae Growth inhibition:

EC50 - Scenedesmus capricornutum (fresh water algae) - 22,000.0 mg/l - 96 h

WATERFOWL TOXICITY: No data available

PERSISTANCE AND DEGRADABILITY: aerobic Result: 72 % - rapidly biodegradable

BIOACCUMULATION: Cyprinus carpio (Carp) - 72 d at 20 °C

BIOCONCENTRATION FACTOR (BCF): 1.0

BIOLOGICAL OXYGEN DEMAND (BOD): 0.6 to 1.12 lb in 5 days

FOOD CHAIN CONCENTRATION POTENTIAL: None

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Incinerate under controlled conditions in a permitted facility.

CONTAMINATED PACKAGING: Dispose of as unused product

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

RCRA: The unused product is a RCRA hazardous waste if discarded. The RCRA ID numbers are: U154 and D001. If the waste is a spent solvent, the appropriate spent solvent code should be used.

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

SECTION 14: TRANSPORT INFORMATION

USDOT Shipping Name: Consumer Commodity ORM-D No Hazmat Required 173.150; Exceptions For Class 3 (flammable and combustible liquids)

USDOT Hazard Classification: ORM-D "Consumer Commodity"

Emergency Response Guide: 131

Marine Pollutant: No

SECTION 15: REGULATORY INFORMATION

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed Methanol CAS 67-56-1

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health, Chronic Health, and Fire

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed Methanol CAS 67-56-1; Reportable Quantity - 5,000 pounds.

SECTION 101(14) Reportable Quantity: 5,000 lbs

Massachusetts Right To Know Components: Methanol CAS-No.67-56-1

Pennsylvania Right To Know Components: Methanol CAS-No.67-56-1

California Proposition 65 Components:

WARNING: This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

TSCA (Toxic Substance Control Act)

Methanol CAS-No.67-56-1 is listed on the TSCA Inventory.

SECTION 16: OTHER INFORMATION

HMIS (Hazardous Materials Identification System)

Hazard Rating:

- 4-Extreme
- 3-High
- 2-Moderate
- 1-Slight
- 0-Insignificant

NFPA RATINGS (SCALE 0-4):	Health=2	Fire=3	Reactivity=0	
HMIS RATINGS (SCALE 0-4)	Health=2	Fire=3	Reactivity=0	PPE=G

Date of preparation: June 1, 2016 REVIEWED: June 11, 2018

Revision Number: 2

Acronyms:

- ACGIH:** American Conference of Governmental Industrial Hygienists
- AIHA:** American Industrial Hygiene Association
- ANSI:** American Nation Standards Institute
- API:** American Petroleum Institute
- CERCLA:** Comprehensive Emergency Response, Compensation, and Liability Act
- DOT:** U.S. Department of Transportation
- EPA:** U.S. Environmental Protection Agency
- HMIS:** Hazardous Materials Information System
- IARC:** International Agency For Research On Cancer
- MSHA:** Mine Safety and Health Administration
- NFPA:** National Fire Protection Association
- NIOSH:** National Institute of Occupational Safety and Health
- NOIC:** Notice of Intended Change (Proposed change to ACGIH TLV)
- NTP:** National Toxicology Program
- OPA:** Oil Pollution Act of 1990
- OSHA:** U.S. Occupational Safety & Health Administration
- PEL:** Permissible Exposure Limit (OSHA)
- RCRA:** Resource Conservation and Recovery Act
- REL:** Recommended Exposure Limit (NIOSH)
- SARA:** Superfund Amendments and Reauthorization Act of 1986 Title III
- SCBA:** Self-Contained Breathing Apparatus
- STEL:** Short-Term Exposure Limit (generally 15 minutes)
- TLV:** Threshold Limit Value
- TSCA:** Toxic Substances Control Act
- TWA:** Time Weighted Average (8hr.)
- WHMIS:** Canadian Workplace Hazardous Materials Information System

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Safety Data Sheet (SDS)

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Zinc

Signal Word
N/A

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261
Chemtrec Emergency Phone Number: (800) 424-10496

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.

As shipped, no adverse effects or dangers are associated with zinc in the form of a shot, sheet, foil, or granular. Combustible hazards are associated with the dust or powdered forms.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Zinc	7440-66-6	Zn	65.37	

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: Brush off loose particles from skin (P335). 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 solid.

Finely divided zinc dust is a severe fire hazard. Zinc dust in contact with acids, water or damp air evolves hydrogen gas. The heat produced may ignite the hydrogen gas. Minimize contact with moisture.

NFPA Code
None established

In case of fire: Use a tri-class dry class fire extinguisher (P370+P378). If there is contact with water use class D fire extinguisher according to NFPA book.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

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 #1. Store with metals and metal hydrides.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Shiny white metal with bluish-gray luster. Forms: granular, Boiling point: 908 °C
mossy, metal pieces, foil, sheets, shot, strips. Odorless. Melting point: 419 °C
Soluble: Acids and alkalis. Insoluble in water. Specific gravity: 7.14

SECTION 10 — STABILITY AND REACTIVITY

Avoid strong acids, strong bases, cadmium, sulfur chlorinated solvents, amines, and carbon disulfide. Avoid any source of flame for zinc dust only! Zinc dust can spontaneously combust when in contact with moisture.

Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Dust may cause lung irritations.	ORL-RAT LD ₅₀ : N.A.
Chronic effects: N.A.	IHL-RAT LC ₅₀ : N.A.
Target organs: N.A.	SKN-RBT LD ₅₀ : N.A.

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.

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (231-175-3).

SECTION 16 — OTHER INFORMATION

This Safety Data Sheet (SDS) 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. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

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

N/A = Not applicable

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

Revision Date: September 1, 2015

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Revision Date: 2009-06-10
Reason for Revision: 29 CFR 1910.1200 and SOR/88-66 Compliance

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: Formaldehyde Solution

Application: Formaldehyde Solution

Company Information (USA):

Hanna Instruments, Inc.
584 Park East Dr, Woonsocket, Rhode Island, USA 02895

Technical Service Contact Information:

1-800-426-6287 (8:30AM - 5:00PM ET)
+1-401-766-4260 (8:30AM - 5:00PM ET)

USA Emergency Contact Information:

1-800-424-9300 (Chemtrec 24Hr. Emergency)

International Emergency Contact Information:

+1-703-527-3887 (Chemtrec 24Hr. Emergency)

E-mail Address:

tech@hannainst.com

SECTION 2: HAZARD IDENTIFICATION

Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Possible risks of irreversible effects. May cause sensitization by skin contact.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component: Formaldehyde

EC-No.: 200-001-8

CAS-No.: 50-00-0

Hazard: T, Xn, C, Carc. Cat. 3

Phrases: R: 23/24/25-34-40-43

Content: > 25% - < 50%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air. Apply mouth to mouth resuscitation or mechanical ventilation if necessary. Call in physician.

After Skin Contact: Wash affected area with plenty of water. Remove contaminated clothing.

After Eye Contact: Rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After Swallowing: Make victim drink water, avoid vomiting. Immediately call in physician. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Immediately call in physician. Indications for the doctor: Gastric Washout. Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Mention methanol.

General Information: Not available

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Powder, Foam

Special Risks:

Formaldehyde vapors: Combustible. Keep away from sources of ignition. Formation of explosive mixtures possible with air.

Special Protective Equipment:

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Additional Information:

Contain escaping vapors with water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Do not inhale vapors/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental Precautions:

Do not allow to enter sewerage system.

Additional Notes:

Render harmless: treat with excess sodium hydrogen sulfite solution.

SECTION 7: HANDLING AND STORAGE

Handling:

Work under hood. Do not inhale substance. Avoid generation of vapors/aerosols.

Storage:

Cannot be stored indefinitely. Keep container closed and protected from direct sunlight. Store at room temperature (+15°C to +25°C).

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	Value	Source	Type	Value	Source
Formaldehyde					
Ceiling	0.38 mg/m ³	Belgium	Ceiling	1.5 mg/m ³	Canada (Ontario)
Ceiling	3 mg/m ³	Canada (Quebec)	TWA (8hr)	0.5 ppm	France
TWA (8hr)	2.5 mg/m ³	Greece	TWA (8hr)	0.6 mg/m ³	Hungary
TWA (8hr)	0.15 mg/m ³	Netherlands	TWA (8hr)	0.5 mg/m ³	Poland
Ceiling	0.3 ppm	Portugal	TWA (8hr)	1.2 mg/m ³	Romania
Ceiling	0.37 mg/m ³	Spain	TWA (8hr)	2.5 mg/m ³	UK
TWA (8hr)	0.30 ppm	USA (ACGIH)	TWA (8hr)	0.75 ppm	USA (OSHA)

Engineering:

Maintain general industrial hygiene practice.

Personal Protective Equipment:

As appropriate to quantity handled.

Respiratory Protection:

Required when vapors/aerosols are generated.

Protective Gloves:

Rubber or plastic

Eye Protection:

Goggles or face mask

Industrial Hygiene:

Immediately change contaminated clothing. Apply skin protective barrier cream. Wash hands and face after working with substance. Work under hood. Do not inhale substance.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Colorless liquid	Odor:	Pungent	Density at 20° C:	1.09 g/cm ³
Melting Point:	< -15°C	Boiling Point:	~ 94 °C	Solubility:	Soluble
pH at 20° C:	~ 3.5	Explosion Limit:	Lower 7 Vol% Upper 73 Vol%	Flash Point:	> 62 °C
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Polymerization:

Tends to polymerize.

Further Information:

Stabilizer: Methanol. Incompatible with various metals and various alloys. Explosive with air in a vaporous/gaseous state when heated.

Hazardous Decomposition Products:

In the event of fire: See section 5.

Substances to be Avoided:

polymerization initiators (eg alkali metals), acids, nitrogen oxides, hydrogen peroxide, oxidizing agent, performic acid, phenol

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

Acute toxicity

LC50 (inhalation, rat): 0.578 mg/L /4 h (Formaldehyde).

LD50 (dermal, rabbit): 270 mg/kg (Formaldehyde).

LD50 (oral, rat): 100 mg/kg (Formaldehyde).

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns (Formaldehyde).

Skin irritation test (rabbit): burns (Formaldehyde).

Subacute to chronic toxicity

Applicable to partial component(s):

Sensitization:

Sensitization test (guinea pig): positive.

The carcinogenic potential requires further clarification.

No impairment of reproductive performance in animal experiments.

Potential Health Effects:

Inhalation: Irritations of the mucous membranes, coughing, and dyspnoea. Inhalation may lead to the formation of edemas in the respiratory tract.

Skin Contact: Burns. Risk of skin sensitization. Danger of skin absorption.

Eye Contact: Burns. Lachrymal irritation due to vapors.

Ingestion: Burns of mucous membranes in the mouth, pharynx, esophagus and gastrointestinal tract. Risk of perforation in the esophagus and stomach.

Further Data: Systemic effects: narcosis, blindness. The following applies to aldehydes in general: irritations after contact with eyes and skin. Mucosal irritations, coughing, and dyspnoea after inhalation. The following applies to aliphatic alcohols in general: effect when product is not handled and used properly: mucosal irritations; after absorption of large quantities: narcosis. Further hazardous properties cannot be excluded. The product should be handled with particular care.

Component Toxicity

Acute Toxicity:

Not Available

Chronic Toxicity:

Formaldehyde

OSHA: Cancer Hazard

IARC Group 1: Carcinogenic to humans

Additional Data:

Not Available

SECTION 12: ECOLOGICAL INFORMATION

The following information refer to individual constituent of the preparation:

Abiotic degradation: Rapid degradation. (air, formaldehyde)

Biologic degradation: Biodegradation: 97.4 % /5 d (Formaldehyde). Readily biodegradable.

Behavior in environmental compartments:

Distribution: log p(o/w): 0.00 (Formaldehyde).

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects: Toxic for aquatic organisms. protoplasmatic toxin. Caustic even in diluted form. Disinfectant effect. Toxic effect on fish and plankton.

Sludge decomposition impaired or not possible even in diluted concentration.

Endangers drinking water supplies if allowed to enter soil and/or waters in large quantities.

Fish toxicity: P.promelas LC 50 : 24 mg/L /96 h (Formaldehyde); Br.rerio LC 50 : 41 mg/L /96 h (Formaldehyde);

Daphnia toxicity: Daphnia magna EC 50 : ~2 mg/L /48 h (Formaldehyde);

Bacterial toxicity: Photobacterium phosphoreum EC 50 : 8.5 mg/L /30 min (Formaldehyde).

Maximum permissible toxic concentration: Algeal toxicity: Sc.quadricauda IC 5 : 2.5 mg/L /8 d (Formaldehyde); Bacterial toxicity: M.aeruginosa EC 5 : 0.39 mg/L /8 d (Formaldehyde).

Further ecologic data:

COD: 1.06 g/g (Formaldehyde); TOD: 1.068 g/g (Formaldehyde)

Further Data: Do not allow to enter waters, waste water, or soil!

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice. Handle contaminated packaging in the same way as the substance itself.

SECTION 14: TRANSPORTATION INFORMATION

Land:

ADR/RID: 9, PGII
UN-No.: UN3316
Name : CHEMICAL KIT

Sea:

IMDG: 9/UN3316/PG II
Name : CHEMICAL KIT
Marine pollutant: no
Severe marine pollutant: no

Air:

ICAO/IATA: 9/UN3316/PG II
Name: CHEMICAL KIT

Transport data applies to the COMPLETE KIT!

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: T: Toxic

R-phrases: 23/24/25-34-40-43: Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Possible risks of irreversible effects. May cause sensitization by skin contact.

S-phrases: 26-36/37/39-45-51: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Use only in well-ventilated areas.

Contains: Formaldehyde

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
34: Causes burns.
40: Possible risks of irreversible effects.
43: May cause sensitization by skin contact.

Revision Information

Revision Date: 2009-06-10
Supersedes edition of: 2008-12-01
Reason for revision: 29 CFR 1910.1200 and SOR/88-66 Compliance

Legend

NA: Not Applicable
ND: Not Determined

THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.

Material Safety Data Sheet

Iodine, Dilute Lugols

ACC# 89210

Section 1 - Chemical Product and Company Identification

MSDS Name: Iodine, Dilute Lugols

Catalog Numbers: S71310ND

Synonyms: None.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, 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	Percent	EINECS/ELINCS
7732-18-5	Deionized Water	>98	231-791-2
7553-56-2	Iodine Crystals	<1.0	231-442-4
7681-11-0	Potassium Iodide	<1.0	231-659-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: dark red-brown liquid.

Caution! May cause allergic skin reaction. May cause irritation. This is expected to be a low hazard for usual industrial handling.

Target Organs: No data found.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: May cause respiratory tract irritation.

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 immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

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: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

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.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

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: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use with adequate ventilation.

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: Good general ventilation should be sufficient to control airborne levels. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
---------------	-------	-------	-------------------

Deionized Water	none listed	none listed	none listed
Iodine Crystals	0.1 ppm Ceiling	2 ppm IDLH	0.1 ppm Ceiling; 1 mg/m ³ Ceiling
Potassium Iodide	none listed	none listed	none listed

OSHA Vacated PELs: Deionized Water: No OSHA Vacated PELs are listed for this chemical. Iodine Crystals: No OSHA Vacated PELs are listed for this chemical. Potassium Iodide: 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. 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: Liquid

Appearance: dark red-brown

Odor: Strong

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:Not available.

Solubility: Soluble.

Specific Gravity/Density:Not available.

Molecular Formula:Solution

Molecular Weight:Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Potassium iodide is incompatible with charcoal + ozone, metals and oxidizable derivatives.

Hazardous Decomposition Products: Iodine.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7732-18-5: ZC0110000

CAS# 7553-56-2: NN1575000

CAS# 7681-11-0: TT2975000

LD50/LC50:

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg;

CAS# 7553-56-2:

Oral, mouse: LD50 = 22 gm/kg;

Oral, mouse: LD50 = 1000 mg/kg;

Oral, rabbit: LD50 = 10 gm/kg;

Oral, rat: LD50 = 14 gm/kg;

CAS# 7681-11-0:

Carcinogenicity:

CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7553-56-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7681-11-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

No information 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	Canada TDG
Shipping Name:	Not regulated as a hazardous material	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7732-18-5 is listed on the TSCA inventory.

CAS# 7553-56-2 is listed on the TSCA inventory.

CAS# 7681-11-0 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.

SARA Codes

CAS # 7553-56-2: immediate, delayed, fire.

CAS # 7681-11-0: immediate, delayed.

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:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 7553-56-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 7681-11-0 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# 7732-18-5: No information available.

CAS# 7553-56-2: 1

CAS# 7681-11-0: 1

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 7553-56-2 is listed on Canada's DSL List.

CAS# 7681-11-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of Not controlled..

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.

Canadian Ingredient Disclosure List

CAS# 7553-56-2 is listed on the Canadian Ingredient Disclosure List.

CAS# 7681-11-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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MSDS Creation Date: 9/02/1997

Revision #7 Date: 12/04/2007

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 event shall Fisher 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 Fisher has been advised of the possibility of such damages.



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SAFETY DATA SHEET

Revision Date 06-Aug-2015

Version 1

1. IDENTIFICATION

Product Name 10% Formalin Fixative in Alcohol
Product Code 4501
Recommended Use For laboratory, scientific, R&D or manufacturing use.
Company E K Industries, Inc.
1403 Herkimer St.
Joliet, IL 60432
Tel. (800) 283-4244
Emergency Telephone Call CHEMTREC 1-800-424-9300 (EKI CCN 7453)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Gases)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Flammable liquids	Category 3

Label elements

Signal word

Danger

Hazard statements

Harmful if inhaled. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. Causes damage to organs.
Flammable liquid and vapor.



Precautionary Statements - Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area. Wash face, hands and any exposed skin

thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. 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.

Precautionary Statements - Response

IF exposed: Call a POISON CENTER or doctor/physician.

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 or doctor/physician.

IF skin irritation or rash occurs: Get medical advice/attention. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

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.

In case of fire: Use CO₂, dry chemical, or foam for extinction.

Precautionary Statements - Storage

Store locked up. Store in a well-ventilated place. Keep cool.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Ethyl alcohol	64-17-5	75-80
Water	7732-18-5	<10
Methyl alcohol	67-56-1	4-6
Isopropyl alcohol	67-63-0	3-5
Formaldehyde	50-00-0	3.5-4.0

4. FIRST AID MEASURES

Description of first aid measures

Eye contact	Immediately flush with plenty of water for at least 15 minutes, separating eyelids occasionally. Remove contact lenses if present. Get immediate medical attention.
Skin contact	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Immediate medical attention is required.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
Ingestion	Do NOT induce vomiting unless instructed to do so by medical personnel. If conscious, rinse mouth and give several glasses of water to drink. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms	Causes skin, eye and respiratory tract irritation. If swallowed, causes GI disturbances. May cause allergic skin reaction. May cause cancer.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

CO₂, dry chemical, dry sand, alcohol-resistant foam Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Specific hazards arising from the chemical

May cause sensitization by skin contact. The product causes irritation of eyes, skin and mucous membranes.

Hazardous combustion products

Carbon oxides. Formaldehyde.

Protective equipment and precautions for firefighters

Firefighters should wear self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

NFPA

Health hazards 3

Flammability 3

Instability 0

Physical and Chemical
Properties -**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures****Personal precautions**

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up**Methods for containment**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Absorb spill with inert material, scoop up and containerize for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Use personal protective equipment as required
Handle in accordance with good industrial hygiene and safety practice.

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Store at 15C to 25C.

Incompatible materials

Strong bases. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational exposure limits**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethyl alcohol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³
Methyl alcohol 67-56-1	STEL: 250 ppm TWA: 200 ppm Skin	TWA: 200 ppm TWA: 260 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m ³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m ³ (vacated) Skin	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³
Isopropyl alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m ³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m ³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³
Formaldehyde 50-00-0	Ceiling: 0.3 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm

		(vacated) STEL: 10 ppm 30 min unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 29 CFR 1910.1048	
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Appropriate engineering controls

Engineering Controls Emergency showers, eyewash stations, ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear protective gloves and protective clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear, colorless
Odor	Slight formaldehyde odor
Odor threshold	No information available
pH	No information available
Melting point / freezing point	No information available
Boiling point / boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Water solubility	Miscible with water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Conditions to avoid	Sources of ignition. Extremes of temperature and direct sunlight.
Incompatible materials	Strong bases. Strong oxidizing agents.

Hazardous Decomposition Products Carbon oxides. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Harmful by inhalation.
Eye contact	Risk of serious damage to eyes.
Skin contact	May cause sensitization by skin contact.
Ingestion	No data available.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl alcohol 64-17-5	-	-	= 124.7 mg/L (Rat) 4 h
Methyl alcohol 67-56-1	= 5628 mg/kg (Rat)	-	= 83.2 mg/L (Rat) 4 h
Isopropyl alcohol 67-63-0	= 4396 mg/kg (Rat)	= 12800 mg/kg (Rabbit)	= 16000 ppm (Rat) 8 h
Formaldehyde 50-00-0	= 500 mg/kg (Rat)	= 270 mg/kg (Rabbit)	= 0.578 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Irritating to skin.
Serious eye damage/eye irritation	Risk of serious damage to eyes.
Irritation	Irritating to eyes and skin. May cause irritation of respiratory tract.
Sensitization	May cause sensitization by skin contact.
Germ cell mutagenicity	No information available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen

Chemical Name	ACGIH	IARC	NTP	OSHA
Isopropyl alcohol 67-63-0	-	Group 3	-	-
Formaldehyde 50-00-0	A2	Group 1	Known	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
 A2 - Suspected Human Carcinogen
 IARC (International Agency for Research on Cancer)
 Group 1 - Carcinogenic to Humans
 Group 3 - Not classifiable as to carcinogenicity in humans
 NTP (National Toxicology Program)
 Known - Known Carcinogen
 OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 X - Present

STOT - single exposure Respiratory system. Central nervous system. Optic nerve.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Ethyl alcohol 64-17-5	-	12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static
Methyl alcohol 67-56-1	-	28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h	-

		Pimephales promelas mg/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through	
Isopropyl alcohol 67-63-0	1000: 96 h Desmodemus subspicatus mg/L EC50 1000: 72 h Desmodemus 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	13299: 48 h Daphnia magna mg/L EC50
Formaldehyde 50-00-0	-	22.6 - 25.7: 96 h Pimephales promelas mg/L LC50 flow-through 1510: 96 h Lepomis macrochirus µg/L LC50 static 41: 96 h Brachydanio rerio mg/L LC50 static 0.032 - 0.226: 96 h Oncorhynchus mykiss mL/L LC50 flow-through 100 - 136: 96 h Oncorhynchus mykiss mg/L LC50 static 23.2 - 29.7: 96 h Pimephales promelas mg/L LC50 static	2: 48 h Daphnia magna mg/L LC50 11.3 - 18: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Ethyl alcohol 64-17-5	-0.32
Methyl alcohol 67-56-1	-0.77
Isopropyl alcohol 67-63-0	0.05
Formaldehyde 50-00-0	0.35

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container. Emptied containers may contain residue. Continue to follow label warnings after container is emptied.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Methyl alcohol 67-56-1	-	Included in waste stream: F039	-	U154
Formaldehyde 50-00-0	U122	Included in waste streams: K009, K010, K038, K040, K156, K157	-	U122

Chemical Name	California Hazardous Waste Status
Ethyl alcohol 64-17-5	Toxic Ignitable
Methyl alcohol 67-56-1	Toxic Ignitable

Isopropyl alcohol 67-63-0	Toxic Ignitable
Formaldehyde 50-00-0	Toxic Ignitable

14. TRANSPORT INFORMATION

Transportation information is provided as a general reference only and may not be applicable in all situations. This information applies to non-bulk shipments only. Per 49 CFR §173.22, it is the shipper's responsibility to ensure that all materials are properly packaged, classified and labeled prior to shipment.

DOT

UN/ID no.	1170
Proper shipping name	Ethanol solutions
Hazard Class	3
Packing Group	II

IATA

UN/ID no.	1170
Proper shipping name	Ethanol solutions
Hazard Class	3
Packing Group	II

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	SARA 313 - Threshold Values %
Methyl alcohol - 67-56-1	1.0
Isopropyl alcohol - 67-63-0	1.0
Formaldehyde - 50-00-0	0.1

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

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
Formaldehyde 50-00-0	100 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Methyl alcohol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Formaldehyde 50-00-0	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Ethyl alcohol - 64-17-5	Carcinogen Developmental
Methyl alcohol - 67-56-1	Developmental
Formaldehyde - 50-00-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethyl alcohol 64-17-5	X	X	X
Methyl alcohol 67-56-1	X	X	X
Isopropyl alcohol 67-63-0	X	X	X
Formaldehyde 50-00-0	X	X	X

16. OTHER INFORMATION

Prepared By

EKI Regulatory Affairs (Email: reg@eki-chem.com)

Revision Date

06-Aug-2015

Disclaimer

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End of Safety Data Sheet



SAFETY DATA SHEET

Page : 1

Revised edition no : 0

Date : 4 / 11 / 2011

Supersedes : 0 / 0 / 0

Gibberelic acid 4+7**G0938**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Identification of the product : Raw material
Product code : G0938
Trade name : Gibberelic acid 4+7

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

Use : For professional use only.
Duchefa Biochemie B.V. products are only intended for in vitro laboratory research purposes.

1.3. Details of the supplier of the safety data sheet

Company identification : Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem The Netherlands
Tel: +31(0)23-5319093
Fax: +31(0)23-5318027
E-mail:info@duchefa.nl

1.4. Emergency telephone number

Emergency phone nr : Tel: (+31)-(0)23-5319093 (local time : 9.00 to 17.00)
See www.who.int/ipcs/en/ for a local poison centre
National Poison Information Centre :Europe NL : +31 30 274 88 88
(this service is only available to health professionals)

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classification EC 67/548 or EC 1999/45

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

: Not regulated.

2.2. Label elements

Labelling EC 67/548 or EC 1999/45

• Symbol(s) : None.

Labelling Regulation EC 1272/2008 (CLP)

• Hazard pictograms code : ---

• Precautionary statements

2.3. Other hazards

None under normal conditions.

SECTION 3 Composition/information on ingredients

Substance / Preparation : Preparation.

Substance name	Contents	CAS No	EC No	Annex No	Ref REACH	Classification
Gibberellic acid A4	: Circa 60 %	468-44-0	207-406-9	----	----	-----
Gibberellic acid A7	: Circa 30 %	510-75-8	----	----	----	-----

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Gibberelic acid 4+7

G0938

SECTION 4 First aid measures

4.1. Description of first aid measures

- Inhalation : Assure fresh air breathing.
- Skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Obtain medical attention if irritation persists.
- Eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- Ingestion : Rinse mouth.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms and effects, both acute and delayed : No data available.

4.3. Indication of any immediate medical attention and special treatment needed

Medical attention and special treatment needed : No data available.

SECTION 5 Fire-fighting measures

5.1. Extinguishing media

Extinguishing media : Carbon dioxide (CO₂).
Dry powder.
Foam.
Water spray.

5.2. Special hazards arising from the substance or mixture

Specific hazards : When exposed to heat, may decompose liberating hazardous gases.
CO_x

5.3. Advice for fire-fighters

Protection against fire : Wear proper protective equipment.
Surrounding fires : Use water spray or fog for cooling exposed containers.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Minimize generation of dust.

6.2. Environmental precautions

Environmental precautions : Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Clean up methods : Sweep up dry powder and dispose properly.

6.4. Reference to other sections

Reference to other sections : No Reference

SECTION 7 Handling and storage

7.1. Precautions for safe handling

General : Minimize generation of dust.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Powder Store at room temperature.
Liquid Store at 2 - 8 °C Store in dry, well-ventilated area. Keep container closed when not in use.

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G0938

SECTION 7 Handling and storage (continued)

7.3. Specific end use(s)

Specific end use(s) : For professional use only.
Duchefa Biochemie B.V. products are only intended for in vitro laboratory research purposes.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No data available.

8.2. Exposure controls

- Eye protection : Safety glasses.
- Skin protection : Wear suitable protective clothing.
- Hand protection : Gloves.
- Respiratory protection : No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation.

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

• Appearance

Appearance : Powder.
Crystals.

Colour : White.

• Odour

Odour : Mild.

• Odour threshold

Odour threshold : Not established.

• pH

pH value : No data available.

• Melting point / Freezing point

Melting point [°C] : 232 - 235

• Initial boiling point - boiling range

Boiling point [°C] : No data available.

• Flash point

Flash point [°C] : No data available.

• Evaporation rate

Evaporation rate (ether=1) : No data available.

• Flammability

Flammability range [vol% in air] : No data available.

• Explosion limits (lower - upper)

Explosion limits : No data available.

• Vapour pressure

Vapour pressure : No data available.

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Gibberelic acid 4+7**G0938****SECTION 9 Physical and chemical properties (continued)****• Vapour density**

Relative vapour density (air=1) : No data available.

• Relative density

Relative density : 0.75 - 0.85

• Solubility

Solubility in water : 5 g/l

• Partition coefficient : n-octanol / water

Log P octanol / water at 20°C : No data available.

• Auto-ignition temperature

Auto-ignition temperature [°C] : No data available.

• Thermal decomposition

Thermal decomposition [°C] : No data available.

• Viscosity

Viscosity : No data available.

• Explosive Properties

Explosive Properties : Not established.

• Oxidising properties

Oxidising properties : Not established.

9.2. Other information

Other data : No data available.

SECTION 10 Stability and reactivity**10.1. Reactivity**

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous properties : None under normal conditions.

10.4. Conditions to avoid

Conditions to avoid : Moisture.

10.5. Incompatible materials

Materials to avoid : Strong oxidizers.

10.6. Hazardous decomposition productsHazardous decomposition products : According to process conditions, hazardous decomposition products may be generated.
COx**SECTION 11 Toxicological information****11.1. Information on toxicological effects**

Rat oral LD50 [mg/kg] : > 15000

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Gibberelic acid 4+7**G0938**

SECTION 12 Ecological information

12.1. Toxicity

96 H-LC50 - Rainbow trout [mg/l] : > 10

12.2. Persistence - degradability

Biodegradation [%] : Circa 99

12.3. Bioaccumulative potential

Bioaccumulative potential : None under normal conditions.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

General : Dispose of this material and its container at hazardous or special waste collection point.

SECTION 14 Transport information

14.1. UN Number

Not applicable.

14.2. Proper shipping name

Not applicable.

14.3. Transport Hazard Classification

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Not applicable.

14.7. Bulk transport - annex II Marpol 73/78 - IBC

Not applicable.

SECTION 15 Regulatory information

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

Ensure all national/local regulations are observed.

15.2. Chemical Safety Assessment

Not established.

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SECTION 16 Other information

- Further information** : The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.
- Revision** : Complete SDS revision

The contents and format of this SDS are in accordance with REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

End of document

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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 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 supplémentaires:

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 ₆ H ₁₂ O ₆ Poids moléculaire: 180.16
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Section 10 Stabilité Et Réactivité

Stabilité chimique: Stable

Polymérisation dangereuse: N'aura pas lieu.

Conditions à éviter: Les températures excessives.

Matières incompatibles: Comburentes 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

Mutagenicité 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 cancérogène 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 cancérogène 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 cancérogène ni comme cancérogène 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 disponibles

Potentiel de bioaccumulation: Pas de données disponibles

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



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	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	Cramps, diarrhea	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.
Skin	Dermal irritation	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.
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:	CLOSED CUP: 160°C (320°F). (Chemical Hazard Response Information System, 2001; Lewis, 1997). OPEN CUP: 177°C (350.6°F) (Budavari, 2000; Chemical Response Information System, 2001; NIOSH ICSC, 2001) OPEN CUP: 199 C(390 F) (National Fire Protection Association, Fire Protection Guide to Hazardous Materials, 13 ed., 2002)
Auto Ignition:	370°C (698°F)(NFPA Fire Protection Guide to Hazardous Materials, 13th ed., 2002; NIOSH ICSC, 2001; CHRIS, 2001) 392 C (739 F) (Lewis, 1997)
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:	These products are carbon oxides (CO, CO ₂), irritating and toxic fumes.
Fire Fighting Equipment and Procedures:	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

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:	<p>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.</p> <p>Large Spill:</p>

	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 triiodide, 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.

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

<u>Hazardous Ingredients</u>	<u>CAS/EC #</u>	<u>PEL/TLV (MG/M#)</u>	<u>Max % Weight</u>	<u>NTP</u>	<u>IARC</u>
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)

Sanford NA
2711 Washington Boulevard
Bellwood, IL 60104
Phone: 708-547-6650 or 800-323-0749

Emergency Medical Number: 888-786-0972

Creation Date: October 20, 2003

Section One: Product Information

Product Name: Higgins Liquid Pen Ink Cleaner

Colors: Not applicable

Writing Instrument Manufacturers Association (WIMA) certified. Conforms to ASTM D04236. This cleaner has been examined by the WIMA Board Certified Toxicologist in a program of toxicological evaluation to assure it is in compliance with the Federal Hazardous Substances Act (FHSA), Labeling of Hazardous Art Materials Act (LHAMA), and ASTM D-4236.

Section Two: Composition

Mild alkaline detergent, sodium metasilicate pentahydrate (10213-79-3)

Section Three: Hazards Identification

This product is considered safe under normal use conditions.

Section Four: First Aid Measures

Inhalation: Not an inhalation hazard.

Skin Contact: Flush with water

Eye Contact: Flush with water.

Ingestion: Drink large amounts of water or milk.

Section Five: Fire Fighting Measures

Flash Point: Not flammable

Flammability Limits (% by volume): Lower: Not available Upper: Not available

Extinguishing Media: As appropriate for surrounding area

Special Fire Fighting Measures: None

Unusual Fire and Explosion Hazards: None

Section Six: Accidental Release Measures

In Case of Spill or Accidental Release: Wipe up with absorbent material

Section Seven: Handling and Storage

Handling: No special handling requirements.

Storage: Keep from freezing.

Section Eight: Exposure Controls and Personal Protection

Eye Protection: None under normal use conditions.
 Clothing: None under normal use conditions.
 Respirator: None under normal use conditions.
 Ventilation: None under normal use conditions.

Section Nine: Physical and Chemical Properties

For ink unless otherwise specified:

Boiling Point: 100C
 Specific Gravity: 1.02
 Vapor Pressure: Not determined
 Solubility in Water: Dispersible
 Evaporation Rate: Not determined
 Appearance; Odor: Light blue liquid; mild soap odor

Section Ten: Stability and Reactivity

Stability: Stable
 Conditions to Avoid: Freezing
 Chemical Incompatibility: None known
 Hazardous Decomposition: None known
 Hazardous Polymerization: Will not occur

Section Eleven: Toxicological Information

IARC Monographs: No
 National Toxicology Program: No
 OSHA Regulated: No

Section Twelve: Ecological Information

Not available

Section Thirteen: Disposal Considerations

Dispose in accordance with Federal, State, and Local Regulations.

Section Fourteen: Transport Information

Not regulated as a hazardous material by DOT, IMO, or IATA.

Section Fifteen: Regulatory Information

TSCA INVENTORY: The product on this Material Safety Data Sheet is not listed on the Toxic Substances Control Act Inventory. All ingredients used to manufacture this product are listed on the TSCA Inventory

Section Sixteen: Other Information

HMIS Code	
Health	N/A
Flammability	N/A
Reactivity	N/A
Personal Protection	N/A

0=Minimal / 4 = Severe

Sanford NA has been advised by Counsel that the OSHA Hazard Communication Standard does not apply to the Sanford Product described in this Material Safety Data Sheet. The reason for the exemption is contained in 29 CFR 1910.1200(b)(6)(ix) as amended July 1, 2002 per the Code of Federal Regulations. The information contained in this MSDS is forwarded to you for your information, but is not meant to imply that the product is covered by the Hazard Communication Standard nor is this MSDS meant to comply with all requirements of the Hazard Communication Standard.

1. Identification

Product identifier **DEGREASER**

Other means of identification

SDS number 538N-87A

Product code HIL00817

Recommended use Degreaser

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 Not classified.

Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves. Wear eye/face protection.

Response If on skin: Wash with plenty of water. 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. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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 Avoid breathing spray or mist Use With Adequate Ventilation. Do not take internally. Do not eat, drink or smoke when using this product.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Tetrasodium ethylenediamine tetraacetate		64-02-8	3 - < 5
Silicic acid, Sodium Salt		6834-92-0	1 - < 3
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	Remove contaminated clothing. Wash with plenty of soap and water. 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 immediately.
Ingestion	Rinse mouth. Drink plenty of water. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.
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	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	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	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. 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	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. Absorb in vermiculite, dry sand or earth and place into containers. 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. 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	Do not get this material in contact with eyes. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

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. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Chemical safety goggles when working with concentrate. Avoid contact with eyes.
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves.
Other	Normal work clothing (long sleeved shirts and long pants) is recommended.
Respiratory protection	Not normally required with adequate ventilation.
Thermal hazards	None known.
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	Clear, amber liquid
Physical state	Liquid.
Form	Liquid.
Color	Amber
Odor	Non-objectionable
Odor threshold	Not available
pH	12.5 - 13.5 Concentrate
Melting point/freezing point	Not applicable / Not available
Initial boiling point and boiling range	202 °F (94.44 °C)
Flash point	> 200.0 °F (> 93.3 °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	17.56 mm Hg
Vapor density	0.63 Air =1
Relative density	1.04 at 77°F
Solubility(ies)	
Solubility (water)	Complete
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Density	8.64 lb/gal
Percent volatile	88.5 - 89.5 %
VOC (Weight %)	0.46 %

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 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	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
DEGREASER		
Acute		
<i>Inhalation</i>		
LC50	Mouse	2688.3118 mg/l, 4 Hours estimated 2597.4026 mg/l, 2 Hours estimated
	Rat	5324.6753 mg/l, 0.5 Hours estimated 3116.8831 mg/l, 4 Hours estimated
<i>Oral</i>		
LD50	Mouse	82950.9922 mg/kg estimated
	Rabbit	1093.4783 g/kg estimated
	Rat	71913.9922 mg/kg estimated
Components	Species	Test Results

Silicic acid, Sodium Salt (CAS 6834-92-0)

Acute

Oral

LD50	Mouse	2400 mg/kg
	Rat	1280 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	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.

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
DEGREASER			
Aquatic			
Crustacea	EC50	Daphnia	67559.2344 mg/l, 48 hours estimated
Components	Species		Test Results
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	
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	Buyer assumes all risk and liability associated with disposal of this product (original concentration or dilution) in violation of applicable law. Do not contaminate ponds, waterways or ditches with chemical or used container.
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	Waste from normal product use may be sewered to a public owned treatment works (POTW) in compliance with applicable Federal, State, and local pretreatment requirements. Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Triple rinse (or equivalent). Then offer clean, dry container for recycling or reconditioning.

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.

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 - No
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No
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SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Safe Drinking Water Act (SDWA)	Not regulated.
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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	01-19-2015
Version #	01
HMIS® ratings	Health: 3 Flammability: 0 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.

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 (CO ₂).
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.
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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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

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 50°F or higher than 120°F.

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		
<i>Dermal</i>		
LD50	Rabbit	33750 mg/kg estimated

Product	Species	Test Results
<i>Inhalation</i>		
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
<i>Oral</i>		
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.

SAFETY DATA SHEET

6/25/2015

SECTION I - IDENTIFICATION

Material Name

SPEEDBALL FABRIC SCREEN PRINTING INK

Manufacturer Information

Speedball Art Products Co.
P.O. Box 5157
2301 Speedball Road
Statesville, NC 28677
Phone: 704-978-4166
Fax: 1-704-838-1472
Email: budmartin@speedballart.com

For transportation emergencies only call: 1-800-898-7224

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.

Carcinogenicity - Category 1B

Skin Sensitization - Category 1

GHS Label Elements

Symbol(s)



Signal Word(s)

Danger

Hazard Statement(s)

May cause cancer.

Precautionary Statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Store locked up.

Response

Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. IF exposed or concerned: Get medical advice/ attention. If skin irritation or rash occurs: Get medical advice/attention.

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

<u>Ingredient</u>	<u>CAS/EC #</u>	<u>PEL/TLV (MG/M#)</u>	<u>Max % Weight</u>	<u>NTP</u>	<u>IARC</u>
None					
BENZISOTHIAZOLINONE	2634-33-5	N/A	0.19000	N	N
DISTILLATES (PETROLEUM), HYDROTREATED HE	64742-52-5	N/A	0.20620	N	N

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 29437 mg/kg.

The summated LC50 is 20877 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

OCTYLPHENOXYPOLYETHOXYETHANOL

PROPYLENE GLYCOL

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:

AMMONIUM HYDROXIDE

MICA

PIGMENT RED 101

PIGMENT WHITE 6

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:

NONE

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: 06/25/2015

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
AMETHYST		(NONE)
BLACK		(NONE)
BLACK PEARL		(NONE)
BLUE		(NONE)
BLUE DENIM		(NONE)
BLUE TOPAZ		(NONE)
BROWN		(NONE)
BURGUNDY		(NONE)
CITRINE		(NONE)
EMERALD		(NONE)
FL. HOT PINK		(NONE)
FL. LIME GREEN		(NONE)
FL. MAGENTA		(NONE)
FL. ORANGE		(NONE)
GOLD		(NONE)
GREEN		(NONE)
ORANGE		(NONE)
PEACOCK BLUE		(NONE)
PEARLY WHITE		(NONE)
PROCESS CYAN		(NONE)
PROCESS MAGENTA		(NONE)
PROCESS YELLOW		(NONE)
RASPBERRY		(NONE)
RED		(NONE)
SHERBERT		(NONE)
SILVER		(NONE)
VIOLET		(NONE)
WHITE		(NONE)
YELLOW		(NONE)

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 Manufacturer's Name: BRODY CHEMICAL Address: 4825 S. 6200 W. SLC, UT. 84118	HMIS Rating: Health-3; Flammability-0; Reactivity-1; Personal Protection-E DOT Hazard Classification: CORROSIVE Identity (trade name as used on label): HYDROCHLORIC ACID
Date Prepared: 11/15/2002 Prepared By: RW Information Calls: (801) 963-2436 EMERGENCY RESPONSE NUMBER: 1-800-424-9300	MSDS Number: Revision- 13 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		EXTINGUISHER MEDIA: Non-combustible
SPECIAL FIRE FIGHTING PROCEDURES: None		
Unusual Fire & Explosion Hazards: Avoid exposure to metals, oxidants which might produce flammable hydrogen gas.		

SECTION 4 - REACTIVITY HAZARD DATA	
STABILITY <input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE	HAZARDOUS POLYMERIZATION <input type="checkbox"/> WILL <input checked="" type="checkbox"/> 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: <input checked="" type="checkbox"/> INHALATION <input type="checkbox"/> INGESTION <input type="checkbox"/> SKIN ABSORPTION <input type="checkbox"/> EYE <input type="checkbox"/> 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

Page E1 of E2

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.

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
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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

Carcinogenicity: 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* (Crustacea), 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/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	0.1 ppm 1 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	The value in mg/m ³ is approximate. Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.1 ppm 1 mg/m ³	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/cm ³
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)
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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

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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

9415204
 9415206 9415208 9415304
 9415306 9415308 9415406
 MSDS No. 9415408 9415505 9415506
 Effective Date: September 13, 2002

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

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	Iron Metal Filings	416-984-3000 HAZARD RATING LEAST SLIGHT MODERATE HIGH EXTREME 0 1 2 3 4 WHMIS Health 1 Flammability 0 Reactivity 1
Chemical Synonyms	Iron Filings	
Formula	Fe	
CAS No.	7439-89-6	

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 ₂ O = 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

Flash point	Non-flammable.	Flammable Limits in Air % by Volume	N/A	Lower	Upper
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.
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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. For laboratory use only. Not for drug, food or household use. Keep out of reach of children. Printed on recycled paper.

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.
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SECTION IX PREPARATION OF THE MSDS

Rev. No.	4	Date	September 13, 2002	Approved	Michael Raszeja
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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				
Niveau de risque				
Minime 0	Légère 1	Modéré 2	Sérieux 3	Extrême 4
Santé 1		Flammabilité 0		Reactivité 1
WHMIS				

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'ébullition (°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 particules; inodore.		

SECTION IV Risques D'incendie ou D'explosion

Point d'éclair	Inflammable.	Limites d'inflammabilité % par volume	Sans objet.	Seuil minimal	Seuil maximal
Moyens d'extinction	Utiliser des poudres chimiques SÈCHES, du CO ₂ , de l'eau pulvérisée ou une mousse. En cas de feu, sapeur-pompier devra porter un masque adéquate ou un respirateur autonome.				

Inflammabilité et risques d'explosion

Sans objet.

TMD Substance non réglementée par le TMD (Canada).

Au meilleur de nos connaissances, l'information contenue dans ce document est exacte. Toutefois, ni le fournisseur ci-haut mentionné ni aucune de ses succursales ne peut assumer quelque responsabilité que ce soit en ce qui a trait à l'exactitude ou à l'état complet de l'information contenue dans ce document. La détermination finale de la convenance de tout matériel ou produit est la responsabilité exclusive de l'utilisateur. Tous les matériaux ou produits peuvent présenter certains risques et devraient être utilisés avec prudence. Bien que certains risques soient décrits dans ce document, nous ne pouvons garantir que ce sont les seuls risques qui existent.

SECTION V Données sur la Réactivité

IX0210

Chimique	oui	X	Si non, dans quelles condition?
Stabilité	non		
Incompatibilité avec d'autres produits	oui	X	Combustibles forte, acides organiques, acides minéral, l'eau.
Produits de décomposition 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 aiguë 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 un médecin ou le centre de poison commande immédiatement. Induisez le vomissement seulement s'informé par le personnel médical approprié. Contact oculaire: Vérifier si la victime porte des verres de contact et dans ce cas lui les enlever. Rincer les yeux immédiatement à l'eau courante pendant au moins 15 minutes en gardant les paupières ouvertes. Obtenir de l'aide médicale. Contact cutané: 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.
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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 ·9H ₂ O	404.00	4-40%
Water	7732-18-5	H ₂ O	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/m³ (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 LD₅₀: 3250 mg/kg as iron(III) nitrate
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 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

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

Revision Date: August 3, 2015

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%

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 (H₂O = 1): 0.786 - 0.79 @ 20°C
Percent volatile (%): 100%
Molecular formula: (CH₃)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.

SAFETY DATA SHEET

Section 1: Chemical Product and Company Information

1.1 Product Identifier

Product Name: KaiBlooley

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use: Water based cleaner

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer: Kaivac Inc.
2680 Van Hook Ave.
Hamilton, OH 45015

**1.4 Emergency Telephone Number: In the event of a medical emergency ONLY, please call:
INFOTRAC at 1-800-535-5053 24/7/365**

Telephone Number for Information: 800-287-1136

Email:

SDS Date of Preparation/Revision: April 12, 2016

Section 2: Hazards Identification

2.1 Classification of the Substance or Mixture

EU Classification (1272/2008): Eye Damage Category 1 (H318)
Skin Corrosive Category 1C (H314)

US OSHA Classification (29CFR1910.1200): Eye Damage Category 1
Skin Corrosive Category 1C

2.2 Label Elements:



DANGER! Contains phosphoric acid and alcohols, C12-15, ethoxylated

H314 Causes severe skin burns and eye damage.

Prevention:

P260 Do not breathe mists.
P280 Wear protective gloves and eye protection.
P264 Wash thoroughly after handling.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with local and national regulations.

Response:

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contacts, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310 Immediately call a POISON CENTER or doctor.

P303+P361+P353 IF ON SKIN(or hair): Take off immediately all contaminated clothing. Rinse skin with water or a shower.

P363 Wash contaminated clothing before reuse.

P310 Immediately call a POISON CENTER or doctor.

P304+P340 IF INHALED: Remove person to fresh air and

	keep comfortable for breathing. P310 Immediately call a POISON CENTER or doctor.
--	---

2.3 Other Hazards: None identified

Section 3: Composition/Information on Ingredients

3.2 Mixture

Component	CAS Number/ EINECS Number.	Amount	EU/GHS Classification (1272/2008)
Alcohols C8 Ethoxylated/ Propoxylated	64366-70-7	2-8%	Eye Damage Category 1 (H318) Aquatic Acute Toxicity Category 1 (H400) Aquatic Chronic Toxicity Category 3 (H412)
Citric Acid	77-92-9/201-069-1	1-10%	Eye Irritation Category 2A (H319)
Sulfamic Acid	5329-14-6/ 226-218-8	1-10%	Eye Irritation Category 2A (H319) Skin Irritation Category 2 (H315) Aquatic Chronic Toxicity Category 3 (H412)
Dipropylene glycol monomethyl ether	34590-94-8/ 252-104-2	1-10%	Not Hazardous
Phosphoric Acid	7664-38-2/231-633-2	1-10%	Skin Corrosion Category 1B (H314) Corrosive to Metals (H290)
Methyl Salicylate (fragrance)	119-36-8 / 204-317-7	<1%	Acute Oral Toxicity Category 4 (H302)

Refer to Section 16 for Full Text of GHS Classes and H Statements
The exact percentages are a trade secret.

Section 4: First Aid Measures

4.1 Description of First Aid Measures

First Aid

Inhalation: Remove to fresh air. If breathing has stopped give artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get immediate medical attention.

Skin contact: Immediately flush skin thoroughly with water for 15 minutes. Wash area with soap and water. Remove contaminated clothing and launder before reuse. Get immediate medical attention.

Eye contact: Immediately flush eyes with water for at least 20 minutes while lifting the upper and lower lids. Get immediate medical attention.

Ingestion: If conscious, give 1 glass of water or milk to dilute. DO NOT induce vomiting. Never give anything by mouth to a person who is unconscious or convulsing. Get immediate medical attention.

See Section 11 for more detailed information on health effects.

4.2 Most Important symptoms and effects, both acute and delayed: Causes severe eye irritation or burns with possible corneal damage and blindness. Skin contact may cause severe irritation or burns. Vapors or mists may cause irritation mucous membranes and respiratory tract with possible pulmonary edema. Ingestion may cause gastrointestinal corrosion, abdominal pain, nausea, shock or death.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical treatment is recommended for all incidents of contact.

Section 5: Fire Fighting Measures

5.1 Extinguishing Media: Use any media that is suitable for the surrounding fire.

5.2 Special Hazards Arising from the Substance or Mixture: Thermal decomposition produces oxides of carbon and phosphorus.

5.3 Advice for Fire-Fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

Section 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Wear appropriate protective clothing as needed to prevent eye and skin contact.

6.2 Environmental Precautions: Avoid contamination of water supplies and environmental releases. Report spills as required to authorities.

6.3 Methods and Material for Containment and Cleaning Up: Contain and collect spill with inert materials such as commercial absorbent, sand or earth. Place in a suitable container for disposal. If permitted, neutralize and flush to sewer.

6.4 Reference to Other Sections:

Refer to Section 13 for disposal information and Section 8 for protective equipment.

Section 7: Handling and Storage

7.1 Precautions for Safe Handling:

Prevent eye and skin contact. Remove and launder contaminated clothing before re-use. Wash thoroughly after handling and before eating, drinking, smoking or using toilet facilities.

7.2 Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, well-ventilated area away from bases and other incompatible materials. Keep container closed.

7.3 Specific end use(s):

Industrial uses: None identified

Professional uses: None identified

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters:

Chemical Name	US OEL	EU IOEL	UK OEL	DFG MK	Biological Limit Value
Alcohols C8 Ethoxylated/Propoxylated	None Established	None Established	None Established	None Established	None Established
Citric Acid	None Established	None Established	None Established	None Established	None Established
Phosphoric Acid	1 mg/m ³ TWA OSHA PEL 1 mg/m ³ TWA 3 mg/m ³ STEL ACGIH TLV	1 mg/m ³ TWA 2 mg/m ³ STEL	1 mg/m ³ TWA 2 mg/m ³ STEL	2 mg/m ³ TWA 4 mg/m ³ STEL (inhalable aerosol)	None Established
Sulfamic Acid	None Established	None Established	None Established	None Established	None Established
Dipropylene glycol monomethyl ether	100 ppm skin TWA OSHA PEL 100 ppm TWA	50 ppm TWA	50 ppm TWA	50 ppm TWA 50 ppm STEL	None Established

	150 ppm STEL skin ACGIH TLV				
Methyl Salicylate	None Established	None Established	None Established	None Established	None Established

8.2 Exposure Controls:

Appropriate Engineering Controls: General ventilation is generally adequate for normal use. Use local exhaust ventilation if needed to maintain concentration of hazardous constituents below recommended limits.

Personal Protective Measurers

Respiratory Protection: Not necessary if workplace concentrations of hazardous constituents are below recommended limits. If the exposure limit is exceeded, an approved respirator should be worn. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable local or national regulations, in the US: OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Eye Protection: Use chemical safety goggles.

Skin Protection: Impervious gloves such as neoprene or nitrile recommended where contact is likely. Wear protective clothing as required to avoid prolonged or repeated skin contact when handling.

Other protection: None required.

Section 9: Physical and Chemical Properties

9.1 Information on basic Physical and Chemical Properties:

Appearance and Odor: Clear blue liquid with a wintergreen odor.

Solubility in Water:	Soluble	Boiling Point:	210°F
Odor Threshold:	Not determined	Partition Coefficient:	Not determined
pH:	0-2.0	Melting Point:	Not determined
Specific Gravity:	1.05-1.07	Vapor Density:	Not determined
Evaporation Rate:	Not determined	Vapor Pressure:	Not determined
Flammability(solid/gas):	Not applicable	Flash Point:	Not applicable
Explosive Limits:	Not determined	Autoignition Temperature:	Not determined
Decomposition Temperature:	Not determined	Viscosity:	Not determined
Explosive Properties:	None	Oxidizing Properties:	None

9.2 Other Information: None

Section 10: Stability and Reactivity

10.1 Reactivity: Not reactive under normal conditions of use and storage.

10.2 Chemical Stability: Stable.

10.3 Possibility of Hazardous Reactions: Reaction with strong bases will generate heat.

10.4 Conditions to Avoid: None known.

10.5 Incompatible Materials: Avoid strong bases.

10.6 Hazardous Decomposition Products: Thermal decomposition produces oxides of carbon and phosphorus.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects:**Potential Health Hazards**

Inhalation: Mist and vapors may cause irritation to the eyes, mucous membranes and upper respiratory tract. High concentrations may cause severe irritation and pulmonary edema..

Skin Contact: May cause severe irritation and burns with reddening and pain. Prolonged or repeated skin contact with diluted solutions or mists may cause dermatitis.

Eye Contact: Causes severe irritation or burns with redness, pain and tearing. Permanent eye damage may occur.

Ingestion: May cause gastrointestinal corrosion, abdominal pain and nausea, circulatory shock and death.

Acute toxicity values: Product ATE: Oral: 30600 mg/kg, Dermal: 54800 mg/kg, Inhalation: 17 mg/m³
Phosphoric Acid: LD50 oral rat: 1530 mg/kg, LD50 dermal rabbit: 2740 mg/kg, LC50 inhalation rat: 0.85 mg/m³/1 hour.

Skin corrosion/irritation: Studies performed on phosphoric acid were found to be corrosive.

Eye damage/ irritation: Product is expected to be damaging to eyes based on mixture rules.

Respiratory Irritation: Prolonged inhalation may cause severe respiratory irritation.

Respiratory Sensitization: Not known to be a sensitizer.

Skin Sensitization: Not known to be a sensitizer.

Germ Cell Mutagenicity: This product is not expected to present a risk of genetic damage

Carcinogenicity: None of the components are listed as a potential carcinogen by IARC, NTP, OSHA, or CLP.

Developmental / Reproductive Toxicity: None of the ingredients are reproductive toxins.

Specific Target Organ Toxicity (Single Exposure): No adverse effects are expected based on components.

Specific Target Organ Toxicity (Repeated Exposure): No adverse effects are expected.

Section 12: Ecological Information

12.1 Toxicity: Biodegradable Surfactant: Pleuronectes platessa LC50: 0.59mg/L, Lepomis macrochirus NOEC: 0.16 mg/L.
Sulfamic Acid: Pimephales promelas LC50: 70.3 mg/L.

12.2 Persistence and degradability: Surfactant and dipropylene glycol monomethyl ether are readily biodegradable.

12.3 Bioaccumulative Potential: Surfactant is not bioaccumulative.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: None required.

12.6 Other Adverse Effects: No data available.

Section 13: Disposal Considerations

13.1 Waste Treatment Methods:

Dispose in accordance with all local, state and national regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations

Section 14: Transport Information

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	UN3264	Corrosive, liquid, acidic, inorganic, n.o.s. (phosphoric acid, sulfamic acid)	8	III	No
Canadian TDG	UN3264	Corrosive, liquid, acidic, inorganic, n.o.s. (phosphoric acid, sulfamic acid)	8	III	No
EU ADR/RID	UN3264	Corrosive, liquid, acidic, inorganic, n.o.s. (phosphoric acid, sulfamic acid)	8	III	No
IMDG	UN3264	Corrosive, liquid, acidic, inorganic, n.o.s. (phosphoric acid, sulfamic acid)	8	III	No
IATA/ICAO	UN3264	Corrosive, liquid, acidic, inorganic, n.o.s. (phosphoric acid, sulfamic acid)	8	III	No

Note: These products can be shipped under limited quantity provisions – refer to specific regulations for requirements.

14.6 Special Precautions for User: None identified

14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code: Not applicable.

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Chemical Safety Assessment: None required

Other EU Regulations: This product is classified and labeled in accordance with EU CLP following mixture rules. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 (REACH)

Section 16: Other Information

CLP Hazard Statements for Reference (See Section 3):

H302 Harmful if swallowed.
 H318 Causes serious eye damage.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H314 Causes severe skin burns and eye damage.
 H290 May be corrosive to metals.
 H400 Very toxic to aquatic life
 H412 Harmful to aquatic life with long lasting effects

Revision Date: 12 April 2016

Supersedes Date: 25 June 2015

Revision Summary: Updated pH

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. Kaivac assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, Kaivac assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed.

SECTION 1 : IDENTIFICATION

Product Name: **KILZ® Original Low Odor Interior Primer (Formerly Kilz Odorless)**
Product Code: 1004
SDS Manufacturer Number: 1004
Manufacturer Name: Masterchem Industries LLC
Address: 3135 Old Highway M
Imperial, MO 63052-2834
(636) 942-2510
(800) 325-3552
General Phone Number:
Customer Service Phone Number:
Emergency Phone Number: For emergencies in the US & Canada, call Verisk 3E: 866-519-4752
Access Code: 335213
SDS Creation Date: June 26, 2006
SDS Revision Date: October 20, 2017

SECTION 2 : HAZARD(S) IDENTIFICATION

GHS Pictograms:



Signal Word:

Warning.

GHS Class:

Flammable Liquid, Category 3.
Aspiration Hazard, Category 1.
Eye Irritant, Category 2B.
Skin Irritant, Category 2.
Specific Target Organ Toxicity, Single Exposure, Category 3.
Acute Inhalation Toxicity, Category 4

Hazard Statements:

Flammable liquid and vapor
May be fatal if swallowed and enters airways.
Causes serious eye irritation.
Harmful if inhaled.
May cause respiratory irritation, drowsiness or dizziness.

Precautionary Statements:

DO NOT use this product unless you can achieve cross-ventilation by opening windows and doors during application and drying or use the product outdoors.
Do not spray on an open flame or other ignition source.
Extinguish all flames and pilot lights and turn off stoves, heaters, electric motors, high intensity lights and other sources of ignition during use and until all vapors are gone.
In case of fire: Use dry chemical, carbon dioxide to extinguish small fires. Use water for large fires.
Wear protective clothing, gloves, eye, and face protection.
Do not breathe vapors or spray mist.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Take off contaminated clothing and wash it before reuse.
Keep container tightly closed.
Store locked up in a cool, well-ventilated place.
Dispose of unused contents, container, and other contaminated wastes in accordance with local, state, federal, and provincial regulations.
If in eyes: Rinse cautiously with water for several minutes and remove contacts if present and easy to do. Continue rinsing and get medical attention if eye irritation persists.
If on skin or hair: Wash with plenty of soap and water.
If inhaled: Leave the area if you experience headaches, drowsiness or dizziness to obtain fresh air and keep at rest in a position comfortable for breathing. If difficulty continues, get medical attention immediately.
If swallowed: Do not induce vomiting and get medical attention immediately.

Emergency Overview:

DANGER! Flammable. Harmful if swallowed. Aspiration may occur during swallowing or vomiting, resulting in lung damage. Harmful if inhaled. Inhalation of vapors may cause drowsiness and dizziness. Irritant.

Route of Exposure:

Eyes. Skin. Inhalation. Ingestion.

Potential Health Effects:

Eye:

Causes severe eye irritation and possible injury.

Skin:

Causes skin irritation.

Inhalation:

Harmful if inhaled. Inhalation of vapors may cause drowsiness and dizziness. Prolonged or excessive inhalation may cause respiratory tract irritation.

Ingestion:

Harmful if swallowed. Ingestion can cause nausea, vomiting, diarrhea and gastrointestinal irritation. Aspiration of petroleum distillates into the lungs can cause severe chemical pneumonitis that can be fatal.

Chronic Health Effects:

Prolonged or repeated contact can result in defatting and drying of the skin, which may result in skin irritation and dermatitis (rash).
Repeated or prolonged inhalation may cause toxic effects.

Signs/Symptoms: Overexposure can cause headaches, dizziness, nausea, and vomiting.
Target Organs: Eyes. Skin. Respiratory system. Digestive system. Central nervous system. Kidney.
Aggravation of Pre-Existing Conditions: May aggravate pre-existing respiratory disorders, allergy, eczema, or skin conditions.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent	EC Num.
Calcium carbonate (limestone)	1317-65-3	30 - 60 by weight	215-279-6
Nepheline Syenite	37244-96-5	10 - 30 by weight	
Hydrotreated heavy petroleum naphtha	64742-48-9	10 - 30 by weight	265-150-3
Titanium dioxide	13463-67-7	5 - 10 by weight	236-675-5
Plasticizer	94-28-0	1 - 5 by weight	202-319-2
Silica, crystalline - quartz	14808-60-7	0.1 - 1 by weight	238-878-4

SECTION 4 : FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Remove contacts if present and easy to do. Continue rinsing. Get medical attention, if irritation or symptoms of overexposure persists.

Skin Contact: Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

Ingestion: If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Other First Aid: Due to possible aspiration into the lungs, DO NOT induce vomiting if ingested. Provide a glass of water to dilute the material in the stomach. If vomiting occurs naturally, have the person lean forward to reduce the risk of aspiration.

SECTION 5 : FIRE FIGHTING MEASURES

Flammable Properties: Combustible.

Flash Point: 102°F (38.9°C)

Auto Ignition Temperature: Not applicable.

Lower Flammable/Explosive Limit: 0.8

Upper Flammable/Explosive Limit: 9.6

Fire Fighting Instructions: Flammable. Cool fire-exposed containers using water spray.

Extinguishing Media: Use dry chemical, carbon dioxide to extinguish small fires. Use water for large fires.

Protective Equipment: As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.

Unusual Fire Hazards: Flammable liquid. Vapors can form an ignitable mixture with air. Vapors can flow along surfaces to a distant ignition source and flash back.

NFPA Ratings:

NFPA Health:	1
NFPA Flammability:	3
NFPA Reactivity:	1

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate area and keep unnecessary and unprotected personnel from entering the spill area. Use proper personal protective equipment as listed in Section 8.

Environmental Precautions: Avoid runoff into storm sewers, ditches, and waterways.

Methods for containment: Contain spills with an inert absorbent material such as soil or sand. Prevent from spreading by covering, diking or other means. Provide ventilation. Eliminate all ignition sources including those beyond the immediate spill area if safe to do so.

Methods for cleanup: Clean up spills immediately observing precautions in the protective equipment section. Collect spill with a non-sparking tool. Place into a suitable container for disposal. Take precautionary measures against static discharges. After removal, flush spill area with soap and water to remove trace residue.

SECTION 7 : HANDLING and STORAGE

Handling:	DO NOT use this product unless you can achieve cross-ventilation by opening windows and doors during application and drying or use the product outdoors. Avoid breathing vapor and contact with eyes, skin and clothing. Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
Storage:	Store in a cool, dry, well ventilated area away from sources of heat, combustible materials, and incompatible substances. Keep container tightly closed when not in use.
Work Practices:	To reduce potential for static discharge, bond and ground containers when transferring material.
Special Handling Procedures:	Do not reuse containers without proper cleaning or reconditioning.
Hygiene Practices:	Wash thoroughly after handling. Avoid contact with eyes and skin. Avoid inhaling vapor or mist.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Skin Protection Description:	Chemical-resistant gloves and chemical goggles, face-shield and synthetic apron or coveralls should be used to prevent contact with eyes, skin or clothing.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor 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 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 Protective:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
PPE Pictograms:	



Titanium dioxide :

Guideline ACGIH: TLV-TWA: 10 mg/m³

Silica, crystalline - quartz :

Guideline ACGIH: TLV-TWA: 0.025 mg/m³ (R)

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

Physical State:	Liquid.
Color:	White
Odor:	Slight.
Odor Threshold:	Not applicable.
Boiling Point:	>99°F (>37°C)
Melting Point:	Not applicable.
Density:	13.15 Lbs/gal
Solubility:	Not applicable.
Vapor Density:	Not applicable.
Vapor Pressure:	Not applicable.
Evaporation Rate:	Not applicable.
pH:	Not applicable.
Viscosity:	50-140
Coefficient of Water/Oil Distribution:	Not applicable.
Flammability:	Liquid.
Flash Point:	102°F (38.9°C)
Auto Ignition Temperature:	Not applicable.
VOC Content:	Material VOC: 348 gm/L(Includes Water) Coating VOC.:348 gm/L(Excludes Water)

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Heat, flames, ignition sources, and sparks. Incompatible materials. Freezing or temperatures below 0°C (32°F).
Incompatible Materials:	Oxidizing agents. Strong acids and alkalis.

SECTION 11 : TOXICOLOGICAL INFORMATION

Hydrotreated heavy petroleum naphtha :

Inhalation:	Inhalation - Rat LC50 - Lethal concentration, 50 percent kill: 8500 mg/m ³ /4H [Lungs, Thorax, or Respiration - Other changes] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: >6 gm/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Plasticizer :

Skin:	Administration onto the skin - Rabbit LD50 - Lethal dose, 50 percent kill: 14100 uL/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)
Ingestion:	Oral - Rat LD50 - Lethal dose, 50 percent kill: 31 gm/kg [Behavioral - Somnolence (general depressed activity) Gastrointestinal - Other changes Kidney/Ureter/Bladder - Other changes] (RTECS)

SECTION 12 : ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.
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SECTION 14 : TRANSPORT INFORMATION

DOT Shipping Name:	Paint.
DOT UN Number:	UN1263
DOT Hazard Class:	3
DOT Packing Group:	III
DOT Exemption:	Not applicable.
IATA Shipping Name:	Paint.
IATA UN Number:	1263
IATA Hazard Class:	3
IATA Packing Group:	III
Canadian Shipping Name:	Paint.
Canadian UN Number:	1263
Canadian Hazard Class:	3
Canadian Packing Group:	III
IMDG UN Number :	1263
IMDG Shipping Name :	Paint.
IMDG Hazard Class :	3
IMDG Packing Group :	III
Marine Pollutant:	Not applicable.
ADR UN Number:	1263
ADR Shipping Name :	Paint.
ADR Hazard Class:	3
ADR Packing Group :	III

SECTION 15 : REGULATORY INFORMATION

Calcium carbonate (limestone) :

TSCA Inventory Status: Listed
EC Number: 215-279-6

Nepheline Syenite :

Canada DSL: Listed

Hydrotreated heavy petroleum naphtha :

TSCA Inventory Status: Listed
Canada DSL: Listed
EC Number: 265-150-3

Titanium dioxide :

TSCA Inventory Status: Listed
Canada DSL: Listed
EC Number: 236-675-5

Plasticizer :

TSCA Inventory Status: Listed
Canada DSL: Listed
EC Number: 202-319-2

Silica, crystalline - quartz :

TSCA Inventory Status: Listed
Canada DSL: Listed
EC Number: 238-878-4

SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HMIS Health Hazard: 1
HMIS Fire Hazard: 3
HMIS Reactivity: 1
HMIS Personal Protection: 1

SDS Creation Date: June 26, 2006
SDS Revision Date: October 20, 2017

Disclaimer:

This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet.

Trademark:

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SAFETY DATA SHEET

48010

Section 1. Identification

Product name : KRYLON® Spray Adhesive
Product code : 48010
Other means of identification : Not available.
Product type : Aerosol.
Relevant identified uses of the substance or mixture and uses advised against
Paint or paint related material.

Manufacturer : Krylon Products Group
180 Brunel Road
Mississauga, ON L4Z 1T5

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (800) 247-3268

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
TOXIC TO REPRODUCTION (Fertility) - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 41.5%
Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 84.6%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 46.5%

GHS label elements

Hazard pictograms :



Signal word : Danger

Date of issue/Date of revision : 10/29/2018 **Date of previous issue** : 7/4/2018

48010 KRYLON® Spray Adhesive

Version : 4.01 1/17

SHW-85-NA-GHS-CA

Section 2. Hazards identification

- Hazard statements** : Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging fertility or the unborn child.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
- 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** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling. Pressurized container: Do not pierce or burn, even after use.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. 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 locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.
Please refer to the SDS for additional information. Keep out of reach of children. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- 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

Ingredient name	% by weight	CAS number
Acetone	20	67-64-1
Hexane	13.75	110-54-3
Propane	12.75	74-98-6
Butane	12.25	106-97-8
Heptane	8.25	142-82-5
Lt. Aliphatic Hydrocarbon Solvent	8.25	64742-89-8
Cyclohexane	3.85	110-82-7
Toluene	3.85	108-88-3
Cyclopentane	1.65	287-92-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Section 3. Composition/information on ingredients

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 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 it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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** : Get medical attention immediately. Call a poison center or physician. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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 serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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** : Extremely flammable aerosol. 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. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. 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:
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. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. 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

Section 6. Accidental release measures

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

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). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. Empty containers retain product residue and can be hazardous.

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.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. 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

Occupational exposure limits (OSHA United States)

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Acetone	<p>ACGIH TLV (United States, 3/2017). TWA: 250 ppm 8 hours. STEL: 500 ppm 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 250 ppm 10 hours. TWA: 590 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 2400 mg/m³ 8 hours.</p>
Hexane	<p>ACGIH TLV (United States, 3/2017). Absorbed through skin. TWA: 50 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2016). TWA: 50 ppm 10 hours. TWA: 180 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Propane	<p>NIOSH REL (United States, 10/2016). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 3/2017). Oxygen Depletion [Asphyxiant].</p>
Butane	<p>NIOSH REL (United States, 10/2016). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</p> <p>ACGIH TLV (United States, 3/2017). STEL: 1000 ppm 15 minutes.</p>
Heptane	<p>ACGIH TLV (United States, 3/2017). TWA: 400 ppm 8 hours. TWA: 1640 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 2050 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 85 ppm 10 hours. TWA: 350 mg/m³ 10 hours. CEIL: 440 ppm 15 minutes. CEIL: 1800 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 2000 mg/m³ 8 hours.</p>
Lt. Aliphatic Hydrocarbon Solvent Cyclohexane	<p>None.</p> <p>ACGIH TLV (United States, 3/2017). TWA: 100 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2016). TWA: 300 ppm 10 hours. TWA: 1050 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 300 ppm 8 hours. TWA: 1050 mg/m³ 8 hours.</p>
Toluene	<p>OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours.</p>

Section 8. Exposure controls/personal protection

Cyclopentane	<p>STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes. ACGIH TLV (United States, 3/2017). TWA: 20 ppm 8 hours.</p> <p>ACGIH TLV (United States, 3/2017). TWA: 600 ppm 8 hours. TWA: 1720 mg/m³ 8 hours. NIOSH REL (United States, 10/2016). TWA: 600 ppm 10 hours. TWA: 1720 mg/m³ 10 hours.</p>
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Occupational exposure limits (Canada)

Ingredient name	Exposure limits
Acetone	<p>CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1200 mg/m³ 8 hours. 15 min OEL: 1800 mg/m³ 15 minutes. 8 hrs OEL: 500 ppm 8 hours. 15 min OEL: 750 ppm 15 minutes.</p> <p>CA British Columbia Provincial (Canada, 6/2017). TWA: 250 ppm 8 hours. STEL: 500 ppm 15 minutes.</p> <p>CA Ontario Provincial (Canada, 7/2015). TWA: 500 ppm 8 hours. STEL: 750 ppm 15 minutes.</p> <p>CA Quebec Provincial (Canada, 1/2014). TWAEV: 500 ppm 8 hours. TWAEV: 1190 mg/m³ 8 hours. STEV: 1000 ppm 15 minutes. STEV: 2380 mg/m³ 15 minutes.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). STEL: 750 ppm 15 minutes. TWA: 500 ppm 8 hours.</p>
Hexane	<p>CA Alberta Provincial (Canada, 4/2009). Absorbed through skin. 8 hrs OEL: 50 ppm 8 hours. 8 hrs OEL: 176 mg/m³ 8 hours.</p> <p>CA British Columbia Provincial (Canada, 6/2017). Absorbed through skin. TWA: 20 ppm 8 hours.</p> <p>CA Ontario Provincial (Canada, 7/2015). Absorbed through skin. TWA: 50 ppm 8 hours.</p> <p>CA Quebec Provincial (Canada, 1/2014). Absorbed through skin. TWAEV: 50 ppm 8 hours. TWAEV: 176 mg/m³ 8 hours.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 62.5 ppm 15 minutes. TWA: 50 ppm 8 hours.</p>
Propane	<p>CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1000 ppm 8 hours.</p> <p>CA British Columbia Provincial (Canada, 6/2017). TWA: 1000 ppm 8 hours.</p> <p>CA Quebec Provincial (Canada, 1/2014). TWAEV: 1000 ppm 8 hours.</p>

Section 8. Exposure controls/personal protection

Butane

TWAEV: 1800 mg/m³ 8 hours.
CA Ontario Provincial (Canada, 7/2015).
 TWA: 1000 ppm 8 hours.
CA Saskatchewan Provincial (Canada, 7/2013).
 STEL: 1250 ppm 15 minutes.
 TWA: 1000 ppm 8 hours.
CA Alberta Provincial (Canada, 4/2009).
 8 hrs OEL: 1000 ppm 8 hours.
CA British Columbia Provincial (Canada, 6/2017).
 TWA: 600 ppm 8 hours.
 STEL: 750 ppm 15 minutes.
CA Quebec Provincial (Canada, 1/2014).
 TWAEV: 800 ppm 8 hours.
 TWAEV: 1900 mg/m³ 8 hours.
CA Ontario Provincial (Canada, 7/2015).
 TWA: 800 ppm 8 hours.
CA Saskatchewan Provincial (Canada, 7/2013).
 STEL: 1250 ppm 15 minutes.
 TWA: 1000 ppm 8 hours.

Heptane

CA Alberta Provincial (Canada, 4/2009).
 15 min OEL: 2050 mg/m³ 15 minutes.
 8 hrs OEL: 1640 mg/m³ 8 hours.
 8 hrs OEL: 400 ppm 8 hours.
 15 min OEL: 500 ppm 15 minutes.
CA British Columbia Provincial (Canada, 6/2017).
 TWA: 400 ppm 8 hours.
 STEL: 500 ppm 15 minutes.
CA Ontario Provincial (Canada, 7/2015).
 TWA: 400 ppm 8 hours.
 STEL: 500 ppm 15 minutes.
CA Quebec Provincial (Canada, 1/2014).
 TWAEV: 400 ppm 8 hours.
 TWAEV: 1640 mg/m³ 8 hours.
 STEV: 500 ppm 15 minutes.
 STEV: 2050 mg/m³ 15 minutes.
CA Saskatchewan Provincial (Canada, 7/2013).
 STEL: 500 ppm 15 minutes.
 TWA: 400 ppm 8 hours.

Cyclohexane

CA Alberta Provincial (Canada, 4/2009).
 8 hrs OEL: 344 mg/m³ 8 hours.
 8 hrs OEL: 100 ppm 8 hours.
CA British Columbia Provincial (Canada, 6/2017).
 TWA: 100 ppm 8 hours.
CA Ontario Provincial (Canada, 7/2015).
 TWA: 100 ppm 8 hours.
CA Quebec Provincial (Canada, 1/2014).
 TWAEV: 300 ppm 8 hours.
 TWAEV: 1030 mg/m³ 8 hours.
CA Saskatchewan Provincial (Canada, 7/2013).
 STEL: 150 ppm 15 minutes.
 TWA: 100 ppm 8 hours.

Toluene

CA Alberta Provincial (Canada, 4/2009).
Absorbed through skin.
 8 hrs OEL: 50 ppm 8 hours.

Section 8. Exposure controls/personal protection

cyclopentane	<p>8 hrs OEL: 188 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 6/2017). TWA: 20 ppm 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 20 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). Absorbed through skin. TWAEV: 50 ppm 8 hours. TWAEV: 188 mg/m³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 60 ppm 15 minutes. TWA: 50 ppm 8 hours. CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1720 mg/m³ 8 hours. 8 hrs OEL: 600 ppm 8 hours. CA British Columbia Provincial (Canada, 6/2017). TWA: 600 ppm 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 600 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 600 ppm 8 hours. TWAEV: 1720 mg/m³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 900 ppm 15 minutes. TWA: 600 ppm 8 hours.</p>
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Occupational exposure limits (Mexico)

Ingredient name	Exposure limits
Acetone	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 500 ppm 8 hours. STEL: 750 ppm 15 minutes.
Hexane	NOM-010-STPS-2014 (Mexico, 4/2016). Absorbed through skin. TWA: 50 ppm 8 hours.
Propane	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 1000 ppm 8 hours.
Butane	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 1000 ppm 8 hours.
Heptane	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 400 ppm 8 hours. STEL: 500 ppm 15 minutes.
Cyclohexane	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 100 ppm 8 hours.
Toluene	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 20 ppm 8 hours.
cyclopentane	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 600 ppm 8 hours.

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 :

Section 8. Exposure controls/personal protection

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**
- 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** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
- Evaporation rate** : 9.1 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 0.9%
Upper: 12.8%
- Vapor pressure** : 101.3 kPa (760 mm Hg) [at 20°C]
- Vapor density** : 1.55 [Air = 1]
- Relative density** : 0.69
- Solubility** : Not available.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): <0.205 cm ² /s (<20.5 cSt)
Molecular weight	: Not applicable.
Aerosol product	
Type of aerosol	: Spray
Heat of combustion	: 32.773 kJ/g

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	: Avoid all possible sources of ignition (spark or flame).
Incompatible materials	: No specific data.
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
Acetone	LD50 Oral	Rat	5800 mg/kg	-
Hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Heptane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	103 g/m ³	4 hours
Cyclohexane	LD50 Oral	Rat	6240 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Cyclopentane	LD50 Oral	Rat	11400 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Acetone	Eyes - Mild irritant	Human	-	186300 parts per million	-
	Eyes - Mild irritant	Rabbit	-	10 microliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Hexane	Skin - Mild irritant	Rabbit	-	395 milligrams	-
	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
Toluene				100	

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	Eyes - Mild irritant	Rabbit	-	milligrams 870	-
	Eyes - Severe irritant	Rabbit	-	Micrograms 24 hours 2	-
	Skin - Mild irritant	Pig	-	milligrams 24 hours 250	-
	Skin - Mild irritant	Rabbit	-	microliters 435	-
	Skin - Moderate irritant	Rabbit	-	milligrams 24 hours 20	-
	Skin - Moderate irritant	Rabbit	-	milligrams 500	-
				milligrams	

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Hexane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Heptane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Lt. Aliphatic Hydrocarbon Solvent	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Cyclohexane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Toluene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Cyclopentane	Category 3	Not applicable.	Respiratory tract irritation and

Section 11. Toxicological information

Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 2	Not determined	Not determined
Hexane	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Butane	Category 2	Not determined	Not determined
Heptane	Category 2	Not determined	Not determined
Lt. Aliphatic Hydrocarbon Solvent	Category 2	Not determined	Not determined
Cyclohexane	Category 2	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined
Cyclopentane	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Hexane	ASPIRATION HAZARD - Category 1
Propane	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1
Heptane	ASPIRATION HAZARD - Category 1
Lt. Aliphatic Hydrocarbon Solvent	ASPIRATION HAZARD - Category 1
Cyclohexane	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
Cyclopentane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

Inhalation : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

Skin contact : Adverse symptoms may include the following:
 irritation
 redness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

Ingestion : Adverse symptoms may include the following:
 nausea or vomiting
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

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 : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	9664 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure	
Acetone	Acute EC50 7200000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours	
	Acute LC50 6000000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours	
	Acute LC50 6900 mg/l Fresh water	Daphnia - Daphnia magna	48 hours	
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata	96 hours	
	Chronic NOEC 4.95 mg/l Marine water	Algae - Ulva pertusa	96 hours	
	Chronic NOEC 0.016 ml/L Fresh water	Crustaceans - Daphniidae	21 days	
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days	
	Chronic NOEC 0.1 mg/l Fresh water	Fish - Fundulus heteroclitus	4 weeks	
	Hexane	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Heptane	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
Lt. Aliphatic Hydrocarbon Solvent	Acute LC50 >100000 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours	
	Cyclohexane	Acute LC50 4530 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Toluene	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours	
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours	
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours	
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours	

Section 12. Ecological information

Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
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Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Acetone	-	-	Readily
Toluene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Hexane	-	501.187	high
Heptane	-	552	high
Lt. Aliphatic Hydrocarbon Solvent	-	10 to 2500	high
Cyclohexane	-	167	low
Toluene	-	90	low
Cyclopentane	-	70.8	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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Section 14. Transport information

Additional information	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).	-	-	Emergency schedules F-D, S-U
	ERG No. 126	ERG No. 126	ERG No. 126		

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Proper shipping name : Not available.

Ship type : Not available.

Pollution category : Not available.

Section 15. Regulatory information

International regulations

International lists

: **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		4
Physical hazards		0

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.

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.

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
FLAMMABLE AEROSOLS - Category 1	On basis of test data
GASES UNDER PRESSURE - Compressed gas	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
TOXIC TO REPRODUCTION (Fertility) - Category 2	Calculation method
TOXIC TO REPRODUCTION (Unborn child) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

History

Date of printing : 10/29/2018

Date of issue/Date of revision : 10/29/2018

Date of previous issue : 7/4/2018

Version : 4.01

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

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

41306

Section 1. Identification

Product name : KRYLON® Workable Fixitif Spray Coating
Product code : 41306
Other means of identification : Not available.
Product type : Aerosol.
Relevant identified uses of the substance or mixture and uses advised against
Paint or paint related material.

Manufacturer : Krylon Products Group
180 Brunel Road
Mississauga, ON L4Z 1T5

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (800) 247-3268

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 25%
Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 94.7%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 62.5%

GHS label elements

Hazard pictograms :



Signal word : Danger

Section 2. Hazards identification

- Hazard statements** : Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging the unborn child.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
- 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** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling. Pressurized container: Do not pierce or burn, even after use.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. 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 locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.
Please refer to the SDS for additional information. Keep out of reach of children. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- 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

Ingredient name	% by weight	CAS number
Acetone	46.5	67-64-1
Toluene	20	108-88-3
Propane	12.75	74-98-6
Butane	12.25	106-97-8
Ethyl 3-Ethoxypropionate	3.25	763-69-9

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 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 it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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** : Get medical attention immediately. Call a poison center or physician. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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 serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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** : Extremely flammable aerosol. 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. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed.

- 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. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. 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 :

Section 6. Accidental release measures

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). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. Empty containers retain product residue and can be hazardous.

- 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.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. 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

Occupational exposure limits (OSHA United States)

Ingredient name	Exposure limits
Acetone	ACGIH TLV (United States, 3/2017). TWA: 250 ppm 8 hours. STEL: 500 ppm 15 minutes. NIOSH REL (United States, 10/2016). TWA: 250 ppm 10 hours. TWA: 590 mg/m ³ 10 hours. OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 2400 mg/m ³ 8 hours.
Toluene	OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours.

Section 8. Exposure controls/personal protection

Propane	<p>CEIL: 300 ppm AMP: 500 ppm 10 minutes. NIOSH REL (United States, 10/2016). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes. ACGIH TLV (United States, 3/2017). TWA: 20 ppm 8 hours.</p>
Butane	<p>NIOSH REL (United States, 10/2016). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m³ 10 hours. OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours. ACGIH TLV (United States, 3/2017). Oxygen Depletion [Asphyxiant]. NIOSH REL (United States, 10/2016). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours. ACGIH TLV (United States, 3/2017). STEL: 1000 ppm 15 minutes.</p>
Ethyl 3-Ethoxypropionate	None.

Occupational exposure limits (Canada)

Ingredient name	Exposure limits
Acetone	<p>CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1200 mg/m³ 8 hours. 15 min OEL: 1800 mg/m³ 15 minutes. 8 hrs OEL: 500 ppm 8 hours. 15 min OEL: 750 ppm 15 minutes. CA British Columbia Provincial (Canada, 6/2017). TWA: 250 ppm 8 hours. STEL: 500 ppm 15 minutes. CA Ontario Provincial (Canada, 7/2015). TWA: 500 ppm 8 hours. STEL: 750 ppm 15 minutes. CA Quebec Provincial (Canada, 1/2014). TWAEV: 500 ppm 8 hours. TWAEV: 1190 mg/m³ 8 hours. STEV: 1000 ppm 15 minutes. STEV: 2380 mg/m³ 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 750 ppm 15 minutes. TWA: 500 ppm 8 hours.</p>
Toluene	<p>CA Alberta Provincial (Canada, 4/2009). Absorbed through skin. 8 hrs OEL: 50 ppm 8 hours. 8 hrs OEL: 188 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 6/2017). TWA: 20 ppm 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 20 ppm 8 hours. CA Quebec Provincial (Canada, 1/2014). Absorbed through skin. TWAEV: 50 ppm 8 hours. TWAEV: 188 mg/m³ 8 hours.</p>

Section 8. Exposure controls/personal protection

Propane	<p>CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 60 ppm 15 minutes. TWA: 50 ppm 8 hours.</p> <p>CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1000 ppm 8 hours.</p> <p>CA British Columbia Provincial (Canada, 6/2017). TWA: 1000 ppm 8 hours.</p> <p>CA Quebec Provincial (Canada, 1/2014). TWAEV: 1000 ppm 8 hours. TWAEV: 1800 mg/m³ 8 hours.</p> <p>CA Ontario Provincial (Canada, 7/2015). TWA: 1000 ppm 8 hours.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours.</p>
Butane	<p>CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1000 ppm 8 hours.</p> <p>CA British Columbia Provincial (Canada, 6/2017). TWA: 600 ppm 8 hours. STEL: 750 ppm 15 minutes.</p> <p>CA Quebec Provincial (Canada, 1/2014). TWAEV: 800 ppm 8 hours. TWAEV: 1900 mg/m³ 8 hours.</p> <p>CA Ontario Provincial (Canada, 7/2015). TWA: 800 ppm 8 hours.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours.</p>

Occupational exposure limits (Mexico)

Ingredient name	Exposure limits
Acetone	<p>NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 500 ppm 8 hours. STEL: 750 ppm 15 minutes.</p>
Toluene	<p>NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 20 ppm 8 hours.</p>
Propane	<p>NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 1000 ppm 8 hours.</p>
Butane	<p>NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 1000 ppm 8 hours.</p>

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

Section 8. Exposure controls/personal protection

- 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. 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** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : 7
- Melting point/freezing point** : Not available.
- Boiling point/boiling range** : Not available.
- Flash point** : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
- Evaporation rate** : 5.6 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 12.8%
- Vapor pressure** : 101.3 kPa (760 mm Hg) [at 20°C]
- Vapor density** : 1.55 [Air = 1]
- Relative density** : 0.73
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): <0.205 cm²/s (<20.5 cSt)
- Molecular weight** : Not applicable.

Section 9. Physical and chemical properties

Aerosol product

Type of aerosol : Spray
Heat of combustion : 30.324 kJ/g

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 : Avoid all possible sources of ignition (spark or flame).

Incompatible materials : No specific data.

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
Acetone	LD50 Oral	Rat	5800 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Ethyl 3-Ethoxypropionate	LD50 Oral	Rat	3200 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Acetone	Eyes - Mild irritant	Human	-	186300 parts per million	-
	Eyes - Mild irritant	Rabbit	-	10 microliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
Toluene	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	395 milligrams	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-

Section 11. Toxicological information

Ethyl 3-Ethoxypropionate	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
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Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Toluene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 2	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Butane	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Toluene	ASPIRATION HAZARD - Category 1
Propane	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

- Inhalation** : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

- Ingestion** : Adverse symptoms may include the following:
 nausea or vomiting
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

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** : May cause damage to organs through prolonged or repeated exposure.

- Carcinogenicity** : No known significant effects or critical hazards.

- Mutagenicity** : No known significant effects or critical hazards.

- Teratogenicity** : Suspected of damaging the unborn child.

- 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	2310.4 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Acetone	Acute EC50 7200000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 6000000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 6900 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata	96 hours
	Chronic NOEC 4.95 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.016 ml/L Fresh water	Crustaceans - Daphniidae	21 days
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Toluene	Chronic NOEC 0.1 mg/l Fresh water	Fish - Fundulus heteroclitus	4 weeks
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Acetone	-	-	Readily
Toluene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Toluene	-	90	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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	- <u>ERG No.</u> 126	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). <u>ERG No.</u> 126	- <u>ERG No.</u> 126	-	<u>Emergency schedules</u> F-D, S-U

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Proper shipping name : Not available.
Ship type : Not available.
Pollution category : Not available.

Section 15. Regulatory information

International regulations

International lists :

- Australia inventory (AICS):** Not determined.
- China inventory (IECSC):** Not determined.
- Japan inventory (ENCS):** Not determined.
- Japan inventory (ISHL):** Not determined.
- Korea inventory (KECI):** Not determined.
- Malaysia Inventory (EHS Register):** Not determined.
- New Zealand Inventory of Chemicals (NZIoC):** Not determined.
- Philippines inventory (PICCS):** Not determined.
- Taiwan Chemical Substances Inventory (TCSI):** Not determined.
- Thailand inventory:** Not determined.
- Turkey inventory:** Not determined.
- Vietnam inventory:** Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		4
Physical hazards		3

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.

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.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE AEROSOLS - Category 1	On basis of test data
GASES UNDER PRESSURE - Compressed gas	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
TOXIC TO REPRODUCTION (Unborn child) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

History

- Date of printing : 12/1/2018
- Date of issue/Date of revision : 12/1/2018
- Date of previous issue : 10/29/2018
- Version : 4.03
- 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

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS

Section 16. Other information

without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

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

P308 + P313
P501

present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
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.	10099-74-8
EC-No.	233-245-9
Index-No.	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/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	0.05 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Confirmed animal carcinogen with unknown relevance to humans			
		TWA	0.05 mg/m ³	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/m ³	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
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 reducing agents, Organic materials, Powdered metals

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NO_x), 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 humans Re-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 humans Re-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**

Copyright 2013 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. 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.

MATERIAL SAFETY DATA SHEET

MSDS No.: LL0225
 Revision Date: September 30, 2013
 Approved by: James A. Bertsch

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, CO₂ or Halon.

Flash Point: Non-combustible.

Autoignition temperature: N/A

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

- 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.

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 (H₂O = 1): 2.38
Percent volatile (%): 100%
Molecular formula: LiNO₃
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.

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-phrases(s) R22 - Harmful if swallowed

Label Elements



Signal Word

Warning

SAFETY DATA SHEET

Methylene Blue

Revision Date 16-Nov-2010

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

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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

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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

SAFETY DATA SHEET

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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 (CO₂).

SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Component Information

Component
Methylene blue

LD50 Oral	LD50 Dermal	LC50 Inhalation
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

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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

SAFETY DATA SHEET

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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

SAFETY DATA SHEET

Methylene Blue

Revision Date 16-Nov-2010



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: HNO₃

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/mf)
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. 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, CO₂, 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	<p>ACGIH TLV (United States, 3/2019). STEL: 1000 ppm 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2016). TWA: 1000 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 5/2018). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.</p>
glycerol	<p>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</p> <p>OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p>

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/m ³	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 UI	-
	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.

Section 1 Chemical Product and Company Information

Page E1 of E2



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.

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.	Evaporation rate (Butyl acetate = 1): Ca 2*	Partition coefficient: (n-octanol / water): Low Pow: -.32*
Odor: Mild characteristic odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: 400°C (752°F)*
Odor threshold: Data not available.	Explosion limits: Lower / Upper: 4.0%(V) / 20.0%(V)*	Decomposition temperature: Data not available.
pH: Data not available.	Vapor pressure (mm Hg): Ca 50 @ 20°C*	Viscosity: Data not available.
Melting / Freezing point: -114°C (-173°F)*	Vapor density (Air = 1): Ca 1.5*	Molecular formula: Mixture
Boiling point: 74-80°C (165.2-176°F)*	Relative density (Specific gravity): 0.7919-0.7955°C @ 60/60°F*	Molecular weight: Mixture
Flash point: 5°C (41°F)*	Solubility(ies): Soluble in water.	*[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

Carcinogenicity: 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.

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

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 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 (H₂O = 1): 2.67

Percent volatile (%): N/A

Molecular formula: K₂Cr₂O₇

Molecular weight: 294.19

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures and heat.

Incompatibilities with other materials: Reducing agents, combustible materials, oxidizable materials. Avoid contact with 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 margined "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/m³

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.

MSDS # 570.00

Potassium Hydroxide

**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**

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

Section 2: Hazards Identification*White pellets or flakes, no odor.***HMS (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/m³ 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. (<i>Butyl acetate = 1</i>).
Boiling Point/Range	1320°C.	Partition Coefficient	N/A. (<i>log P_{ow}</i>).
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).**WHMIS Canada:** D1B, E: Toxic material, Corrosive.**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

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SAFETY DATA SHEET

MATERIAL NAME: **SAX TRUE FLOW ACRYLIC**

LAST REVISION: **01/30/2017**

SECTION 1 – IDENTIFICATION

Material Name

SAX TRUE FLOW ACRYLIC

Product Number

Various

(All information the same for all colors and sizes.)

Company Information

SAX / SCHOOL SPECIALTY

P.O. Box 1579

Appleton, WI 54912-1579

U.S.A

Phone: 888-388-3224

Fax: 888-388-6344

Website: www.saxarts.com; www.schoolspecialty.com

For Health Emergencies Call the Poison Control Center: 1-888-516-2502

Seek medical assistance for further treatment, observation and support, if necessary.

SECTION 2 – 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 3 for Components Affected

Medical Conditions Usually Aggravated by Over Exposure to this Product: None

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS #</u>	<u>PEL/TLV (MG/M#)</u>	<u>Max % Weight</u>	<u>NTP</u>	<u>IARC</u>
NONE					

SECTION 4 – FIRST AID MEASURES

First Aid Measures: None Required

No Acute Health Effects Expected.

SECTION 5 – 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 6 – 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 13.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe 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 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Respiratory Protection & Special Ventilation Requirements:	None needed under normal conditions of use
Protective Gloves:	None needed under normal conditions of use
Eye Protection:	None needed under normal conditions of use
Other Protective Equipment:	None needed under normal conditions of use
Engineering Controls:	None Required

Hygienic Work Practices

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N/A
Vapor Pressure: N/A
Specific Vapor Density (AIR=1): N/A
Solubility in Water: N/A

Specific Gravity (H2O=1): N/A
Melting Point: N/A
Reactivity in Water: Non-Reactive

SECTION 10 – STABILITY AND REACTIVITY

Stability (Conditions to Avoid): None
Incompatibility (Materials to Avoid): None
Hazardous Decomposition Products: None
Hazardous Polymerization Products: None

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Effects Associated with the use of this material: None Expected

The summated LD50 is 21400 mg/kg.

The summated LC50 is 41684 mg/cubic meter.

This product is not considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section 3)

SECTION 12 – ECOLOGICAL INFORMATION

No harmful effects known other than those associated with suspended inert solids in water.

SECTION 13 – DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261): This product is not classified as hazardous waste.

Waste Disposal Method

Dispose of in accordance with International, Federal, State and Local regulations.

SECTION 14 – TRANSPORT INFORMATION

U.S. DOT (49 CFR 172.101): This product is not a hazardous material as classified by CFR 172.101.

SECTION 15 – REGULATORY INFORMATION

Contents of this SDS comply with OSHA Hazard Communications 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
Pigment Red 2 Dispersion

Supplemental State Compliance Information

US, New Jersey Right-to-Know

This product contains the following chemical(s) listed under New Jersey's Right to Know Program:

Ammonia Hydroxide
Pigment Red 101
Pigment Red 2 Dispersion

US, Washington Children's Safe Products Act

This product contains the following chemical(s) requiring notification to the State of Washington under their Children's Safe Products Act:

None

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling: None

SECTION 16 – OTHER INFORMATION

All information the same for all sizes.

This product does not contain egg, dairy, wheat, gluten, soy or peanut products, by-products or derivatives.

This product does not contain latex materials or animal derived ingredients.

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 bromocresolgreen, 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 Reactivity: 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 blindness. 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

The information provided here for the reagents in this test kit is believed to be correct as of the date of the preparation. Since data, standards and regulations change, and conditions of use and handling are beyond our control, NO WARRANTY, EXPRESS OR IMPLIED, IS MADE AS TO THE COMPLETENESS OR CONTINUING ACCURACY OF THIS INFORMATION.

Section 1 Chemical Product and Company Information

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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
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Synonyms	Sodium Dodecyl Sulfate / SDS
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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, CO₂, 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, CO₂, 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.

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	Evaporation rate (= 1): Data not available	Partition coefficient: (n-octanol / water): Log Pow: 1.6
Odor: Slight fatty odor	Flammability (solid/gas): Combustible solid	Auto-ignition temperature: Data not available
Odor threshold: Data not available	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available
pH: 7.2	Vapor pressure (mm Hg): Data not available	Viscosity: Data not available
Melting / Freezing point: 204-207°C (399-405°F)	Vapor density (Air = 1): Data not available	Molecular formula: CH ₃ (CH ₂) ₁₁ OSO ₃ Na
Boiling point: Data not available	Relative density (Specific gravity): Data not available	Molecular weight: 288.38
Flash point: 180°C (356°F)	Solubility(ies): Soluble in water	

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/m³ ; 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

Carcinogenicity: 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

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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.

Section 1 L'information de produit chimique et de compagnie

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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 dodécylque 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, CO₂, 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, CO₂, 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.

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. Substance 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	Taux d'évaporation (= 1): Données non disponibles	Coefficient de partage: (n-octanol / eau): Log Pow: 1.6
Odeur: Odeur caractéristique douce	Inflammabilité (solide / gaz): Solide combustible	Auto-inflammation: Données non disponibles
Seuil de l'odeur: Données non disponibles	Limites d'explosivité: Bas / Max: Données non disponibles	Température de décomposition: Données non disponibles
pH: 7.2	Pression de vapeur (mm Hg): Données non disponibles	Viscosité: Données non disponibles
Point de fusion / congélation: 204-207°C (399-405°F)	Densité de vapeur (Air = 1): Données non disponibles	Formule moléculaire: CH ₃ (CH ₂) ₁₁ OSO ₃ Na
Point d'ébullition: Données non disponibles	Densité relative (gravité spécifique): Données non disponibles	Poids moléculaire: 288.38
Point d'éclair: 180°C (356°F)	Solubilité (s): Soluble dans l'eau	

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: Combustibles 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/m³ ; 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

Mutagenicité 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.

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 SO_x.

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.

FLINN SCIENTIFIC INC.

"Your Safer Source for Science Supplies"

Flinn MSDS Prevent Chemical Accidents

flinn@flinnsci.com www.flinnsci.com
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(800) 452-1261 Fax (866) 452-1436

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

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification

D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant Moderate respiratory irritant Moderate eye irritant
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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: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (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
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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

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SUCROSE

ChemWatch Company

Chemwatch Hazard Alert Code: 1

Chemwatch: 21998

Issue Date: 01/01/2013

Version No: 6.1.1.1

Print Date: 03/19/2015

Material Safety Data Sheet according to NOHSC and ADG requirements

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.
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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

SUCROSE

	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
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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	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ 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	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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

	<ul style="list-style-type: none"> ▶ Water spray or fog. ▶ Foam. ▶ Dry chemical powder. ▶ BCF (where regulations permit).
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Special hazards arising from the substrate or mixture

SUCROSE

Fire Incompatibility	<ul style="list-style-type: none"> ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer.
Storage incompatibility	<p>Avoid contamination of water, foodstuffs, feed or seed.</p> <ul style="list-style-type: none"> ▶ 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...

SUCROSE

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	<p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ 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	<p>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.</p> <p>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.</p> <p>Suitability and durability of glove type is dependent on usage.</p>
Body protection	See Other protection below
Other protection	<p>No special equipment needed when handling small quantities.</p> <p>OTHERWISE:</p> <ul style="list-style-type: none"> ▶ 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)

SUCROSE

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	<p>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.</p> <p>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.</p> <p>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.</p>
Ingestion	<p>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.</p> <p>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.</p>

SUCROSE

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.

Sucrose	TOXICITY	IRRITATION
	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	<p>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.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails)
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Continued...

SUCROSE

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)"
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Chemical Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (Sucrose)
Korea - KECL	Y
New Zealand - NZIoC	Y
Phillipes - PICCS	Y
USA - TSCA	Y
Legend:	<i>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)</i>

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.

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SACONIX

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 be done safely, continue flushing during transport to hospital. 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 necessary. 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. Trousers 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-purifying 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 cause 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 sudden circulatory collapse. It may also cause systemic toxicity with acidosis.

Harmful if inhaled

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

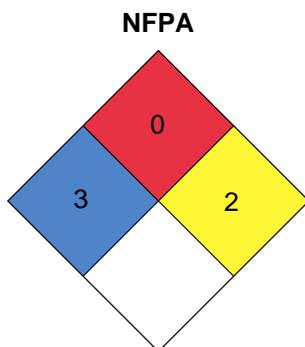
SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
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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.



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.

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 ₃ O ₂ Na	291.28	<0.05%
Bromthymol blue, sodium salt	34722-90-2	C ₂₇ H ₂₇ Br ₂ O ₃ S	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 ₂ H ₅ OH	46.07	55%
Water	7732-18-5	H ₂ O	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 pH indicator solution. Slight alcohol odor.

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.

ORL-MAN TLD₀: 29 mg/kg (as phenolphthalein)

Chronic effects: Liver damage, reproductive, teratogenic effects, carcinogen.

IHL-RAT LC₅₀: 20,000 ppm/10H (as ethyl alcohol)

SKN-RBT LD₅₀: N.A.

Target organs: Eyes, skin, central nervous system, liver, reproductive system.

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

This Safety Data Sheet (SDS) 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. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

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 - 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
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2 – Hazards Identification

GHS Classification: Flammable Aerosol Category 1 Aspiration Toxicity Category 1  DANGER! H222 Extremely Flammable Aerosol. H229 Pressurized container: may burst if heated. H304 May be fatal if swallowed and enters airways. Prevention 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. Response P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor. P331 Do NOT induce vomiting. Storage P405 Store locked up. P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Disposal P501 Dispose of contents and container in accordance with local and national regulations.
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3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	GHS Classification
Distillates (petroleum), hydrotreated light	64742-47-8	50-70	Flammable Liquid Category 4 Aspiration Toxicity Category 1
Non-Hazardous Ingredients	Mixture	30-50	Not Hazardous
Carbon Dioxide	124-38-9	2-3	Gas Under Pressure Compressed Gas

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately. 24 hours Hotline of Emergency Service for Chemical Incident in China: 0532-83889090.

Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

Most Important Symptoms (acute and delayed): May cause eye irritation. Skin contact may cause drying of the skin. Inhalation of mists may cause coughing, headache and dizziness. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage.

Indication of Immediate Medical Attention or Special Treatment: Immediate medical attention is required for ingestion.

5 – Fire Fighting Measures

Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Special Fire Fighting Procedures: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

Unusual Fire and Explosion Hazards: Contents under pressure. Extremely flammable aerosol. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors can cause a flash fire. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. A vapor and air mixture can create an explosion hazard in confined spaces.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Eliminate all sources of ignition and ventilate area. Wear appropriate protective clothing (see Section 8).

Environmental Precautions: Report spills to authorities as required.

Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Conditions for Safe Storage, including any incompatibilities: Store in a cool, well-ventilated area, away from incompatible materials. Do not store in direct sunlight or above 120°F. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Distillates (petroleum), hydrotreated light	1200 mg/m ³ TWA (manufacturer recommended)
Non-Hazardous Ingredients	None Established
Carbon Dioxide	5000 ppm TWA, 30,000 ppm STEL ACGIH TLV 9000 mg/m ³ TWA, 18000 mg/m ³ STEL PC OEL

The Following Controls are Recommended for Normal Consumer Use of this Product**Engineering Controls:** Use in a well-ventilated area.**Personal Protection:****Eye Protection:** Avoid eye contact. Always spray away from your face.**Skin Protection:** Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.**Respiratory Protection:** None needed for normal use with adequate ventilation.**For Bulk Processing or Workplace Use the Following Controls are Recommended****Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.**Personal Protection:****Eye Protection:** Safety goggles recommended where eye contact is possible.**Skin Protection:** Wear chemical resistant gloves.**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.**Work/Hygiene Practices:** Wash with soap and water after handling.**9 – Physical and Chemical Properties**

Appearance:	Light amber liquid	Flammable Limits:	LEL: 0.6% UEL: 5.0% (Distillates (petroleum), hydrotreated light)
Odor:	Mild petroleum odor	Vapor Pressure:	0.023 kPa @ 20°C
Odor Threshold:	Not established	Vapor Density:	6.2
pH:	Not established	Relative Density:	Not established
Melting/Freezing Point:	Not established	Solubility(ies):	Insoluble in water
Boiling Point/Range:	147-663°C	Partition Coefficient; n- octanol/water:	Not established
Flash Point:	175°F (79.5°C)	Auto ignition Temperature:	239°C
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas):	Flammable Aerosol	Viscosity:	3.72 mm ² /sec@40°C
VOC:	533 grams/liter (65%)	Pour Point:	-42°C

10 – Stability and Reactivity**Reactivity:** Not reactive under normal conditions**Chemical Stability:** Stable**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.**Conditions to Avoid:** Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.**Incompatible Materials:** Strong oxidizing agents.**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.**11 – Toxicological Information****Symptoms of Overexposure:****Inhalation:** High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.**Skin Contact:** Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.**Eye Contact:** Contact may be irritating to eyes. May cause redness and tearing.**Ingestion:** This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

Chronic Effects: None expected.

Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.

Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:

Acute Toxicity Estimates: Oral > 5,000 mg/kg; Dermal >2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available; however components of this product are not expected to be harmful to aquatic organisms. If applied to leaves may kill grasses and small plants by interfering with respiration and transpiration. This product is not toxic to fish but may coat gill structures resulting in suffocation.

Persistence and Degradability: Components are expected to be biodegradable.

Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.

Mobility in Soil: No data available.

Other Adverse Effects: None Known

13 - Disposal Considerations

Aerosol containers should not be punctured, compacted in home trash compactors or incinerated. Empty containers may be disposed of through normal waste management options. Dispose of all waste product, absorbents, and other materials in accordance with applicable Federal, state and local regulations.

14 – Transportation Information

IMDG Shipping Description: UN1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1

NOTE: WD-40 Company does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

China Regulations on the Control over Safety of Dangerous Chemicals: All ingredients in this product are listed in IECSC (Inventory of Existing Chemical Substances in China 2010).

16 – Other Information

Indication of changes; version 1.1 Amended by GBT16483-2008;

Training instructions: Not applicable

Further information: The information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to Reader: Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Revision Date: April 12, 2018

Supersedes: December 27, 2017

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® CLEANER ORIGINAL

Version 1.3

Print Date 03/09/2018

Revision Date 01/23/2018

SDS Number 350000014153

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name : WINDEX® CLEANER ORIGINAL

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 International Emergency Phone: (703)527-3887
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

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain hazardous chemicals at or above a reportable level as defined by OSHA 29 CFR 1910.1200

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

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according to Hazard Communication Standard; 29 CFR 1910.1200



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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.

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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.
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.
- Other data** : Stable under normal conditions.

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.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid

Color : blue

Odour : floral

Odour Threshold : Test not applicable for this product type

pH : 10.7
at (25 C)

Melting point/freezing point : 0 C

Initial boiling point and boiling range : 100 C

Flash point : does not flash

Evaporation rate : Test not applicable for this product type

Flammability (solid, gas) : Does not sustain combustion.

Upper/lower flammability or explosive limits : Test not applicable for this product type

Vapour pressure : Calculated 31.7 hPa

Vapour density : Test not applicable for this product type

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Relative density	:	1.00 g/cm ³ at 25 C	
Solubility(ies)	:	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	:	Heating can release hazardous gases.	
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. %)*	:	0.2 % - 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.

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- 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	-
Serious eye damage/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	-

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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.

No environmental data required.

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.

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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

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 does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

State Right To Know

No components are subject to the Massachusetts Right to Know Act.		
No components are subject to the Minnesota "Right To Know" Act		
No components are subject to the New Jersey "Right To Know" Act		
Pennsylvania RTKL	Water	7732-18-5
	Ammonium Hydroxide	1336-21-6

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16. OTHER INFORMATION

HMIS Ratings

Health	1
Flammability	0
Reactivity	0

NFPA Ratings

Health	1
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

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the 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.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)
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Section 1 Chemical Product and Company Information

Page E1 of E2



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, alkalis and water.

Hazardous decomposition products: Zinc oxides and zinc fumes. Reacts with water, acids or alkalis 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

Carcinogenicity: 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.