SAFETY DATA SHEET

Calcium Chloride, Anhydrous

Airgas

Section 1. Identification

GHS product identifier : Calcium Chloride, Anhydrous

Chemical name : calcium chloride

Other means of identification : Calcium chloride (CaCl2)

Product use : Synthetic/Analytical chemistry.

Synonym : Calcium chloride (CaCl2)

SDS # : 001087

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

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

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes serious eye 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 eye or face protection. Avoid release to the environment. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Use and store only outdoors or in a well ventilated place.

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 attention.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : calcium chloride

Other means of identification : Calcium chloride (CaCl2)

CAS number/other identifiers

CAS number : 10043-52-4

Product code : 001087

Ingredient name	%	CAS number
calcium chloride	100	10043-52-4

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. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

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 : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

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

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If 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 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).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

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, 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.

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, particulate filter 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

Appearance

Physical state : Solid. [Crystals. Hygroscopic.]

Color : Colorless. White.

Molecular weight : 110.98 g/mole

Molecular formula : Ca-Cl2

Boiling/condensation point : 1935°C (3515°F)

Melting/freezing point : 772°C (1421.6°F)

Critical temperature : Not available.

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Flash point : Not available.

Burning time : Not available.

Burning rate : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Specific Volume (ft ^{3}/lb) : 0.3981

Gas Density (lb/ft ^{3}) : 2.512 (25°C / 77 to °F)

Relative density : 2.16

Solubility : Not available.

Solubility in water : 745 g/l

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Section 9. Physical and chemical properties

SADT : Not available.

Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

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

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
calcium chloride	LD50 Oral	Rat	1 g/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

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 : No known significant effects or critical hazards.

Ingestion : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

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
calcium chloride	Acute EC50 3130000 µg/l Fresh water Acute EC50 52000 µg/l Fresh water Acute LC50 270 mg/l Marine water Acute LC50 2110 mg/l Fresh water	Algae - Navicula seminulum Daphnia - Daphnia magna Crustaceans - Americamysis bahia Fish - Pimephales promelas	96 hours 48 hours 48 hours 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	- 	- 	- 	- 	- 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-

Section 14. Transport information

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

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 : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
calcium chloride	100	No.	No.	No.	Yes.	No.

State regulations

Massachusetts : This material is not listed.

New York : This material is not listed.

New Jersey : This material is not listed.

Pennsylvania : This material is not listed.

Canada inventory : This material is listed or exempted.

International regulations

Section 15. Regulatory information

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory: This material is listed or exempted.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): 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.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

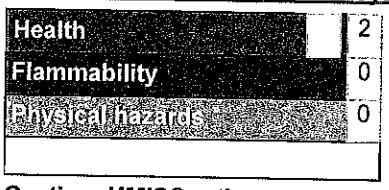
Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not 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.

Section 16. Other information

Canada Label requirements : Class D-2B: Material causing other toxic effects (Toxic).

Hazardous Material Information System (U.S.A.)



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 are not required on SDSs 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 mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

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Section 16. Other information

History

Date of printing	: 5/18/2015.
Date of issue/Date of revision	: 5/18/2015.
Date of previous issue	: 5/18/2015.
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 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

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.

HI-VALLEY CHEMICAL
LABORATORY PRODUCTS
1134 W. 850 N. CENTERVILLE, UT 84014
(801) 295-9591 Fax (801) 295-9448
www.hvchemical.com

Calcium Chloride

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Calcium Chloride
SDS Number: R-045
Revision Date: 3/29/2016
Chemical Formula: CaCl2
Supplier Details: High Valley Products, Inc.
1134 West 850 North
Centerville, Utah 84014
Emergency: PERS: 800-633-8253
Phone: 801-295-9591
Email: sales@hvchemical.com
Web: www.hvchemical.com

2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):
Health, Serious Eye Damage/Eye Irritation, 2 A

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

GHS Hazard Statements:

H319 - Causes serious eye irritation

GHS Precautionary Statements:

P264 - Wash skin thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+313 - Get medical advice/attention.

3 COMPOSITION/INFORMATION OF INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
10043-52-4	94-97%	Calcium chloride (CaCl2)
7447-40-7	<2%	Potassium chloride (KCl)
7647-14-5	<1%	Sodium Chloride
7732-18-5	<1%	Water

include: Neoprene, Polyvinyl chloride ("PVC" or "vinyl"), Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: High efficiency particulate air (HEPA) N95. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

Exposure Guidlines

Calcium chloride (CaCl2) (10043-52-4) [94-97%] : no data available

Potassium chloride (KCl) (7447-40-7) [<2%] : no data available

Sodium Chloride (7647-14-5) [<1%] : no data available

Water (7732-18-5) [<1%] : no data available

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White Pellets
Physical State:	Solid
Odor:	None
Odor Threshold:	No data available
Solubility:	No data available
Spec Grav./Density:	No data available
Viscosity:	No data available
Boiling Point:	No data available
Freezing/Melting Pt.:	772 °C (1,422 °F)
Flash Point:	No data available
Partition Coefficient:	No data available
Vapor Pressure:	No data available
Vapor Density:	No data available
pH:	No data available
Evap. Rate:	No data available
Auto-Ignition Temp:	No data available
Decomp Temp:	No data available
UFL/LFL:	No data available

10 STABILITY AND REACTIVITY

Reactivity:	Hygroscopic. Liberates large amounts of heat when dissolving in water or aqueous acids.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available
Materials to Avoid:	Heat is generated when mixed with water or aqueous acids. Spattering and boiling can occur. Calcium

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: no data available

Potassium chloride (KCl) (7447-40-7) [<2%]

Information on ecological effects

Toxicity:
Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 880 mg/l - 96 h.
mortality NOEC - Pimephales promelas (fathead minnow) - 500 mg/l - 7 d
mortality LOEC - Pimephales promelas (fathead minnow) - 1,000 mg/l - 7 d
Toxicity to daphnia and EC50 - Daphnia magna (Water flea) - 83 mg/l - 48 h.
other aquatic invertebrates

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

Sodium Chloride (7647-14-5) [<1%]

Information on ecological effects

Toxicity:
Toxicity to fish LC50 - Lepomis macrochirus (Bluegill) - 5,840 mg/l - 96 h.
Toxicity to daphnia and NOEC - Daphnia - 1,500 mg/l - 7 d.
other aquatic invertebrates
LC50 - Daphnia magna (Water flea) - 1,661 mg/l - 48 h

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: no data available

Water (7732-18-5) [<1%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: not applicable

FRITZ *Industries, Inc.*

Material Safety Data Sheet

NFPA	HCS Risk Phrases	Protective Clothing
	**HCS CLASS:** Irritant	

Section I. Chemical Product and Company Identification

Common Name/ Trade Name	**CALCIUM CHLORIDE SOLID**	Revision Date: 7-21-05
Supplier	FRITZ INDUSTRIES, INC. 500 SAM HOUSTON ROAD MESQUITE, TX 75149 (972) 285-5471 (800) 955-1323	In Case of Emergency. (800) 424-9300 Week Days: (972) 285-5471 (800) 955-1323
Chemical Family	Inorganic Salt	
Material Uses		

Section II. Composition and Information on Ingredients

Name	CAS #	% by Weight	OSHA PEL	LC_{50}/LD_{50}
Calcium chloride	10043-52-4	74-100	Not Established	Not Established

Section III. Hazards Identification

Emergency overview	Odorless, white pellets/flake. Causes eye irritation. Avoid breathing dust. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Wash thoroughly after handling. Reacts with water to liberate heat.
Eye contact	May irritate or burn eyes.
Skin	May cause irritation.
Inhalation	Dust may cause irritation to mucous membranes and respiratory system.
Ingestion	Ingestion may cause nausea.
Chronic exposure	Carcinogen Status: OSHA- No NTP- No IARC- No

Section IV. First Aid Measures

Eye Contact	Flush eyes thoroughly with large amounts of water. If irritation or adverse symptoms develop, seek medical attention.
Skin Contact	Remove contaminated clothing and shoes. Wash affected area with soap or mild detergent.
Inhalation	Remove from exposure area to fresh air.
Ingestion	Get medical attention.

Section V. Fire and Explosion Data

Flammability of the Product	This material is noncombustible.
Explosion Hazards in Presence of Various Substances	Negligible fire hazard when exposed to heat or flame
Fire Fighting Media and Instructions	Move container(s) from fire area if you can without risk. Apply cooling water sides of containers that are exp9osed to flames until well after fire is out. Extinguish fire using agent suitable for type of surrounding fire and/or chemicals. Do not use water directly on material. Avoid breathing corrosive vapors; keep upwind. Dike area to prevent runoff and contamination of water sources.

Section VI. Accidental Release Measures

Leak/Spill	For dry spills place material in covered, clean, dry container for disposal.
Disposal	For dry spills place material in covered, clean, dry container for disposal. Observer all federal, state and local regulations when disposing of this substance.

Section VII. Handling and Storage

SAFETY DATA SHEET

Be Right™

1. IDENTIFICATION

Product identifier
Product Name CalVer® 2 Calcium Indicator

Other means of identification
Product Code(s) 85299

Safety data sheet number M00005

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory reagent. Calcium determination.
Uses advised against Consumer use.
Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number
+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word
None

Hazard statements
The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known
May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.

Environmental precautions

Environmental precautions	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.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Flammability class	Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Individual protection measures, such as personal protective equipment

Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Ensure adequate ventilation.
Hand Protection	Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.
Eye/face protection	Wear safety glasses with side shields (or goggles).

Metal Corrosivity

Steel Corrosion Rate	Not applicable
Aluminum Corrosion Rate	Not applicable

Volatile Organic Compounds (VOC) Content
Not applicable

Explosive properties

Upper explosion limit	No data available
Lower explosion limit	No data available

Flammable properties

Flash point	Not applicable

Flammability Limit in Air

Upper flammability limit:	No data available
Lower flammability limit:	No data available

Oxidizing properties	No data available.
Bulk density	No data available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical stability
Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
None under normal processing.

Conditions to avoid
None known based on information supplied.

Incompatible materials
Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

STOT - single exposure
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data
No data available.

STOT - repeated exposure
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data
No data available.

Carcinogenicity
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Carcinogenicity Data
No data available.

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Mixture *invitro* Data
No data available.

Substance *invitro* Data
No data available.

Mixture *invivo* Data
No data available.

Substance *invivo* Data
No data available.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Reproductive Toxicity Data
No data available.

Aspiration hazard
Based on available data, the classification criteria are not met.

14. TRANSPORT INFORMATION

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated

Additional information

15. REGULATORY INFORMATION

National Inventories

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

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	No
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

NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

Issue Date	04-May-2021
Revision Date	08-Feb-2023
Revision Note	None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

End of Safety Data Sheet

Safety Data Sheet

Carolina's Perfect Solution®

CAROLINA®
www.carolina.com

Section 1 Product Description

Product Name:	Carolina's Perfect Solution®
Recommended Use:	Science education applications
Distributor:	Carolina Biological Supply Company 2700 York Road, Burlington, NC 27215 1-800-227-1150
Chemical Information:	800-227-1150 (8am-5pm (ET) M-F)
Chemtrec:	800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

WARNING

Causes mild skin irritation

GHS Classification:
Skin Corrosion/Irritation Category 3

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%
The composition of this mixture is proprietary and is protected as a Trade Secret.	Proprietary	100

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation:	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact:	After contact with skin, wash immediately with plenty of water.
Ingestion:	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media:	Use dry chemical, CO2 or appropriate foam.
Fire Fighting Methods and Protection:	Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards:	Fire or excessive heat may produce hazardous decomposition products.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled:	No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this (M)SDS Ventilate the contaminated area.

Section 11 Toxicity Data

Routes of Entry Inhalation and ingestion.
Symptoms (Acute): Respiratory Irritation
Delayed Effects: Respiratory Irritation
Dermititis
Headache

Acute Toxicity:

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Carolina's Perfect Solution®	Proprietary	Oral LD50 Rat > 5000 mg/kg	Dermal LD50 Rabbit Estimated > 20000 mg/kg	Inhalation LC50 (4h) Rat Estimated > 20000 ppm

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
No data available	Proprietary	Not listed	Not listed	Not listed

Chronic Effects:
Mutagenicity: No evidence of a mutagenic effect.
Teratogenicity: No evidence of a teratogenic effect (birth defect).
Sensitization: No evidence of a sensitization effect.
Reproductive: No evidence of negative reproductive effects.
Target Organ Effects:
Acute: No information available
Chronic: No information available

Section 12 Ecological Data

Overview: This material is not expected to be harmful to the ecology.
Mobility: This material is expected to have high mobility in soil. It absorbs weakly to most soil types.
Persistence: Dissolved into water, Biodegradation, Evaporation into atmosphere
Bioaccumulation: Bioconcentration is not expected to occur.
Degradability: Biodegrades slowly.
Other Adverse Effects: Material has microbiocidal properties.

Chemical Name	CAS Number	Eco Toxicity
Carolina's Perfect Solution®	Proprietary	

Section 13 Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.
Waste Disposal Code(s): This material is not considered to be a RCRA hazardous waste.

Section 14 Transport Information

Ground - DOT Proper Shipping Name:
Not regulated for transport by US DOT

Air - IATA Proper Shipping Name:
Not regulated for air transport by IATA.

ATLANTIC SPICE CO.

Ground Cinnamon Products (SDS)

Section 1 - Identification

Product: Ground Cinnamon Products

Company: Atlantic Spice Company
2 Shore Road
North Truro MA 02652
(508) 487-6100

Section 2 - Hazard Identification

Non Hazardous under normal use
No Health Hazards are associated

Section 3 - Composition/Information

Hazardous Component: N/A (CAS #: N/A)
Specific Composition is considered
a trade secret

Section 4 - First Aid Measures

Eye Contact: Flush eyes with water, obtain medical advise if irritation exists
Skin Contact: Not a primary skin irritant
Ingestion: N/A
Inhalation: Non-hazardous nuisance dust that may cause irritation

Section 5 - Fire-Fighting Measures

Extinguishing Media: Water, Foam, Carbon Monoxide (CO) or Dry Chemical
Unusual Fire & Explosion Hazard: Excessive dust accumulation may be combustible under certain conditions
Hazardous Combustion Products: N/A
Fire Fighting Procedures: Use Standards Procedures

Section 6 - Accident Release Measures

Response to Spills: Sweep up and dispose of material
Standard absorbent may be used
Waste Disposal Method: Incineration or sanitary landfill in accordance with local, state and federal regulations

Section 7 - Handling and Storage

Keep away from heat and flame, keep container closed when not in use.
Use ventilation. Store in a cool, dry at (60-70 F) and maximum relative humidity of 70%

Section 8 - Exposure Controls/Personal Protection

Respiratory Protection: Nuisance dust mask recommended
Ventilation: Recommended
Eye Protection: Safety glasses recommended

Section 9 - Physical and Chemical Protection

Specific Gravity: N/A
Solubility in Water: Insoluble
Appearance % Color: (Brown)

Section 10 - Stability and reactivity

Stability: Stable
incompatibility (materials to avoid): Avoid strong oxidizing agent

Section 11 - Toxicological Information

N/A

Section 12 - Ecological Information

N/A

Section 13 - Disposal Consideration

Incineration or sanitary landfill in accordance with local, state and federal regulation

Section 14 - Transport Information

Not regulated by Department of Transportation (DOT)

Section 15 - Regulatory Information

Approved for use by FDA as GRAS substance

Section 16 - Other Information

N/A

Disclaimer:

This information contained herein is, to the best of our knowledge and belief, accurate. Since the use of this information and the conditions of handling and use are beyond our control, it is the user's obligation to determine conditions for safe use of the product.

THE CLOROX COMPANY

SAFETY DATA SHEET

Issuing Date January 5, 2015 **Revision Date** New **Revision Number** 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Clorox Healthcare™ Chlorhexidine Gluconate 2% Solution**

Other means of identification

Product Code(s) 82-919

Recommended use of the chemical and restrictions on use

Recommended Use Patient preoperative skin preparation, surgical hand scrub, healthcare personnel handwash, general skin and wound cleanser

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name
Supplier Address
Clorox Professional Products Company
1221 Broadway
Oakland, CA 94612

Supplier Phone Number Phone: 1-510-271-7000

Emergency telephone number

Emergency Phone Numbers For Medical Emergencies call: 1-800-446-1014
For Transportation Emergencies, call Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2

GHS Label elements, including precautionary statements

Emergency Overview

Signal word **Danger**

Hazard Statements
Causes skin irritation
Causes serious eye damage
Suspected of causing cancer

Appearance Clear, slightly yellow-to-colorless **Physical State** Slightly viscous liquid **Odor** Faint alcohol

Precautionary Statements - Prevention
Wash hands and face thoroughly after handling.
Wear protective gloves and eye protection such as safety glasses.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

Precautionary Statements - Response
If on skin: Wash with plenty of water.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation occurs: Get medical advice.
Take off contaminated clothing and wash it before reuse.
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.
If exposed or concerned: Get medical advice.

Precautionary Statements - Storage
Store locked up.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal in accordance with all applicable federal, state, and local regulations.

Hazards not otherwise classified (HNOC)
Not applicable

Unknown Toxicity
None of the mixture consists of ingredient(s) of unknown toxicity

Other information
No information available.

Interactions with Other Chemicals
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Chlorhexidine digluconate	18472-51-0	1 - 5	*
Isopropyl alcohol	67-63-0	1 - 5	*
Proprietary component	Proprietary	Trade Secret	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice Show this safety data sheet to the doctor in attendance.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin Contact Wash off immediately with soap and plenty of water. Get medical attention if irritation develops and persists.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. If symptoms persist, call a doctor.

Ingestion Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning of eyes.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Dry chemical. Carbon dioxide (CO2). Alcohol resistant foam.

Unsuitable extinguishing media
None.

Specific Hazards Arising from the Chemical
Thermal decomposition may produce toxic fumes of ammonia, hydrogen chloride and oxides of carbon and nitrogen.

Explosion Data
Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Environmental Precautions Do not allow product to enter storm drains, lakes, or streams. See Section 12 for 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 Absorb and containerize. Wash residual down to sanitary sewer. Contact the sanitary treatment facility in advance to assure ability to process washed-down material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Use personal protection equipment..

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition. Store at temperatures below 37°C. Keep in properly labeled containers. Store in accordance with the national and local regulations.

Incompatible Products None known..

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Isopropyl alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m^3	IDLH: 2000 ppm 10% LEL TWA: 980 mg/m^3 TWA: 400 ppm STEL: 500 ppm STEL: 1225 mg/m^3

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection

If splashes are likely to occur: Safety glasses or 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.

Hygiene Measures

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Slightly viscous liquid		
Appearance	Clear	**Odor**	Faint alcohol
Color	Slightly yellow-to-colorless	**Odor Threshold**	No information available

Property	Values	Remarks/ Method
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	None known
Lower flammability limit	No data available	None known
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	~1.06	None known
Water Solubility	Soluble in water	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data 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
Storage at temperatures exceeding 40°C for long periods of time.

Incompatible materials
None known.

Hazardous Decomposition Products
Thermal decomposition may produce toxic fumes of ammonia, hydrogen chloride and oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation May cause irritation of respiratory tract.

Eye Contact Corrosive. May cause severe damage to eyes.

Skin Contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Chorhexidine digluconate 1842-51-0	2 g/kg (Rat)	-	-
Isopropyl alcohol 67-63-0	4.4 g/kg (Rat)	12.8 g/kg (Rabbit)	16000 ppm (Rat, 8 h)

Information on toxicological effects

Symptoms May cause redness and tearing or burns to eyes. May cause redness to skin.

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

Sensitization No information available.

Mutagenic Effects 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		X
Proprietary component		Group 2B	Known	

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans
Group 2B - Possibly Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present
NTP: (National Toxicology Program)
Known - Known Carcinogen

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity Contains a known or suspected carcinogen.

Target Organ Effects Eyes. Respiratory system. Skin. Blood. Kidney. Liver. Spleen. Systemic Toxicity.

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
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Isopropyl alcohol 67-63-0	96h EC50: > 1000 mg/L (Desmodesmus subspicatus) 72h EC50: > 1000 mg/L (Desmodesmus subspicatus)	96h LC50: > 1400000 µg/L (Lepomis macrochirus) 96h LC50: = 11130 mg/L (Pimephales promelas) 96h LC50: = 9640 mg/L (Pimephales promelas)		48h EC50: = 13299 mg/L
Proprietary component		96h LC50: = 3.6 mg/L (Brachydanio rerio)	EC50 = 6000 mg/L 16 h	24h EC50: = 4.2 mg/L

Persistence and Degradability
No information available.

Bioaccumulation

Chemical Name	Log Pow
Isopropyl alcohol 67-63-0	0.05

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal methods
Dispose of in accordance with all applicable federal, state, and local regulations.

Contaminated Packaging
Dispose of in accordance with all applicable federal, state, and local regulations.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Isopropyl alcohol 67-63-0	X	X	X	X	

International Regulations

Canada
WHMIS Hazard Class
B2 - Flammable liquid
D2B - Toxic materials

16. OTHER INFORMATION

NFPA	**Health Hazards**	3	**Flammability**	0	**Instability**	0	**Physical and Chemical Hazards** -
HMIS	**Health Hazards**	3	**Flammability**	0	**Physical Hazard**	0	**Personal Protection** B

Prepared By
Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date New

Revision Note New

Reference INT0038/010274

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

SAFETY DATA SHEET

Version 6.2
Revision Date 09/27/2022
Print Date 12/16/2023

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

1.1 Product identifiers

Product name : Chloroquine diphosphate salt

Product Number : C6628
Brand : Sigma
CAS-No. : 50-63-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Acute toxicity, Oral (Category 4), H302

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Warning

Hazard statement(s)
H302 Harmful if swallowed.

Precautionary statement(s)
P264 Wash skin thoroughly after handling.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides
Nitrogen oxides (NOx)
Oxides of phosphorus
Hydrogen chloride gas
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed. Dry.

Light sensitive.

Storage class

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid Color: beige
b)	Odor	No data available
c)	Odor Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 192 - 198 °C (378 - 388 °F)
f)	Initial boiling point and boiling range	No data available
g)	Flash point	()No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Density	No data available
	Relative density	No data available
n)	Water solubility	50 g/l
o)	Partition coefficient: n-octanol/water	No data available
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	none

9.2 Other safety information

No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

RTECS: VB2450000
May cause permanent eye injury., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 49.52 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

THE CLOROX COMPANY

SAFETY DATA SHEET

Issuing Date January 5, 2015 **Revision Date** July 22, 2019 **Revision Number** 3

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Clorox Commercial Solutions® Clorox® Disinfecting Spray**

Other means of identification

EPA Registration Number 67619-21

Recommended use of the chemical and restrictions on use

Recommended Use Aerosol disinfectant, sanitizer, and deodorizer

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address
Clorox Professional Products Company
1221 Broadway
Oakland, CA 94612

Phone: 1-510-271-7000

Emergency telephone number

Emergency Phone Numbers For Medical Emergencies call: 1-800-446-1014
For Transportation Emergencies, call Chemtrec: 1-800-424-9300

Unknown Toxicity
None

Other information
Very toxic to aquatic life with long lasting effects.

Interactions with Other Chemicals
Can react with strong oxidizers, inorganic acids, and halogens.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade Secret
Ethanol	64-17-5	50 - 70	*
Butane	106-97-8	3 - 7	
Isobutane	75-28-5	1 - 5	*
Propane	74-98-6	1 - 5	*
Sodium nitrite	7632-00-0	<0.8	*
n-Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium chloride	68424-85-1	0.1 - 0.3	*
Octyl decyl dimethyl ammonium chloride	32426-11-2	0.1 - 0.3	*

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice Show this safety data sheet to the doctor in attendance.

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 eye. Call a poison control center or doctor for treatment advice.

Skin Contact Wash skin with soap and water. If irritation persists, call a doctor.

Inhalation Move to fresh air. If breathing is affected, call a doctor.

Ingestion Drink a glassful of water. Call a doctor or poison control center.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects May cause substantial eye irritation. Inhalation of high concentrations may cause irritation of the respiratory tract, headaches, dizziness, nausea, vomiting, and malaise.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethanol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m^3	IDLH: 3300 ppm 10% LEL TWA: 1000 ppm TWA: 1900 mg/m^3
Butane 106-97-8	STEL: 1000 ppm	None	TWA: 800 ppm TWA: 1900 mg/m^3
Isobutane 75-28-5	STEL: 1000 ppm	None	TWA: 800 ppm TWA: 1900 mg/m^3
Propane 74-98-6	TWA: 1000 ppm	TWA: 1000 ppm TWA: 1800 mg/m^3	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m^3
Sodium nitrite 7632-00-0	None	None	None
n-Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium chloride 68424-85-1	None	None	None
Octyl decyl dimethyl ammonium chloride 32426-11-2	None	None	None

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Wear safety glasses.

Skin and Body Protection

Wear rubber or neoprene gloves if there is the potential for repeated or prolonged skin contact.

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.

Hygiene Measures

Do not eat, drink, or smoke when using this product. Wash hands with soap and water after use.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Inhalation of high concentrations may cause irritation of the respiratory tract, headaches, dizziness, nausea, vomiting, and malaise.

Eye Contact May cause substantial eye irritation.

Skin Contact Prolonged contact may cause slight irritation.

Ingestion Ingestion may cause central nervous system depression, gastrointestinal irritation, nausea, vomiting, and diarrhea.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethanol 64-17-5	-	-	124.7 mg/L (Rat) 4 h
Butane 106-97-8	-	-	658 mg/L (Rat) 4 h
Isobutane 75-28-5	-	-	658 mg/L (Rat) 4 h
Propane 74-98-6	-	-	658 mg/L (Rat) 4 h
Sodium nitrite 7632-00-0	85 mg/kg (Rat)	-	5.5 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes.

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

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. Ethanol has been shown to be carcinogenic in long-term studies only when consumed as alcoholic beverage.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethanol 64-17-5	A3	Group 1	Known	X
Sodium nitrite 7632-00-0		Group 2A		X

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans Group 2A - Probably Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive Toxicity No information available

STOT - single exposure No information available.

14. TRANSPORT INFORMATION

DOT Limited quantity.

TDG

UN-No	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Description	UN1950, AEROSOLS, 2.1

ICAO

UN-No	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Description	UN1950, AEROSOLS, 2.1

IATA

UN-No	UN1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Hazard Class	2.1
Description	UN1950, AEROSOLS, FLAMMABLE, 2.1

IMDG/IMO

UN-No	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
EMs No.	F-D, S-U
Description	UN1950, AEROSOLS, 2.1

15. REGULATORY INFORMATION

Chemical Inventories

TSCA	All components of this product are either on the TSCA 8(b) inventory or otherwise exempt from listing.
DSL/NDSL	All components are on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains the following chemical that is subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS-No	Weight %	SARA 313 Threshold Values %
Sodium nitrite 7632-00-0	7632-00-0	0.1 - 1	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

International Regulations

Canada
WHMIS Hazard Class
D2A Very toxic materials
D2B Toxic materials
A Compressed gases
B5 Flammable aerosol

16. OTHER INFORMATION

NFPA	**Health Hazard** 1	**Flammability** 3	**Instability** 0	**Physical and Chemical Hazards** -
HMIS	**Health Hazard** 1*	**Flammability** 3	**Physical Hazard** 0	**Personal Protection** A

**Indicates a chronic health hazard*

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Preparation Date	January 5, 2015
Revision Date	July 22, 2019
Revision Note	Updated hazard classification.
Reference	1117264/161939.001

General Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

THE CLOROX COMPANY

SAFETY DATA SHEET

Issuing Date 05-Jan-2015 **Revision Date** 16-Jun-2021 **Revision Number** 3

NGHS - English

1. IDENTIFICATION

Product Identifier

Product Name Clorox Pro® Clorox® Disinfecting Wipes - Fresh Scent

Other means of identification

EPA Pesticide registration number 67619-31

Recommended use of the chemical and restrictions on use

Recommended Use Wipes, Disinfecting
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Identification Clorox Professional Products Company

Address 1221 Broadway
Oakland, CA 94612
USA

Telephone 1-510-271-7000

Emergency telephone number

Emergency Telephone Number For Medical Emergencies call: 1-800-446-1014. Transportation Emergencies, call Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

Appearance Clear White **Physical state** Pre-Moistened Towelette (no free liquids) **Odor** Fruity Apple Floral

GHS Label elements, including precautionary statements

Hazard statements
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

Precautionary Statements - Prevention
Not applicable

Precautionary Statements - Response
Not applicable

Precautionary Statements - Storage
Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Environmental precautions

Environmental precautions 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.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products None known based on information supplied.

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.

Appropriate engineering controls

Engineering controls None under normal use conditions.

Individual protection measures, such as personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

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

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	None known.
Ingestion	Ingestion may cause irritation to mucous membranes.

Information on toxicological effects

Symptoms	No information available.

Numerical measures of toxicity

Acute Toxicity	No information available
Unknown acute toxicity	No information available

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

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin 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.

12. ECOLOGICAL INFORMATION

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and Degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.
Other adverse effects	No information available.

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product may contain 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

Acute Health Hazard	No
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

This product does not contain any substances above threshold limits that are regulated by state right-to-know.

US EPA Label Information

EPA Pesticide Registration No. 67619-31

EPA Statement
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide label
CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling. Wear gloves for prolonged or frequent use.

THE CLOROX COMPANY

SAFETY DATA SHEET

Issuing Date January 5, 2015 **Revision Date** June 12, 2015 **Revision Number** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Clorox® Regular-Bleach$_1$**

Other means of identification

EPA Registration Number 5813-100

Recommended use of the chemical and restrictions on use

Recommended use Household disinfecting, sanitizing, and laundry bleach

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address
The Clorox Company
1221 Broadway
Oakland, CA 94612

Phone: 1-510-271-7000

Emergency telephone number

Emergency Phone Numbers For Medical Emergencies, call: 1-800-446-1014
For Transportation Emergencies, call Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

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

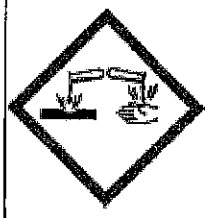
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word **Danger**

Hazard Statements
Causes severe skin burns and eye damage
Causes serious eye damage



Appearance Clear, pale yellow **Physical State** Thin liquid **Odor** Bleach

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves, protective clothing, face protection, and eye protection such as safety glasses.

Precautionary Statements - Response

Immediately call a poison center or doctor.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Specific treatment (see supplemental first aid instructions on this label).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents in accordance with all applicable federal, state, and local regulations.

Hazards not otherwise classified (HNOC)

Although not expected, heart conditions or chronic respiratory problems such as asthma, chronic bronchitis, or obstructive lung disease may be aggravated by exposure to high concentrations of vapor or mist.

Product contains a strong oxidizer. Always flush drains before and after use.

Unknown Toxicity
Not applicable.

Other information
Very toxic to aquatic life with long lasting effects.

Interactions with Other Chemicals
Reacts with other household chemicals such as toilet bowl cleaners, rust removers, acids, or products containing ammonia to produce hazardous irritating gases, such as chlorine and other chlorinated compounds.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade Secret
Sodium hypochlorite	7681-52-9	5 - 10	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General Advice — Call a poison control center or doctor immediately for treatment advice. Show this safety data sheet to the doctor in attendance.

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 eye. Call a poison control center or doctor for treatment advice.

Skin Contact — Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation — Move to fresh air. If breathing is affected, call a doctor.

Ingestion — Have person sip a glassful of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Call a poison control center or doctor immediately for treatment advice.

Protection of First-aiders — Avoid contact with skin, eyes, and clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects — Burning of eyes and skin.

Indication of any immediate medical attention and special treatment needed

Notes to Physician — Treat symptomatically. Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

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

Unsuitable Extinguishing Media
CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical
This product causes burns to eyes, skin, and mucous membranes. Thermal decomposition can release sodium chlorate and irritating gases and vapors.

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 Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation. Use personal protective equipment as required. For spills of multiple products, responders should evaluate the MSDSs of the products for incompatibility with sodium hypochlorite. Breathing protection should be worn in enclosed and/or poorly-ventilated areas until hazard assessment is complete.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental Precautions This product is toxic to fish, aquatic invertebrates, oysters, and shrimp. Do not allow product to enter storm drains, lakes, or streams. See Section 12 for 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 Absorb and containerize. Wash residual down to sanitary sewer. Contact the sanitary treatment facility in advance to assure ability to process washed-down material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Do not eat, drink, or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage

Store away from children. Reclose cap tightly after each use. Store this product upright in a cool, dry area, away from direct sunlight and heat to avoid deterioration. Do not contaminate food or feed by storage of this product.

Incompatible Products

Toilet bowl cleaners, rust removers, acids, and products containing ammonia.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hypochlorite 7681-52-9	None	None	None

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection

If splashes are likely to occur: Wear safety glasses with side shields (or goggles) or face shield.

Skin and Body Protection

Wear rubber or neoprene gloves and protective clothing such as long-sleeved shirt.

Respiratory Protection

If 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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands after direct contact. Do not wear product-contaminated clothing for prolonged periods. Remove and wash contaminated clothing before re-use. Do not eat, drink, or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Thin liquid		
Appearance	Clear	**Odor**	Bleach
Color	Pale yellow	**Odor Threshold**	No information available

Property	Values	Remarks/ Method
pH	~12	None known
Melting/freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	Not flammable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	None known
Lower flammability limit	No data available	None known
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	~1.1	None known
Water Solubility	Soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive Properties	Not explosive	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

10. STABILITY AND REACTIVITY

Reactivity
Reacts with other household chemicals such as toilet bowl cleaners, rust removers, acids, or products containing ammonia to produce hazardous irritating gases, such as chlorine and other chlorinated compounds.

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
None known based on information supplied.

Incompatible materials
Toilet bowl cleaners, rust removers, acids, and products containing ammonia.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Exposure to vapor or mist may irritate respiratory tract and cause coughing. Inhalation of high concentrations may cause pulmonary edema.

Eye Contact Corrosive. May cause severe damage to eyes.

Skin Contact May cause severe irritation to skin. Prolonged contact may cause burns to skin.

Ingestion Ingestion may cause burns to gastrointestinal tract and respiratory tract, nausea, vomiting, and diarrhea.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hypochlorite 7681-52-9	8200 mg/kg (Rat)	>10000 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes. May cause burns to eyes. May cause redness or burns to skin. Inhalation may cause coughing.

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

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sodium hypochlorite 7681-52-9	-	Group 3	-	-

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.
Chronic Toxicity Carcinogenic potential is unknown.
Target Organ Effects Respiratory system, eyes, skin, gastrointestinal tract (GI).

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

ATEmix (oral)
54 g/kg
ATEmix (inhalation-dust/mist)
58 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic life with long lasting effects.

This product is toxic to fish, aquatic invertebrates, oysters, and shrimp. Do not allow product to enter storm drains, lakes, or streams.

Persistence and Degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal methods
Dispose of in accordance with all applicable federal, state, and local regulations. Do not contaminate food or feed by disposal of this product.

Contaminated Packaging
Do not reuse empty containers. Dispose of in accordance with all applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

DOT	Not restricted.
TDG	Not restricted for road or rail.
ICAO	Not restricted, as per Special Provision A197, Environmentally Hazardous Substance exception.
IATA	Not restricted, as per Special Provision A197, Environmentally Hazardous Substance exception.
IMDG/IMO	Not restricted, as per IMDG Code 2.10.2.7, Marine Pollutant exception.

15. REGULATORY INFORMATION

Chemical Inventories

TSCA	All components of this product are either on the TSCA 8(b) Inventory or otherwise exempt from listing.
DSL/NDSL	All components are on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. 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

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
Sodium hypochlorite 7681-52-9	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	Extremely Hazardous Substances RQs	RQ
Sodium hypochlorite 7681-52-9	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

EPA Statement
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

> **DANGER: CORROSIVE.** Causes irreversible eye damage and skin burns. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Wear protective eyewear and rubber gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the restroom. Avoid breathing vapors and use only in a well-ventilated area.

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	Rhode Island	Illinois
Sodium hypochlorite 7681-52-9	X	X	X	X	
Sodium chlorate 7775-09-9	X	X	X		

International Regulations

Canada
WHMIS Hazard Class
E - Corrosive material

16. OTHER INFORMATION

NFPA	Health Hazard 3	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 3	Flammability 0	Physical Hazard 0	Personal Protection B

Prepared By
Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date June 12, 2015

Revision Note Revision Section 14.

Reference 1096036/164964.159

General Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

COLUMBUS CHEMICAL INDUSTRIES

Safety Data Sheet

Citric Acid, Anhydrous, Granular USP

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Citric Acid, Anhydrous, Granular USP

Synonyms/Generic Names: Citric Acid; 2-Hydroxy-1,2,3-propanetricarboxylic acid

Product Number: 1500

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information: 920-623-2140 (Monday-Friday 8:00-4:30)
www.columbuschemical.com

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Irritant

Target Organs: Not Available

Signal Words: Warning

Pictograms:

GHS Classification:

Eye irritation	Category 2A

GHS Label Elements, including precautionary statements:

Hazard Statements:

H319	Causes serious eye irritation.

Precautionary Statements:

P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

Potential Health Effects

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls: Contains no substances with occupational exposure limit values.

Personal Protection

Eyes	Wear chemical safety glasses with side shields or goggles.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	White crystalline solid.
Odor	Odorless
Odor threshold	Not Available
pH	1.8 at ca. 50 g/l at 25°C (77°F)
Melting point/freezing point	153°C (307°F)
Initial boiling point and boiling range	175°C
Flash point	100°C (212°F)
Evaporation rate	Not Available
Flammability (solid, gas)	Flammable solid when heated above flash point.
Upper/lower flammability or explosive limit	LEL: 0.28%; UEL: 2.29%
Vapor pressure	Not Available
Vapor density	Not Available
Density	1.665 g/cm^3
Solubility (ies)	Soluble in water; 383 g/l at 25°C (77°F)
Partition coefficient: n-octanol/water	Log Pow: -1.64 at 20°C (68°F)
Auto-ignition temperature	1,010°C (1,850°F)
Decomposition temperature	175°C

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Excess heat.

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute Health Hazard
SARA 312	Acute Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class E: Corrosive material.

16. OTHER INFORMATION

Revision	Date
Revision 1	07/09/2012
Revision 2	07/20/2017

SDS: D4552

ITEM: 39UV51 - Concrete Bonding Additive Bottle 1

ORDER: 0165242522 **LP NUMBER: U882861198**

SAFETY DATA SHEET (SDS)

This SDS should be attached or kept with the respective product with which it is associated.

SDS - D4552

Assoc ed Grainger Items
39U

SAKRETE(R*)

SAFETY DATA SHEET

SAKRETE CONCRETE BONDER & FORTIFIER

(C)ROBERTS CONCRETE PRODUCTS (A TCC MATERIALS COMPANY)

VERSION: 1.0

ROBERTS CONCRETE PRODUCTS
2025 CENTRE POINT BOULEVARD
SUITE 300
MENDOTA HEIGHTS, MN 55120-1221

EMERGENCY TELEPHONE NUMBER: 651-688-9116

INFORMATION TELEPHONE NUMBER: 651-905-8137

REVISION DATE: MARCH 2015

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT IDENTIFIER: PRODUCT FORM; MIXTURE

PRODUCT NAME: SAKRETE CONCRETE BONDER & FORTIFIER

SECTION 2: HAZARD IDENTIFICATION

PRODUCT POSES LITTLE HAZARD IN ORDINARY USE. EYE AND SKIN IRRITATION MAY OCCUR FROM DIRECT CONTACT.

WARNING:
DO NOT INGEST. CAUSES EYE AND SKIN IRRITATION. HARMFUL TO AQUATIC LIFE.

THIS PRODUCT HAS BEEN EVALUATED ACCORDING TO GHS AND 29 CFR 1910.1200, APPENDIX A. IT IS CATEGORIZED AS A HEALTH HAZARD - SKIN IRRITANT CATEGORY 3 AND EYE IRRITANT - CATEGORY 2B. IT IS CLASSIFIED AS HAZARDOUS TO THE AQUATIC ENVIRONMENT - CATEGORY 3.

HMIS(R*) RATING:
HEALTH 0
FIRE 0
REACTIVITY 0

HMIS(R*) IS A REGISTERED TRADEMARK OF THE NATIONAL PAINT AND COATINGS ASSOC TION RATING IS BASED ON POTENTIAL FOR ETHANOL.

SECTION 3: HAZARDOUS INGREDIENTS/COMPOSITION

INGREDIENT	TYPICAL PERCENTAGE	CAS #
WATER	35-65%	7732-18-5
ACRYLIC COPOLYMER	25-35%	*
NONIONIC SURFACTANT	<3%	*

*SPECIFIC CHEMICAL IDENTITIES WITHHELD AS TRADE SECRET. IT IS AVAILABLE UPON REQUEST TO HEALTH PROFESSIONALS, EMPLOYEES AND THEIR DESIGNATED REPRESENTATIVES IN ACCORD WITH 29 CFR 1910.1200(I).

SECTION 4: FIRST AID MEASURES

INHALATION: UNLIKELY TO BE AN INHALATION HAZARD.

EYE CONTACT:
HOLD EYELIDS APART AND FLUSH EYES WITH PLENTY OF WATER. AT LEAST FIFTEEN MINUTES OF FLUSHING IS RECOMMENDED FOR ANY CHEMICAL CONTACT. IF ANY IRRITATION PERSISTS, GET MEDICAL ATTENTION.

SKIN CONTACT: WASH OFF WITH SOAP AND WATER.

INGESTION:
CHECK WITH THE POISON CONTROL CENTER OR A DOCTOR. DO NOT INDUCE VOMITING.

SYMPTOMS OF OVEREXPOSURE:
DIRECT CONTACT CAN CAUSE EYE IRRITATION. REPEATED OR EXTENSIVE CONTACT CAN CAUSE SKIN IRRITATION. MAY CAUSE NOSE AND THROAT IRRITATION IF MISTED, BUT NOT A LIKELY ROUTE OF EXPOSURE.

NOTE TO PHYSICIAN: TREAT ACCORDING TO SYMPTOMS. NO KNOWN SPECIFIC ANTIDOTE.

SECTION 5: FIRE FIGHTING MEASURES

FIRE EXTINGUISHING MEDIA:
APPROPRIATE FOR SURROUNDING MATERIALS (CARBON DIOXIDE, WATER SPRAY, DRY CHEMICAL, FOAM).

SPECIAL FIRE FIGHTING PROCEDURES: NONE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE EXPECTED.

HAZARDOUS COMBUSTION PRODUCTS:
CARBO NOXIDE, CARBON DIOXIDE, CARBON PRODUCTS SUCH AS ACRYLATES FROM INCO E COMBUSTION.

SECTION 6: ACCIDENTAL RELEASE MEASURES

CONTAIN AND SOAK UP WITH ABSORBENT MATERIAL. CLEAN AREA WITH WATER.

SECTION 7: HANDLING AND STORAGE

TO PROTECT THE PRODUCT, KEEP FROM FREEZING OR EXCESSIVE HEAT. MAY COAGULATE IF FROZEN OR AFTER EXTENDED STORAGE. CAN DEVELOP A BACTERIAL ODOR AFTER EXTENDED STORAGE.

KEEP CONTAINER TIGHTLY CLOSED.

WASH HANDS AFTER USE.

DO NOT EAT, DRINK, OR USE TOBACCO PRODUCTS WHEN HANDLING ANY CHEMICAL PRODUCTS.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
NONE ESTABLISHED (NO OSHA PEL. NO ACGIH TLV(R*). NO NIOSH REL)

ENGINEERING CONTROLS:
NO SPECIAL MEASURES ARE NEEDED.
LOCAL EXHAUST VENTILATION IS NOT REQUIRED

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: NOT REQUIRED UNDER CONDITIONS OF NORMAL USE.

SKIN PROTECTION:
WEAR WATER-IMPERMEABLE GLOVES SUCH AS NEOPRENE, NITRILE, PVC, OR NATURAL RUBBER GLOVES, PARTICULARLY FOR PROLONGED CONTACT. USE FACE SHIELD IF SPLASHING IS LIKELY.

EYE PROTECTION: WEAR CHEMICAL SAFETY GOGGLES IF EYE CONTACT MAY BE LIKELY.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:
MILKY WHITE LIQUID, MILD ODOR (SIMILAR TO LATEX PAINT).

FLASH POINT: NONCOMBUSTIBLE.

FLAMMABLE LIMITS: N/A

BOILING POINT: 212 DEG. F (ESTIMATED)

FREEZING POINT: APPROX. 32 DEG. F (ESTIMATED)

SPECIFIC GRAVITY: 1.05

SOLUBILITY IN WATER: MISCIBLE.

PH: 7-8

EVAPORATION RATE (BUTYL ACETATE = 1): <1 (EQUIVALENT TO WATER)

SECTION 10: STABILITY AND REACTIVITY

STABILITY: STABLE.

CONDITIONS TO AVOID: NONE KNOWN.

INCOMPATIBILITY: STRONG OXIDIZING AGENTS.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

HAZARDOUS DECOMPOSITION PRODUCTS: NONE LIKELY UNLESS MATERIAL IS IN A FIRE.

SECTION 11: TOXICOLOGICAL INFORMATION

NOT CONSIDERED ACUTELY TOXIC.

NO INGREDIENTS ARE LISTED AS CARCINOGENIC ACCORDING TO IARC, ACGIH, NTP, OR OSHA. NOT A SENSITIZER.

FOR ACRYLIC COPOLYMER:
ORAL LD50 (RAT): >2000 MG/KG (SIMILAR MATERIAL)
DERMAL LD50 (RAT): >2000 MG/KG (SIMILAR MATERIAL)

AQUATIC TOXICITY FOR ACRYLIC COPOLYMER + SURFACTANT (SPECIES NOT SPECIFIED):
LC50: >100 MG/L

FOR NONIONIC SURFACTANT:
ORAL LD50 (RAT): 4000 MG/KG
LC50 FOR FISH (BLUEGILL): >10 MG/L (96 HOURS)
LC50 FOR MYSID SHRIMP: 0.26 MG/L

BASED ON TOXICITY TO SHRIMP, CLASSIFY AS HAZARDOUS TO THE AQUATIC ENVIRONMENT, CATEGORY 3.

APPLICABLE HAZARD STATEMENTS:
H316: CAUSES MILD SKIN IRRITATION.
H320: CAUSES EYE IRRITATION.
H402: HARMFUL TO AQUATIC LIFE.

APPLICABLE PRECAUTIONARY STATEMENTS:

P332+P313: IF SKIN IRRITATION OCCURS, GET MEDICAL ATTENTION.

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.

P273: AVOID UNCONTROLLED RELEASE TO THE ENVIRONMENT.

P501:
DISPOSE OF CONTENTS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:
PRODUCT AS A WHOLE HAS NOT BEEN TESTED. MATERIAL SIMILAR TO ACRYLIC COPOLYMER/SURFACTANT WAS PRACTICALLY NONTOXIC TO AQUATIC ORGANISMS, BUT SURFACTANT ALONE WAS HIGHLY TOXIC TO MYSID SHRIMP.

PERSISTENCE AND DEGRADABILITY: NOT LIKELY TO BIODEGRADE.

MOBILITY IN SOIL: NO INFORMATION AVAILABLE.

BIOACCUMULATION: BASED ON INGREDIENTS, NOT LIKELY TO BIOACCUMULATE.

SECTION 13: DISPOSAL CONSIDERATIONS

DO NOT SEWER OR DUMP ON THE GROUND.
AS PROVIDED, NOT A RCRA-REGULATED WASTE.
DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION 14: TRANSPORTATION

NOT A DOT-REGULATED HAZARDOUS MATERIAL. NOT CLASSIFIED AS DANGEROUS GOODS FOR DOT, IATA, IMDG, TDG.

SECTION 15: REGULATORY INFORMATION

THIS PRODUCT DOES NOT CONTAIN 0.1% OR MORE OF ANY:
CHEMICALS REGULATED UNDER:
CERCLA
SARA 302 EHS
SARA 311/312
SARA 313

HAZARDOUS AIR POLLUTANTS.

CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE EFFECTS.

CHEMICALS ON THE NEW JERSEY RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST.

SECTION 16: OTHER INFORMATION

ADDITIONAL INFORMATION ON THE PRODUCTS IS AVAILABLE AT.
WWW.TCCMATERIALS.COM

DISCLAIMER:
WE BELIEVE THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE, BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND. THE INFORMATION CONTAINED IN THIS DOCUMENT APPLIES TO THIS SPECIFIC MATERIAL AS SUPPLIED. IT MAY NOT BE VALID FOR THIS MATERIAL IF IT IS USED IN COMBINATION WITH ANY OTHER MATERIALS. IT IS THE USERS RESPONSIBILITY TO SATISFY ONESELF AS TO THE SUITABILITY AND COMPLETENESS OF THIS INFORMATION FOR THE USER'S OWN PARTICULAR USE.

SAFETY DATA SHEET

Be Right™

1. IDENTIFICATION

Product identifier
Product Name Copper Masking Reagent

Other means of identification
Product Code(s) 2603449

Safety data sheet number M00105

Recommended use of the chemical and restrictions on use
Recommended Use Complexes copper to provide reagent blank. Water Analysis.
Uses advised against Consumer use.
Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number
+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word
None

Hazard statements
The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.

Environmental precautions

Environmental precautions	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	Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Flammability class	Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Individual protection measures, such as personal protective equipment

Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Ensure adequate ventilation.
Hand Protection	Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.
Eye/face protection	Wear safety glasses with side shields (or goggles).

Metal Corrosivity

Steel Corrosion Rate	Not applicable
Aluminum Corrosion Rate	Not applicable

Volatile Organic Compounds (VOC) Content
Not applicable

Explosive properties

Upper explosion limit	No data available
Lower explosion limit	No data available

Flammable properties

Flash point	Not applicable

Flammability Limit in Air

Upper flammability limit:	No data available
Lower flammability limit:	No data available

Oxidizing properties	No data available.
Bulk density	No data available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical stability
Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
None under normal processing.

Conditions to avoid
None known based on information supplied.

Incompatible materials
Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products
Sodium oxides. Carbon oxides. Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data
No data available.

STOT - repeated exposure
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data
No data available.

Carcinogenicity
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Carcinogenicity Data
No data available.

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Mixture *invitro* Data
No data available.

Substance *invitro* Data
No data available.

Mixture *invivo* Data
No data available.

Substance *invivo* Data
No data available.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Reproductive Toxicity Data
No data available.

Aspiration hazard
Based on available data, the classification criteria are not met.

DOT	Not regulated
Special Provisions	Contact with acids liberates toxic gas, sulfur dioxide.
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated
Note:	No special precautions necessary.

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods.
If the item is not in a reagent set or kit, the classification given above applies.
If the item is part of a reagent set or kit the classification would change to the following:
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.
If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

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	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

Prepared By	Hach Product Compliance Department
Issue Date	01-Sep-2020
Revision Date	08-Feb-2023
Revision Note	None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

End of Safety Data Sheet

SAFETY DATA SHEET

Creation Date 09-Apr-2010 **Revision Date** 10-Oct-2016 **Revision Number** 2

1. Identification

Product Name Copper(II) sulfate

Cat No. : AC422870000; AC422870025; AC422870050; AC422870100; AC422871000; AC422875000

Synonyms Cupric sulfate anhydrous; Cupric sulfate; Copper monosulfate

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

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

Acute oral toxicity	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if swallowed
Causes skin irritation
Causes serious eye irritation

Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects

3. Composition / Information on ingredients

Component	CAS-No	Weight %
Cupric sulfate	7758-98-7	98

4. 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 if symptoms occur.

Inhalation Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention. If not breathing, give artificial respiration.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Highly toxic fumes Sulfur oxides Copper oxides
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.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	1	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Cupric sulfate	TWA: 1 mg/m³		IDLH: 100 mg/m³ TWA: 1 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

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/face Protection 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 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.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Grey
Odor	Odorless
Odor Threshold	No information available
pH	3.5-4.5
Melting Point/Range	200 °C / 392 °F
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	3.6
Solubility	203 g/L (20°C)
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Cu O4 S
Molecular Weight	159.6

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions. Hygroscopic.

Conditions to Avoid Avoid dust formation. Incompatible products. Excess heat. Exposure to moisture.

Incompatible Materials Strong bases, Metals, Alkali metals, Powdered metals

Hazardous Decomposition Products Highly toxic fumes, Sulfur oxides, Copper oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cupric sulfate	LD50 = 481 mg/kg (Rat)	LD50 > 1000 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic Products No information available

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

Irritation Irritating to eyes and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Cupric sulfate	7758-98-7	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not allow material to contaminate ground water system. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Cupric sulfate	Not listed	LC50: = 0.1 mg/L, 96h (Oncorhynchus mykiss)	Not listed	EC50 = 0.024 mg/L/48h

Persistence and Degradability May persist based on information available.
Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper technical name Cupric sulfate
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

15. Regulatory Information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Cupric sulfate	X	X	-	231-847-6	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Cupric sulfate	7758-98-7	98	1.0

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)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Cupric sulfate	X	10 lb	X	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

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)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Cupric sulfate	10 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Cupric sulfate	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

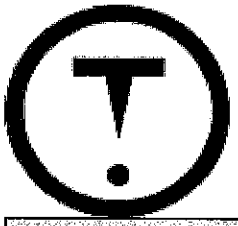
U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

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

WHMIS Hazard Class D2B Toxic materials



16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 09-Apr-2010
Revision Date 10-Oct-2016
Print Date 10-Oct-2016
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Seachem Just add water. **We'll do the rest.**

SEACHEM LABORATORIES, INC. **SAFETY DATA SHEET**

This data sheet was prepared in conformity with the Globally Harmonized System as promulgated by Title 29 of the United States Code of Federal Regulations (CFR) and by European Directives (EC) No. 1272/2008 and 1907/2006/EC. Accordingly, it is only for informational purposes as intended thereby.

Cupramine

Section 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Cupramine
OTHER PRODUCT NAMES: N/A
PRODUCT USE: Antiparasitic treatment for fish in ornamental aquariums.

SUPPLIER DETAILS

COMPANY NAME:	Seachem Laboratories, Inc.
ADDRESS:	1000 Seachem Drive, Madison, GA 30650 USA
TELEPHONE NUMBER FOR INFORMATION:	706-343-6060
EMERGENCY TELEPHONE NUMBER:	706-343-6060
DATE OF PREPARATION:	May 16, 2011
DATE OF LAST REVISION:	Dec. 30, 2015

Section 2: HAZARDS IDENTIFICATION

Hazard Classification:

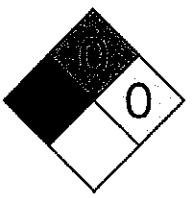
Under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200, and Regulation (EC) No 1272/2008 (GHS):

This material is not hazardous.

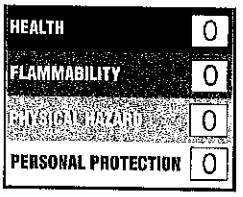
Label elements: **No measures required**

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD RATINGS

Health (Blue): 0 – Minimal
Flammability (Red): 0 – Minimal
Instability (Yellow): 0 – Minimal
Other (White): None



HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)
Health Hazard (Blue): 0 – Minimal
Flammability Hazard (Red): 0 – Minimal
Physical Hazard (Orange): 0 – Minimal
Protective Equipment: See section 8



Section 3: COMPOSITION and INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Wt %
Copper Sulfate	7758-99-8	231-847-6	4.5%

Other ingredients identity and weight, are trade secrets, and are present in amounts less than 1% and/or are non-hazardous.

Section 4: FIRST AID MEASURES

INGESTION: Rinse mouth with water and drink a glass of water. Further first aid not generally required. If unconscious, do not induce vomiting. If in doubt, contact a poison information center or a doctor.

EYE CONTACT: Immediately flush eyes thoroughly with water for 15-20 minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN CONTACT: Wash contaminated area with soap and plenty of and water. Get medical advice if needed.

INHALATION: In case of inhalation of dust, remove victim to fresh air and keep at rest and warm. If victim feels unwell, call a doctor or physician.

RECOMMENDATIONS TO PHYSICIANS: Treat symptomatically. First aid responders should wear suitable protective equipment for eyes, skin, and protective mask depending on the situation

Section 5: FIRE-FIGHTING MEASURES

FIRE EXTINGUISHING MATERIALS: Material is non-flammable.
FLASH POINT: None
AUTOIGNITION TEMPERATURE: Not Applicable
FLAMMABLE LIMITS (in air by volume, %): Not Applicable
Lower Explosive Limit (LEL): Not Applicable
Upper Explosive Limit (UEL): Not Applicable

Section 6: ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Wear suitable protective equipment described in section 8. Sweep up scattered materials or vacuum them using a vacuum cleaner so as not to cause dust then collecting into an empty container. Do not eat drink or smoke near release area, handling, or storage location. Take measures to prevent the flow or spread of materials into drains, sewers, basements, or other closed areas.

Section 7: HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Install or use appropriate equipment and wear suitable protective apparatus described in Section 8. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid generating and breathing dusts or particulates generated by this product. Use in a well-ventilated location. Launder contaminated clothing before reuse.

STORAGE AND HANDLING PRACTICES: Store material in original containers. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks.

Section 8: EXPOSURE CONTROLS-PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use adequate ventilation to ensure exposure levels are maintained below the limits provided below.

EXPOSURE LIMITS/GUIDELINES:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states, and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION:

Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN 529:2005, or EU member states. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. Federal OSHA's Respiratory Protection Standard (1910.134-1998) or the regulations of various U.S. States, Canada, EU Member States, or those of Japan. Air-purifying respirators with dust/mist/fume filters are recommended if operations may involve prolonged exposures to mists or sprays from this product.

EYE PROTECTION:

Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian CSA Standard Z94.3-M1982, *Industrial Eye and Face Protectors*, or relevant European Standards, Australian Standards, or Japanese Standards.

HAND PROTECTION:

Wear neoprene or butyl rubber gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR 1910.138, or relevant European, Canadian, Australian or Japanese Standards.

BODY PROTECTION:

Use body protection appropriate for the task (e.g., apron, lab coat, overalls, etc.) If necessary, refer to appropriate Standards of Canada, the European Union, Australia, or Japan.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE AND COLOR:	Blue Liquid
ODOR:	None
pH:	6 - 7
BOILING POINT:	100 °C
FREEZING/MELTING POINT:	0 °C
FLASH POINT:	Non-flammable
EVAPORATION RATE (n-Butyl Acetate = 1):	0.3
FLAMMABILITY (solid, gas):	Not applicable
VAPOR PRESSURE @ 20 °C:	0.023 atm
VAPOR DENSITY (air = 1):	0.62
SPECIFIC GRAVITY (water = 1):	1.0 – 1.1
SOLUBILITY IN WATER:	Soluble

Section 10: STABILITY and REACTIVITY

STABILITY:

This product is stable under normal conditions of use.

REACTIVITY:

This product is non-reactive under normal conditions of use.

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID:

Temperatures above the boiling point or flash point.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:

Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

DECOMPOSITION PRODUCTS:

Decomposition products can include and are not limited to: Carbon dioxide, Alcohols, Ethers, Hydrocarbons, Polymer fragments.

Section 11: TOXICOLOGICAL INFORMATION

Section 13: DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL:

Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, EU Member States, Australia, and Japan. When disposing, consult to a certificated waste trader or local office if they deal with the waste. The used container should be recycled after cleaning or dispose of in compliance with related laws and local regulations. Contents should be removed completely when disposing of empty containers.

U.S. EPA WASTE NUMBER: Not applicable for wastes of this product.

EUROPEAN UNION EWC CODE: Waste from this product is NOT considered as a hazardous waste pursuant to the relevant EEC Directive on hazardous waste, and is NOT subject to the provisions of that directive.

Section 14: TRANSPORTATION INFORMATION

This product is NOT hazardous as defined by (1) the U.S. Department of Transportation (49 CFR 172.101), (2) per regulations of Transport Canada, (3) per the International Air Transport Association, (4) per rules of the International Maritime Organization, (5) per the Economic Commission for Europe (European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)). Additionally, this product is NOT classified as a Marine Pollutant as defined by 49 CFR 172.101 Appendix B, U.S. Department of Transportation).

When transporting, confirm no leakage from containers. When loading, prevent containers from failing, dropping or damaging. Take preventative measures against collapse.

Section 15: REGULATORY INFORMATION

ADDITIONAL UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The component of this product is NOT subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: The component of this product has no specific Threshold Planning Quantity. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 pounds (4540 kg) therefore applies, per 40 CFR 370.20.

U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. TSCA INVENTORY STATUS: The component of this product is listed on the TSCA Inventory.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable

OTHER U.S. FEDERAL REGULATIONS:

- The component of this product is not subject to the reporting requirements of CFR 29 1910.1000.

- The component of this product is not subject to the reporting requirements of Section 112® of the Clean Air Act.
- The component of this product is not a Class I or Class II ozone depleting chemical (40 CFR part 82).
- The component of this product is not listed under Table 1 as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Release Prevention.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The component of this product is not on the California Proposition 65 Lists.

ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The component of this product is included in the DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The component of this product is not on the CEPA Priorities Substances Lists.
CANADIAN WHMIS CLASSIFICATION: This product does not meet the criteria to be classified as a Controlled Product.
CANADIAN WHMIS SYMBOLS: Not applicable.

ADDITIONAL EUROPEAN UNION REGULATIONS:
EU LABELING/CLASSIFICATION: This product does not meet the definition of hazardous as defined by European Economic Community Guidelines.
EU CLASSIFICATION: Not applicable.
EU RISK PHRASES: R 36 (irritating to eyes); R 37 (irritating to respiratory system)
EU SAFETY PHRASES: S 22 (do not breathe dust); S 25 (avoid contact with eyes)
EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOL: Not applicable
EUROPEAN UNION CLASSIFICATION ON COMPONENTS:
CARBON: A classification by the European Union Directives has not yet been published for this compound.

Section 16: OTHER INFORMATION

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Seachem Laboratories' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

PREPARED BY: SEACHEM LABORATORIES, INC.
1000 Seachem Drive
Madison, GA 30650
United States of America
706/343-6060

ABBREVIATIONS AND DEFINITIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	The European Agreement Concerning the International Carriage of Dangerous Goods by Road (Economic Commission for Europe)
Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition.
Biological Exposure Indices	Reference values intended as guidelines for the evaluation of potential health hazards in the practice of industrial hygiene, published by the ACGIH. BEIs represent the levels of determinants that are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.
CAL/OSHA	The Division of Occupational Safety and Health for the State of California.
CAS #	The Chemical Abstract Service Number that uniquely identifies each constituent.
CEPA	Canadian Environmental Protection Act
CERCLA	The United States Comprehensive Environmental Response, Compensation, and Liability Act, sometimes known as the Superfund Act
CFR	The US Code of Federal Regulations
CSA	The Canadian Standards Association
DOT	The United States Department of Transportation
DSL/NDSL	The Canadian Domestic/Non-Domestic Substances List
EC #	Sometimes known as the EINECS # (European Inventory of Now-Existing Chemical Substances), which uniquely identifies each constituent.
Embryotoxin	A chemical that causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines.
EN	European standards for products and services by European Committee for Standardization (Comité Européen de Normalisation).
EPA	The United States Environmental Protection Agency.
EPA Waste Number	A code developed by the EPA to identify characteristics of hazardous waste (e.g., ignitability, corrosivity, reactivity, etc.)
EU	European Union
EWC	European Waste Catalogue, a publication of the European Union, which catalogs hazardous chemical wastes.
Flash Point	Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable product with air.
HMIS	Hazardous Materials Identification System, a rating system developed by the National Paint and Coating Association that has been adopted by industry to identify the degree of chemical hazards.
H-Phrase H320	Causes eye irritation
H-Phrase H335	May cause respiratory irritation
IARC	International Agency for Research on Cancer, an agency of the World Health Organization.
IATA	International Air Transport Association

IDLH	Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30 minutes without suffering escape-preventing or permanent injury.
IMO	International Maritime Organization
LD_{50}	Lethal Dose 50%, or median lethal dose, the dose of a toxin, pathogen, or radiation required to kill half the members of a tested population after a specified test duration. The LD_{50} is frequently used as a general indicator of a substance's acute toxicity.
LEL	Lower Explosive Limit, the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
Mutagen	A chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines.
NFPA	National Fire Protection Association, which has established a rating system for chemical hazards.
NIOSH	National Institute for Occupational Safety and Health, a Federal research agency focusing on occupational safety and health.
NTP	National Toxicology Program, an agency of the Federal Department of Health and Human Services.
OSHA	Occupational Safety and Health Administration, an agency of the United States Department of Labor.
PEL	Permissible Exposure Limit. This has the exact same meaning as TLV, except that it is enforceable by OSHA.
REL	Recommended Exposure Limit. This has the same meaning as TLV, but is a recommendation by NIOSH.
Reproductive Toxin	Any substance which interferes in any way with the reproductive process.
RID	International Regulations Concerning the Carriage of Dangerous Goods by Rail
SARA	Superfund Amendments and Reauthorization Act
SCBA	Self-Contained Breathing Apparatus
STEL	This is the 15-minute Short Term Exposure Limit reported under Threshold Limit Value and OSHA's Permissible Exposure Limit.
TC	Transport Canada
Teratogen	A chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines.
TLV	Threshold Limit Value , the airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must also be considered. See the definitions of TWA and STEL.
TSCA	The United States Toxic Substances Control Act
TWA	This is the 8-hour Time Weighted Average reported under Threshold Limit Value and OSHA's Permissible Exposure Limit.
UEL	Upper Explosive Limit, the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
WHMIS	Canadian Workplace Hazardous Materials Information System

Seachem Just add water. **We'll do the rest.**

SEACHEM LABORATORIES, INC. **SAFETY DATA SHEET**

This data sheet was prepared in conformity with the Globally Harmonized System as promulgated by Title 29 of the United States Code of Federal Regulations (CFR) and by European Directives (EC) No. 1272/2008 and 1907/2006/EC. Accordingly, it is only for informational purposes as intended thereby.

Cuprisorb

Section 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	Cuprisorb
OTHER PRODUCT NAMES:	N/A
PRODUCT USE:	Filtration media for ornamental aquariums.

SUPPLIER DETAILS

COMPANY NAME:	Seachem Laboratories, Inc.
ADDRESS:	1000 Seachem Drive, Madison, GA 30650 USA
TELEPHONE NUMBER FOR INFORMATION:	706-343-6060
EMERGENCY TELEPHONE NUMBER:	706-343-6060
DATE OF PREPARATION:	May 16, 2011
DATE OF LAST REVISION:	Dec 30, 2015

Section 2: HAZARDS IDENTIFICATION

Hazard Classification:

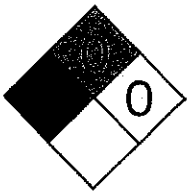
Under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200, and Regulation (EC) No 1272/2008 (GHS):

This material is not hazardous.

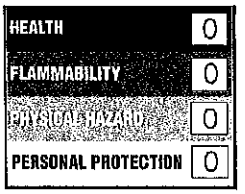
Label elements: **No measures required**

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD RATINGS

Health (Blue): 0 – Minimal
Flammability (Red): 0 – Minimal
Instability (Yellow): 0 – Minimal
Other (White): None



HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)
Health Hazard (Blue): 0 – Minimal
Flammability Hazard (Red): 0 – Minimal
Physical Hazard (Orange): 0 – Minimal
Protective Equipment: See section 8



Section 3: COMPOSITION and INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Wt %
*	*	*	*

*Product consists of proprietary, moist polymer beads which are non-hazardous, and whose exact composition is a trade secret.

Section 4: FIRST AID MEASURES

INGESTION: Rinse mouth with water and drink a glass of water. Further first aid not generally required. If unconscious, do not induce vomiting. If in doubt, contact a poison information center or a doctor.

EYE CONTACT: Immediately flush eyes thoroughly with water for 15-20 minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN CONTACT: Wash contaminated area with soap and plenty of and water. Get medical advice if needed.

INHALATION: In case of inhalation of dust, remove victim to fresh air and keep at rest and warm. If victim feels unwell, call a doctor or physician.

RECOMMENDATIONS TO PHYSICIANS: Treat symptomatically. First aid responders should wear suitable protective equipment for eyes, skin, and protective mask depending on the situation

Section 5: FIRE-FIGHTING MEASURES

FIRE EXTINGUISHING MATERIALS: Material is non-flammable.
FLASH POINT: Not Applicable
AUTOIGNITION TEMPERATURE: Not Applicable
FLAMMABLE LIMITS (in air by volume, %): Not Applicable
Lower Explosive Limit (LEL): Not Applicable
Upper Explosive Limit (UEL): Not Applicable

Section 6: ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Wear suitable protective equipment described in section 8. Sweep up scattered materials or vacuum them using a vacuum cleaner so as not to cause dust then collecting into an empty container. Do not eat drink or smoke near release area, handling, or storage location. Take measures to prevent the flow or spread of materials into drains, sewers, basements, or other closed areas.

Section 7: HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Install or use appropriate equipment and wear suitable protective apparatus described in Section 8. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid generating and breathing dusts or particulates generated by this product. Use in a well-ventilated location. Launder contaminated clothing before reuse.

STORAGE AND HANDLING PRACTICES: Store material in original containers. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks.

Section 8: EXPOSURE CONTROLS-PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use adequate ventilation to ensure exposure levels are maintained below the limits provided below.

EXPOSURE LIMITS/GUIDELINES:

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states, and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION:

Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN 529:2005, or EU member states. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. Federal OSHA's Respiratory Protection Standard (1910.134-1998) or the regulations of various U.S. States, Canada, EU Member States, or those of Japan. Air-purifying respirators with dust/mist/fume filters are recommended if operations may involve prolonged exposures to mists or sprays from this product.

EYE PROTECTION:

Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian CSA Standard Z94.3-M1982, *Industrial Eye and Face Protectors*, or relevant European Standards, Australian Standards, or Japanese Standards.

HAND PROTECTION:

Wear neoprene or butyl rubber gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR 1910.138, or relevant European, Canadian, Australian or Japanese Standards.

BODY PROTECTION:

Use body protection appropriate for the task (e.g., apron, lab coat, overalls, etc.) If necessary, refer to appropriate Standards of Canada, the European Union, Australia, or Japan.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE AND COLOR:	White beads
ODOR:	None
pH:	n/a
BOILING POINT:	Not applicable
FREEZING/MELTING POINT:	Not applicable
FLASH POINT:	Not applicable
EVAPORATION RATE (n-Butyl Acetate = 1):	Not applicable
FLAMMABILITY (solid, gas):	Not flammable
VAPOR PRESSURE @ 20 ^{o}C:	Not applicable
VAPOR DENSITY (air = 1):	Not applicable
SPECIFIC GRAVITY (water = 1):	1.2 – 1.3
SOLUBILITY IN WATER:	Insoluble

Section 10: STABILITY and REACTIVITY

STABILITY:

This product is stable under normal conditions of use.

REACTIVITY:

This product is non-reactive under normal conditions of use.

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID:

Temperatures above the boiling point or flash point.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:

Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

DECOMPOSITION PRODUCTS:

Decomposition products can include and are not limited to: Carbon dioxide, Alcohols, Ethers, Hydrocarbons, Polymer fragments.

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity Estimates (ATE) are calculated according to US OSHA Hazard Communication Standard 29CFR 1910.1200. The calculation is based on specific toxicology data for components present in concentrations greater than 1%.

ACUTE TOXICITY

Acute oral toxicity

The calculated **ATE(mix)** for this product is **>10,000 (estimated).**
Product has negligible toxicity if swallowed.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Typical for this family of materials. LD50, Rabbit > **5,000 mg/kg (estimated)**.

Acute inhalation toxicity

No adverse effects are anticipated from inhalation.

SKIN CORROSION/IRRITATION

Essentially nonirritating to skin.

SERIOUS EYE DAMAGE/EYE IRRITATION

May cause eye irritation. Corneal injury is unlikely.

SENSITIZATION

The components of this product are not known to be human skin or respiratory sensitizers.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE)

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

CARCINOGENICITY

The components of this product are not listed by U.S. FEDERAL OSHA, NTP, IARC, and CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

TERATOGENICITY

The components of this product are not reported to produce teratogenic effects in humans.

REPRODUCTIVE TOXICITY

The components of this product are not reported to cause reproductive effects in humans.

MUTAGENICITY

The components of this product are not reported to produce mutagenic effects in humans.

ASPIRATION HAZARD

Based on physical properties, not likely to be an aspiration hazard.

Section 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY:

This product will not biodegrade in the environment.

EFFECT OF MATERIAL ON PLANTS OR ANIMALS:

This product is not expected to cause harm to plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE:

No data are currently available on the effects of a release of this product to bodies of water.

Section 13: DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL:

Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, EU Member States, Australia, and Japan. When disposing, consult to a certificated waste trader or local office if they deal with the waste. The used container should be recycled after cleaning or dispose of in compliance with related laws and local regulations. Contents should be removed completely when disposing of empty containers.

U.S. EPA WASTE NUMBER: Not applicable for wastes of this product.

EUROPEAN UNION EWC CODE: Waste from this product is NOT considered as a hazardous waste pursuant to the relevant EEC Directive on hazardous waste, and is NOT subject to the provisions of that directive.

Section 14: TRANSPORTATION INFORMATION

This product is NOT hazardous as defined by (1) the U.S. Department of Transportation (49 CFR 172.101), (2) per regulations of Transport Canada, (3) per the International Air Transport Association, (4) per rules of the International Maritime Organization, (5) per the Economic Commission for Europe (European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)). Additionally, this product is NOT classified as a Marine Pollutant as defined by 49 CFR 172.101 Appendix B, U.S. Department of Transportation).

When transporting, confirm no leakage from containers. When loading, prevent containers from failing, dropping or damaging. Take preventative measures against collapse.

Section 15: REGULATORY INFORMATION

ADDITIONAL UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The component of this product is NOT subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: The component of this product has no specific Threshold Planning Quantity. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 pounds (4540 kg) therefore applies, per 40 CFR 370.20.

U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. TSCA INVENTORY STATUS: The component of this product is listed on the TSCA Inventory.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable

OTHER U.S. FEDERAL REGULATIONS:

- The component of this product is not subject to the reporting requirements of CFR 29 1910.1000.

- The component of this product is not subject to the reporting requirements of Section 112® of the Clean Air Act.
- The component of this product is not a Class I or Class II ozone depleting chemical (40 CFR part 82).
- The component of this product is not listed under Table 1 as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Release Prevention.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The component of this product is not on the California Proposition 65 Lists.

ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The component of this product is included in the DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The component of this product is not on the CEPA Priorities Substances Lists.
CANADIAN WHMIS CLASSIFICATION: This product does not meet the criteria to be classified as a Controlled Product.
CANADIAN WHMIS SYMBOLS: Not applicable.

ADDITIONAL EUROPEAN UNION REGULATIONS:
EU LABELING/CLASSIFICATION: This product does not meet the definition of hazardous as defined by European Economic Community Guidelines.
EU CLASSIFICATION: Not applicable.
EU RISK PHRASES: R 36 (irritating to eyes); R 37 (irritating to respiratory system)
EU SAFETY PHRASES: S 22 (do not breathe dust); S 25 (avoid contact with eyes)
EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOL: Not applicable
EUROPEAN UNION CLASSIFICATION ON COMPONENTS:
CARBON: A classification by the European Union Directives has not yet been published for this compound.

Section 16: OTHER INFORMATION

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Seachem Laboratories' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

PREPARED BY: SEACHEM LABORATORIES, INC.
1000 Seachem Drive
Madison, GA 30650
United States of America
706/343-6060

ABBREVIATIONS AND DEFINITIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	The European Agreement Concerning the International Carriage of Dangerous Goods by Road (Economic Commission for Europe)
Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition.
Biological Exposure Indices	Reference values intended as guidelines for the evaluation of potential health hazards in the practice of industrial hygiene, published by the ACGIH. BEIs represent the levels of determinants that are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.
CAL/OSHA	The Division of Occupational Safety and Health for the State of California.
CAS #	The Chemical Abstract Service Number that uniquely identifies each constituent.
CEPA	Canadian Environmental Protection Act
CERCLA	The United States Comprehensive Environmental Response, Compensation, and Liability Act, sometimes known as the Superfund Act
CFR	The US Code of Federal Regulations
CSA	The Canadian Standards Association
DOT	The United States Department of Transportation
DSL/NDSL	The Canadian Domestic/Non-Domestic Substances List
EC #	Sometimes known as the EINECS # (European Inventory of Now-Existing Chemical Substances), which uniquely identifies each constituent.
Embryotoxin	A chemical that causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines.
EN	European standards for products and services by European Committee for Standardization (Comité Européen de Normalisation).
EPA	The United States Environmental Protection Agency.
EPA Waste Number	A code developed by the EPA to identify characteristics of hazardous waste (e.g., ignitability, corrosivity, reactivity, etc.)
EU	European Union
EWC	European Waste Catalogue, a publication of the European Union, which catalogs hazardous chemical wastes.
Flash Point	Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable product with air.
HMIS	Hazardous Materials Identification System, a rating system developed by the National Paint and Coating Association that has been adopted by industry to identify the degree of chemical hazards.
H-Phrase H320	Causes eye irritation
H-Phrase H335	May cause respiratory irritation
IARC	International Agency for Research on Cancer, an agency of the World Health Organization.
IATA	International Air Transport Association

IDLH	Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30 minutes without suffering escape-preventing or permanent injury.
IMO	International Maritime Organization
LD_{50}	Lethal Dose 50%, or median lethal dose, the dose of a toxin, pathogen, or radiation required to kill half the members of a tested population after a specified test duration. The LD_{50} is frequently used as a general indicator of a substance's acute toxicity.
LEL	Lower Explosive Limit, the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
Mutagen	A chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines.
NFPA	National Fire Protection Association, which has established a rating system for chemical hazards.
NIOSH	National Institute for Occupational Safety and Health, a Federal research agency focusing on occupational safety and health.
NTP	National Toxicology Program, an agency of the Federal Department of Health and Human Services.
OSHA	Occupational Safety and Health Administration, an agency of the United States Department of Labor.
PEL	Permissible Exposure Limit. This has the exact same meaning as TLV, except that it is enforceable by OSHA.
REL	Recommended Exposure Limit. This has the same meaning as TLV, but is a recommendation by NIOSH.
Reproductive Toxin	Any substance which interferes in any way with the reproductive process.
RID	International Regulations Concerning the Carriage of Dangerous Goods by Rail
SARA	Superfund Amendments and Reauthorization Act
SCBA	Self-Contained Breathing Apparatus
STEL	This is the 15-minute Short Term Exposure Limit reported under Threshold Limit Value and OSHA's Permissible Exposure Limit.
TC	Transport Canada
Teratogen	A chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines.
TLV	Threshold Limit Value , the airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must also be considered. See the definitions of TWA and STEL.
TSCA	The United States Toxic Substances Control Act
TWA	This is the 8-hour Time Weighted Average reported under Threshold Limit Value and OSHA's Permissible Exposure Limit.
UEL	Upper Explosive Limit, the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.
WHMIS	Canadian Workplace Hazardous Materials Information System

Revision Number: 002.0

Issue Date: 06/08/2015

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product identifier used on the label:

Dial® Antibacterial Liquid Hand Soap – Gold, Aloe, Spring Water, White Tea & Vitamin E, Pomegranate & Tangerine, Lavender & Twilight Jasmine
DMD Dial® Antibacterial Liquid Hand Soap – Gold
DMD Sweetheart Antibacterial Liquid Hand Soap
DMD Dial® for Sensitive Skin Antibacterial Liquid Hand Soap
DMD Dial® with Moisturizers + Vitamin E Antibacterial Liquid Hand Soap

Other means of identification:

1909024 (Gold, DMD Gold); 1909068 (Aloe); 1909466 (Spring Water, DMD Sweetheart); 1909527 (White Tea & Vit E); 1909556 (Pomegranate & Tangerine); 1909568 (Lavender & Twilight); 1911996 (DMD Sensitive Skin); 1912384 (DMD Moisturizers + Vit E)

Recommended use of the chemical and restrictions on use: Soap, liquid; No restrictions on use

Name, address and telephone number of the chemical manufacturer:

The Dial Corporation, a Henkel Company
7201 E. Henkel Way
Scottsdale, AZ 85255-9672 USA

CHEMTREC: 1-800-424-9300 (24 hours daily)
Internet: www.henkelna.com

Emergency telephone number: Medical Emergencies: 1-888-689-9082

2. HAZARD IDENTIFICATION

The hazards described in this OSHA Globally Harmonized System Safety Data Sheet (SDS) are not intended for consumers, and does not address consumer use of the product. For information regarding consumer applications of this product, refer to the product label.

Classification of the substance or mixture in accordance with paragraph (d) of §1910.1200

HAZARD CLASS	HAZARD CATEGORY
EYE IRRITATION	2A

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Signal word: WARNING

Hazard Statement(s): Causes serious eye irritation.

Symbol(s):

Precautionary Statements:

Prevention: Wash thoroughly after handling.
Wear eye and face protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing.
If eye irritation persists: Get medical attention.

Storage: Not prescribed

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Hazards not otherwise classified: Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

The following chemicals are classified as health hazards in accordance with paragraph (d) of § 1910.1200.

Chemical Name*	CAS Number (Unique Identifier)	Concentration
Alkyltrimethylammonium chloride C16	112-02-7	1 – 5 %
Glycerol	56-81-5	1 - 5 %
dodecyldimethylamine oxide	1643-20-5	1 - 5 %
N-[3-(dimethylamino)propyl] dodecanamide N-oxide	61792-31-2	1 - 5 %
Benzethonium Chloride	121-54-0	0.10 %

*The specific chemical identity and/or exact percentage (concentration) of composition has been withheld because a trade secret is claimed in accordance with paragraph (i) of §1910.1200.

4. FIRST AID MEASURES

Description of necessary measures

Inhalation: First aid measures not required.
Skin contact: First aid measures not required. Cosmetic product and therefore not necessary.
Eye contact: Rinse eyes immediately with plenty of water, occasionally lifting upper and lower lids, until no evidence of product remains. Get medical attention if pain or irritation develops.
Ingestion: Dilution by rinsing the mouth and giving water or milk to drink is generally recommended. Contact physician or local poison control center.

Most important symptoms and effects, both acute and delayed

After eye contact: May cause moderate to severe irritation. After skin contact: Repeated or prolonged excessive exposure may cause irritation or dermatitis. After ingestion: Nausea and possible vomiting may occur. After inhalation: Unlikely to occur due to the physical properties of the product. At elevated temperatures, vapors or mists may cause irritation.

Indication of any immediate medical attention and special treatment needed

After eye contact: Rinse eyes with plenty of water until no evidence of product remains. After skin contact: Rinse affected area with large amounts of water until no evidence of product remains. After ingestion: Dilution by rinsing the mouth and giving a glass of water to drink is generally recommended. After inhalation: Remove from exposure area to fresh air.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Dry chemical, carbon dioxide, water spray or regular foam.
Unsuitable extinguishing media: None known

Specific hazards arising from the chemical

Irritating smoke, carbon monoxide, and carbon dioxide.

Special protective equipment and precautions for fire-fighters

In case of fire, wear a full-face positive-pressure self-contained breathing apparatus and protective suit. Shut off all ignition sources. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Isolate area. Keep unnecessary personnel away. Avoid breathing vapors, keep upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear skin, eye and respiratory protection as recommended in Section 8. Stop leak if you can do it without risk. Spills present a slipping hazard. Keep unnecessary personnel away. Ventilate spill area if possible. Make sure area is slip-free before re-opening to traffic.

Environmental Precautions

Small or household quantities may be disposed in sewer or other liquid waste system. For larger quantities check with your local water disposal authorities.

Methods and materials for containment and cleaning up

SMALL SPILLS: Contain and absorb with sand or other absorbent material and place into clean, dry containers for later disposal. Wash site of spillage thoroughly with water. LARGE SPILLS: Dike far ahead of spill to prevent further movement. Recover by pumping or by using a suitable absorbent material and place into containers for later disposal. Dispose in suitable waste container.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not get in eyes. Do not take internally. Use with adequate ventilation. Avoid generating aerosols and mists.

Conditions for safe storage, including any incompatibilities

Store in original containers in a cool dry area. Storage areas for large quantities (warehouse) should be well ventilated. Keep the containers tightly closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

Hazardous Component(s)	ACGIH	OSHA PEL	AIHA WEEL	OTHER
Alkyltrimethylammonium chloride C16	None	None	None	None
Glycerol	None	5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust.	None	None
dodecyldimethylamine oxide	None	None	None	None

Appropriate engineering controls
Provide local exhaust or general dilution ventilation to keep exposure to airborne contaminants below the permissible exposure limits where mists or vapors may be generated.

Individual protection measures

Respiratory: Air contamination monitoring should be carried out where mists or vapors are likely to be generated, to assure that the employees are not exposed to airborne contaminants above the permissible exposure limits.

Eye: Splash-proof safety glasses are required to prevent eye contact where splashing of product may occur.

Hand/Body: Protective gloves are required where repeated or prolonged skin contact may occur.
Protective clothing is required where repeated or prolonged skin contact may occur.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	liquid, colored
Odor:	distinct
Odor threshold:	Not available
pH:	4.30 – 5.30 (25 °C)
Melting point/ range:	Not available.
Boiling point/range:	Not available.
Flash point:	> 93.3 °C (> 199.94 °F)
Evaporation rate:	Not available.
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Vapor pressure:	Not available.
Vapor density:	Not available.
Solubility in water:	Not available.
Partition coefficient (n-octanol/water):	Not available.
Autoignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	3,000 - 8,000 mPa.s
VOC content:	Not available.
Specific gravity:	1.0160 at 20 °C (68°F)

10. STABILITY AND REACTIVITY

Reactivity: This product may react with strong alkalies.

Chemical stability: Stable under normal ambient temperature (70°F, 21°C) and pressure (1 atm).

Possibility of hazardous reactions: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

Conditions to avoid: Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials: Strong oxidizers and alkalis.

Hazardous decomposition products: Thermal decomposition may release toxic and/or hazardous gases, including ammonia.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure including symptoms related to characteristics

Inhalation: Unlikely to occur due to the physical properties of the product. At elevated temperatures, vapors or mists may cause irritation.

Skin contact: Not a hazard under normal use conditions.

Eye contact: May cause moderate to severe irritation.
Ingestion: May cause mild gastrointestinal irritation with nausea, vomiting, diarrhea and abdominal pain.
Physical/Chemical: No physical/chemical hazards are anticipated for this product.

Other relevant toxicity information:
This product is a personal care or cosmetic product. The use of this product by consumers is safe under normal and reasonable foreseen use.

Numerical measures of toxicity, including delayed and immediate effect

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Alkyltrimethylammonium chloride C16	None	No Data
Glycerol	None	Blood, Irritant, Kidney, Nuisance dust
dodecyldimethylamine oxide	None	Irritant
N-[3-(dimethylamino)propyl] dodecanamide N-oxide	None	No Data
Benzethonium Chloride	None	No Data

Carcinogenicity information

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Alkyltrimethylammonium chloride C16	No	No	No
Glycerol	No	No	No
dodecyldimethylamine oxide	No	No	No
N-[3-(dimethylamino)propyl] dodecanamide N-oxide	No	No	No
Benzethonium Chloride	No	No	No

Carcinogenicity None of the ingredients in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA).
Mutagenicity None of the ingredients in this product are known to cause mutagenicity.
Toxicity to reproduction None of the ingredients in this product are known to have reproductive, fetal, or developmental hazards.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:
This product is anticipated to be safe for the environment at concentrations predicted in household settings under normal use conditions. The following toxicity information is available for the hazardous ingredient(s) when used as technical grade and is provided as reference for the occupational settings.

Toxicity to fish:
The aquatic toxicity profile of this product has not been determined.

Toxicity to aquatic invertebrates:
The aquatic toxicity profile of this product has not been determined.

Toxicity to algae:
The aquatic toxicity profile of this product has not been determined.

Persistence and Degradability: The persistence and degradability of this product has not been determined. The hazardous ingredients are readily biodegradable.

Hazardous substances	Result value	Route of application	Species	Method
Alkyltrimethylammonium chloride C16	Readily biodegradable	NA	95 %	OECD 301 B (CO2 evolution)
Glycerol	Readily biodegradable	aerobic	90 – 94 %	EU Method C.4-E (closed bottle)
Dodecyldimethylamine oxide	Readily biodegradable	No data	99 %	OECD 301 B (CO2 evolution)

Bioaccumulation Potential: The bioaccumulation potential of this product has not been determined.

Mobility: The mobility of this product (in soil and water) has not been determined.

13. DISPOSAL CONSIDERATIONS

Waste Number and Description: Not applicable, not regulated.

Disposal Considerations:
Disposal of products: This product is not a RCRA hazardous waste and can be disposed of in accordance with federal, state and local regulations.
Disposal of packages: Place in trash.

Additional information: Observe all federal, state and local regulations when storing or disposing of this substance

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

International Air Transportation (ICAO/IATA)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

Water Transportation (IMO/IMDG)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None
Marine pollutant:	None

15. REGULATORY INFORMATION

Occupational Safety and Health Act: Hazard Communication Standard, 29 CFR 1910.1200(g) Appendix D: The Occupational Safety and Health Administration (OSHA) require that the Safety Data Sheets (SDSs) are readily accessible to employees for all hazardous chemicals in the workplace. Since the use pattern and exposure in the workplace are generally not consistent with those experienced by consumers, this SDS may contain health hazard information not relevant to consumer use.

United States Regulatory Information:

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302:	None above reporting de minimis
CERCLA/SARA Section 311/312:	Not available.
CERCLA/SARA Section 313:	None above reporting de minimis
California Proposition 65:	No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information:

CEPA DSL/NDSL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.

16. OTHER INFORMATION

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This safety data sheet contains changes from the previous version in sections: 3, 11

Prepared by: R&D Support Services

Issue date: 06/08/2015 **Supercedes:** Rev. 1, 04/20/2015

Safety Data Sheet

DIMILIN® SC

Version	Revision Date:	MSDS Number:	Country: US
1.9	05/01/2015	400000004081	Language: EN

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DIMILIN® SC

Product code : 400000004081

Chemical nature : Diflubenzuron

Manufacturer or supplier's details

Company name of supplier : MacDermid Crop Solutions Inc.

Address : 245 Freight Street
Waterbury, CT United States of America 06702

Telephone : (US) +1 866-430-2775

Recommended use of the chemical and restrictions on use

Recommended use : Insect Growth Regulator

Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING!	
Appearance	liquid
Colour	off-white, to, tan
Odour	slight
Hazard Summary	Harmful if inhaled. Very toxic to aquatic life with long lasting effects.

OSHA Regulatory status : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

GHS Classification

Acute toxicity (Inhalation) : Category 4

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS Label element

Hazard pictograms :

Signal word : Warning

Hazard statements : H332 Harmful if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Inhalation : Harmful if inhaled.
Occupational health effects due to inhalation of mineral dusts incorporating crystalline silica (quartz, cristobalite, tridymite), crystalline silicates (kaolin, talc) graphite or coal.

Skin : May irritate skin.

Eyes : May irritate eyes.

Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Aggravated Medical Condition : None known.

Symptoms of Overexposure : The absorption of this product into the body may lead to the formation of methaemoglobine that, in sufficient concentration, causes cyanosis.

Carcinogenicity:

IARC

Group 1: Carcinogenic to humans

kaolin 1332-58-7

Group 1: Carcinogenic 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 carcino-

gen by 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.

NTP Known to be human carcinogen

kaolin 1332-58-7

Known to be human carcinogen

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Diflubenzuron

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
N-[[(4-chlorophenyl)amino]carbonyl]-2,6-difluorobenzamide	35367-38-5	>= 30 - < 50
propane-1,2-diol	57-55-6	>= 5 - < 10
silicon dioxide	7631-86-9	>= 1 - < 5
kaolin	1332-58-7	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

If inhaled : If breathed in, move person into fresh air.
Give oxygen or artificial respiration if needed.
In case of bluish discolouration (lips, ear lobes, fingernails), give oxygen as quickly as possible.
Obtain medical attention.

In case of skin contact : If on clothes, remove clothes.
Wash off immediately with plenty of water for at least 15 minutes.
If skin irritation occurs, seek medical advice/attention.
Wash contaminated clothing before re-use.
Destroy contaminated shoes.

In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If symptoms persist, call a physician.

If swallowed : Do NOT induce vomiting.
Give small amounts of water to drink.
Call a physician or poison control centre immediately.
Never give anything by mouth to an unconscious person.

Notes to physician	: The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Extinguishing media - large fires Alcohol-resistant foam (on small fires) Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	: Water spray jet
Specific hazards during fire-fighting	: Burning produces noxious and toxic fumes.
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	: Fight fire with normal precautions from a reasonable distance. Keep away from fire, sparks and heated surfaces. Use water spray to cool unopened containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	: Body covering protective clothing, full "turn-out" gear. Self-contained breathing apparatus (EN 133)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye/face protection. Avoid contact with skin and eyes. Ventilate the area. Keep in properly labelled containers. Dispose of rinse water as waste water.
Environmental precautions	: Toxic to aquatic life. Do not allow uncontrolled discharge of product into the environment. Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal. Large spills should be collected mechanically (remove by pumping) for disposal. Ventilate the area.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Handle and open container with care.
Protect from contamination.
Use only in well-ventilated areas.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
Wear suitable protective clothing, gloves and eye/face protection.
Wash thoroughly after handling.
Keep container closed when not in use.

Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep only in the original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane-1,2-diol	57-55-6	TWA	10 mg/m3	US WEEL
silicon dioxide	7631-86-9	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m3 / %SiO2 (Silica)	OSHA Z-3
		TWA	6 mg/m3 (Silica)	NIOSH REL
kaolin	1332-58-7	TWA (Respirable fraction)	2 mg/m3	ACGIH
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0

Engineering measures : Use mechanical ventilation for general area control.
Ensure that extracted air cannot be returned to the workplace through the ventilation system.
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Remarks : Chemical resistant protective gloves

Eye protection : Safety glasses with side-shields
or
Safety goggles

Skin and body protection : Long sleeved clothing
Remove and wash contaminated clothing before re-use.
Discard contaminated shoes.
To protect against splashes from pouring:
Rubber or plastic boots
Rubber or plastic apron

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wear suitable gloves and eye/face protection.
Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.
Ensure adequate ventilation, especially in confined areas.
When using do not eat, drink or smoke.
Wash thoroughly after handling.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Contaminated work clothing should not be allowed out of the workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: off-white, to, tan
Odour	: slight
Odour Threshold	: No data available
pH	: 8 - 10

Melting point/range	:	Not applicable
Boiling point/boiling range	:	> 100 °C
Flash point	:	> 110 °C
Evaporation rate	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1.188 (20 °C)
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	partly soluble Solvent: Organic solvents
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Self-Accelerating decomposition temperature (SADT)	:	Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Incompatible materials	:	Strong acids
Hazardous decomposition products	:	Carbon oxides Nitrogen oxides (NOx) Hydrogen chloride gas Hydrogen fluoride

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Components:

propane-1,2-diol:

Acute oral toxicity : LD50 (Rat): 20,000 mg/kg

LD50 (Rabbit): 18,500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 20,800 mg/kg

silicon dioxide:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
GLP: no

kaolin:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit
Result: slight irritation

Components:

silicon dioxide:

Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: slight irritation

Components:
silicon dioxide:
Result: No eye irritation

Respiratory or skin sensitisation

Product:
Species: Guinea pig
Result: negative

Components:
silicon dioxide:
Test Type: Maximisation Test (GPMT)
Species: Guinea pig
Assessment: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment	:	Based on available data, the classification criteria are not met.

Components:
silicon dioxide:

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Result: negative GLP: no
	:	Test Type: Unscheduled DNA synthesis (UDS) Result: negative
Genotoxicity in vivo	:	Test Type: in vivo assay Species: Rat (male) Application Route: Oral Result: negative GLP: no
		Test Type: in vivo assay Species: Rat (male and female) Application Route: Oral Result: negative GLP: no
Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.

Carcinogenicity

Product:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Components:

silicon dioxide:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

kaolin:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : Based on available data, the classification criteria are not met.

Components:

silicon dioxide:

Reproductive toxicity - Assessment : No toxicity to reproduction
No effects on or via lactation

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

N-[[(4-chlorophenyl)amino]carbonyl]-2,6-difluorobenzamide:

M-Factor (Acute aquatic toxicity) : 100

M-Factor (Chronic aquatic toxicity) : 1,000

silicon dioxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 5,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 5,000 mg/l
Exposure time: 24 h

Toxicity to algae : EC50 (Algae): 440 mg/l
Exposure time: 72 h
Remarks: Information given is based on data obtained from similar substances.

kaolin:

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 1,100 mg/l
Exposure time: 48 h

Persistence and degradability

Components:

silicon dioxide:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of waste material in compliance with all federal, state, and local regulations.
Pesticide wastes are toxic.
Do not contaminate ponds, waterways or ditches with chemical or used container.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diflubenzuron)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(Diflubenzuron)

Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diflubenzuron)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Highly toxic by inhalation

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
1-Butanol	71-36-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
ethylene oxide	75-21-8	10	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

	N-[[(4-chloro-phenyl)amino]carbonyl]-2,6-difluorobenzamide	35367-38-5	41.2359 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

kaolin	1332-58-7
quartz (SiO2)	14808-60-7
4-chloroaniline	106-47-8
sulphuric acid	7664-93-9
ethylene oxide	75-21-8

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

ethylene oxide	75-21-8

FIFRA Hazard Information:

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION

Harmful if absorbed through skin or inhaled. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist.

This pesticide is toxic to aquatic invertebrates. For terrestrial uses, do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic invertebrate organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.
This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination or water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 +91 1166 411 405
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
Middle East / Africa:	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
America	United States of America and Canada	+1866 928 0789 +1 215 207 0061
Latin America:	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670

World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Date Printed 9/28/10
MSDS No: M00015

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Diphenylcarbazone Reagent
Catalog Number: 83514

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880
E-mail:SDS@hach-lange.de

Emergency Telephone Numbers:
(Poison Information Center Mainz)
(+49 (0) 6131 19240) 24 HR

Responsible Department:
HACH LANGE LTD
Unit 1, Chestnut Road
Western Industrial Estate, IRL-Dublin 12 Ireland
+353(0)1 4602522
E-mail: info@hach-lange.ie

Office numbers are not 24 hr numbers.

HACH LANGE LTD
Pacific Way
Salford, GB-Manchester United Kingdom M50 1DL
+44 (0)161 872 14 87
E-mail: info@hach-lange.co.uk

SDS Number: M00015
Chemical Name: Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Use of the substance/preparation: Determination of chloride
CAS No.: Not applicable
Hazard: Causes severe eye irritation.
Safety Data Sheet written according to Regulation (EU) No. 1907/2006 (REACH):
Date of MSDS Preparation:
Day: 01
Month: October
Year: 2010

2. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance: Light pink to yellow crystals
Odor: None
EU Symbols: Xi - IRRITATING
R PHRASES: R 36/37/38: Irritating to eyes, respiratory system and skin.
Protective Equipment:
Potential Health Effects:
Eye Contact (EC): Causes irritation
Skin Contact (EC): Causes irritation
Skin Absorption (EC): None Reported
Target Organs (SA E): None Reported
Ingestion (EC): May cause: nausea vomiting paresthesias (tingling or burning sensation) of the hands and feet
Target Organs (Ing E): Central nervous system

Inhalation: Causes: respiratory tract irritation May cause: drunkenness drowsiness
Target Organs (Inh E): None Reported
Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions
Chronic Effects: Chronic overexposure may cause adverse effects to the blood
Cancer / Reproductive Toxicity Information:
This product does NOT contain any IARC listed chemicals.
Additional Cancer / Reproductive Toxicity Information: None reported
Toxicologically Synergistic Products: None reported

3. COMPOSITION / INFORMATION ON INGREDIENTS

Phthalic Acid
EEC Number: 2018732
CAS No.: 88-99-3
Percent Range: 65,0 - 75,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Xi - IRRITATING
Ingredient R phrase(s): R 36/37/38
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m^3, Inhalable dust

Other component
EEC Number: Not applicable
CAS No.: Not applicable
Percent Range: < 1,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: Not established

Potassium Acid Phthalate
EEC Number: 2128894
CAS No.: 877-24-7
Percent Range: 25,0 - 35,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m^3, Inhalable dust

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Skin Contact (First Aid): Wash skin with soap and plenty of water. Call physician if irritation develops.
Ingestion (First Aid): Give large quantities of water. Call physician immediately.
Inhalation: Remove to fresh air.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors.
Hazardous Combustion Products: Toxic fumes of: carbon monoxide, carbon dioxide.
Fire / Explosion Hazards: May react violently with: nitric acid metal nitrites

Static Discharge: None reported.
Mechanical Impact: None reported
Extinguishing Media: Use media appropriate to surrounding fire conditions
Extinguishing Media NOT To Be Used: Not applicable
Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
Containment Technique: Stop spilled material from being released to the environment.
Clean-up Technique: Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.
Evacuation Procedure: Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
Storage: Protect from: heat Keep away from: oxidizers
Special Packaging Instructions: Not applicable
Use of the substance/preparation: Determination of chloride

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.
Personal Protective Equipment:
Eye Protection: safety glasses with top and side shields
Skin / Hand Protection: disposable latex gloves lab coat
Inhalation Protection: adequate ventilation
Precautionary Measures: Avoid contact with: eyes skin Do not breathe: dust Wash thoroughly after handling. Protect from: heat Keep away from: oxidizers
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m^3, Inhalable dust

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Light pink to yellow crystals
Physical State: Solid
Odor: None
pH: 5% solution = 3,1
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Not applicable
Melting Point: 167°C; 333°F
Flash Point: Not applicable
Method: Not applicable
Autoignition Temperature: Not available
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable

Specific Gravity/ Relative Density (water = 1; air =1): 1,40
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not applicable
Partition Coefficient (n-octanol / water): Not applicable
Solubility:
Water: Soluble
Acid: Soluble
Other: Not determined
Metal Corrosivity:
Steel: Not determined
Aluminum: Not determined

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Heat
Reactivity / Incompatibility: Incompatible with: oxidizers
Hazardous Decomposition: Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
LD50: None reported
LC50: None reported
Dermal Toxicity Data: None reported
Skin and Eye Irritation Data: None reported
Mutation Data: None reported
Reproductive Effects Data: None reported
--

Ingredient Toxicological Data: Phthalic acid Oral rat LD50 = 7900 mg/kg; Potassium Acid Phthalate Oral rat LDLo = 3200 mg/kg
This product does NOT contain any IARC listed chemicals.

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: --
No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

I.C.A.O.:
I.C.A.O. Proper Shipping Name: Not Currently Regulated
--
ICAO Hazard Class: NA
ICAO Subsidiary Risk: NA

ICAO UN/ID Number: NA
ICAO Packing Group: NA

I.M.O.:
I.M.O. Proper Shipping Name: Not Currently Regulated
--
I.M.O. Hazard Class: NA
I.M.O. Subsidiary Risk: NA
I.M.O. UN Number: NA
I.M.O. Packing Group: NA

A.D.R.:
A.D.R. Proper Shipping Name: Not Currently Regulated
--
A.D.R Hazard Class: NA
A.D.R. Subsidiary Risk: NA
A.D.R. UN-Number:: NA
A.D.R. Packing Group: NA

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories:
EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.
EEC Number: Not applicable
EEC LABEL COPY:
EU Symbols: Xi - IRRITATING
R PHRASES: R 36/37/38: Irritating to eyes, respiratory system and skin.
S PHRASES: S 24: Avoid contact with skin. S 25: Avoid contact with eyes.
Ingredients: Phthalic Acid;

16. OTHER INFORMATION

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. In-house information. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Technical Judgment.

Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

SAFETY DATA SHEET
DOW SILICONES CORPORATION

Product name: DOWSIL™ 3145 RTV Mil-A-46146 Adhesive/Sealant Gray

Issue Date: 12/14/2023

Print Date: 01/12/2024

DOW SILICONES CORPORATION encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: DOWSIL™ 3145 RTV Mil-A-46146 Adhesive/Sealant Gray

Recommended use of the chemical and restrictions on use
Identified uses: Adhesive, binding agents Electrical industry and electronics

COMPANY IDENTIFICATION
DOW SILICONES CORPORATION
2200 WEST SALZBURG ROAD
MIDLAND MI 48686-0994
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 1 800 424 9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Reproductive toxicity - Category 2

Label elements
Hazard pictograms

Signal word: **WARNING!**

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: Rinse mouth with water. No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:
Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical. Water spray.

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides. Silicon oxides.

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health..

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Retain and dispose of

soon as possible after exposure ceases)

Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	paste
Color	grey
Odor	slight
Odor Threshold	No data available
pH	Not applicable, substance/mixture is non-soluble (in water)
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	Not applicable
Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute Toxicity Endpoints:
Not classified based on available information.

Acute oral toxicity

Information for the Product:

As product: Single dose oral LD50 has not been determined.

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Based on information for component(s):
LD50, > 5,000 mg/kg Estimated.

Information for components:

Methyltrimethoxysilane
LD50, Rat, male and female, 11,685 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Octamethyl Cyclotetrasiloxane
LD50, Rat, male, > 4,800 mg/kg No deaths occurred at this concentration.

Methanol
Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed. LD50, Rat, > 5,000 mg/kg

Lethal Dose, Humans, 340 mg/kg Estimated.

Lethal Dose, Humans, 29 - 237 ml Estimated.

Acute dermal toxicity

Information for the Product:

For similar material(s):
LD50, Rat, > 2,000 mg/kg
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Information for components:

Methyltrimethoxysilane

For similar material(s):
Brief contact may cause slight skin irritation with local redness.

Information for components:

Methyltrimethoxysilane
Brief contact may cause slight skin irritation with local redness.

Octamethyl Cyclotetrasiloxane
Brief contact is essentially nonirritating to skin.

Methanol
Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

Not classified based on available information.

Information for the Product:

For similar material(s):
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Information for components:

Methyltrimethoxysilane
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Octamethyl Cyclotetrasiloxane
Essentially nonirritating to eyes.

Methanol
May cause eye irritation.

Sensitization

For skin sensitization:
Not classified based on available information.

For respiratory sensitization:
Not classified based on available information.

Information for the Product:

Based on data from similar materials
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Information for components:

Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

Octamethyl Cyclotetrasiloxane
Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

Methanol
May be harmful if swallowed and enters airways.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Methyltrimethoxysilane
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Octamethyl Cyclotetrasiloxane
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Respiratory tract.
Female reproductive organs.

Methanol
Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane

Not classified based on available information.

Information for the Product:

Product test data not available.

Information for components:

Methyltrimethoxysilane
In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Octamethyl Cyclotetrasiloxane
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Methanol
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative in some cases and positive in other cases.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data are available.

Toxicity

Methyltrimethoxysilane

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
No toxicity at the limit of solubility
ErC50, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate inhibition, > 3.6 mg/l, OECD Test Guideline 201
No toxicity at the limit of solubility
NOEC, Pseudokirchneriella subcapitata (green algae), Static, 72 Hour, Growth rate inhibition, >= 3.6 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC10, activated sludge, Static, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, >= 10 mg/l

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Theoretical Oxygen Demand: 1.50 mg/mg

Chemical Oxygen Demand: 1.49 mg/mg Dichromate

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	72 %
20 d	79 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 8 - 18 d
Method: Estimated.

Bioaccumulative potential

Methyltrimethoxysilane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.82 Estimated.

Octamethyl Cyclotetrasiloxane
Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water(log Pow): 6.49 Measured
Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Methanol
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.77 Measured
Bioconcentration factor (BCF): < 10 Leuciscus idus (Golden orfe) Measured

Mobility in soil

Methyltrimethoxysilane
No relevant data found.

Octamethyl Cyclotetrasiloxane
Partition coefficient (Koc): 16596 OECD Test Guideline 106

Methanol
Partition coefficient (Koc): 0.44 Estimated.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Reproductive toxicity

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Polydimethylsiloxane hydroxy-terminated	70131-67-8
Hexamethyldisilazane reaction with Silica	68909-20-6
Methyltrimethoxysilane	1185-55-3
Titanium dioxide	13463-67-7

California Prop. 65
WARNING: This product can expose you to chemicals including Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Flammability	Instability
1	1	0

HMIS

Health	Flammability	Physical Hazard
1*	1	0

* = Chronic Effects (See Hazards Identification)

Revision
Identification Number: 99180935 / A713 / Issue Date: 12/14/2023 / Version: 15.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.
Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)

control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product Name DPD Free Chlorine Reagent

Other means of identification
Product Code(s) 2105569

Safety data sheet number M00109

HMRIC # HMIRA Registry Number 9935 Filed 2021-03-29

Recommended use of the chemical and restrictions on use
Recommended Use Water Analysis. Determination of chlorine.
Uses advised against Consumer use.
Restrictions on use Please refer to the product labeling and packaging for information about appropriate use.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number
+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (repeated exposure)	Category 2

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word
Warning

Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation.

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	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Carbon monoxide, Carbon dioxide. Phosphorus oxides. Nitrogen oxides.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.
Other Information	Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so.

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.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Appearance	powder	**Color**	White to light pink White to brown
Odor	Odorless	**Odor threshold**	No data available

Property	Values	Remarks • Method
Molecular weight	No data available	
pH	6.35	1% @ 20°C
Melting point / freezing point	110 °C / 230 °F	
Initial boiling point and boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Relative vapor density	No data available	
Specific Gravity	1.76	
Partition coefficient	log K_{ow} ~ 0	
Soil Organic Carbon-Water Partition Coefficient	log K_{oc} ~ 0	
Autoignition temperature	No data available	
Decomposition temperature	110 °C / 230 °F	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Completely soluble	> 10000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

Other information

Metal Corrosivity

Steel Corrosion Rate	No data available
Aluminum Corrosion Rate	No data available

Volatile Organic Compounds (VOC) Content
Not applicable

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Carboxylate Salt	-	No data available	-
Phosphoric acid, disodium salt	7558-79-4	No data available	-
Salt of N,N-Diethyl-p-Phenylenediamine	-	Not applicable	-

Skin contact Causes skin irritation.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms Redness. May cause redness and tearing of the eyes.

Acute toxicity
Based on available data, the classification criteria are not met

Mixture
No data available.

Ingredient Acute Toxicity Data
Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Salt of N,N-Diethyl-p-Phenyl enediamine (1 - 5%) CAS#: -	Rat LD_{50}	695 mg/kg	None reported	None reported	Outside testing
Disodium EDTA (1 - 5%) CAS#: 139-33-3	Rat LD_{50}	2000 mg/kg	None reported	None reported	RTECS

Inhalation (Dust/Mist) Exposure Route

Unknown Acute Toxicity
0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

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

ATEmix (oral)	21,786.80 mg/kg
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	136.40 mg/l
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation
Classification based on data available for ingredients. Irritating to skin.

Mixture
No data available.

Ingredient Skin Corrosion/Irritation Data
Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (30 - 40%)	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS

Carboxylate Salt	-	-	-	-	-
Phosphoric acid, disodium salt	7558-79-4	-	-	-	-
Salt of N,N-Diethyl-p-Phenylenediamine	-	-	-	-	-
Disodium EDTA	139-33-3	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Mixture *invitro* Data
No data available.

Substance *invitro* Data
Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Disodium EDTA (1 - 5%) CAS#: 139-33-3	Cytogenetic analysis	Hamster lung	200 mg/L	None reported	Positive test result for mutagenicity	RTECS

Mixture *invivo* Data
No data available.

Substance *invivo* Data
No data available.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Mixture
No data available.

Ingredient Reproductive Toxicity Data
No data available.

Aspiration hazard
Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity Based on available data, the classification criteria are not met.

Unknown aquatic toxicity 0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Mixture

Aquatic Acute Toxicity
No data available.

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
US EPA Waste Number	Not applicable

14. TRANSPORT INFORMATION

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated
Note:	No special precautions necessary.

Additional information

15. REGULATORY INFORMATION

National Inventories

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

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

Additional information

Global Automotive Declarable Substance List (GADSL)
Not applicable
NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 2 - *	Flammability - 0	Physical hazards - 0	Personal protection - X - I

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealands Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product Name DPD Total Chlorine Reagent

Other means of identification
Product Code(s) 2105669

Safety data sheet number M00110

HMRIC # HMIRA Registry Number 9936 Filed 2016-04-11

Recommended use of the chemical and restrictions on use
Recommended Use Water Analysis. Indicator for total chlorine.
Uses advised against Consumer use.
Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number
+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (repeated exposure)	Category 1

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word
Danger

persists.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Self-protection of the first aider Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

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 Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon monoxide, Carbon dioxide. Iodine compounds. Phosphorus oxides. Potassium oxides. Sodium monoxide. Nitrogen oxides.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

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.

Information on basic physical and chemical properties

Physical state Solid
Appearance powder
Color White to light pink
White to brown
Odor Odorless
Odor threshold Not applicable

Property	Values	Remarks • Method
Molecular weight	Not applicable	
pH	6.35	1% @ 20°C
Melting point / freezing point	145 °C / 293 °F	
Initial boiling point and boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Relative vapor density	No data available	
Specific Gravity	1.79	
Partition coefficient	log K_{ow} ~ 0	
Soil Organic Carbon-Water Partition Coefficient	log K_{oc} ~ 0	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
None reported	No information available	No data available	No information available

Other information

Metal Corrosivity

Steel Corrosion Rate 0.97 mm/yr / 0.04 in/yr
Aluminum Corrosion Rate 0.15 mm/yr / 0.01 in/yr

Volatile Organic Compounds (VOC) Content
Not applicable

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Carboxylate Salt	-	No data available	-

Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes. Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Symptoms	Redness. May cause redness and tearing of the eyes.

Acute toxicity
Based on available data, the classification criteria are not met

Mixture
Test data reported below.

Oral Exposure Route

Endpoint type	Reported dose	Toxicological effects	Key literature references and sources for data
Rat LD_{50}	4700 mg/kg	**Behavioral** Flaccid muscle tone Lethargy Prostration **Eye** Chromodacryorrhea Ptosis **Gastrointestinal** Abnormalities of the gastrointestinal tract Diarrhea **Liver** Abnormalities of the liver **Lungs, Thorax, or Respiration** Abnormalities of the lungs Dyspnea Red or brown staining of the nose/mouth area **Nutritional and Gross Metabolic** Soiling of the anogenital area Wetness of the anogenital area **Reproductive** **Skin and Appendages** Piloerection	Outside testing

Ingredient Acute Toxicity Data
Test data reported below.

Oral Exposure Route

W A HAMMOND DRIERITE CO., LTD.

SAFETY DATA SHEET

Section I Product Information

Products: Drierite Regular Drierite, Non-Indicating Drierite, Commercial Drierite

Common Name: Calcium Sulfate

Chemical Name: Calcium Sulfate Anhydrous

Applicable Drierite Stock Numbers:

11001,11005,11025,11050,12001,12005,12025,12050,13001,13005,13025,13050,14001, 14005,14025,14050,15001,15005,15025,15050,19045,26910,26940,31050,32050,33050, 34020,34050,35050,39045,60011,60012,60013,60014,60016,60018,60061,61025,62020, 63025, 64010,66025,68005,68050

Distributor Name: W A Hammond Drierite Co, Ltd.
Address: P O Box 460, Xenia, OH 45385
Phone Number: 937-376-2927

Manufacturer Name: W A Hammond Drierite Co, Ltd.
Address: P O Box 460, Xenia, OH 45385
Phone Number: 937-376-2927

Emergency Phone: 937-376-2927

Recommended Use: Desiccant, Drying Agent

Section II Hazard Identification

Pictogram: 

Signal Word: Warning

Hazard Statement(s): This product can release nuisance dust in handling or during use. Eye, skin, nose, throat, and upper respiratory irritation may occur with prolonged dust exposures.

Effects of Overexposure:

Acute:

Eyes: Direct contact can cause mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician. Eye irritation Category 2, Subcategory 2B.

W A HAMMOND DRIERITE CO., LTD.

SAFETY DATA SHEET

Section II cont.

Skin: However, direct, prolonged or repeated contact with the skin may cause irritation. Rubbing of this product against the skin can result in abrasions. Rinse with water until free of material to avoid abrasions, and then wash skin thoroughly with mild soap and water. May dry skin. Mild Skin Irritation Category B

Inhalation: Inhalation of dusts from this product may irritate the nose, throat, lungs, and upper respiratory tract. Persons exposed to large amounts of this dust may be forced to leave area because of nuisance conditions such as coughing, sneezing, and nasal irritation. Labored breathing may occur after excessive inhalation. If respiratory symptoms persist, consult physician.

Ingestion: Harmful if swallowed. Calcium Sulfate is non-toxic; however, ingestion of a sufficient quantity could lead to mechanical obstruction of the gut, especially the pyloric region. See Emergency and First Aid – Ingestion in Section IV.

Chronic: Gypsum sourced calcium sulfate displays no specific toxic properties. (Repeated Exposure: Category 2)

Inhalation: Prolonged and repeated exposure to respirable crystalline silica can result in lung disease (i.e. silicosis) and/or lung cancer.

Eyes: None known

Skin: None known

Ingestion: None Known

Carcinogenicity:

Material	IARC	NTP	ACGIH	CAL-65
Crystalline Silica	Group 1	Group 1	A2	On Record

In 1997, IARC classified inhaled crystalline silica as carcinogenic to humans categorizing it as a Group 1 agent. In this evaluation, IARC noted that carcinogenicity was not detected in all industrial circumstances studied, and may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. Carcinogenicity Category 2: Suspected Carcinogen. There are no known mutagenic, teratogenic, nor has reproductive effects.

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SAFETY DATA SHEET

Section III Information on Ingredients

Ingredients	CAS Number	WT%	LC50	LD50
Calcium Sulfate Dihydrate, Calcium Sulfate Anhydrite, or Dihydrate/Anhydrite blend.	7778-18-9	>95	2.61 mg/L [rat]	1,581 mg/kg [rat]
Silicon Dioxide (Crystalline Silica)	14808-60-7	<0.025	Not Available	Not Available
Limestone	1317-65-3	<2	Not Available	6450 mg/kg [rat]

Section IV First Aid Measures

Eyes:	Direct contact can cause mechanical irritation of eyes including: burning, redness, itching, pain or other symptoms. Flush thoroughly with water for 15 minutes. If irritation persists, consult physician. Contact lenses should not be worn.
Skin:	Direct, prolonged or repeated contact with the skin may cause irritation. Rubbing of this product against the skin can result in abrasions. Rinse with water until free of material to avoid abrasions, and then wash skin thoroughly with mild soap and water. May dry skin, and chronic exposure could lead to dermatitis. Wash with mild soap and water. Dry skin may be treated with a commercially available hand lotion. If skin has become cracked, take appropriate action to prevent infection and promote healing.
Inhalation:	Inhalation of dusts from this product may irritate the nose, throat, lungs, and upper respiratory tract. Leave the area of dust exposure and remain away until coughing and other symptoms subside. Prolonged and repeated exposure to respirable crystalline silica can result in lung disease (i.e. silicosis) and/or lung cancer. While other measures are usually not necessary, consult a physician if conditions warrant.
Ingestion:	Unlikely to occur, but may cause gastric disturbances if swallowed. Gypsum is non-toxic; however, ingestion of a sufficient quantity could lead to mechanical obstruction of the gut, especially the pyloric region. Get medical attention immediately.
Target Organs:	Eyes, skin and respiratory system.
Medical Conditions Which may be Aggravated:	Pre-existing upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema, and asthma.
Primary Routes of entry:	Inhalation, eyes and/or skin contact, ingestion.

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SAFETY DATA SHEET

Section V Fire and Explosion Hazard Data

Flash Point:	Non-combustible
Auto-Ignition:	Non applicable.
Flammable Limits:	Non applicable.
Fire Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.
Special Fire-Fighting Procedures:	Wear proper personal protective equipment as listed in Section VIII.
Hazardous Combustion Products:	Decomposes to Sulfur dioxide at 1450°C/2642°F.
Explosion Hazards:	None Known.

Section VI Accidental Release Measures

Steps to be taken in the event of a spill or discharge: Remove by dry sweeping or vacuum. Avoid creating excessive dust. It is recommended that gloves and a mask be worn while cleaning the spill. If already mixed with water, scrape up and place in container. Wear appropriate protective equipment as described in Sections VII and VIII.

Disposal Procedures: Dispose of material in accordance with all applicable federal, state and local regulations. Can be disposed as an inert solid in a landfill. Slurry may plug drains.

Section VII Handling and Storage

Handling: Avoid contact with skin and eyes. Do not breathe dust. Use only in well ventilated areas. Wear appropriate eye and respiratory protection, including a NIOSH approved dust mask, if dust is generated. When using, do not eat or drink. Wash hands before eating, drinking or smoking.

Storage: Keep out reach of children. Keep the container tightly closed and dry. Store in a covered, dry climate controlled area, away from incompatibles listed in Section X.

W A HAMMOND DRIERITE CO., LTD.

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Section VIII Exposure Control

Material	WT (%)	OSHA PEL * (mg/m3)	ACGIH TLV*
Gypsum, Anhydrite or Gypsum/Anhydrite Blend	60-95	15(T)/5 (R)	10
Crystalline Silica	<0.025	0.1 (R)	0.025 (R)
Limestone	0-15	15(T)/5 (R)	10

*(T)- Total (R) – Respirable

Note: All ingredients of this product are included in (i) the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory and (ii) in the Canadian Domestic Substances List or the Canadian Non-Domestic Substances List.

When using product, provide local and general exhaust ventilation to keep airborne dust concentrations below exposure limits.

No TLV assigned to this mixture (see Section III). Minimize exposures in accordance with good hygiene practice.

Engineering controls: Ventilate to keep exposures below TLV requirements of the individual ingredients. General ventilation is expected to be satisfactory, Use local exhaust ventilation if necessary to control dust.

Respiratory Protection: None required where adequate ventilation conditions exist. In order to meet TLV requirements of individual ingredients and to control dusting conditions, provide general ventilation and local exhaust ventilation. Avoid creating dust. Wear a NIOSH/MSHA approved dust respirator in poorly ventilated areas and/or if TLV requirements of the individual ingredients is exceeded.

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SAFETY DATA SHEET

Section IX Physical/Chemical Characteristics

Appearance:	White
Physical State:	Powder/Solid
Melting Point:	Not Applicable
Freezing Point:	Not Applicable
Odor:	Low
Odor Threshold:	Not Determined
Flash point:	Non-Combustible
Flammability Limits:	Not Applicable
Solubility(in water) (g/100g):	0.205
Initial Boiling Point:	Not Applicable
Boiling Range:	Not Applicable
Specific Gravity:	2.32-2.41
pH:	~7
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Auto-Ignition Temperature:	None
Evaporation Rate:	Not Applicable
Partition Coefficient:	Not Applicable
Viscosity:	Not Applicable
Upper Flammability Limit:	Not Determined
Lower Flammability Limit:	Not Determined
Decomposition Temp:	1,450°C/2642°F

Section X Chemical Stability and Reactivity

Conditions of reactivity: Reacts with water and produces large amounts of heat (normal condition of use).

Chemical stability: Stable at normal storage conditions and temperature

Conditions to Avoid: Water, high humidity, and acids.

Hazardous decomposition products: May include, and are not limited to: calcium oxide, sulfur dioxide due to decomposition at 1450°C/2642°F.

Hazardous Polymerization: None known.

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Section XI Toxicological Information

Acute effects: The acute oral toxicity study [OECD TG 420] of calcium sulfate showed that this chemical did not cause any changes.

Chronic Effects/ Carcinogenicity: Crystalline Silica: Exposures to respirable crystalline silica are not expected during the normal use of this product; however, levels must be determined by in-house workplace hygiene testing.

In 1997, IARC classified inhaled crystalline silica as carcinogenic to humans categorizing it as a Group 1 agent. In this evaluation, IARC noted that carcinogenicity was not detected in all industrial circumstances studied, and may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. In 1992, NTP listed respirable crystalline silica among the substances "reasonably anticipated to be carcinogens".

Section XII Ecological Information

There are no known causes from this product that would harm the Ecology. The disposal of large quantities directly into waterways would be expected to cause significant aquatic life death.

Section XIII Disposal Considerations

Disposal Procedure: Dispose of material in accordance with all applicable federal, state and local regulations. Can be disposed as an inert solid in a landfill. Slurry may plug drains. Do not dispose of directly in waterways or sewers.

W A HAMMOND DRIERITE CO., LTD.

SAFETY DATA SHEET

Section XIV Transport Information

Department of Transportation (DOT) Requirements:	This product is not regulated as a hazardous material by the United States (DOT) Transportation regulations.
Canadian Transportation of Dangerous Goods:	Not regulated as dangerous goods.
UN#	None, Not regulated as dangerous goods.
UN Proper Shipping Name:	Not Applicable
ADNR:	None.
RID/ADR:	Not Classified.
Environmental Hazards:	None.
Annex II of MARPOL 73/78:	Not Applicable.
International Bulk Chemical code:	Not Applicable.

Section XV Regulatory Information

U.S. EPA;s Toxic Substance Control Act Chemical Substance Inventory:	Not Listed as reportable quantity or regulated quantity in SARA Title III Sections 302, 304, and 313, CAA Section 112(r) Regulated Chemicals for Accidental Release Prevention, CERCLA Hazardous Substances, and RCRA Hazardous Waste.
Canadian Controlled Product Regulations:	Crystalline Silica: IDL* Item #1406 Classification: D2A Limestone: WHMIS** Classification: D2A
European Union Directive 67/548/EEC (Annex III and IV):	R36, R37, R38, S37, S38, S39, and S51

*IDL Item: Canadian Hazardous Product Act Ingredient Disclosure List
** WHMIS: Workplace a Hazardous Safety Information System

U.S. Federal

TSCA

CAS# 7778-18-9 is listed on the TSCA Inventory.

W A HAMMOND DRIERITE CO., LTD.

SAFETY DATA SHEET

Section XVI Other Information

Precautionary Labeling: Warning: This product can release nuisance dust in handling or during use. Eye, skin, nose, throat, and upper respiratory irritation may occur with prolonged dust exposures. Direct, prolonged or repeated contact with the skin may cause irritation. Rubbing of this product against the skin can result in abrasions. Rinse with water until free of material to avoid abrasions, and then wash skin thoroughly with mild soap and water. May dry skin.

HMIS:	**NFPA:**	**Rating Scale:**
Health – 1	Health-1	Minimal Hazard=0
Flammability -0	Flammability-0	Slight Hazard=1
Physical Hazard-1	Reactivity-0	Moderate Hazard=2
Personal Protection-E	Serious Hazard=3	Extreme Hazard=4

Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CAS	Chemical Abstracts Service (Registry Number)
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
DSL	Canadian Domestic Substances List
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning & Community Right –to-know act
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
MSHA	Canadian Non-Domestic Substances List
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
OSHA	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
TLV	Threshold Limit Value
UN/NA#	United Nations/North America number
WHMIS	Workplace Hazardous Material Information System

SDS Prepared by: W A Hammond Drierite Co., Ltd.
P O Box 460
Xenia, OH 45385
937-376-2927

Updated: January 1st, 2016

DYLOX® 6.2 GRANULAR INSECTICIDE

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

Product identifier

Trade name	DYLOX® 6.2 GRANULAR INSECTICIDE
Product code (UVP)	04399137
SDS Number	102000012263
EPA Registration No.	432-1308

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

Use	Insecticide
Restrictions on use	See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

All Emergencies, 24hr/ 7 days	1-800-334-7577 (24 hours/day)
Product Information Telephone No.	1-800-331-2867
SDS Information or Request	SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Acute toxicity (Inhalation): Category 4
Eye irritation : Category 2B

Signal word: Warning

Hazard statements
Harmful if inhaled.
Causes eye irritation.

Precautionary statements
Avoid breathing dust.
Use only outdoors or in a well-ventilated area.
Wash face, hands and any exposed skin thoroughly after handling.
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.

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.

Other hazards
This product contains an cholinesterase inhibitor.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Trichlorfon	52-68-6	6.20

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation, dermal absorption or ingestion of this product may result in systemic intoxication due to inhibition of the enzyme cholinesterase. Symptoms of poisoning may only appear several hours later.

Inhalation

If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately. Move to fresh air. Keep patient warm and at rest.

Skin contact

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center 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 eye. Call a physician or poison control center immediately.

Ingestion

Never give anything by mouth to an unconscious person. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Rinse out mouth and give water in small sips to drink. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms

This product causes reversible cholinesterase inhibition without long term effects., Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced symptoms.

The symptoms of cholinesterase inhibition include:

Nausea, Salivation, Lachrymation, Blurred vision, Constriction of pupils

Indication of any immediate medical attention and special treatment needed

Risks	This product contains an anticholinesterase compound. Do not use if under medical advice not to work with such compounds.
Treatment	The following antidotes are generally accepted: atropin and oximes.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	None known.
Special hazards arising from the substance or mixture	Dangerous gases are evolved in the event of a fire., In the event of fire the following may be released:, Chloral

Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
Further information	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions	Avoid contact with spilled product or contaminated surfaces. Isolate hazard area. Avoid dust formation.

Methods and materials for containment and cleaning up

Methods for cleaning up	Sweep up or vacuum up spillage and collect in suitable container for disposal. Scrub contaminated area with detergent and bleach solution. Flush with water. Contaminated soil may have to be removed and disposed.
Additional advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation. Avoid contact with skin, eyes and clothing.
Hygiene measures	Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove soiled clothing immediately and clean thoroughly before using again.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Trichlorfon	52-68-6	0.28 mg/m3 (TWA)		OES BCS*
Trichlorfon (Inhalable fraction.)	52-68-6	1 mg/m3 (TWA)	02 2012	ACGIH
Trichlorfon	52-68-6	1 ug/m3 (AN ESL)	07 2011	TX ESL
Trichlorfon	52-68-6	10 ug/m3 (ST ESL)	07 2011	TX ESL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Hand protection	Chemical resistant nitrile rubber gloves
Eye protection	Safety glasses with side-shields or Goggles
Skin and body protection	Long-sleeved shirt and long pants Shoes plus socks
General protective measures	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	tan
Physical State	granular
Odor	sweet
Odour Threshold	no data available
pH	ca. 4.6 (1 %)
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Bulk density	30 - 35 lb/ft³
Evapouration rate	not applicable
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	no data available
Minimum Ignition Energy	no data available

Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity	
Thermal decomposition	no data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	Exposure to moisture.
Incompatible materials	Strong oxidizing agents, Bases
Hazardous decomposition products	Chloral Dimethyl hydrogen phosphite Carbon monoxide Oxides of phosphorus

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Skin Absorption, Skin contact, Inhalation
Immediate Effects	
Eye	Moderate eye irritation.

Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled.

Information on toxicological effects

Acute oral toxicity	LD50 (male rat) > 5,100 mg/kg LD50 (female rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (male/female combined rat) > 2 mg/l Exposure time: 4 h Determined in the form of dust. LC50 (male/female combined rat) > 8 mg/l Exposure time: 1 h Determined in the form of dust. Extrapolated from the 4 hr LC50.
Acute dermal toxicity	LD50 (male/female combined rat) > 5,000 mg/kg
Skin irritation	No skin irritation (rabbit)
Eye irritation	Mild eye irritation. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity
Trichlorfon did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity
Trichlorfon was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity
Trichlorfon was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
None.

NTP
None.

IARC
None.

OSHA
None.

Assessment toxicity to reproduction
Trichlorfon is not considered a reproductive toxicant at non-maternally toxic dose levels.

Assessment developmental toxicity
Trichlorfon did not cause developmental toxicity in rats and rabbits.

Further information
Only acute toxicity studies have been performed on the formulated product.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Leuciscus idus (Golden orfe)) 0.52 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient trichlorfon. LC50 (Rainbow trout (Oncorhynchus mykiss)) 0.7 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient trichlorfon.
Toxicity to aquatic invertebrates	LC50 (Water flea (Daphnia magna)) 0.00096 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient trichlorfon.
Toxicity to aquatic plants	EC50 (Desmodesmus subspicatus) 347 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient trichlorfon.
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not allow to get into surface water, drains and ground water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Contaminated packaging	Empty remaining contents. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR

UN number	**3077**
Class	9
Packaging group	III
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (TRICHLORFON)
RQ	Reportable Quantity is reached with 1,612 lb of product.

IMDG

UN number	**3077**
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (TRICHLORFON MIXTURE)

IATA

UN number	**3077**
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (TRICHLORFON MIXTURE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1308

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.
SARA Title III - Section 302 - Notification and Information
None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting

Trichlorfon	52-68-6	1.0%

US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.
US State Right-To-Know Ingredients

Trichlorfon	52-68-6	CA, CT, NJ

Canadian Regulations
Canadian Domestic Substance List

Trichlorfon	52-68-6

Environmental
CERCLA

Trichlorfon	52-68-6	100 lbs

Clean Water Section 307 Priority Pollutants
None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

International Regulations
European Inventory of Existing Commercial Substances (EINECS)

Trichlorfon	52-68-6

EPA/FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements:
Causes eye irritation.
Cholinesterese inhibitor
Avoid contact with skin, eyes and clothing.
Avoid breathing dust or spray mist.
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16: OTHER INFORMATION

DYLOX® 6.2 GRANULAR INSECTICIDE

NFPA 704 (National Fire Protection Association):

Health - 2	Flammability - 1	Instability - 1	Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1	Flammability - 1	Physical Hazard - 1	PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 5: Fire Fighting Measures. Section 9: Physical and Chemical Properties.

Revision Date: 09/12/2013

SAFETY DATA SHEET

Be Right™

Issue Date 07-Jun-2016 **Revision Date** 15-Jun-2016 **Version** 2

1. IDENTIFICATION

Product identifier
Product Name DPD Free Chlorine Reagent

Other means of identification
Product Code(s) 2105569

Safety data sheet number M00109

Component of Kits or Sets 001-H00525.88; 001-H11782.88; 2105503K; 2459500; 2507700; 2507900; 2508200; 251232; 251232K; 251234; 251234K; 251235; 251235K; 251238; 251238K; 251239; 251239K; 251242; 251242K; 25127000; 25127000K; 2590100; 2681300; 2688800; 2688800K; 2689800; 2690200; 2690600; 2690800; 2690900; 2691100; 2770900; 2823500; 2891400; 2892000; 2892003; 2922400; 2922400K; 2922401; 2922401K; 2922500; 2922500K; 2922501; 2922501K; 2922600; 2922600K; 2922601; 2922601K; 2923200; 2923300; 2955100; 2955200; 2991100; 2991200; 400-P1350.88; 4670000; 4670051; 5440015; 5440016; 5870000; 5870000.L1; 5870000.L2; 5870000.L3; 5870000-N; 5870000Q; 5870000RGT; 5870051; 5870051RGT; L2385CA; PCIICHLOR; PCIICHLORK

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory Use. Determination of Free Chlorine.
Uses advised against None.
Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company
P.O.Box 389 Loveland, CO 80539 USA
(970) 669-3050

Emergency telephone number
(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

Product Information
Chemical Name Not applicable
Formula Not applicable
CAS No Not applicable
Alternate CAS Number Not applicable
NIOSH (RTECS) Number None reported

2. HAZARDS IDENTIFICATION

Classification

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

4. FIRST AID MEASURES

Description of first aid measures

General advice In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms persist, call a physician.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If symptoms persist, call a physician.

Inhalation IF INHALED: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

Ingestion IF SWALLOWED: Rinse Mouth. If symptoms persist, call a physician.

Self-protection of the first aider Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11: TOXICOLOGICAL INFORMATION.

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 Caution: Use of water spray when fighting fire may be inefficient.

Flammable properties
Can burn in fire, releasing toxic vapors.

Specific hazards arising from the chemical
May react violently with:. Strong oxidizers.

Hazardous combustion products Carbon monoxide, carbon dioxide. Phosphorus oxides. nitrogen oxides.

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

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

EC Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special

Individual protection measures, such as personal protective equipment

Eye/face protection	Avoid contact with eyes. Wear tight sealing safety goggles and/or face protection shield.
Skin and body protection	Wear protective gloves and protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General Hygiene Considerations	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear suitable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice. Avoid prolonged or repeated contact with skin. Take off all contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs.

Environmental exposure controls
Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Gas Under Pressure	Not classified according to GHS criteria

Appearance	Powder	**Color**	White to light pink
Odor	Odorless	**Odor threshold**	No data available

Property	Values	Remarks • Method
Molecular weight	No data available	
pH	6.3	1% Solution
Melting point/freezing point	No data available	
Boiling point / boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Vapor density (air = 1)	Not applicable	
Specific gravity (water = 1 / air = 1)	1.76	
Partition Coefficient (n-octanol/water)	No data available	
Soil Organic Carbon-Water Partition Coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	110 °C /	
Dynamic viscosity	Not applicable	

None reported

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid
Exposure to light. Excess moisture. Heating to decomposition. Contact with oxidizers. Poor Ventilation.

Incompatible materials
Incompatible with:. Oxidizers.

Hazardous Decomposition Products
Heating to decomposition releases toxic and/or corrosive fumes of:. Carbon dioxide. Carbon Monoxide. Phosphorus oxides. Nitrogen oxides.

Explosive properties
Not classified according to GHS criteria.

Upper explosion limit No data available

Lower explosion limit No data available

Autoignition temperature
No data available

Sensitivity to Static Discharge
None reported

Sensitivity to Mechanical Impact
None reported

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information	Causes skin irritation. Causes eye irritation.
Inhalation	No known effect based on information supplied.
Eye contact	Contact with eyes may cause irritation.
Skin contact	Causes skin irritation.
Ingestion	No known effect based on information supplied.
Aggravated Medical Conditions	None known.
Toxicologically synergistic products	None known.
Toxicokinetics, metabolism and distribution	See ingredients information below.

Chemical Name	Toxicokinetics, metabolism and distribution
Sodium Phosphate, Dibasic (30 - 40%) CAS#: 7558-79-4	Phosphates are widely utilized by cells for metabolism of proteins, fats and carbohydrates.
Ethylenediaminetetra acetic Acid, Disodium Salt (0 - 10%) CAS#: 139-33-3	EDTA and related compounds are poorly absorbed by the digestive system.

Ingredient Skin Corrosion/Irritation Data

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium Phosphate, Dibasic (30 - 40%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Serious Eye Damage/Eye Irritation Data
No data available.

Ingredient Eye Damage/Eye Irritation Data

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium Phosphate, Dibasic (30 - 40%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

Chronic Toxicity Information

Product Repeat Dose Toxicity Data

Oral Exposure Route No data available.

Dermal Exposure Route No data available.

Inhalation (Dust/Mist) Exposure Route No data available.

Inhalation (Vapor) Exposure Route No data available.

Inhalation (Gas) Exposure Route No data available.

Ingredient Repeat Dose Toxicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route	No data available

Ingredient Germ Cell Mutagenicity *invivo* Data

Oral Exposure Route	No data available
Dermal Exposure Route	No data available
Inhalation (Dust/Mist) Exposure Route	No data available
Inhalation (Vapor) Exposure Route	No data available
Inhalation (Gas) Exposure Route	No data available
Oral Exposure Route	No data available
Dermal Exposure Route	No data available
Inhalation (Dust/Mist) Exposure Route	No data available
Inhalation (Vapor) Exposure Route	No data available
Inhalation (Gas) Exposure Route	No data available

Ingredient Reproductive Toxicity Data

Oral Exposure Route	No data available
Dermal Exposure Route	No data available
Inhalation (Dust/Mist) Exposure Route	No data available
Inhalation (Vapor) Exposure Route	No data available
Inhalation (Gas) Exposure Route	No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity	Based on the classification principles, not classified as hazardous to the environment.

Product Ecological Data

Aquatic toxicity

Fish	No data available
Crustacea	No data available
Algae	No data available

Terrestrial toxicity

Soil	No data available
Vertebrates	No data available
Invertebrates	No data available

Ingredient Ecological Data

Aquatic toxicity

Bioaccumulation
None known.

Product Bioaccumulation Data No data available.

Ingredient Bioaccumulation Data No data available

Additional Information

Product Information No data available

Partition Coefficient (n-octanol/water) No data available

Ingredient Information

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Salt of N,N-Diethyl-p-Phenylenediamine (0 - 10%) CAS#: -	log K_{ow} = -1.56	No information available
Ethylenediaminetetraacetic Acid, Disodium Salt (0 - 10%) CAS#: 139-33-3	log K_{ow} < 0	No information available

Mobility
Mobility in soil: Moderate to high mobility. If available, see ingredient data below.

Product Information No data available

Soil Organic Carbon-Water Partition Coefficient No data available

Ingredient Information

Chemical Name	Soil Organic Carbon-Water Partition Coefficient	Method
Ethylenediaminetetraacetic Acid, Disodium Salt (0 - 10%) CAS#: 139-33-3	log K_{oc} < 0	No information available

Additional information

Water solubility

Product Information

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Ingredient Information

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Carboxylate Salt (60 - 70%) CAS#: -	Soluble	> 1000 mg/L	25 °C	77 °F
Sodium Phosphate, Dibasic	Completely soluble	118000 mg/L	20 °C	68 °F

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Does not comply
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

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	No
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)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Phosphate, Dibasic 7558-79-4	5000 lb	-	-	X

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

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium Phosphate, Dibasic 7558-79-4	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

End of Safety Data Sheet