



SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	No. 85 Algaecide (4108-08)	
Other means of identification	Not available	
Recommended use	Algaecide	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	Nu-Calgon	
Address	2611 Schuetz Road St. Louis, MO 63043 United States	
Telephone	Phone: 314-469-7000 / 800-554-5499	
E-mail	info@nucalgon.com	
Emergency phone number	Emergency Phone: 1-800-424-9300 (CHEMTREC)	

2. Hazards Identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, inhalation	Category 4
	Serious eye damage/eye irritation	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Warning	
Hazard statement	Causes serious eye irritation. Harmful if inhaled.	
Precautionary statement		
Prevention	Wash thoroughly after handling. Wear eye protection/face protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapors.	
Response	If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor 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.	
Storage	Store away from incompatible materials.	
Disposal	Dispose of waste and residues in accordance with local authority requirements.	
Hazard(s) not otherwise classified (HNOC)	None known.	
Supplemental information	This is a registered EPA product. The product labeling is in compliance with EPA regulations and guidelines. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.	

3. Composition/Information on Ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Poly[oxethylene(dimethyliminio) ethylene (dimethyliminio) ethylene dichloride		31512-74-0	30

4. First Aid Measures

Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin contact	If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
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.
Ingestion	If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wear rubber gloves and safety glasses with side shields. Keep out of reach of children. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 800-424-9300 for emergency medical treatment information.

5. Fire Fighting Measures

Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self-contained breathing apparatus.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewers, basements or confined areas.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. When using do not eat or drink. Avoid contact with skin and clothing. Avoid breathing vapors or mists of this product. Keep container tightly closed. It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Conditions for safe storage, including any incompatibilities	Store in a closed container away from incompatible materials. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children. Do not contaminate water, food or feed by storage or disposal. Keep container closed when not in use.

8. Exposure Controls/Personal Protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	
US ACGIH Threshold Limit Values: Skin designation	
1,4-Dioxane (CAS 123-91-1)	Can be absorbed through the skin.
Bis(2-chloroethyl) ether (CAS 111-44-4)	Can be absorbed through the skin.
US. NIOSH: Pocket Guide to Chemical Hazards	
Bis(2-chloroethyl) ether (CAS 111-44-4)	Can be absorbed through the skin.
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)	
1,4-Dioxane (CAS 123-91-1)	Can be absorbed through the skin.
Bis(2-chloroethyl) ether (CAS 111-44-4)	Can be absorbed through the skin.
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear protective eyewear (goggles or face shield).
Skin protection	
Hand protection	Chemical resistant gloves.
Other	Wear long-sleeved shirt, long pants, shoes, socks, and chemical resistant gloves made of any waterproof material (such as any waterproof material, such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, Neoprene Rubber, Natural Rubber, Polyethylene, Polyvinyl Chloride (PVC) or Viton).
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid breathing mists or vapors. Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
Thermal hazards	Not applicable.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. When using do not eat or drink.

9. Physical and Chemical Properties

Appearance	Liquid
Physical state	Liquid.
Form	Liquid
Color	Amber
Odor	Characteristic
Odor threshold	Not available.
pH	6.5 (Concentrate)
Melting point/freezing point	32 °F (0 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Pour point	Not available.
Specific gravity	1.07
Partition coefficient (n-octanol/water)	Not available
Flash point	None to boiling
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available
Flammability limit - upper (%)	Not available
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available
Vapor density	Not available
Relative density	Not available.
Solubility(ies)	Complete
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and Reactivity

Reactivity	This product may react with strong oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Oxidizers. Acids.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon. Oxides of nitrogen.

11. Toxicological Information

Information on likely routes of exposure

Inhalation	Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).
Skin contact	Harmful if absorbed through skin.
Eye contact	Moderate eye irritation.
Ingestion	Harmful if swallowed. May cause stomach distress, nausea or vomiting.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Product	Species	Test Results
No. 85 Algaecide (4108-08) (CAS Mixture)		

Acute*Dermal*

LD50	Rabbit	> 2000 mg/kg
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Inhalation

LC50	Rat	> 2.9 mg/l/4h
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Oral

LD50	Rat	> 1951 mg/kg
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Components	Species	Test Results
Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride (CAS 31512-74-0)]		

Acute*Dermal*

LD50	Not available	
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Inhalation

LC50	Not available	
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Oral

LD50	Rat	1850 mg/kg, Buckman Laboratories, Inc.
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Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Exposure minutes	Not available.
Erythema value	Not available.
Oedema value	Not available.
Serious eye damage/eye irritation	Causes serious eye irritation.
Corneal opacity value	Not available.
Iris lesion value	Not available.
Conjunctival reddening value	Not available.
Conjunctival oedema value	Not available.
Recover days	Not available.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	Non-hazardous by OSHA criteria.
Carcinogenicity	Non-hazardous by OSHA criteria.

ACGIH Carcinogens

1,4-Dioxane (CAS 123-91-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Bis(2-chloroethyl) ether (CAS 111-44-4)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

1,4-Dioxane (CAS 123-91-1)	Volume 11, Supplement 7, Volume 71 - 2B Possibly carcinogenic to humans.
Bis(2-chloroethyl) ether (CAS 111-44-4)	Volume 9, Supplement 7, Volume 71 - 3 Not classifiable as to carcinogenicity to humans.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-Dioxane (CAS 123-91-1)	
Bis(2-chloroethyl) ether (CAS 111-44-4)	

US. National Toxicology Program (NTP) Report on Carcinogens

1,4-Dioxane (CAS 123-91-1)	Reasonably Anticipated to be a Human Carcinogen.
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US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity	Non-hazardous by OSHA criteria.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.
Chronic effects	Non-hazardous by OSHA criteria.
Further information	Not available.

12. Ecological Information

Ecotoxicity	This pesticide is toxic to fish, aquatic organisms and clams. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.
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Ecotoxicological data

Components	Species	Test Results
Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride (CAS 31512-74-0)]		
Aquatic		
Fish	LC50 Harlequinfish, red rasbora (Rasbora heteromorpha)	0.17 mg/L, 96 hours

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	Not available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions

Nonrefillable container. Do not reuse or refill the container. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

General

CFR 171.4: The requirements of this subchapter specific to marine pollutants does not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft, except when all or part of the transportation is by vessel.

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

IATA/ICAO (Air)**Basic shipping requirements:**

UN number UN3082
Proper shipping name Environmentally hazardous substance, liquid, n.o.s.
Technical name Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio) ethylene dichloride]
Hazard class 9
Packing group III

IMDG (Marine Transport)**Basic shipping requirements:**

UN number UN3082
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio) ethylene dichloride]
Hazard class 9
Packing group III
EmS F-A, S-F

IATA; IMDG

15. Regulatory Information

US federal regulations

This is an EPA registered product. This material can only be used commercially in the EPA registered application(s) noted on the product label.

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

EPA Registration Number 1448-233-65516
EPA Est. # 72026-IL-1

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS.
CAUTION: Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wear long-sleeved shirt, long pants, shoes, socks, and chemical resistant gloves made of any waterproof material (such as any waterproof material, such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, Neoprene Rubber, Natural Rubber, Polyethylene, Polyvinyl Chloride (PVC) or Viton).

USER SAFETY RECOMMENDATIONS: User should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. User should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. User should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

USER SAFETY REQUIREMENTS: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched (except as required by directions for use) or heavily contaminated with this product's concentrate. Do not reuse them.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Wear protective eyewear (goggles or face shield). Wear long-sleeved shirt, long pants, shoes, socks, and chemical resistant gloves made of any waterproof material (such as any waterproof material, such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, Neoprene Rubber, Natural Rubber, Polyethylene, Polyvinyl Chloride (PVC) or Viton).

ENVIRONMENTAL HAZARD: This pesticide is toxic to fish, aquatic organisms and clams. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from US Toxic Substances Control Act (TSCA) Inventory listing requirements.

Bis(2-chloroethyl) ether (CAS 111-44-4) 1.0 % One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4)

1,4-Dioxane (CAS 123-91-1) Listed.

Bis(2-chloroethyl) ether (CAS 111-44-4) Listed.

US EPCRA Section 304 Extremely Haz. Subs. & CERCLA Haz. Subs.: Section 304 EHS reportable quantity

Bis(2-chloroethyl) ether (CAS 111-44-4) 10 LBS

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**Food and Drug Administration (FDA)** Not regulated.**US state regulations****US - Illinois Chemical Safety Act: Listed substance**

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

US - Louisiana Spill Reporting: Listed substance

1,4-Dioxane (CAS 123-91-1)

Listed.

Bis(2-chloroethyl) ether (CAS 111-44-4)

Listed.

US - Minnesota Haz Subs: Listed substance

1,4-Dioxane (CAS 123-91-1)

1,4-DIOXANE (DIETHYLENE DIOXIDE)
DIETHYLENE DIOXIDE (SEE DIOXANE)
DICHLOROETHYL ETHER

Bis(2-chloroethyl) ether (CAS 111-44-4)

US - New Jersey RTK - Substances: Listed substance

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

US - North Carolina Toxic Air Pollutants: Listed substance

1,4-Dioxane (CAS 123-91-1)

US - Pennsylvania RTK - Hazardous Substances: Special hazard

1,4-Dioxane (CAS 123-91-1)

US - Washington Chemical of High Concern to Children: Listed substance

1,4-Dioxane (CAS 123-91-1)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

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

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

US. Pennsylvania RTK - Hazardous Substances

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

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

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

US. Rhode Island RTK

1,4-Dioxane (CAS 123-91-1)

Bis(2-chloroethyl) ether (CAS 111-44-4)

US. California Proposition 65**WARNING:** This product can expose you to chemicals including 1,4-dioxane, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

1,4 Dioxane (CAS# 123-91-1): 10 ppm max

Dichloroethyl ether (CAS# 111-44-4): 10 ppm max

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-Dioxane (CAS 123-91-1)

Listed: January 1, 1988

Bis(2-chloroethyl) ether (CAS 111-44-4)

Listed: April 1, 1988

Country(s) or region

Inventory name

On inventory (yes/no)*

United States & Puerto Rico

Toxic Substances Control Act (TSCA) Inventory

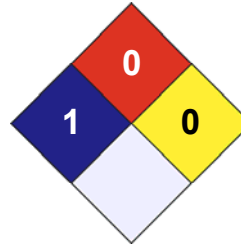
No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

20-September-2018

Revision date

20-September-2018

Version #

01

Further information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

Prepared by

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