



# SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

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

### 1.1 Product identifier

Product name

**CDM4PERMAB™ Recommended additions:  
3.2 g/L Sodium Bicarbonate, 0.5 g/L  
Poloxamer 188, 4 mM L-Glutamine**

Catalogue Number

**SH30872.02**

Product description

Not available.

Product type

Powder.

Other means of identification

Not available.

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

For Further Manufacturing or Research Use. Not for Diagnostic or Therapeutic Use.

### 1.3 Details of the supplier of the safety data sheet

#### Supplier

Cytiva Austria  
Kremplstr. 5  
4061 Pasching  
AUSTRIA  
Phone: +43 7229 64865

**Hours of operation**  
Mo. - Fr.  
08.30 - 17.00

HyClone Laboratories  
925 West 1800 South  
Logan, Utah 84321  
Phone: (435) 792-8000

Cytiva Singapore  
1 Maritime Square #13-01  
Harbourfront Centre  
Singapore 099253

Person who prepared the SDS: sds\_author@cytiva.com

### 1.4 Emergency telephone number

#### Switzerland

Pall (Schweiz) GmbH  
Schaeferweg 16  
4057 Basel  
Switzerland  
0848 802 810  
+41 0848 802 810

Call INFOTRAC 24 Hour number:  
001-352-323-3500 (Call Collect).

### National advisory body/Poison Centre

**Switzerland**

Vergiftungsnotruf  
Tel: 145

Aus dem Ausland oder bei technischen Problemen: +41 44 251 51 51

<https://www.toxinfo.ch/notruf-145>

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

**Ingredients of unknown toxicity** 30.2 percent of the mixture consists of component(s) of unknown acute oral toxicity  
73.2 percent of the mixture consists of component(s) of unknown acute dermal toxicity  
78.2 percent of the mixture consists of component(s) of unknown acute inhalation toxicity

**Ingredients of unknown ecotoxicity** Contains 44% of components with unknown hazards to the aquatic environment

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

#### Hazard pictograms

**Signal word** No signal word.

**Hazard statements** Harmful to aquatic life with long lasting effects.

#### Precautionary statements

**General** Not applicable.

**Prevention** Avoid release to the environment.

**Response** Not applicable.

**Storage** Not applicable.

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

**Supplemental label elements** Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** Not applicable.

#### Special packaging requirements

**Containers to be fitted with child-resistant fastenings** Not applicable.

**Tactile warning of danger** Not applicable.

### 2.3 Other hazards

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other hazards which do not result in classification** May form explosive dust-air mixture if dispersed.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Mixture

copper dichloride	EC: 231-210-2 CAS: 10125-13-0	<0.005	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 100 M [Chronic] = 100	[1] [2]
See Section 16 for the full text of the H statements declared above.					

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

[1] Substance classified with a physical, health or environmental hazard

[2] Substance with a workplace exposure limit

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

<b>Eye contact</b>	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training.

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

#### Over-exposure signs/symptoms

<b>Eye contact</b>	Adverse symptoms may include the following: irritation redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

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

<b>Notes to physician</b>	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Specific treatments</b>	No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	Use dry chemical powder.
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<b>Unsuitable extinguishing media</b>	Avoid high pressure media which could cause the formation of a potentially explosive dust-air mixture.
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### 5.2 Special hazards arising from the substance or mixture

<b>Hazards from the substance or mixture</b>	May form explosive dust-air mixture if dispersed. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
<b>Hazardous combustion products</b>	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides halogenated compounds metal oxide/oxides

## 5.3 Advice for firefighters

<b>Special precautions for fire-fighters</b>	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	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".

<b>6.2 Environmental precautions</b>	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
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### 6.3 Methods and material for containment and cleaning up

<b>Small spill</b>	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
<b>Large spill</b>	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.
<b>6.4 Reference to other sections</b>	See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

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## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

<b>Protective measures</b>	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid release to the environment. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Advice on general occupational hygiene</b>	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.

### 7.2 Conditions for safe storage, including any incompatibilities

Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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### 7.3 Specific end use(s)

<b>Recommendations</b>	Not available.
<b>Industrial sector specific solutions</b>	Not available.

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## SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario (s).

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
ammonium iron(III) citrate	<b>SUVA (Switzerland, 1/2025) [Eisensalze (löslich)]</b> TWA 8 hours: 1 mg/m³ (calculated as Fe). Form: Inhalable fraction.
ethanol	<b>SUVA (Switzerland, 1/2025)</b> Carc 1A, Repr 1A. TWA 8 hours: 500 ppm. TWA 8 hours: 960 mg/m³. STEL 15 minutes: 1000 ppm. STEL 15 minutes: 1920 mg/m³.
succinic acid	<b>SUVA (Switzerland, 1/2025)</b> TWA 8 hours: 2 mg/m³. Form: Inhalable fraction. STEL 15 minutes: 5 mg/m³. Form: Inhalable fraction.
copper sulphate pentahydrate	<b>SUVA (Switzerland, 1/2025) [Kupfer und seine anorganischen Verbindungen]</b> TWA 8 hours: 0.1 mg/m³ (As Cu calculated). Form: Inhalable fraction. STEL 15 minutes: 0.2 mg/m³ (As Cu calculated). Form: Inhalable fraction.
copper dichloride	<b>SUVA (Switzerland, 1/2025) [Kupfer und seine anorganischen Verbindungen]</b> TWA 8 hours: 0.1 mg/m³ (As Cu calculated). Form: Inhalable fraction. STEL 15 minutes: 0.2 mg/m³ (As Cu calculated). Form: Inhalable fraction.
Acetic acid.	<b>SUVA (Switzerland, 1/2025)</b> TWA 8 hours: 10 ppm. TWA 8 hours: 25 mg/m³. STEL 15 minutes: 20 ppm. STEL 15 minutes: 50 mg/m³.
sodium selenite	<b>SUVA (Switzerland, 1/2025) [Selen und seine anorganischen Verbindungen]</b> Absorbed through skin. TWA 8 hours: 0.02 mg/m³ (calculated as Se). Form: Inhalable fraction. STEL 15 minutes: 0.16 mg/m³ (calculated as Se). Form: Inhalable fraction.
hexaammonium heptamolybdate	<b>SUVA (Switzerland, 1/2025) [Molybdänverbindungen löslich]</b> TWA 8 hours: 5 mg/m³ (calculated as Mo). Form: Inhalable fraction.
Cobalt dichloride, hexahydrate	<b>SUVA (Switzerland, 1/2025) [Cobalt und seine Verbindungen]</b> Carc 1B, Muta 2, Repr 1B. Absorbed through skin, Sensitiser. TWA 8 hours: 0.05 mg/m³ (calculated as Co). Form: inhalable dust and aerosol.
copper dichloride	<b>SUVA (Switzerland, 1/2025) [Kupfer und seine anorganischen Verbindungen]</b> TWA 8 hours: 0.1 mg/m³ (As Cu calculated). Form: Inhalable fraction. STEL 15 minutes: 0.2 mg/m³ (As Cu calculated). Form: Inhalable fraction.
manganese sulphate	<b>SUVA (Switzerland, 1/2025) [Mangan und seine anorganischen Verbindungen]</b> TWA 8 hours: 0.2 mg/m³ (calculated as Mn). Form: Inhalable fraction. TWA 8 hours: 0.1 mg/m³ (calculated as Mn). Form: Respirable fraction.
cadmium chloride	<b>SUVA (Switzerland, 1/2025) [Cadmium und seine Verbindungen]</b> Carc 1B, Muta 2, Develop 2. Absorbed through skin. TWA 8 hours: 0.001 mg/m³ (calculated as Cd). Form: Inhalable fraction.
tin dichloride	<b>SUVA (Switzerland, 1/2025) [Zinnverbindungen, anorganische]</b> TWA 8 hours: 2 mg/m³ (calculated as Sn). Form: Inhalable fraction. STEL 15 minutes: 4 mg/m³ (calculated as Sn). Form: Inhalable fraction.

#### Biological exposure indices

No exposure indices known.

#### Recommended monitoring procedures

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

##### Product/ingredient name

##### Result

188, 4 mM L-Glutamine

Acetic acid.

**DNEL - General population - Short term - Inhalation**25 mg/m<sup>3</sup>Effects: Local**DNEL - General population - Long term - Inhalation**25 mg/m<sup>3</sup>Effects: Local**DNEL - Workers - Short term - Inhalation**25 mg/m<sup>3</sup>Effects: Local**DNEL - Workers - Long term - Inhalation**25 mg/m<sup>3</sup>Effects: Local**PNECs**

Not available.

**8.2 Exposure controls****Appropriate engineering controls**

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.

**Skin protection****Hand protection**

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection**

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**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.

**SECTION 9: Physical and chemical properties**

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

**9.1 Information on basic physical and chemical properties****Appearance**

<b>Physical state</b>	Solid. [Powder.]
<b>Colour</b>	White. to Off-white.
<b>Odour</b>	Not available.
<b>Odour threshold</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Boiling point or initial boiling point and boiling range</b>	Not available.

<b>Flammability</b>	Not available.
<b>Lower and upper explosion limit</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not available.
<b>pH</b>	5 to 7 [Conc. (% w/w): 1.7%]
<b>Viscosity</b>	Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C): Not available.
<b>Solubility in water</b>	Not available.
<b>Partition coefficient: n-octanol/water</b>	Not applicable.
<b>Vapour pressure</b>	Not available.
<b>Relative density</b>	Not available.
<b>Relative vapour density</b>	Not applicable.

**Particle characteristics**

<b>Median particle size</b>	Not available.
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**9.2 Other information****9.2.1 Information with regard to physical hazard classes**

<b>Burning time</b>	Not available.
<b>Burning rate</b>	Not available.
<b>Explosive properties</b>	Not available.
<b>Oxidising properties</b>	Not available.

**9.2.2 Other safety characteristics**

<b>Evaporation rate</b>	Not available.
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Not applicable.

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**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity</b>	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
<b>10.5 Incompatible materials</b>	Reactive or incompatible with the following materials: oxidising materials
<b>10.6 Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

<b>Product/ingredient name</b>	<b>Result</b>
Acetic acid.	<b>Rat - Oral - LD50</b> 3310 mg/kg
	<b>Rabbit - Dermal - LD50</b> 1060 mg/kg
	<b>Rat - Inhalation - LC50 Vapour</b> 11000 mg/m³ [4 hours]
cadmium chloride	<b>Rat - Oral - LD50</b> 665 mg/kg
tin dichloride	<b>Rat - Oral - LD50</b> 700 mg/kg

**Conclusion/Summary [Product]** Not available.**Acute toxicity estimates**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
CDM4PERMAb™	89581.9	N/A	N/A	N/A	N/A
Acetic acid.	3310	1060	N/A	11	N/A
cadmium chloride	100	N/A	N/A	0.5	N/A
tin dichloride	700	N/A	N/A	N/A	N/A

**Skin corrosion/irritation**

Not available.

**Conclusion/Summary [Product]** Not available.**Serious eye damage/eye irritation**

Not available.

**Conclusion/Summary [Product]** Not available.**Respiratory corrosion/irritation**

Not available.

**Conclusion/Summary [Product]** Not available.**Respiratory or skin sensitization**

Not available.

**Skin****Conclusion/Summary [Product]** Not available.**Ingredient name**

tin dichloride

**Conclusion/Summary**

May cause allergic reactions in certain individuals.

**Respiratory****Conclusion/Summary [Product]** Not available.**Ingredient name**

tin dichloride

**Conclusion/Summary**

May cause allergic reactions in certain individuals.

**Germ cell mutagenicity**

Not available.

**Conclusion/Summary [Product]** Not available.**Carcinogenicity**

Not available.

**Conclusion/Summary [Product]** Not available.**Reproductive toxicity**

Not available.

**Conclusion/Summary [Product]** Not available.**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

188, 4 mM L-Glutamine

**Product/ingredient name****Result**

manganese sulphate  
cadmium chloride

STOT RE 2, H373  
STOT RE 1, H372

**Aspiration hazard**

Not available.

**Information on likely routes of exposure** Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

**Potential acute health effects**

<b>Inhalation</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Eye contact</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

**Symptoms related to the physical, chemical and toxicological characteristics**

<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing
<b>Ingestion</b>	No specific data.
<b>Skin contact</b>	No specific data.
<b>Eye contact</b>	Adverse symptoms may include the following: irritation redness

**Delayed and immediate effects as well as 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.

**Conclusion/Summary [Product]** Not available.

**General** Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

**Carcinogenicity** No known significant effects or critical hazards.

**Mutagenicity** No known significant effects or critical hazards.

**Reproductive toxicity** No known significant effects or critical hazards.

**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

Not available.

**Conclusion/Summary [Product]** The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

**11.2.2 Other information**

Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product/ingredient name

copper dichloride

#### Result

**Acute - EC50 - Marine water**  
 US EPA  
 Algae - Diatom - *Skeletonema costatum*  
Age: 3 days  
 9.52 ppb [72 hours]  
Effect: Population

**Chronic - NOEC - Marine water**

US EPA  
 Crustaceans - Harpacticoid copepod - *Tisbe battagliai*  
Age: <24 hours  
 18 ppb [21 days]  
Effect: Mortality

Acetic acid.

**Acute - LC50 - Marine water**

Crustaceans - Brine shrimp - *Artemia salina*  
 32 mg/l [48 hours]  
Effect: Mortality

**Acute - LC50 - Fresh water**

Fish - Bluegill - *Lepomis macrochirus*  
 75 ppm [96 hours]  
Effect: Mortality

**Conclusion/Summary [Product]** Not available.

#### Ingredient name

manganese sulphate

#### Conclusion/Summary

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 12.2 Persistence and degradability

Not available.

**Conclusion/Summary [Product]** Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Acetic acid.	-	>60%; 28 day(s)	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Acetic acid.	-0.17	3.16	Low

### 12.4 Mobility in soil

#### Soil/water partition coefficient

Product/ingredient name	logK <sub>oc</sub>	K <sub>oc</sub>
Acetic acid.	0.0031	1.00727

#### Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
copper dichloride	No	No	No	No	No	No	No
Acetic acid.	No	N/A	Yes	No	N/A	N/A	Yes
manganese sulphate	No	No	No	No	No	No	No
cadmium chloride	No	No	No	No	No	No	No
tin dichloride	No	No	No	No	No	No	No

**Mobility** Not available.

**Conclusion/Summary** The product does not meet the criteria to be considered as a PMT or vPvM.

### 12.5 Results of PBT and vPvB assessment

#### Regulation (EC) No. 1907/2006 [REACH]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
copper dichloride	No	No	No	No	No	No	No
Acetic acid.	No	N/A	No	No	No	N/A	No
manganese sulphate	No	No	No	No	No	No	No
cadmium chloride	No	No	No	No	No	No	No
tin dichloride	No	No	No	No	No	No	No

**Regulation (EC) No. 1272/2008 [CLP]**

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
copper dichloride	No	No	No	No	No	No	No
Acetic acid.	No	N/A	No	No	No	N/A	No
manganese sulphate	No	No	No	No	No	No	No
cadmium chloride	No	No	No	No	No	No	No
tin dichloride	No	No	No	No	No	No	No

**Conclusion/Summary** The product does not meet the criteria to be considered as a PBT or vPvB.

**Regulation (EC) No. 1272/2008  
[CLP]****12.6 Endocrine disrupting properties**

Not applicable.

**Conclusion/Summary [Product]** The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

**12.7 Other adverse effects**

No known significant effects or critical hazards.

**SECTION 13: Disposal considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**13.1 Waste treatment methods****Product****Methods of disposal**

The generation of waste should be avoided or minimised 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.

**Hazardous waste**

The classification of the product may meet the criteria for a hazardous waste.

**Packaging****Methods of disposal**

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions**

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 spilt material and runoff and contact with soil, waterways, drains and sewers.

**SECTION 14: Transport information**

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>14.2 UN proper shipping name</b>	-	-	-	-
<b>14.3 Transport hazard class(es)</b>	-	-	-	-
<b>14.4 Packing group</b>	-	-	-	-
<b>14.5 Environmental hazards</b>	No.	No.	No.	No.
<b>Additional information</b>	-	-	-	-

**14.6 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.

188, 4 mM L-Glutamine

**14.7 Transport in bulk** Not available.  
**according to IMO instruments**

## SECTION 15: Regulatory information

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

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Carcinogen	cadmium chloride	Candidate	ED/49/2014	6/16/2014
Mutagen	cadmium chloride	Candidate	ED/49/2014	6/16/2014
Toxic to reproduction	cadmium chloride	Candidate	ED/49/2014	6/16/2014
Substance of equivalent concern for human health	cadmium chloride	Candidate	ED/49/2014	6/16/2014

#### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
hexaammonium heptamolybdate	≤0.1	65
cadmium chloride	≤0.02	23

**Labelling** Not applicable.

#### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** Not listed

**Explosive precursors** Not applicable.

#### Ozone depleting substances (EU 2024/590)

Not listed.

#### Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

#### Persistent Organic Pollutants

Not listed.

#### Seveso Directive

This product is not controlled under the Seveso Directive.

#### National regulations

**VOC content** Exempt.

#### International regulations

##### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

**Inventory list**

<b>United States</b>	Not determined.
<b>Canada inventory</b>	Not determined.
<b>China</b>	Not determined.
<b>Japan</b>	<b>Japan inventory (CSCL):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>15.2 Chemical safety assessment</b>	This product contains substances for which Chemical Safety Assessments are still required.

**SECTION 16: Other information**

 Indicates information that has changed from previously issued version.

<b>Abbreviations and acronyms</b>	ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number vPvB = Very Persistent and Very Bioaccumulative
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**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

<b>Classification</b>		<b>Justification</b>
Aquatic Chronic 3, H412		Calculation method
<b>Full text of abbreviated H statements</b>	H400 H410 H412	Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
<b>Full text of classifications [CLP/ GHS]</b>	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 3	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
<b>Date of printing</b>	17 February 2026	
<b>Date of issue/ Date of revision</b>	17 February 2026	
<b>Date of previous issue</b>	No previous validation	
<b>Version</b>	1	

**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.