



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
Kremslstr. 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

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

Switzerland

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

National advisory body/Poison Centre

SwitzerlandVergiftungsnotruf
Tel: 145

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

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

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 explosible 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]
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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

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	Wash out mouth with water. 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.
Protection of first-aiders	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

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

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	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.
Specific treatments	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use dry chemical powder.

Unsuitable extinguishing media Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	May form explosible 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.
Hazardous combustion products	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**Special precautions for fire-fighters**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

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

SECTION 6: Accidental release measures**6.1 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. 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".

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up**Small spill**

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.

Large spill

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.

6.4 Reference to other sections

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.

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**Protective measures**

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.

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.

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.

7.3 Specific end use(s)**Recommendations**

Not available.

Industrial sector specific solutions

Not available.

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	SUVA (Switzerland, 1/2025) [Eisensalze (löslich)] TWA 8 hours: 1 mg/m ³ (calculated as Fe). Form: Inhalable fraction.
ethanol	SUVA (Switzerland, 1/2025) Carc 1A, Repr 1A. TWA 8 hours: 500 ppm. TWA 8 hours: 960 mg/m ³ . STEL 15 minutes: 1000 ppm. STEL 15 minutes: 1920 mg/m ³ .
succinic acid	SUVA (Switzerland, 1/2025) TWA 8 hours: 2 mg/m ³ . Form: Inhalable fraction. STEL 15 minutes: 5 mg/m ³ . Form: Inhalable fraction.
copper sulphate pentahydrate	SUVA (Switzerland, 1/2025) [Kupfer und seine anorganischen Verbindungen] TWA 8 hours: 0.1 mg/m ³ (As Cu calculated). Form: Inhalable fraction. STEL 15 minutes: 0.2 mg/m ³ (As Cu calculated). Form: Inhalable fraction.
copper dichloride	SUVA (Switzerland, 1/2025) [Kupfer und seine anorganischen Verbindungen] TWA 8 hours: 0.1 mg/m ³ (As Cu calculated). Form: Inhalable fraction. STEL 15 minutes: 0.2 mg/m ³ (As Cu calculated). Form: Inhalable fraction.
Acetic acid.	SUVA (Switzerland, 1/2025) TWA 8 hours: 10 ppm. TWA 8 hours: 25 mg/m ³ . STEL 15 minutes: 20 ppm. STEL 15 minutes: 50 mg/m ³ .
sodium selenite	SUVA (Switzerland, 1/2025) [Selen und seine anorganischen Verbindungen] Absorbed through skin. TWA 8 hours: 0.02 mg/m ³ (calculated as Se). Form: Inhalable fraction. STEL 15 minutes: 0.16 mg/m ³ (calculated as Se). Form: Inhalable fraction.
hexaammonium heptamolybdate	SUVA (Switzerland, 1/2025) [Molybdänverbindungen löslich] TWA 8 hours: 5 mg/m ³ (calculated as Mo). Form: Inhalable fraction.
Cobalt dichloride, hexahydrate	SUVA (Switzerland, 1/2025) [Cobalt und seine Verbindungen] Carc 1B, Muta 2, Repr 1B. Absorbed through skin, Sensitiser. TWA 8 hours: 0.05 mg/m ³ (calculated as Co). Form: inhalable dust and aerosol.
copper dichloride	SUVA (Switzerland, 1/2025) [Kupfer und seine anorganischen Verbindungen] TWA 8 hours: 0.1 mg/m ³ (As Cu calculated). Form: Inhalable fraction. STEL 15 minutes: 0.2 mg/m ³ (As Cu calculated). Form: Inhalable fraction.
manganese sulphate	SUVA (Switzerland, 1/2025) [Mangan und seine anorganischen Verbindungen] TWA 8 hours: 0.2 mg/m ³ (calculated as Mn). Form: Inhalable fraction. TWA 8 hours: 0.1 mg/m ³ (calculated as Mn). Form: Respirable fraction.
cadmium chloride	SUVA (Switzerland, 1/2025) [Cadmium und seine Verbindungen] Carc 1B, Muta 2, Develop 2. Absorbed through skin. TWA 8 hours: 0.001 mg/m ³ (calculated as Cd). Form: Inhalable fraction.
tin dichloride	SUVA (Switzerland, 1/2025) [Zinnverbindungen, anorganische] TWA 8 hours: 2 mg/m ³ (calculated as Sn). Form: Inhalable fraction. STEL 15 minutes: 4 mg/m ³ (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 - Inhalation25 mg/m³Effects: Local**DNEL - General population - Long term - Inhalation**25 mg/m³Effects: Local**DNEL - Workers - Short term - Inhalation**25 mg/m³Effects: Local**DNEL - Workers - Long term - Inhalation**25 mg/m³Effects: 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**

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

188, 4 mM L-Glutamine

Flammability Not available.

Lower and upper explosion limit Not applicable.

Flash point Not applicable.

Auto-ignition temperature Not applicable.

Decomposition temperature Not available.

pH 5 to 7 [Conc. (% w/w): 1.7%]

Viscosity Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): Not available.

Solubility in water Not available.

Partition coefficient: n-octanol/water Not applicable.

Vapour pressure Not available.

Relative density Not available.

Relative vapour density Not applicable.

Particle characteristics

Median particle size Not available.

9.2 Other information**9.2.1 Information with regard to physical hazard classes**

Burning time Not available.

Burning rate Not available.

Explosive properties Not available.

Oxidising properties Not available.

9.2.2 Other safety characteristics

Evaporation rate Not available.

Not applicable.

SECTION 10: Stability and reactivity

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

10.2 Chemical stability The product is stable.

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

10.4 Conditions to avoid 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.

10.5 Incompatible materials Reactive or incompatible with the following materials:
oxidising materials

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

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Product/ingredient name**

Acetic acid.

Result**Rat - Oral - LD50**

3310 mg/kg

Rabbit - Dermal - LD50

1060 mg/kg

Rat - Inhalation - LC50 Vapour

11000 mg/m³ [4 hours]

cadmium chloride

Rat - Oral - LD50

665 mg/kg

tin dichloride

Rat - Oral - LD50

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

manganese sulphate

cadmium chloride

Result

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**Inhalation**

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Ingestion

No known significant effects or critical hazards.

Skin contact

No known significant effects or critical hazards.

Eye contact

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**Inhalation**Adverse symptoms may include the following:
respiratory tract irritation
coughing**Ingestion**

No specific data.

Skin contact

No specific data.

Eye contactAdverse 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

Acetic acid.

Aquatic half-life

-

Photolysis

>60%; 28 day(s)

Biodegradability

Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Acetic acid.	-0.17	3.16	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name

Acetic acid.

logK_{oc}

0.0031

K_{oc}

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
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

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 according to IMO instruments Not available.

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

United States	Not determined.
Canada inventory	Not determined.
China	Not determined.
Japan	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.

15.2 Chemical safety assessment

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.

Abbreviations and acronyms

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

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements	H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]	Aquatic Acute 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 Aquatic Chronic 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 Aquatic Chronic 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
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Version	1

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