

# SAFETY DATA SHEET



Glass Indicating O2 Trap

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

This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

### 1.1 Product identifier

**Product name** : Glass Indicating O2 Trap  
**Part no.** : 5182-9201, 5182-9202, 5182-9401, 5182-9402

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

**Identified uses** : Analytical chemistry.  
Tube (Glass.)  
1 x 100 ml  
5182-9201 - Glass Indicating O2 Trap, 1/8"  
5182-9202 - Glass Indicating O2 Trap, 1/8", SS  
5182-9401 - Glass Indicating O2 Trap, 1/4"  
5182-9402 - Glass Indicating O2 Trap, 1/4", SS

**Uses advised against** : None known.

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

Agilent Technologies Deutschland GmbH  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany  
0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(44)-870-8200418

## SECTION 2: Hazards identification

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture (encapsulated in article)

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

H302	ACUTE TOXICITY (oral)	Category 4
H332	ACUTE TOXICITY (inhalation)	Category 4
H315	SKIN CORROSION/IRRITATION	Category 2
H318	SERIOUS EYE DAMAGE/EYE IRRITATION	Category 1
H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Category 2
H400	SHORT-TERM (ACUTE) AQUATIC HAZARD	Category 1
H410	LONG-TERM (CHRONIC) AQUATIC HAZARD	Category 1

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

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## SECTION 2: Hazards identification

**Ingredients of unknown toxicity** : Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10%  
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30%  
Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 10 - 30%

**Ingredients of unknown ecotoxicity** : Contains 8.5% 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** : Danger

**Hazard statements** : H302 + H332 - Harmful if swallowed or if inhaled.  
H315 - Causes skin irritation.  
H318 - Causes serious eye damage.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
H410 - Very toxic to aquatic life with long lasting effects.

#### Precautionary statements

**Prevention** : P280 - Wear protective gloves. Wear eye or face protection.  
P273 - Avoid release to the environment.  
P260 - Do not breathe dust.

**Response** : P391 - Collect spillage.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage** : Not applicable.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazardous ingredients** : - manganese dioxide  
- dicopper oxide  
- Calcium oxide  
- crystalline silica, respirable powder

**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

**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.

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## SECTION 2: Hazards identification

Other hazards which do not result in classification : Causes digestive tract burns.

## SECTION 3: Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

3.1 Substances : Mixture (encapsulated in article)

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Silicon dioxide	EC: 231-545-4 CAS: 7631-86-9	≥25 - ≤50	Not classified.	-	[2]
manganese dioxide	EC: 215-202-6 CAS: 1313-13-9 Index: 025-001-00-3	≥10 - ≤25	Acute Tox. 4, H302 Acute Tox. 4, H332	ATE [Oral] = 500 mg/kg ATE [Inhalation (dusts and mists)] = 1.5 mg/l	[1] [2]
dicopper oxide	EC: 215-270-7 CAS: 1317-39-1 Index: 029-002-00-X	≥10 - ≤25	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 500 mg/kg ATE [Inhalation (dusts and mists)] = 3.34 mg/l M [Acute] = 100 M [Chronic] = 10	[1]
aluminium oxide	EC: 215-691-6 CAS: 1344-28-1	≥10 - ≤25	Not classified.	-	[2]
Talc , not containing asbestiform fibres	EC: 238-877-9 CAS: 14807-96-6	≤10	Not classified.	-	[2]
Calcium oxide	EC: 215-138-9 CAS: 1305-78-8	<3	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335	-	[1] [2]
Disodium oxide	EC: 215-208-9 CAS: 1313-59-3	≤3	Skin Corr. 1B, H314 EUH014	-	[1]
crystalline silica, respirable powder	EC: 238-878-4 CAS: 14808-60-7	≤3	STOT RE 1, H372 (lungs) (inhalation)	-	[1] [2]
zinc oxide	EC: 215-222-5 CAS: 1314-13-2 Index: 030-013-00-7	≤1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410 <b>See Section 16 for the full text of the H statements declared above.</b>	M [Acute] = 10 M [Chronic] = 1	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes skin irritation.
- Ingestion** : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

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

**Unsuitable extinguishing media** : None known.

### 5.2 Special hazards arising from the substance or mixture

**Hazards from the substance or mixture** : This material is very toxic 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:  
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.

**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.

**Additional information** : May catch fire.

## 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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**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. Collect spillage.

### 6.3 Methods and material for containment and cleaning up

**Methods for cleaning up** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. 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.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- 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

- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. 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.

### Seveso Directive - Reporting thresholds

#### Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E1	100 tonne	200 tonne

### 7.3 Specific end use(s)

- Recommendations** : Industrial applications, Professional applications.
- Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
Silicon dioxide	<b>NAOSH (Ireland, 5/2021). [silica, amorphous] Notes: Advisory Occupational Exposure Limit Values (OELVs)</b> OELV-8hr: 2.4 mg/m <sup>3</sup> 8 hours. Form: respirable dust OELV-8hr: 6 mg/m <sup>3</sup> 8 hours. Form: inhalable dust
manganese dioxide	<b>NAOSH (Ireland, 5/2021). [manganese and inorganic manganese compounds] Notes: EU derived Occupational Exposure Limit Values</b> OELV-8hr: 0.2 mg/m <sup>3</sup> , (as Mn) 8 hours. Form: Inhalable fraction OELV-8hr: 0.05 mg/m <sup>3</sup> , (as Mn) 8 hours. Form: respirable fraction
aluminium oxide	<b>NAOSH (Ireland, 5/2021). Notes: Advisory Occupational Exposure Limit Values (OELVs)</b> OELV-8hr: 4 mg/m <sup>3</sup> 8 hours. Form: respirable dust OELV-8hr: 10 mg/m <sup>3</sup> 8 hours. Form: inhalable dust
Talc , not containing asbestiform fibres	<b>NAOSH (Ireland, 5/2021). Notes: Advisory Occupational Exposure Limit Values (OELVs)</b> OELV-8hr: 0.8 mg/m <sup>3</sup> 8 hours. Form: respirable dust OELV-8hr: 10 mg/m <sup>3</sup> 8 hours. Form: inhalable dust

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**SECTION 8: Exposure controls/personal protection**

Calcium oxide	<b>NAOSH (Ireland, 5/2021). Notes: EU derived Occupational Exposure Limit Values</b> OELV-15min: 4 mg/m <sup>3</sup> 15 minutes. Form: respirable fraction OELV-8hr: 1 mg/m <sup>3</sup> 8 hours. Form: respirable fraction
crystalline silica, respirable powder	<b>NAOSH (Ireland, 5/2021). [silica, crystalline] Notes: EU derived Occupational Exposure Limit Values; List of Carcinogenic Substances, Mixtures and Processes</b> OELV-8hr: 0.1 mg/m <sup>3</sup> 8 hours. Form: respirable dust
zinc oxide	<b>NAOSH (Ireland, 5/2021). Notes: Advisory Occupational Exposure Limit Values (OELVs)</b> OELV-15min: 10 mg/m <sup>3</sup> 15 minutes. Form: fume OELV-8hr: 2 mg/m <sup>3</sup> 8 hours. Form: respirable fraction

**Biological exposure indices**

None 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	Type	Exposure	Value	Population	Effects
manganese dioxide	DNEL	Long term Dermal	0.0021 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.00414 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.043 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Inhalation	0.2 mg/m <sup>3</sup>	Workers	Systemic
dicopper oxide	DNEL	Long term Oral	0.041 mg/kg bw/day	General population	Systemic
	DNEL	Short term Oral	0.082 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	137 mg/kg bw/day	Workers	Systemic
Calcium oxide	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	General population	Local
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Short term Inhalation	4 mg/m <sup>3</sup>	General population	Local
	DNEL	Short term Inhalation	4 mg/m <sup>3</sup>	Workers	Local
zinc oxide	DNEL	Long term Inhalation	0.5 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Oral	0.83 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	2.5 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Inhalation	5 mg/m <sup>3</sup>	Workers	Systemic

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**SECTION 8: Exposure controls/personal protection**

	DNEL	Inhalation Long term Dermal	83 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	83 mg/kg bw/day	Workers	Systemic

**PNECs**

No PNECs available

**8.2 Exposure controls**

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**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.
- Colour** : Not available.
- Odour** : Characteristic.
- Odour threshold** : Not available.

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**SECTION 9: Physical and chemical properties**

**Melting point/freezing point** : Not available.

**Initial boiling point and boiling range** : Not available.

**Flammability** : May catch fire.

**Upper/lower flammability or explosive limits** : Not applicable.

**Flash point** : Not applicable.

**Auto-ignition temperature** : 370°C

**Decomposition temperature** : Not available.

**pH** : Not applicable.

**Viscosity** : Kinematic: Not applicable.

**Solubility(ies)** :

Media	Result
water	Not soluble

**Partition coefficient: n-octanol/water** : Not applicable.

**Vapour pressure** : Not applicable.

**Evaporation rate** : Not available.

**Relative density** : 0.8

**Density** : 0.8 g/cm<sup>3</sup> [20°C]

**Vapour density** : Not applicable.

**Explosive properties** : Not available.

**Oxidising properties** : Not available.

**Particle characteristics**

**Median particle size** : Not available.

**9.2 Other information**

No additional information.

**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** : No specific data.

**10.5 Incompatible materials** : May react or be incompatible with oxidising materials.

**10.6 Hazardous decomposition products** : 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**

**Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
manganese dioxide	LD50 Oral	Rat	3478 mg/kg	-
dicopper oxide	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
Calcium oxide	LD50 Oral LC50 Inhalation Dusts and mists	Rat Rat - Male, Female	470 mg/kg >6.04 mg/l	- 4 hours
zinc oxide	LC50 Inhalation Dusts and mists	Rat	>5.7 mg/l	4 hours

**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)
Glass Indicating O2 Trap	1348.5	N/A	N/A	N/A	4.4
manganese dioxide	500	N/A	N/A	N/A	1.5
dicopper oxide	500	N/A	N/A	N/A	3.34

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
zinc oxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

**Sensitiser**

**Conclusion/Summary** : Not available.

**Mutagenicity**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

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

Product/ingredient name	Category	Route of exposure	Target organs
Calcium oxide	Category 3	-	Respiratory tract irritation

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

Product/ingredient name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	inhalation	lungs

**Aspiration hazard**

Not available.

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

**Potential acute health effects**

**Inhalation** : Harmful if inhaled.

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**SECTION 11: Toxicological information**

- Ingestion** : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
- Skin contact** : Causes skin irritation.
- Eye contact** : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : No specific data.
- Ingestion** : Adverse symptoms may include the following:  
stomach pains
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
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

- General** : May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

**11.2 Information on other hazards**

**11.2.1 Endocrine disrupting properties**

Not available.

**11.2.2 Other information**

Not available.

**SECTION 12: Ecological information**

**12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure
manganese dioxide	Acute EC50 >100 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 >100 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute NOEC >100 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 10 mg/l Fresh water	Daphnia - Ceriodaphnia dubia	8 days
dicopper oxide	Acute EC50 0.042 mg/l Fresh water	Daphnia - Daphnia similis	48 hours
	Acute LC50 350 µg/l Marine water	Crustaceans - Balanus improvisus - Nauplii	48 hours
	Acute LC50 0.075 mg/l Fresh water	Fish - Danio rerio	96 hours
Calcium oxide	Chronic NOEC 100 mg/l Fresh water	Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling,	46 days

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**SECTION 12: Ecological information**

zinc oxide	Acute IC50 1.85 mg/l Marine water Acute LC50 98 µg/l Fresh water	Weanling) Algae - Skeletonema costatum Daphnia - Daphnia magna - Neonate	96 hours 48 hours
	Acute LC50 1.1 ppm Fresh water Chronic NOEC 0.04 mg/l Fresh water	Fish - Oncorhynchus mykiss Daphnia - Daphnia magna	96 hours 21 days

**12.2 Persistence and degradability**

Not available.

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Calcium oxide	-	2.34	low
zinc oxide	-	28960	high

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

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

**12.6 Endocrine disrupting properties**

Not available.

**12.7 Other adverse effects**

No known significant effects or critical hazards.

**SECTION 13: Disposal considerations**

**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


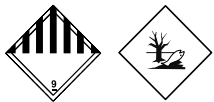
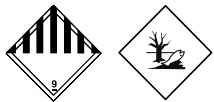
**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**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 spill material and runoff and contact with soil, waterways, drains and sewers.

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## SECTION 14: Transport information

This Safety Data Sheet is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

	ADR/RID	IMDG	IATA
14.1 UN number or ID number	UN3077	UN3077	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Dicopper oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Dicopper oxide)	Environmentally hazardous substance, solid, n.o.s. (Dicopper oxide)
14.3 Transport hazard class(es)	9 	9 	9 
14.4 Packing group	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.

### Additional information

#### ADR/RID

- : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- Hazard identification number** 90
- Limited quantity** 5 kg
- Special provisions** 274, 335, 601, 375
- Tunnel code** (-)

#### IMDG

- : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- Emergency schedules** F-A, S-F
- Special provisions** 274, 335, 966, 967, 969

#### IATA

- : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
- Quantity limitation** Passenger and Cargo Aircraft: 400 kg. Packaging instructions: 956. Cargo Aircraft Only: 400 kg. Packaging instructions: 956. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y956.
- Special provisions** A97, A158, A179, A197, A215

#### 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.

#### 14.7 Transport in bulk according to IMO instruments

- : Not available.

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## 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

None of the components are listed.

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

Not listed.

**Label** : Not applicable.

#### Other EU regulations

##### Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

##### Persistent Organic Pollutants

Not listed.

##### Seveso Directive

This product is controlled under the Seveso Directive.

###### Danger criteria

Category
E1

#### National regulations

Product/ingredient name	List name	Name on list	Classification	Notes
crystalline silica, respirable powder	Ireland Occupational Exposure Limits	silica, crystalline respirable dust	Carc.	-

#### 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

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Eurasian Economic Union** : **Russian Federation inventory**: All components are listed or exempted.

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**SECTION 15: Regulatory information**

- Japan** : **Japan inventory (CSCL)**: All components are listed or exempted.  
**Japan inventory (ISHL)**: All components are listed or exempted.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** : All components are listed or exempted.
- Turkey** : Not determined.
- United States** : All components are active or exempted.
- Viet Nam** : All components are listed or exempted.

**15.2 Chemical safety assessment** : This product contains substances for which Chemical Safety Assessments might still be 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
Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

**Full text of abbreviated H statements**

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH014	Reacts violently with water.

**Full text of classifications [CLP/GHS]**

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**SECTION 16: Other information**

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

**Date of issue/ Date of revision** : 13/01/2023

**Date of previous issue** : No previous validation

**Version** : 1

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