

# SAFETY DATA SHEET



## Guard Edge D (C082)

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

#### 1.1 Product identifier

**Product name** : Guard Edge D (C082)  
**Product code** : 45202  
**Product type** : Powder coating.  
**Other means of identification** : Not available.

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

Use in coatings - Industrial use

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

Jotun A/S  
P.O.Box 2021  
3202 Sandefjord  
Norway  
Tel: + 47 33 45 70 00  
Fax: +47 33 45 72 42  
E-mail: SDSJotun@jotun.no

JOTUN CZECH a.s.  
NA ROVNEM 866  
400 04 TRMICE  
CZECH REPUBLIC

Phone : + 420 477 828 969  
Fax.: + 420 477 828 962  
sdsjotun@jotun.com

#### 1.4 Emergency telephone number

##### National advisory body/Poison Centre

**Telephone number** : Contact NHS Direct; phone 0845 4647 or 111. Open 24/7.

##### Supplier

**Telephone number** : +47 33 45 70 00 Jotun Norway (head office)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

##### Classification according to UK CLP/GHS

Aquatic Acute 1, H400  
Aquatic Chronic 3, H412

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

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** : Warning.

**Hazard statements** : H410 - Very toxic to aquatic life with long lasting effects.

##### Precautionary statements

**General** : Not applicable.

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**SECTION 2: Hazards identification**

<b>Prevention</b>	: P273 - Avoid release to the environment.
<b>Response</b>	: P391 - Collect spillage.
<b>Storage</b>	: Not applicable.
<b>Disposal</b>	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: EUH212 - Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	: Not applicable.
<b>Special packaging requirements</b>	
<b>Containers to be fitted with child-resistant fastenings</b>	: Not applicable.
<b>Tactile warning of danger</b>	: Not applicable.

**2.3 Other hazards**

<b>Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
<b>Other hazards which do not result in classification</b>	: None known.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
Barium sulfate	REACH #: 01-2119491274-35 EC: 231-784-4 CAS: 7727-43-7	≤10	Not classified.	[2]
copper	REACH #: 01-2119480154-42 EC: 231-159-6 CAS: 7440-50-8	≤5	Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411	[1] [2]
1,2,4,5-benzenetetracarboxylic acid, compd. with 4,5-dihydro-2-phenyl-1h-imidazole (1:1)	REACH #: 01-2119453802-40 EC: 259-224-4 CAS: 54553-90-1	≤5	Aquatic Chronic 3, H412	[1]
titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7 Index: 022-006-00-2	≤3	Carc. 2, H351 (inhalation)	[1] [2] [*]
Aluminium powder (stabilized)	REACH #: 01-2119529243-45 EC: 231-072-3 CAS: 7429-90-5 Index: 013-002-00-1	≤3	Flam. Sol. 1, H228 Water-react. 2, H261	[2]
2,4,8,10-tetraoxa-3,9-diphospha-spiro[5.5]undecane, 3,9-bis[2,4-bis(1,1-dimethylethyl)phenoxy]-	REACH #: 01-2119977073-34 EC: 247-952-5 CAS: 26741-53-7	≤1	Aquatic Chronic 1, H410 (M=1)	[1]
2-ethyl-N,N-bis(2-ethylhexyl)	EC: 217-461-0	≤0.3	Repr. 2, H361f	[1]

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**SECTION 3: Composition/information on ingredients**

hexylamine	CAS: 1860-26-0		STOT RE 2, H373 <b>See Section 16 for the full text of the H statements declared above.</b>
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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.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[\*] The classification as a carcinogen by inhalation applies only to mixtures placed on the market in powder form containing 1% or more of titanium dioxide particles with aerodynamic diameter  $\leq 10 \mu\text{m}$  not bound within a matrix.

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

**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** : No specific data.
- Inhalation** : No specific data.
- 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.

See toxicological information (Section 11)

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

- Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO<sub>2</sub> blanket, water spray or mist.
- Unsuitable extinguishing media** : Do not use water jet.  
Do not use inert gas under high pressure (e.g. CO<sub>2</sub>).

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

## SECTION 5: Firefighting measures

**Hazards from the substance or mixture** : This material is very toxic to aquatic life. 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  
 sulfur oxides  
 metal oxide/oxides  
 Fine dust clouds may form explosive mixtures with air.

### 5.3 Advice for firefighters

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

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

## SECTION 6: Accidental release measures

### 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. 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

**Small spill** : Move containers from spill area. 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. 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. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

### 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 release to the environment. 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.

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## SECTION 7: Handling and storage

**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 in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in 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

See Technical Data Sheet / packaging for further information.

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Dust Limit : 10 mg/m<sup>3</sup> (TWA of total inhalable dust) and 4 mg/m<sup>3</sup> (TWA of respirable)

Product/ingredient name	Exposure limit values
barium sulfate	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020).</b> TWA: 4 mg/m <sup>3</sup> 8 hours. Form: respirable dust TWA: 10 mg/m <sup>3</sup> 8 hours. Form: inhalable dust
copper	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020). Notes: as Cu</b> TWA: 0.2 mg/m <sup>3</sup> , (as Cu) 8 hours. Form: Fume
titanium dioxide	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020).</b> TWA: 4 mg/m <sup>3</sup> 8 hours. Form: respirable TWA: 10 mg/m <sup>3</sup> 8 hours. Form: total inhalable
Aluminium powder (stabilized)	<b>EH40/2005 WELs (United Kingdom (UK), 1/2020).</b> TWA: 4 mg/m <sup>3</sup> 8 hours. Form: respirable dust TWA: 10 mg/m <sup>3</sup> 8 hours. Form: inhalable dust

#### Biological exposure indices

No exposure indices known.

**Recommended monitoring procedures** : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

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

Product/ingredient name	Type	Exposure	Value	Population	Effects
barium sulfate	DNEL	Long term Inhalation	10 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	10 mg/m <sup>3</sup>	General population	Systemic
copper	DNEL	Long term Inhalation	10 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Oral	13000 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	137 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	137 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Dermal	273 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	273 mg/kg bw/day	Workers	Systemic
1,2,4,5-benzenetetracarboxylic acid, compd. with 4,5-dihydro-2-phenyl-1h-imidazole (1:1)	DNEL	Long term Oral	0.272 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.272 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.473 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Dermal	0.544 mg/kg bw/day	Workers	Systemic
titanium dioxide	DNEL	Long term Inhalation	1.92 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	28 µg/m <sup>3</sup>	General population	Local
Aluminium powder (stabilized)	DNEL	Long term Inhalation	170 µg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	3.72 mg/m <sup>3</sup>	Workers	Local
2,4,8,10-tetraoxa-3,9-diphosphaspiro [5.5]undecane, 3,9-bis[2,4-bis(1,1-dimethylethyl)phenoxy]-	DNEL	Long term Inhalation	3.72 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Oral	3.95 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0.39 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.39 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.68 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Dermal	0.78 mg/kg bw/day	Workers	Systemic
2-ethyl-N,N-bis(2-ethylhexyl) hexylamine	DNEL	Long term Inhalation	2.75 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Oral	0.03 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.06 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Dermal	0.07 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.13 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.23 mg/m <sup>3</sup>	Workers	Systemic

**PNECs**

No PNECs available

## SECTION 8: Exposure controls/personal protection

### 8.2 Exposure controls

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

#### 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 to ISO 16321-1:2022 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.

#### Skin protection

##### Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

##### Gloves

Wear suitable gloves tested to ISO 374-1:2016.

Recommended, gloves(breakthrough time) > 8 hours: PVC (> 0.5 mm), nitrile rubber (> 0.75 mm), neoprene (> 0.35 mm), butyl rubber (> 0.4 mm)

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

**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** : If workers are exposed to concentrations above the exposure limit, they must use a respirator according to EN 140. If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist. (FFP2 / N95).

**Environmental exposure controls** : Do not allow to enter drains or watercourses.

## 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** : Various

**Odour** : Odourless.

**Odour threshold** : Not applicable.

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**SECTION 9: Physical and chemical properties**

<b>Melting point (dust)</b>	: 85 - 115 °C
<b>Initial boiling point and boiling range</b>	: Not applicable.
<b>Flammability</b>	: Not applicable.
<b>Lower explosion limit (dust)</b>	: 30 g/m <sup>3</sup> (EN 14034-3)
<b>Minimum ignition energy (mJ)</b>	: 10 - 30 (EN 13821)
<b>Flash point</b>	: Not applicable.
<b>Auto-ignition temperature</b>	: > 400°C
<b>Decomposition temperature</b>	: >230°C
<b>pH</b>	: Not applicable.
<b>Viscosity</b>	: Not applicable.
<b>Solubility(ies)</b>	:

Media	Result
cold water	Not soluble
hot water	Not soluble

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

**Vapour pressure** : Not applicable.

**Evaporation rate** : Not applicable.

**Density** : 1.2 to 1.9 g/cm<sup>3</sup>

**Vapour density** : Not applicable.

**Particle characteristics**

**Median particle size** : Not available.

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** : Fine dust clouds may form explosive mixtures with air.

**10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).

**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** : Not applicable.

**10.6 Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

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

Product/ingredient name	Result	Species	Dose	Exposure
1,2,4,5-benzenetetracarboxylic acid, compd. with 4,5-dihydro-2-phenyl-1h-imidazole (1:1)	LD50 Oral	Rat	7400 mg/kg	-

**Acute toxicity estimates**

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**SECTION 11: Toxicological information**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Guard Edge D (C082) copper	10114.3	N/A	N/A	N/A	N/A
1,2,4,5-benzenetetracarboxylic acid, compd. with	500	N/A	N/A	N/A	N/A
4,5-dihydro-2-phenyl-1h-imidazole (1:1)	7400	N/A	N/A	N/A	N/A

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
Titanium dioxide	Skin - Mild irritant	Human	-	72 hours	-
2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane, 3,9-bis[2,4-bis(1,1-dimethylethyl)phenoxy]-	Skin - Severe irritant	Rabbit	-	0.5 Grams	-

**Sensitisation**

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

**Mutagenicity**

No known significant effects or critical hazards.

**Carcinogenicity**

It has been observed that the carcinogenic hazard of this product arises when respirable dust is inhaled in quantities leading to significant impairment of particle clearance mechanisms in the lung.

No known significant effects or critical hazards.

**Reproductive toxicity**

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Teratogenicity**

No known significant effects or critical hazards.

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

Not available.

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

Product/ingredient name	Category	Route of exposure	Target organs
2-ethyl-N,N-bis(2-ethylhexyl)hexylamine	Category 2	-	-

**Aspiration hazard**

Not available.

**Potential acute health effects**

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

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

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

**General** : No known significant effects or critical hazards.

**Other information** : None identified.

## SECTION 12: Ecological information

### 12.1 Toxicity

There are no data available on the mixture itself.

Coating powder residues should not be allowed to enter drains or watercourses or be deposited where they could affect ground or surface waters.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

Product/ingredient name	Result	Species	Exposure
Copper	Acute EC50 1100 µg/l Fresh water	Aquatic plants - Duckweed - Lemna minor	4 days
	Acute EC50 2.1 µg/l Fresh water	Daphnia - Water flea - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute IC50 13 µg/l Fresh water	Algae - Green algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute IC50 5.4 mg/l Marine water	Aquatic plants - Plant Kingdom - Plantae - Exponential growth phase	72 hours
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Scud Order - Amphipoda - Adult	48 hours
	Acute LC50 7.56 µg/l Marine water	Fish - Mudskipper - Periophthalmus waltoni - Adult	96 hours
	Chronic NOEC 2.5 µg/l Marine water	Algae - Diatom - Nitzschia closterium - Exponential growth phase	72 hours
	Chronic NOEC 7 mg/l Fresh water	Aquatic plants - Coontail - Ceratophyllum demersum	3 days
	Chronic NOEC 0.02 mg/l Fresh water	Crustaceans - Appalachian crayfish - Cambarus bartonii - Mature	21 days
	Chronic NOEC 2 µg/l Fresh water	Daphnia - Water flea - Daphnia magna	21 days
1,2,4,5-benzenetetracarboxylic acid, compd. with 4,5-dihydro-2-phenyl-1h-imidazole (1:1)	Acute EC50 9 mg/l	Fish - Nile tilapia - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling)	6 weeks
	Acute EC50 125 mg/l Chronic NOEC 0.64 mg/l	Algae - Algae - Scenedesmus subspicatus	72 hours
titanium dioxide	Acute LC50 3 mg/l Fresh water	Crustaceans	48 hours
	Acute LC50 6.5 mg/l Fresh water	Algae	-
	Acute LC50 >1000000 µg/l Marine water	Crustaceans - Water flea - Ceriodaphnia dubia - Neonate	48 hours
aluminium powder (stabilised)	Acute LC50 38000 µg/l	Daphnia - Water flea - Daphnia pulex - Neonate	48 hours
	Acute LC50 1130 µg/l Fresh water	Fish - Mummichog - Fundulus heteroclitus	96 hours
	Chronic NOEC 9 mg/l Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane, 3,9-bis[2,4-bis(1,1-dimethylethyl)phenoxy]-	Acute EC10 15.4 mg/l	Fish - Loach Family - Cobitidae - Fry	96 hours
	Acute EC50 97 mg/l Acute LC50 70.7 mg/l Chronic NOEC 0.1 mg/l	Aquatic plants - Coontail - Ceratophyllum demersum	3 days
		Algae	72 hours
		Fish	96 hours
		Daphnia	21 days

Conclusion/Summary :

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**SECTION 12: Ecological information**

This material is very toxic to aquatic life. This material is harmful to aquatic life with long lasting effects.

**12.2 Persistence and degradability**

**Conclusion/Summary** : Not available.

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
1,2,4,5-benzenetetracarboxylic acid, compd. with 4,5-dihydro-2-phenyl-1h-imidazole (1:1)	1	-	low
2-ethyl-N,N-bis(2-ethylhexyl) hexylamine	10.131	-	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 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** : Yes.

**Waste catalogue**

Waste code	Waste designation
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous substances

**Packaging**

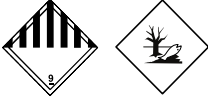
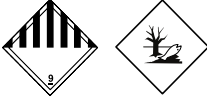
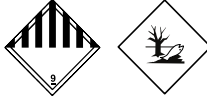
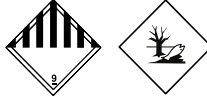
**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	Waste catalogue
CEPE Guidelines	15 01 10* packaging containing residues of or contaminated by hazardous substances

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

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**SECTION 14: Transport information**

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	UN3077	UN3077	UN3077	UN3077
<b>14.2 UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (copper)	Environmentally hazardous substance, solid, n.o.s. (copper)	Environmentally hazardous substance, solid, n.o.s. (copper). Marine pollutant (copper)	Environmentally hazardous substance, solid, n.o.s. (copper)
<b>14.3 Transport hazard class(es)</b>	9 	9 	9 	9 
<b>14.4 Packing group</b>	III	III	III	III
<b>14.5 Environmental hazards</b>	Yes.	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

**Tunnel code** (-)

**ADN**

: 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.

**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

**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.

**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.

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****UK (GB)/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.

**Ozone depleting substances**

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## SECTION 15: Regulatory information

Not listed.

### Prior Informed Consent (PIC)

Not listed.

### Persistent Organic Pollutants

Not listed.

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

### Seveso Directive

This product is controlled under the Seveso Directive.

### Danger criteria

**Category**

E1

### EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Listed

### 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.

**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
- GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = GB CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic

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## SECTION 16: Other information

PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number  
 SGG = Segregation Group  
 vPvB = Very Persistent and Very Bioaccumulative

### Procedure used to derive the classification

Classification	Justification
Aquatic Acute 1, H400 Aquatic Chronic 3, H412	Calculation method Calculation method

### Full text of abbreviated H statements

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H351	Suspected of causing cancer.
H361f	Suspected of damaging fertility.
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.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### Full text of classifications

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
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Carc. 2	CARCINOGENICITY - Category 2
Flam. Sol. 1	FLAMMABLE SOLIDS - Category 1
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
Water-react. 2	SUBSTANCES AND MIXTURES WHICH IN CONTACT WITH WATER EMIT FLAMMABLE GASES - Category 2

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### Notice to reader

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