# 1. Identification of substance / mixture / company

## 1.1. Product identification (Registration number of the substance/REACH):

| COPPER OXYCHLORIDE | Ident No.: P056723 |

| 01-2119966120-46-0006 |

## 1.2. Important identified use of the substance:

Inorganic salt for different industrial use: chemical, textile, agrochemicals, wood and for professional use: additive for animal feed and fertiliser, for galvanic protection, etc. Not mixed with materials having acid reaction.

## 1.3. Manufacturer / supplier (importer, the distributor):

### 1.3.1. Supplier's name:

CINKARNA CELJE, Inc.

### 1.3.2. Supplier's address and phone number:

Kidričeva 26, 3001 Celje, SLOVENIA

Tel.: +386 3 427 60 00

### 1.3.3. Contact (email address):

vesna.gabersek@cinkarna.si

## 1.4. Emergency telephone number:

In the case of health hazards consult with personal or emergency doctor, in the case of life-threatening situation, call 112.

Additional information is available:

- Weekdays from 7 to 15 am: Phone: +386 3 427 6341

# 2. Hazards identification

## 2.1. Classification of the substance or mixture:

| Acute toxicity /oral/; Category 4 |
| Acute toxicity /inh./; Category 4 |
| Hazardous to the aquatic environment /Acute/; Category 1 |
| Hazardous to the aquatic environment /Chronic/; Category 2 |

**Hazard Statements:** H302, H332, H400, H411

## 2.2. Elements label:

![Warning]

**Hazard Statements:**

- H302 Harmful if swallowed.
- H332 Harmful if inhaled.
- H410 Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

- P261 Avoid breathing dust/fume/gas/vapours/spray.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor / physician.
- P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P501 Dispose of contents / container in accordance with national regulations.

## 2.3. Other hazards:

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.
### 3. Composition / information on ingredients

#### 3.1. Substance / mixture: COPPER OXYCHLORIDE

In accordance with Regulation (EC) No. 1272/2008

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>REACH No.</th>
<th>% wt/vol/max. conc.</th>
<th>Hazard phrases (H)</th>
<th>Class and category of risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dicopper chloride trihydroxide</td>
<td>1332-65-6</td>
<td>215-572-9</td>
<td></td>
<td>01-211966120-46-0006</td>
<td>95 - 98 wt. %</td>
<td>302, 332, 400, 411</td>
<td>Category 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute toxicity / oral /; Category 4</td>
<td>Hazardous to the aquatic environment /Acute/; Category 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute toxicity / inh. /; Category 4</td>
<td>Hazardous to the aquatic environment /Chronic/; Category 2</td>
</tr>
</tbody>
</table>

Reference to section 16.

### 4. First aid measures

#### 4.1. Description of the first aid

**General measures:** poisoning symptoms may take several hours to occur; therefore a close medical observation for at least 48 hours after the accident is recommended.

Prevent further contact with the product (inhalation of dust, mist or vapour). Patient is immediately removed from the contaminated area into fresh air or into well-ventilated area and protect him from the cold or heat. In case of unconsciousness place him in unconscious position (on the left side). In case of unconsciousness place him in unconscious position (on the left side). In case of unconsciousness place him in unconscious position (on the left side). In case of unconsciousness place him in unconscious position (on the left side). In case of unconsciousness place him in unconscious position (on the left side). In case of unconsciousness place him in unconscious position (on the left side).

**After inhalation:**
The patient is immediately removed from the contaminated area to fresh air. If the patient cough, has shortness of breathes or has a burning sensation in the mouth, throat or chest, seek medical help immediately.

**After skin contact:**
Remove contaminated clothing and shoes. Thoroughly wash the affected parts of the body with water and soap. If the skin irritation occurs and persists, seek medical attention.

**After eye contact:**
Using the thumb and forefinger open up eye lids and rinse the opened eye for 15 minutes under running water or physiological saline. Contact lenses should be removed immediately. If irritation and redness persist, seek medical attention.

**After swallowing:**
Wash out mouth with water and drink 2-3 dl water. WARNING! Do not induce vomiting. If patient is not completely conscious, don’t give something to drink nor induce vomiting. Seek medical attention.

#### 4.2. The most important symptoms and effects both acute and belated:

Various tests indicate possible occurrence of nausea, abdominal cramps and vomiting due to stomach irritation. Symptoms of being exposed to high concentrations of copper are hepatic toxicity and neurological disorders (but no adverse effects on the distribution in the tissues), rapid heart rate, lower blood pressure, cardiovascular collapse and unconsciousness. Even workers with forty years of service don't seem to be affected with lung injury.

#### 4.3. Indication of any immediate medical care and special treatment:

Establish and maintain the necessary vital functions. If necessary, decontaminate the skin and mucous membranes. Antidotes are not indicated.

Treatment is symptomatic.
### 5. Fire fighting measures

**5.1. Extinguishing media**

| Suitable extinguishing agents: | Dry extinguishing resource, carbon dioxide (CO₂), foam. |
| Unsuitable extinguishing agents: | Do not use direct water jet. |

**5.2. Specific risks associated with the substance or mixture:**

In the case of fire - hydrogen chloride and oxides of copper may form. Never rinse the contaminated soil with water. Water from the fire should not be allowed to enter drain systems or watercourses. It should be separately collected and disposed of at an appropriately regulated landfill, in accordance with the applicable rules of the disposal of hazardous waste.

**5.3. Advice for Firefighters:**

Not required.

### 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

| For non-qualified persons: | See section 6.3.2 |
| For rescuers: | See section 4.1 |

**6.2. Environmental precautions**

If the water pollution – inform the competent services.

**6.3. Methods and materials for containment and cleaning**

| Appropriate spill containment techniques: | In the event of substance being mixed with water – prevent (substance cover with soil or other absorbent materials) the spread into the underground drainage pipe system or streams. |
| Techniques of neutralization: | Cover the substance with soil, peat or other neutral absorbent material. |
| Decontamination techniques: | Spillage: protect the affected area; danger warnings must be placed in order to protect the contaminated area; notify responsible authorities about the existing danger; withdraw all workers against the direction of the wind; use personal protective equipment (as described in 8.2.2); call the relevant Center for more information. |
| Absorbent materials: | Neutral absorbent materials: soil, turf, sand or other absorbent material. |
| Cleaning techniques: | In the case of spillage pick up the substance with a shovel and place it into a clean and labeled container with a fully sealable lead. Do not breathe in the dust. If the substance can not be re-used it should be disposed of in accordance with the applicable Rules of the disposal of hazardous waste. If the substance is mixed with absorbent material in moisture soil, it should be mechanically removed like hazardous waste. We use personal protective equipment (read 8.2.2). After work the soil and dirty objects area is washed with water and detergent. Waste water should not enter drain systems or watercourses. |

**6.3.2. Appropriate cleaning procedures**

| Suction techniques: | Use industrial vacuum cleaner for dry cleaning – wet and dry vacuum cleaners (with a brush, with adapter for dust). |

| The equipment needed for containment / cleaning: | The equipment used depends on the type and extent of contamination. General equipment: tank, neutral absorbent material, shovel and foils to prevent dust. Cleaning is carried out under supervision of experts. It usually takes fire management intervention. |
6.3.3. Improper cleaning techniques: Retention in the direction of the wind; rinse with water before the substance is mechanically removed; use of detergent with an acid reaction.

6.4. References to other sections: Not required.

### 7. Handling and Storage

#### 7.1. Precautions for Safe Handling

**7.1.1. Recommendations**

- **Safe handling with the substance or mixture:** Use in well ventilated area. Accumulation of dust and powder should be reduced to a minimum. Mandatory use of personal protective equipment (read section 8.2.2). Follow instructions for safe handling of hazardous materials and instructions on safety and health at work.

- **Prevent treatment with incompatible materials:** Follow all instructions for the work and SDS.

- **Prevent releases of substance or mixture:** Follow all instructions for the work and SDS.

**7.1.2. General hygiene (eating, drinking and smoking is strictly prohibited in working areas; washing hands;...):** Use personal protective equipment. Upon completion of work protective clothing must be washed. Likewise the person must wash their hands with water and soap. Even during the break workers should wash their hands.

While working you should not eat, drink or smoke.

#### 7.2. Conditions for Safe Storage, Including the Incompatibility

**Command the risks associated with**

- **explosive atmospheres:** Unspecified.

- **corrosive substances:** The substance must be isolated from corrosive substances (acids, bases).

- **incompatible substances or mixtures:** Substances with acids reaction.

- **volatile substances:** Not specified.

- **potential sources of ignition:** Unspecified.

**Control effects**

- **weather conditions:** Substance shouldn't be exposed to rain and shouldn't be used in areas with high humidity.

- **environmental pressure:** Unspecified.

- **temperature:** Room temperature.

- **solar light:** Substance must be separated from direct sunlight.

- **humidity:** The substance is hygroscopic.

- **vibration:** Not specified.

**Ensuring the integrity of the substance or mixture by the use of**

- **stabilizers:** Not required.

- **antioxidants:** Not required.
Substance name: COPPER OXYCHLORIDE

Other advices including the following
- ventilation requirements: Ventilation (local and spatial).
- specific constructions for storehouse: Specific constructions are not required.
- limits by storage conditions: Limit quantities are not provided by proper storage.
- compatibility with packaging: Substance is compatible with the packaging.

7.3. **Specific end use:** Use only in accordance with instructions (point 1.2).

Informations for point 7 are from EUCuTF, SCHER (VRAR), EFSA Reference to section 16.

8. Exposure controls / personal protection

8.1. **Control parameters**

8.1.1. **Threshold limit value (TLV):**

**Copper:**
Inhalable = 1 mg / m$^3$; Alveolar = 0,1 mg /m$^3$; Short term = 4 mg /m$^3$

**DNEL**
Cooper is an essential metal. A regulating mechanism inside the organism is maintaining the balance between the amount of copper that is necessary for normal physiological functioning and the amount which is already harmful for the organism.
ADI = 0,15 mg Cu/kg bw/day
AOEL = 0,072 mg Cu/kg bw/day
NOAEL (oral, rat) = 16 mg Cu/kg bw/day

**Source:** EFSA, DG SANCO

**PNEC**
Soil (90%): PEC/PNEC = < 1 (low risk)
Factor L/A = 2 /for all the land/
Different processes and environmental factors are affected with copper acceptance such as: pH, organic matter, soil texture and cation exchange capacity (CEC). From listed it follows that the largest impact has locally and regional environment.
The aquatic environment: PECsw and PECsed. = from 1 to 2
The risk of surface water is dependent on soluble copper.
Effects on aquatic organisms is depended on water hardness, pH and dissolved organic carbon.

**Source:** EUCuTF-Scientific Committee 2010

8.2. **Exposure controls**

8.2.1. **Appropriate controls:** Ventilation (local and spatial).

8.2.2. **Personal protection**


- skin protection: The degree of protection depends on the purpose of handling of the substance. We can use protective clothing (standard EN ISO 13688:2013), which can be washed after use and re-worn, and rubber footwear or footwear protecting against chemicals (standard EN 13832-1:2006). After work we wash with water and soap.
**Substance name:** COPPER OXYCHLORIDE

| - hand protection: | Protective gloves made to the standard EN 374-3:2003. After work we wash hands with water and soap and protect the skin with cream. |
| - heat hazard: | There are no thermic dangers. |

**Other:**

8.2.3. **Environmental exposure controls:** Contaminated water from fire should not be spilled into drains or watercourses. We must prevent the development of dust – to ensure adequate ventilation and separate collection and disposal to an appropriate landfill regulated under the current Rules on the disposal of hazardous waste.

*Informations for section 8 are from EUCuTF, SCHER (VRAR), EFSA*

*Reference to section 16.*

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**9. Physical and chemical properties**

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

| - form: | Fine powder |
| - colour: | Green |
| - odour: | Odourless |
| - pH: | 5.0 – 7.5 (1 % water dispersion, at 20 °C) |
| - melting point: | Substance decomposes before melting point (240 °C). |
| - boiling point: | No boiling point before decomposition. |
| - flash point: | Not required (solid). |
| - evaporation rate: | Not applicable. |
| - flammability: | Not highly flammable. |
| - upper / lower flammability or explosive limits: | Not applicable. |
| - vapour pressure: | Not applicable. |
| - vapor density: | Not applicable. |
| - relative density: | Approximately 3.6 at 20 °C (for 57 to 58 % copper) |
| - solubility: | Water: < 1 x 10^{-3} g/L, at pH = 7.0 and at 20°C; practically insoluble substance |
|  | Organic solvents, 20 °C: |
|  | methanol, acetone = < 8.2 mg/L; dichloromethane = < 10 mg/L; toluene = < 11.0 mg/L |
### 9.2 Other information:

- **Surface tension:** 72.2 mN/m at 20 °C.
- **Self-ignition temperature:** Not observed following use of many years.
- **Dissociation Constant:** Copper is a poorly soluble metallic element that can only remain in a totally dissociated ionic state, a non-reversible process. Since its solubility is low and it does not exit in solution in an associated state, it does not therefore have a measurable dissociation constant.

*Informations for section 9 are from EUCuTF, SCHER (VRAR), EFSA, ANSES*

*Reference to section 16.*

### 10. Stability and reactivity

10.1 **Reactivity:**

Substance is stable, practically insoluble in water. The substance reacts very slowly.

10.2 **Chemical stability:**

Copper oxychloride is not a self-heating substance. Experience of use indicates that it does not ignite in contact with water or evolve gases.

Though copper oxychloride is a solid, experience of use and manufacture indicates that it may be considered to be corrosive to metals in a solution (low pH, high hardness of water).

10.3 **Possibility of hazardous reactions:**

There are no dangerous reactions (section 9 and 10).

10.4 **Conditions to be avoided:**

Moisture (substance is hygroscopic), substances with acid reaction.

10.5 **Incompatible materials:**

Materials with acid reaction, strong acids and bases, chlorates.

10.6 **Hazardous decomposition products:**

Oxides of copper, hydrogen chloride (in case of fire).

### 11. Toxicological information

11.1 **Information on toxicological effects**

- **- acute toxicity:**
  
  **Acute toxicity (oral); Category 4**
  
  LD50 oral. (rat) = > 950 mg/kg - /tests result/;
  
  **Acute toxicity (inhalation); Category 4**
  
  LC50 inh. (rat) = 2.83 mg/L air/ 4 hours - /studies according to OECD 403/ 
  
  LD50 derm. (rat) = > 2000 mg/kg - **Not classified** /tests according to OECD 402/

- **- skin corrosion / irritation:**
  
  **Not classified**
  
  *Source: tests with rabbits, according to OECD 404.*
  
  Mean value for erythema and oedema is between 0 and 0.1 (24 to 72 hours).
<table>
<thead>
<tr>
<th>Substance name: COPPER OXYCHLORIDE</th>
</tr>
</thead>
</table>
| **- serious eye damage / irritation:** | Not classified  
  Mild – moderate irritation was observed in the studies, but the level of irritation observed was not sufficient in order to classify the substance.  
  Source: tests with rabbits, according to OECD 405. |
| **- sensitization by inhalation and skin sensitization:** | Not classified  
  /tests on rabbits, guinea pigs – according to OECD 404/.  
  Explanation: Walker, D.J. - a Buchler test conducted on guinea pigs showed that the compound was not a dermal sensitizer. |
| **- germ cell mutagenicity:** | Not classified  
  Basic of decision: the weight of evidence suggests that copper and copper oxychloride is not mutagenic: the result of tests (in vitro – in vivo studies) in rats and the standard tests using somatic cells.  
  Source: Arce 1988; Wong 1988; Denizean & Marion 1989; Dillon, DM, Riach |
| **- carcinogenicity:** | Not classified  
  Explanation: results of long-term studies (rats and humans) and data from the literature are negative. No increase incidences of tumors were observed in the different animal studies.  
  A rare genetic disease of copper in humans is Wilson’s disease (WD) – consequence is accumulation of copper in the body.  
  If abnormally high levels of copper are present over long periods in an organ or tissue, yet there is no association between the high copper levels and cancer in these organs or tissues, in chronic disease, than it is reasonable to conclude that copper is not carcinogenic in these tissues.  
  Other sources: Haywood, S. in Loughran, M. 1985; Stoner, GD et al 1975 |
| **- reproductive toxicity:** | Not classified  
  Explanation: studies on rats, mice, rabbits – tests have shown no adverse effects on fertility or reproductive performance of the adults, no adverse effects on survival of the offspring through weaning.  
  Reproductive toxicity (rat): NOEL = 1500 ppm at the max dose from 23 to 56 Cu mg/kg bw/day  
  Source: Hebert et al 1993; Leeming 2003; Hunley 2003a,b inc; Lecky 1980 |
| **- STOT – single exposure:** | Not classified  
  Explanation: the human has well recorded homeostatic mechanisms to control excess copper levels in the body by a combination of decreased absorption and increased excretion. The clinical observations and effects seen at necropsy are not considered relevant. Various tests indicate stomach irritation, nausea, vomiting, diarrhea, kidney necrosis.  
  Those authors state tests as a target organ: kidney, liver, stomach, lungs.  
  There was no clear evidence of any specific toxic effects on a target organ or tissue.  
  Source: Chuttani 1965; Wals 1977; Jackson, D. 1994b; Sanders 2002a; Driscoll, R. 1999a; Deenihan, MJ 1988 Forster, R. |
| **- STOT – repeated exposure:** | Not classified  
  Tested substances do not classify into the categories STOT RE or in STOT SE.  
  Explanation: there are many studies on the effects of excess intake of copper as:  
  O’Donohue et al 1993; Hebert, CD et al 1993; Haywood, S 1985 |
| **- aspiration hazard:** | Not classified  
  The data point 11: EUCuTF, VRAR, SCHER, EFSA, DG SANCO, ANSES  
  Reference to section 16. |
### 12. Ecological data

#### 12.1. Toxicity:
The substance is classified in the Aquatic Acute toxicity; Category 1 and in the Aquatic Chronic toxicity; Category 2.

*Studies for fish and Daphnia magna confirm LC50 < 1 mg/L.*

- LC50 fish, 96 hours = 0.08 mg/L (0.052 mg Cu/L – soluble copper)
- Tests according to OECD 203.
- EC50 (Daphnia magna), 48 h = 0.5 mg/L (0.29 mg Cu/L)
- Acute EC50, 48 h (aquatic invertebrates) = 0.29 mg/L
- Tests according to the OECD 202; *Source:* Noack, M. 2000a and 2001
- ER50, 72 hours (algae) = > 320 mg/L - Not classified
- Tests according to the OECD 201.
- 96 hours, EC50 (fish) = 43.8 mg/L (total copper) and > 0.106 mg/L (soluble copper)
- Explanation: tested in accordance with OECD Guidelines 211.
- NOEC = 43.8 mg Cu/L

#### 12.2. Stability and degradation:
The substance is stable and is not biodegradable.

- Aerobic degradation in soil (DT50 – typical) = 10000 /very stable/
- Copper is an inorganic compound that can not be degraded in soil.
- Photolysis in water = stable
- Hydrolysis in water = very stable
- The risk of water depends on soluble copper.
- *General:* the risk is lower in hard water and water containing high organic carbon.

#### 12.3. The ability to accumulate in organisms:
Tests have not shown accumulation in organisms.

#### 12.4. Mobility in soil:
Copper is medium-mobile. Affects the mobility of copper: pH (low acid value - solubility of copper is greater); redox potential (cooper is more soluble in wet soils or in soils with low redox potential); microbial activity and organic matter (humic substances). The surge of humic acid in the soil, increases the adsorption of copper 2⁺ - ions form complexes with hydroxides and carbonate ions. Furthermore, organic matter holds cations in the chelates, which may be associated with copper and increase its solubility and mobility. Great importance has the physical - chemical sorption (transfer of ions from the solution to the solid phase) of the soil, which is closely related to pH and buffer capacity.

#### 12.5. Results of PBT and vPvB assessment:
The substance is not considered to PBT/vPvB.

- The substance is persistent, bioaccumulation is very low /substance is rarely an indicator of toxicity/.
- *Source:* EFSA

#### 12.6. Other adverse effects:
The risk of soil micro-organisms is low.

- Laboratory and field tests: the substance does not affect the microbial action in soil /no significant effects/.
- Earthworms and other soil microorganisms: LC50 = > 155 mgCu/kg soil
- Impact on the nitrification and mineralization in soil is observed at 20 kg copper/ha).
- The risk of non-target organisms is low.
- Bees: risk ratio (HQ) = < 50
- LD50 oral. = 12.1-116 μg/bee
- Birds: long-term NOEL = 5.05 mgCu/kg bw/day acute LD50 = 173 mgCu/kg bw

*The data point 12: EU Cu TF, FOCUS, VRAR, SCHER, EFSA, DG SANCO Reference to section 16.*
13. Disposal considerations

### 13.1 Methods of waste management:
Residues of substances are stored in their original packaging. Waste materials and packaging are given on rent to an authorized collector of hazardous substances in accordance with applicable environmental legislation, which regulates hazardous waste management and the management of packaging and packaging waste.

14. Transport information

<table>
<thead>
<tr>
<th><strong>ADR, RID, ADN, IMDG, ICAO-TI/IATA-DGR:</strong></th>
<th>ADR / RID / IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>14.1 UN Number:</strong></td>
<td>3077</td>
</tr>
<tr>
<td><strong>14.2 Proper shipping name:</strong></td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper oxychloride)</td>
</tr>
<tr>
<td><strong>14.3 Class:</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>14.4 Packaging group:</strong></td>
<td>III</td>
</tr>
<tr>
<td><strong>14.5 Environmental hazards:</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>14.6 Special precautions:</strong></td>
<td>Avoid release to the environment. Do not breathe in the dust.</td>
</tr>
<tr>
<td><strong>14.7 Cargo transport with Annex II of MARPOL 73/78 and the IBC code:</strong></td>
<td>The substance is not to be transported in bulk.</td>
</tr>
<tr>
<td><strong>14.8 Tunnel restriction code:</strong></td>
<td>(E)</td>
</tr>
<tr>
<td><strong>14.9 Classification code:</strong></td>
<td>M7</td>
</tr>
<tr>
<td><strong>14.11 Hazard label:</strong></td>
<td>9</td>
</tr>
</tbody>
</table>

15. Regulatory information

### 15.1 Regulations / legislation on health, safety and environment specific substance:
This substance is a subject to applicable regulations of CLP and the law: safety, occupational health, environmental protection and management of hazardous chemicals.

### 15.2 The chemical safety assessment:
The chemical safety assessment for the substance is done.

16. Other information:

<table>
<thead>
<tr>
<th><strong>Indication of changes</strong></th>
<th><strong>Registration number of the substance / REACH.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A list of all phrases of the hazard (H) and precautionary statements (P) from 2 to 15:</strong></td>
<td>H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td><strong>Training of workers:</strong></td>
<td>A Course of safety, occupational health, fire safety and handling of hazardous chemicals.</td>
</tr>
<tr>
<td><strong>Sources:</strong></td>
<td>Classified by CLP Regulation (EC) No.: 1907/2006, 1272/2008 with changes and additions Commission Directive No.: 2008/58/EC; 2009/2/EC with changes and additions</td>
</tr>
</tbody>
</table>

www.cinkarna.si
| Legislation on: Safety and Health at Work, Waste management  
ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road |
|---|
| A key or legend to abbreviation and acronyms used in the safety data sheet:  
ADI = Acceptable Daily Intake  
ANSES = French Agency for Food, Environmental and Occupational Health & Safety  
AOEL = Acceptable Operator Exposure Level  
CLP = Classification, Labelling and Packaging  
DG SANCO = Directorate General for Health and Consumer Affairs  
ECHA = European Chemicals Agency  
EUCuTF = European Union Copper Task Force  
EFSA = European Food Safety Authority  
ErC50 = 50% reduction in growth rate  
EU OSHA = European Agency for Safety and Health at Work  
EC50 = Median effective concentration  
FOCUS = Forum on the Coordination of Pesticide fate models and their use  
HC = Hazardous Concentration  
L/A = Leaching/Ageing factor  
LD50 = Median lethal dose  
LC50 = Median lethal concentration  
M = Factor for the concentration of substance hazardous to the aquatic environment  
NOAEL = No observed adverse effect  
NOEC = No observed effect concentration  
NOEL = No observable adverse effect level  
PBT = Persistent, Bioaccumulative, Toxic  
PEC = Predicted effect concentration  
PNEC = Predicted no effect concentration  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
SCHER = Scientific Committee on Health and Environmental Risks  
STOT = Specific Target Organ Toxicity  
STP = Sewage Treatment Plant  
VRAR = Voluntary Risk Assessment Report |

Information is based on our knowledge of the substance during the preparation of this data sheet. If the buyer does not use the substance as advised he will carry the responsibility of any damages that may occur. Of course, the information in the SDS shall not relieve anyone of customer duty to take into the account all legislation that is bound to its area of activity.