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

1.1 Product identifier

Trade name

Copper (II) oxide

Substance name: COPPER OXIDE

Identification numbers

- CAS no.: 1317-38-0
- EC no.: 215-269-1
- Index no.: 029-016-00-6

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

Relevant identified uses of the substance or mixture: chemical analysis

Uses advised against:

No data available.

1.3 Details of the supplier of the safety data sheet

Address

ELTRA GmbH
Retsch-Allee 1-5
42781 Haan
GERMANY

Telephone no.: +49 (0) 2104 23 33-400
Fax no.: +49 (0) 2104 23 33-499

Information provided by / telephone:

+49 (0) 2104 23 33-192

Advice on Safety Data Sheet

info@eltra.com

1.4 Emergency telephone number

For medical advice (in German and English):

+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)

Acute Tox. 4; H302
Aquatic Acute 1; H400
Aquatic Chronic 1; H410

<table>
<thead>
<tr>
<th>Note</th>
<th>Specific concentration limits</th>
<th>M-factor (acute)</th>
<th>M-factor (chronic)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M = 100</td>
<td>-</td>
</tr>
</tbody>
</table>

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

- Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
- Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

aberrant from/in addition to the classification set out in Annex VI, this substance is classified according to European Regulation (EC) No 1272/2008 (CLP), Article 4 (3), paragraph 2.

2.2 Label elements
EC safety data sheet

Trade name: Copper (II) oxide

Current version: 3.0.1, issued: 31.01.2020  Replaced version: 3.0.0, issued: 22.08.2018  Region: GB

Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Product identifier
029-016-00-6 (COPPER OXIDE)

Hazard pictograms

GHS07  GHS09

Signal word
Warning

Hazard statement(s)
H302  Harmful if swallowed.
H410  Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273  Avoid release to the environment.
P301+P312  IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P501  Dispose of contents/container to hazardous or special waste collection point.

2.3 Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1 Substances
Chemical characterization
Substance name  COPPER OXIDE

Identification numbers
CAS no.  1317-38-0
EC no.  215-269-1
Index no.  029-016-00-6

3.2 Mixtures
Not applicable. The product is not a mixture.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information
In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing.

After inhalation
Remove affected person from the immediate area. Ensure supply of fresh air.

After skin contact
In case of contact with skin wash off with water.

After eye contact
Separate eyelids, wash the eyes thoroughly with water (15 min.).

After ingestion
Rinse out mouth and give plenty of water to drink. Call a doctor immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
No data available.

4.3 Indication of any immediate medical attention and special treatment needed
No data available.
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

Unsuitable extinguishing media
No data available.

5.2 Special hazards arising from the substance or mixture
No data available.

5.3 Advice for firefighters
Use self-contained breathing apparatus. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

For emergency responders
No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up
Take up mechanically. Send in suitable containers for recovery or disposal. Clean contaminated surfaces thoroughly with water. Avoid raising dust.

6.4 Reference to other sections
No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Provide good ventilation at the work area (local exhaust ventilation, if necessary). Avoid the formation and deposition of dust. If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn.

General protective and hygiene measures
Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Do not inhale dust.

Advice on protection against fire and explosion
Keep away from sources of heat and ignition. Avoid formation of dust.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed and dry in a cool, well-ventilated place.

Requirements for storage rooms and vessels
Always keep in containers of same material as the original. Containers which are opened must be carefully closed and kept upright to prevent leakage.

Incompatible products
Substances to be avoided, pls. See chapter 10.

7.3 Specific end use(s)
No data available.

SECTION 8: Exposure controls/personal protection
8.1 Control parameters

Occupational exposure limit values

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COPPER OXIDE</td>
<td>1317-38-0</td>
<td>215-269-1</td>
</tr>
</tbody>
</table>

List of approved workplace exposure limits (WELs) / EH40
Copper and compounds (as Cu) dusts and mists

| WEL short-term (15 min reference period) | 2  | mg/m³ |
| WEL long-term (8-hr TWA reference period) | 1  | mg/m³ |

8.2 Exposure controls

Appropriate engineering controls
No data available.

Personal protective equipment

Respiratory protection
Use respiratory protection mask with P2 particulate filter in presence of dust.

Eye / face protection
Safety glasses (EN 166)

Hand protection
Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material nitrile rubber
Material thickness 0.11 mm
Breakthrough time > 480 min

Other
Wear suitable protective clothing

Environmental exposure controls
No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Form/Colour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>solid</td>
<td></td>
</tr>
<tr>
<td>black</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Odour</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>odourless</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Odour threshold</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>pH value</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>appr. 7</td>
</tr>
<tr>
<td>Reference temperature</td>
<td>20 °C</td>
</tr>
<tr>
<td>Concentration</td>
<td>50 g/l</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling point / boiling range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Melting point / melting range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1326 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decomposition point / decomposition range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>&gt; 1026 °C</td>
</tr>
</tbody>
</table>
Flash point
Not applicable

Auto-ignition temperature
No data available

Oxidising properties
No data available

Explosive properties
No data available

Flammability (solid, gas)
No data available

Lower flammability or explosive limits
No data available

Upper flammability or explosive limits
No data available

Vapour pressure
No data available

Vapour density
No data available

Evaporation rate
No data available

Relative density
No data available

Density
<table>
<thead>
<tr>
<th>Value</th>
<th>6.48 g/cm³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference temperature</td>
<td>25 °C</td>
</tr>
</tbody>
</table>

Bulk density
| Value | appr. 500 kg/m³ |

Solubility in water
Comments
insoluble

Solubility(ies)
No data available

Partition coefficient: n-octanol/water
No data available

Viscosity
No data available

9.2 Other information
Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
Dangerous reactions are not expected if the product is handled according to its intended use.

10.2 Chemical stability
Stable if stored and handled properly.

10.3 Possibility of hazardous reactions
With aluminium powder (heat) danger of explosion.

10.4 Conditions to avoid
No data available.

10.5 Incompatible materials
Alkali metals; Fluorine; Hydrazine; boron

10.6 Hazardous decomposition products
Fumes of metal oxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Toxicity Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>LD50 470 mg/kg (rat)</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Acute inhalational toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Evaluation: Slightly irritant</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>No data available</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>No data available</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Reproduction toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>STOT - single exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>STOT - repeated exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Other information:
Other hazardous properties cannot be excluded. Take the precautions customary when handling chemicals.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Toxicity Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish (acute)</td>
<td>LC50 25 mg/l (96 h, Oncorhynchus mykiss)</td>
</tr>
<tr>
<td>Toxicity to fish (chronic)</td>
<td>No data available</td>
</tr>
<tr>
<td>Toxicity to Daphnia (acute)</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Trade name: Copper (II) oxide

<table>
<thead>
<tr>
<th>EC50</th>
<th>Duration of exposure</th>
<th>Species</th>
<th>Toxicity to Daphnia (chronic)</th>
<th>Toxicity to algae (acute)</th>
<th>Toxicity to algae (chronic)</th>
<th>Bacteria toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.04</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

12.7 Other information
Do not discharge into the drains or waters and do not store on public depositories.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Provide for recycling by the manufacturer or send to an authorised special waste facility or treatment facility adhering to the Special Waste Regulations.
Generally, chemical residuals must be handled and disposed of as special waste. Please contact the competent authority that provides information for proper disposal, recycling or reclamation of the substance.

Packaging
Dispose of in accordance with federal, state and local regulations. Packaging that cannot be cleaned should be disposed off as product waste.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

<table>
<thead>
<tr>
<th>Class</th>
<th>Classification code</th>
<th>Packing group</th>
<th>Hazard identification no.</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Technical name</th>
<th>Tunnel restriction code</th>
<th>Label</th>
<th>Environmentally hazardous substance mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>M7</td>
<td>III</td>
<td>90</td>
<td>UN3077</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.</td>
<td>COPPER OXIDE</td>
<td>-</td>
<td>9</td>
<td>Symbol &quot;fish and tree&quot;</td>
</tr>
</tbody>
</table>

14.2 Transport IMDG

<table>
<thead>
<tr>
<th>Class</th>
<th>Packing group</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>III</td>
</tr>
</tbody>
</table>
EC safety data sheet

Trade name: Copper (II) oxide

UN number: UN3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Technical name: COPPER OXIDE
EmS: F-A, S-F
Label: 9
Marine pollutant mark: Symbol "fish and tree"

14.3 Transport ICAO-TI / IATA

Class: 9
Packing group: III
UN number: UN3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Technical name: COPPER OXIDE
Label: 9
Environmentally hazardous substance mark: Symbol "fish and tree"

14.4 Other information
No data available.

14.5 Environmental hazards
Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user
No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not relevant

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)
In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation
In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

The substance is not subject to the provisions of annex XVII (restriction entries) of the Reach regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances
This product is subject to Part I of Annex I, risk category: E1

Other regulations
Adhere to the national sanitary and occupational safety regulations when using this product.

15.2 Chemical safety assessment
No data available.

SECTION 16: Other information

Further information
Article no. 90290 / 90289, 100 g
Gestis – Dangerous Substances Database
www.dguv.de/bgia/de/gestis/stoffdb
www.baua.de
Sources of key data used to compile the data sheet:
National Threshold Limit Values of the corresponding countries as amended in each case.
Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)
H400 Very toxic to aquatic life.

Department issuing safety data sheet
UMCO GmbH
Georg-Wilhelm-Str. 187, D-21107 Hamburg
Tel.: +49 40 / 555 546 300  Fax: +49 40 / 555 546 357  e-mail: umco@umco.de

Contact person
For technical information please contact:
Dr. Stefan Degen, Tel. +49 (0)5326 / 507 - 422
stefan.degen@recylex.de

This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:
Alterations to the previous edition are marked in the left-hand margin.

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