Cupric Oxide
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 11/23/2015  Revision date: 06/11/2018  Supersedes: 02/04/2016  Version: 3.0

SECTION 1: Identification

1.1. Identification

Product form: Substance
Substance name: Cupric Oxide
CAS-No.: 1317-38-0
Formula: CuO

1.2. Recommended use and restrictions on use

Use of the substance/mixture: Nutrient; Dietary Supplement

1.3. Supplier

Manufacturer:
Jost Chemical Co.
8150 Lackland Rd.
Saint Louis, Missouri 63114
T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

1.4. Emergency telephone number

Emergency number: For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
United States and Canada: 1-800-424-9300 / +1 703-527-3887
Global: +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Not classified

2.2. GHS Label elements, including precautionary statements

GHS-US labeling
No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupric Oxide (Main constituent)</td>
<td>(CAS-No.) 1317-38-0</td>
<td>100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures


First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists. Wash skin with plenty of water.

First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth with water. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)


4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2. Specific hazards arising from the chemical

Fire hazard: DIRECT FIRE HAZARD: Non combustible. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity: Violent to explosive reaction with (some) compounds: (increased) risk of fire. Violent to explosive reaction on exposure to temperature rise with (some) metal powders.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighborhood close doors and windows.

Firefighting instructions: Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighborhood close doors and windows.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.
6.2. Environmental precautions
Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up
For containment: Contain released product, pump into suitable containers. Dam up the solid spill. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up: Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain.

Hygiene measures: Observe strict hygiene. Keep container tightly closed. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.

Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: reducing agents. metal powders.

Storage area: Store in a dry area. Keep container in a well-ventilated place. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: MATERIAL TO AVOID: metal.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
No additional information available.

8.2. Appropriate engineering controls
Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment
Personal protective equipment:

Materials for protective clothing:
GIVE GOOD RESISTANCE: neoprene

Hand protection:
Gloves

Eye protection:
Safety glasses. In case of dust production: protective goggles. Safety glasses

Skin and body protection:
Protective clothing

Respiratory protection:
Dust production: dust mask with filter type P2
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state: Solid
- Appearance: Black powder.
- Color: Brown-black to black
- Odor: Odorless
- Odor threshold: No data available
- pH: 7 (5 %)
- pH solution: 5 %
- Melting point: 1446 °C
- Freezing point: Not applicable
- Boiling point: Not applicable (decomposes)
- Flash point: Not applicable
- Relative evaporation rate (butyl acetate=1): No data available
- Flammability (solid, gas): Non flammable.
- Vapor pressure: No data available
- Relative vapor density at 20 °C: No data available
- Relative density: 6.48 (25 °C, Literature)
- Specific gravity / density: 6310 kg/m³
- Molecular mass: 79.54 g/mol
  - Water: < 0.01 g/100ml
  - Acetone: 0.269 mg/l (20 °C)
- Log Pow: 1.43 (Estimated value)
- Auto-ignition temperature: Not applicable
- Decomposition temperature: 1026 - 1030 °C
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosion limits: Not applicable
- Explosive properties: No data available
- Oxidizing properties: No data available

9.2. Other information

- VOC content: Not applicable (inorganic)
- Other properties: Substance has neutral reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Violent to explosive reaction with (some) compounds: (increased) risk of fire. Violent to explosive reaction on exposure to temperature rise with (some) metal powders.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).
10.5. Incompatible materials

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

SECTION 11: Toxicological information
11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute toxicity (oral)</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cupric Oxide (1317-38-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
</tbody>
</table>

- **Skin corrosion/irritation**: Not classified
- **pH**: 7 (5 %)

- **Serious eye damage/irritation**: Not classified
- **pH**: 7 (5 %)

- **Respiratory or skin sensitization**: Not classified

- **Germ cell mutagenicity**: Not classified

- **Carcinogenicity**: Not classified

- **Reproductive toxicity**: Not classified

- **Specific target organ toxicity – single exposure**: Not classified

- **Specific target organ toxicity – repeated exposure**: Not classified

- **Aspiration hazard**: Not classified

- **Viscosity, kinematic**: No data available

- **Likely routes of exposure**: Skin and eye contact. Inhalation. Ingestion.

- **Potential Adverse human health effects and symptoms**: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Not irritant to skin. Slightly irritant to eyes.

<table>
<thead>
<tr>
<th>Symptoms/effects after inhalation</th>
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<table>
<thead>
<tr>
<th>Symptoms/effects after skin contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No effects known.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symptoms/effects after eye contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slight irritation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symptoms/effects after ingestion</th>
</tr>
</thead>
</table>

- **Chronic symptoms**: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Metal fume fever. Enlargement/affection of the liver. Affection of the renal tissue.

SECTION 12: Ecological information

12.1. Toxicity

- **Ecology - general**: Dangerous for the environment.
- **Ecology - air**: Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- **Ecology - water**: Very toxic to crustacea. Toxic to crustacea with long lasting effects. Very toxic to fish. Toxic to fish, with long lasting effects. Very toxic to algae.

<table>
<thead>
<tr>
<th>Cupric Oxide (1317-38-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
</tbody>
</table>
Cupric Oxide
Safety Data Sheet

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Cupric Oxide (1317-38-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold limit algae 1</strong></td>
<td>0.047 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 96 h; Chlamydomonas reinhardtii; Flow-through system; Fresh water; Weight of evidence)</td>
</tr>
<tr>
<td><strong>Threshold limit algae 2</strong></td>
<td>0.032 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 10 days; Chlamydomonas reinhardtii; Flow-through system; Fresh water; Weight of evidence)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Cupric Oxide (1317-38-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Log Pow</strong></td>
<td>1.43 (Estimated value)</td>
</tr>
<tr>
<td><strong>Bioaccumulative potential</strong></td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Cupric Oxide (1317-38-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ecology - soil</strong></td>
<td>Adsorbs into the soil.</td>
</tr>
</tbody>
</table>

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

<table>
<thead>
<tr>
<th>Regional legislation (waste)</th>
<th>LWCA (the Netherlands): KGA category 05.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste treatment methods</td>
<td>Dispose of contents/container in accordance with licensed collector’s sorting instructions.</td>
</tr>
<tr>
<td>Product/Packaging disposal recommendations</td>
<td>Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse.</td>
</tr>
</tbody>
</table>


SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Transport by sea

<table>
<thead>
<tr>
<th>Transport document description (IMDG)</th>
<th>UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III, MARINE POLLUTANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (IMDG)</td>
<td>3077</td>
</tr>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>Environmentally hazardous substance, solid, n.o.s.</td>
</tr>
<tr>
<td>Class (IMDG)</td>
<td>9 - Miscellaneous dangerous substances and articles</td>
</tr>
<tr>
<td>Packing group (IMDG)</td>
<td>III - substances presenting low danger</td>
</tr>
<tr>
<td>Limited quantities (IMDG)</td>
<td>5 kg</td>
</tr>
<tr>
<td>EmS-No. (1)</td>
<td>F-A</td>
</tr>
<tr>
<td>EmS-No. (2)</td>
<td>S-F</td>
</tr>
</tbody>
</table>
Air transport

Transport document description (IATA) : UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III
UN-No. (IATA) : 3077
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Cupric Oxide (1317-38-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 06/11/2018

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

SDS US (HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.