

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

### Product Identifier:

**Identification as on the label/Trade name:** Copper (II) Oxide, Enriched Copper (II) Oxide.

**Molecular weight:** 79.545

**Chemical formula:** CuO

**Synonyms:** None.

### Details of the supplier of the Safety Data Sheet:

Neonest AB

Storgatan 70C, Solna

SE-17152

Sweden

### Contact details:

+46-76-219-9731

### 24-hour Emergency Contact:

Swedish Poisons Centre

Phone: 112 - Ask for Poisons Information, 112 – begär Giftinformation.

### Other International Contacts:

CHEMTREC 24-hour: +1-703-741-5500 (US + Worldwide)

NHS: 111 (UK)

Charite: +49 30 450 531 000 (Netherlands)

INTCF: +34 917689800 (Spain)

CapTv: +33 1 40 05 48 48 (France)

## Section 2: Hazards Identification

### Classification of the substances or mixture:

**The mixture is classified according to:** Regulation EC 1272/2008 [EU-GHS/CLP]

### **Hazard classes/Hazard categories:**

Aquatic Acute (Category 1)

Aquatic Chronic (Category 1)

### **Hazard statement:**

H400

H410

### Label elements:

**Hazard pictograms:**



**Signal Words:** Warning.

**Hazard Statements:**

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

P273 Avoid release to the environment.

P391 Collect spillage.

P501 Dispose of contents/container in accordance with local and national regulations.

**Other hazards:** None known.

**Section 3: Composition/Information on Ingredients**

**Substance/Mixture:** Substance.

**Ingredients:**

Substance name (IUPAC/EC)	CAS-No.	Molecular weight	Concentration % by weight	Classification EC1272/2008
	EC-No.			
Copper oxide	1317-38-0	79.545	>99%	Aquatic Acute 1 H400 Aquatic Chronic 1H410
	1344-70-3			
	215-269-1			

For explanation of abbreviations see Section 16.

**Section 4: First-Aid Measures**
**Description of first aid measures:**

**In case of inhalation:** Remove person to fresh air, keep warm and quiet, give oxygen if breathing is difficult, and seek medical attention if symptoms persist.

**In case of skin contact:** Remove any contaminated clothing, brush material off skin, flush with running water, and wash carefully with soap and water. Seek medical attention if symptoms persist.

**In case of eye contact:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

**In case of ingestion:** Give 1-2 glasses of milk or water and induce vomiting; seek immediate medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed:**

**Inhalation:** May be harmful if inhaled; may cause respiratory tract irritation.

**Eyes:** May cause eye irritation.

**Skin contact:** May be harmful if absorbed through skin; may cause skin irritation.

**Ingestion:** Toxic if swallowed.

**Indication of any immediate medical attention and special treatment needed:** Treat symptomatically. Show this safety data sheet to a physician or emergency room.

**Section 5: Fire-Fighting Measures**
**Extinguisher media:**

**Suitable extinguisher media:** Use suitable extinguishing media for surrounding material and type of fire.

**Unsuitable extinguishing media:** None known.

**Special hazards arising from the mixture:** May ignite on contact with dichloromethylsilane, hydrogen sulphide or hydrogen trisulfide. May react violently with hydrazine, PN<sub>2</sub>H, titanium or zirconium. May have a violent exothermic reaction with boron when heated. May explode when heated with powdered aluminium, anilinium perchlorate, hydrogen or phthalic anhydride. May explode at 350°C with cesium acetylene carbide.

**Advice for fire-fighters:** Wear self-contained breathing apparatus and protective clothing for firefighting.

**Further information:** Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## Section 6: Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures:

**Personal precautions:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

**Environmental precautions:** Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

### Methods for containment and cleaning up:

**Methods for cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### Reference to other sections:

Treat recovered material as described in the section "Disposal considerations".

## Section 7: Handling and Storage

### Precautions for safe handling:

**Advice on safe handling:** Avoid contact with skin and eyes. Avoid formation of dust or aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

**Hygiene measures:** Do not eat, drink or smoke when using this product. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area.

### Conditions for safe storage, including incompatibilities:

**Requirements for storage areas and containers:** Store in cool, dry, well-ventilated area. Keep tightly sealed when not in use.

## Section 8: Exposure Controls/Personal Protection

### Control parameters:

**Occupational exposure limits:** Contains no substances with occupational exposure limit values.

### Exposure controls:

**Appropriate engineering controls:** Safety shower and eye bath, mechanical exhaust required.

**Individual protection measures, such as personal protective equipment:**

**Eye/face protection:** Use safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU).

**Hand protection:** Use chemical resistant gloves. Examples of preferred glove barrier materials include: Butyl rubber, Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, polyvinyl alcohol, Polyvinyl chloride.

**Body protection:** Wear protective clothing as appropriate.

**Respiratory protection:** For nuisance exposures, use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher-level protection, use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Section 9: Physical and Chemical Properties****Information on basic physical and chemical properties**

**Appearance (form):** Solid (powder).

**Colour:** Black.

**Odour:** Odourless.

**Odour threshold:** No data available.

**Molecular Weight:** 79.545

**pH (concentration):** No data available.

**Melting point/range (°C):** 1326 °C

**Boiling point/range (°C):** 2000 °C

**Freezing point (°C):** No data available.

**Flash point (°C):** No data available.

**Evaporation rate:** No data available.

**Flammability (solid, gas):** No data available.

**Ignition temperature (°C):** No data available.

**Upper/lower flammability/explosive limits:** No data available.

**Vapour pressure (20 °C):** No data available.

**Vapour density:** No data available.

**Relative density (25 °C):** 6.4 g/cm<sup>3</sup>

**Water solubility (g/L) at 20 °C:** Insoluble.

**n-Octanol/Water partition coefficient:** No data available.

**Auto-ignition temperature:** No data available.

**Decomposition temperature:** No data available.

**Viscosity, dynamic (mPa s):** No data available.

**Explosive properties:** The substance or mixture is not classified as explosive.

**Oxidising properties:** The substance or mixture is not classified as oxidizing.

**Section 10: Stability and Reactivity**

**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use.

**Conditions to avoid:** None known.

**Incompatible materials:** Cesium acetylene carbide, hydrazine, PN<sub>2</sub>H, titanium, zirconium, chloromethylsilane, hydrogen sulphide, hydrogen trisulfide, powdered aluminium, aniline perchlorate, hydrogen magnesium, phthalic anhydride or boron.

**Hazardous decomposition products:** None known.

## Section 11: Toxicological Information

### Information on toxicological effects:

**Acute Toxicity:**

Oral LD<sub>50</sub>: Rat, 470 mg/kg

**Classification according to GHS (1272/2008/EG, CLP)****Skin corrosion/irritation:**

May cause dermatitis.

**Serious eye damage/eye irritation:**

Not classified based on available information.

**Respiratory or skin sensitisation:**

Not classified based on available information.

**Germ cell mutagenicity:**

Not classified based on available information.

**Carcinogenicity:**

Not classified based on available information.

**Reproductive toxicity:**

Not classified based on available information.

**Specific target organ toxicity – single exposure (STOT):**

Not classified based on available information.

**Specific target organ toxicity (STOT) – repeated exposure:**

Not classified based on available information.

**Aspiration toxicity:**

Not classified based on available information.

## Section 12: Ecological Information

**Toxicity:**

Toxicity to fish: LC<sub>50</sub>, *Oncorhynchus mykiss*, 25.4 mg/l, 96 hours.

Toxicity to daphnia and other aquatic invertebrates: EC<sub>50</sub> *Daphnia magna*, 0.011 - 0.039 mg/l, 48 hours.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Results of PBT& vPvB assessment:** Not relevant.

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life, with long-lasting effects.

## Section 13: Disposal Considerations

**Waste treatment methods:** Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

## Section 14: Transport Information

**IMDG:**

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide).

**Hazard Class:** 9

**UN Number:** 3077

**Packing Group:** III

**Hazard Labels:**



**IATA:**

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide).

**Hazard Class:** 9

**UN Number:** 3077

**Packing Group:** III

**Section 15: Regulatory Information**

**EU regulations:**

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

**Authorisations:**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

**Restrictions on use:**

**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use**

Not regulated.

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**

Not regulated.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding.**

Not regulated.

**Other EU regulations:**

**Directive 2012/18/EU on major accident hazards involving dangerous substances**

Not listed.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.**

Always applicable.

**Directive 94/33/EC on the protection of young people at work**

Not listed.

**Other regulations:** The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**OSHA Hazards:** Toxic by ingestion.

**SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:** The following components are subject to reporting levels established by SARA Title III, Section 313: Copper Oxide, CAS No. 1317-38-0, Revision Date 2007-07-01.

**SARA 311/312 Hazards:** Acute Health Hazard.

**Massachusetts Right To Know Components:** No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components:** Copper Oxide, CAS No. 1317-38-0, Revision Date 2007-07-01.

**New Jersey Right To Know Components:** Copper Oxide, CAS No. 1317-38-0, Revision Date 2007-07-01.

**California Prop. 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**National regulations:** Follow national regulation for work with chemical agents.

**Chemical safety assessment:** No Chemical Safety Assessment has been carried out.

## Section 16: Other Information

**List of abbreviations:**

ACGIH American Conference of Governmental Industrial Hygienists

ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road

ALARA As Low As Is Reasonably Achievable

AMU Atomic Mass Unit

ANSI American National Standards Institute

BLS Basic Life Support

CAM Continuous Air Monitor

CAS Chemical Abstracts Service (division of the American Chemical Society)

CEN European Committee for Standardization  
CERCLA Comprehensive Environmental Response Compensation and Liability Act  
CLP Classification, Labelling and Packaging (European Union)  
CPR Controlled Products Regulations (Canada)  
CWA Clean Water Act (USA)  
DAC Derived Air Concentration (USA)  
DOE United States Department of Energy (USA)  
DOT United States Department of Transportation (USA)  
DSL Domestic Substances List (Canada)  
EC50 Half Maximal Effective Concentration  
EINECS European Inventory of Existing Commercial Chemical Substances  
EHS Environmentally Hazardous Substance  
ELINCS European List of Notified Chemical Substances  
EMS Emergency Response Procedures for Ships Carrying Dangerous Goods  
EPA Environmental Protection Agency (USA)  
EPCRA Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986  
GHS Globally Harmonized System  
HMIS Hazardous Materials Identification System (USA)  
IARC International Agency for Research on Cancer  
IATA International Air Transport Association  
IBC Intermediate Bulk Containers  
ICAO International Civil Aviation Organization  
IDLH Immediately Dangerous to Life or Health  
IMDG International Maritime Code for Dangerous Goods  
LC50 Lethal concentration, 50 percent  
LD50 Lethal dose, 50 percent  
LDLO Lethal Dose Low  
LOEC Lowest-Observed-Effective Concentration  
MARPOL International Convention for the Prevention of Pollution from Ships  
MSHA Mine Safety and Health Administration (USA)  
NCRP National Council on Radiation Protection & Measurements (USA)  
NDSL Non-Domestic Substances List (Canada)  
NFPA National Fire Protection Association (USA)  
NIOSH National Institute for Occupational Safety and Health (USA)  
NOEC No Observed Effect Concentration  
N.O.S. Not Otherwise Specified  
NRC Nuclear Regulatory Commission (USA)  
NTP National Toxicology Program (USA)  
OSHA Occupational Safety and Health Administration (USA)  
PBT Persistent Bioaccumulative and Toxic Chemical  
PEL Permissible Exposure Limit  
PIH Poisonous by Inhalation Hazard  
RCRA Resource Conservation and Recovery Act (USA)  
RCT Radiation Control Technician  
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)  
RID Regulations Concerning the International Transport of Dangerous Goods by Rail  
RTECS Registry of Toxic Effects of Chemical Substances



SARA Superfund Amendments and Reauthorization Act (USA)

TDG Transportation of Dangerous Goods (Canada)

TIH Toxic by Inhalation Hazard

TLV Threshold Limit Value

TPQ Threshold Planning Quantity

TSCA Toxic Substances Control Act

TWA Time Weighted Average

UN United Nations (Number)

VOC Volatile Organic Compound

vPvB Very Persistent Very Bioaccumulative Chemical

WGK Wassergefährdungsklassen (Germany: Water Hazard Classes)

WHMIS Workplace Hazardous Materials Information System

**References:**

Not available.

**Full text of any H-statements not written out in full under Sections 2 to 15:**

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

**Revision information:**

None.

**Training information:**

Follow training instructions when handling this material.

**Further Information:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.