



## Safety Data Sheet

According to 29 CFR 1910.1200 (OSHA HCS)

SDS No. 660

Review date: July 12, 2018

### 1 Identification of substance and company

**Product name:** Copper (II) oxide  
**Product code:** 12569, 13626, 17060, 18804, C2132  
**Relevant use and restrictions on use:** Research and product development  
**Manufacturer/Supplier:** Noah Technologies Corporation  
1 Noah Park  
San Antonio, Texas 78249-3419  
Phone: 210-691-2000  
Fax: 210-691-2600  
Web site: www.noahtech.com

**Emergency information:** CHEMTREC  
800-424-9300

### 2 Hazards identification

**Hazard designation:**

**Pictogram(s):**



**Signal word:**

Warning

**Hazard statement(s):**

H400 Very toxic to aquatic life  
H412 Harmful to aquatic life with long lasting effects

**Precautionary statement(s):**

P273 Avoid release to the environment  
P391 Collect spillage  
P501 Dispose of contents/ container to an approved waste disposal plant

**GHS Classification in accordance with 29CFR1910:**

Acute aquatic toxicity - 1  
Chronic aquatic toxicity - 3

**Hazards not otherwise classified:**

None

**HMIS ratings (scale 0-4):**

Health: 1  
Flammability: 0  
Physical hazard: 0

### 3 Composition/Information on ingredients

**Chemical name:** Copper (II) oxide  
**Designation: (CAS#):** 1317-38-0  
**EC Number:** 215-269-1  
**Formula:** CuO  
**Synonyms:** Cupric oxide, copper monoxide, black copper oxide

### 4 First aid measures

**After inhalation:** Seek immediate medical advice  
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**After skin contact:** Instantly wash with water and soap and rinse thoroughly  
If irritation persists, consult a physician

**After eye contact:** Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.

**After ingestion:** If conscious, rinse mouth out with water and seek medical attention

**Information for doctor:** Show this safety data sheet to the doctor in attendance

**Immediate medical attention and special treatment needed:** May cause irritation to the eyes, skin (oxide pox), and/or respiratory system or respiratory disease if overexposed on a chronic basis. May cause nausea, chills, diarrhea or fever.

### 5 Fire-fighting measures

**Suitable extinguishing agents:** Use extinguishing media most appropriate to surrounding fire conditions

**Special hazards caused by the material, its products of combustion or resulting gases:** In case of fire, the following can be released:  
Oxides of copper

**Special fire fighting procedures:** Wear self-contained breathing apparatus  
Wear fully protective fire fighting equipment/clothing in fire situations

**Unusual fire and explosion hazard:** Reacts violently with hydrazine, titanium and zirconium. Ignites on contact with dichloromethylsilane, hydrogen sulfide. Explodes when heated with powdered aluminum, hydrogen, magnesium, phthalic anhydride.

#### 6 Accidental release measures

**Person-related safety precautions:** Wear personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

**Measures for environmental protection:** Do not allow material to be released to the environment without proper governmental permits

**Measures for cleaning/collecting:** Dispose of contaminated material as waste according to item 13  
Place in a suitable container for proper disposal  
Ventilate and wash spill site after material removal is complete

**Additional information:** See Section 7 for information on safe handling  
See Section 8 for information on personal protective equipment  
See Section 13 for information on disposal

#### 7 Handling and storage

**Information for safe handling:** Keep containers tightly sealed  
Store in cool, dry place in tightly closed containers  
Ensure good ventilation/exhaustion at the workplace

**Information about protection against explosions and fires:** This product is not flammable

**Storage requirements to be met by storerooms and containers:** No special requirements

**Incompatibility (avoid contact with):** Strong oxidizers, acids or bases  
Water/moisture

**Further information about storage conditions:** Keep container tightly sealed  
Store in cool, dry conditions in well sealed containers

#### 8 Exposure controls/personal protection

**Ventilation requirements:** Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute

**Components with critical values that require monitoring at the workplace:** NIOSH REL: TWA 0.1 mg(Cu)/m<sup>3</sup>

**Additional information:** None

**Personal protective equipment:** The usual precautionary measures should be adhered to in handling the chemicals

**General protective and hygienic measures:** Keep away from foodstuffs, beverages and food  
Instantly remove any soiled and impregnated garments  
Wash hands during breaks and at the end of the work  
Avoid contact with the eyes and skin

**Personal protective equipment:**

**Respiratory protection:** Use suitable respirator when high concentrations are present  
**(Use only NIOSH or CEN approved Equipment)** Use only NIOSH/MESA or CEN approved dust mask type N95 or TYPE P1 (EN 143)

**Hand protection:** Impervious gloves

**Eye protection:** Safety glasses

**Skin protection:** Protective work clothing

**Additional protective equipment:** Sufficient to prevent contact  
Emergency eyewash and safety shower

**Precautionary labeling:** Wash thoroughly after handling  
Do not get in eyes, on skin or on clothing  
Do not breathe dust, vapor, mist, gas  
Store in tightly closed containers  
Store in a cool, dry place. Irritant.

#### 9 Physical and chemical properties

**General Information:**

**Physical state:** Powder

**Color:** Black

**Odor:** Odorless

**Odor threshold:** No data available

**Molecular Weight (Calculated):** 79.55

**pH (5% solution)** No data available

**Melting point/freezing point/range:** 1326 C

**Boiling point/range:** No data available

**Sublimation temperature/start:** No data available

**Decomposition temperature:** No data available

**Flammability (solid, gas):**

**Flash point:** Non-flammable

**Autoignition temperature:** No data available

**Danger of explosion:** No data available

**Flammable limits:**

**Lower:** No data available

Upper:	No data available
Evaporation rate:	No data available
Vapor pressure (mm Hg):	No data available
Vapor density:	No data available
Specific gravity:	6.31
Bulk density:	No data available
Solubility in/Miscibility with water:	0.0001 g/L
Partition coefficient n-octanol/water:	No data available
Viscosity:	No data available
Other information:	No additional information

#### 10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	See below
Conditions to be avoided:	No decomposition if used and stored according to specifications See section 7 for information on proper handling and storage
Materials to be avoided:	Water/moisture (hygroscopic) Strong oxidizing agents, acids, bases
Dangerous reactions:	Reacts violently with hydrazine, titanium and zirconium. Ignites on contact with dichloromethylsilane, hydrogen sulfide. Explodes when heated with powdered aluminum, hydrogen, magnesium, phthalic anhydride.
Hazardous decomposition products: (thermal and other)	Oxides of copper

#### 11 Toxicological information

Acute toxicity:	
LD/LC50 values that are relevant for classification:	oral-rat LD <sub>50</sub> : > 2,500 mg/kg
Irritation or corrosion of skin:	No skin irritation
Irritation or corrosion of eyes:	Mild eye irritation
Primary irritant or corrosive effect: on the skin:	No skin irritation
on the eye:	May cause irritation with redness, pain and conjunctivitis
Sensitization:	No sensitizing effect known
Potential health effects:	
Inhalation:	Pre-existing lung disease may be aggravated by exposure. Could result in respiratory disease if overexposed on a chronic basis.
Ingestion:	May be harmful
Skin:	May cause mild irritation
Eyes:	May cause irritation
Signs and symptoms of exposure:	Product may be harmful if inhaled or ingested. Product may cause irritation to the eyes, skin, and/or respiratory system Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis. To the best of our knowledge the acute and chronic toxicity of the substance is not fully known
Carcinogenicity:	Not identified as a carcinogen or potential carcinogen by IARC, ACGIH, NTP or OSHA

#### 12 Ecological information

Toxicity:	
Toxicity to fish:	Rainbow trout LC <sub>50</sub> : 0.19 - 0.21 mg/L:96H
Toxicity to daphnia and other aquatic invertebrates:	Daphnia magna EC <sub>50</sub> : 0.011-0.039 mg/L:48H
Toxicity to algae:	Phaeodactylum tricorutum NOEC: 0.0057 mg/L:72H
Persistence and degradability:	
Biodegradability:	The methods for determining the biological degradability are not applicable to inorganic substances
Bioaccumulative potential:	No data available
Bioaccumulation:	No data available
Mobility in soil:	No data available
Other adverse effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal Very toxic to aquatic life

#### 13 Disposal considerations

Recommendation:	Consult state, local or national regulation for proper disposal Allow professional disposal company to handle waste Must be specially treated under adherence to official regulations
Unclean packaging recommendation:	Disposal must be made according to official regulations

#### 14 Transport information

##### Land transport DOT

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Copper (II) oxide

##### Air transport ICAO-TI and IATA-DGR:

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Copper (II) oxide

##### UPS Ground / FedEx Ground

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Copper (II) oxide

##### UPS Air

**Proper shipping name:** Chemicals Non-Hazardous  
**Technical name:** Copper (II) oxide

#### 15 Regulatory information

##### SARA Section 302 Extremely Hazardous

**components and corresponding TPQs:** Not subject to reporting requirements

**SARA Section 311 / 312 hazards:** No SARA Hazards

**SARA Section 313 components:** This product contains chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-to-know Act of 1986 and 40CFR372

**California Proposition 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

**TSCA:** This product is listed in the TSCA inventory

#### 16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.