



Safety Data Sheet

In accordance with CFR 1910.1200 (OSHA HCS)

SDS No. 847

Date of review: March 6, 2017

1 Identification of substance and company

Product name: Copper metal
Product code: 11542, 11583, 14105, 14476, 14527, 14898, 15508, 15535, 16170, 16376, 16808, 16984, 17307, 17449, 18803
18862, 90557, 90605, 90627, 90849
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

Emergency Overview:



Signal word(s): Warning
Pictogram(s): Environmental
Hazard statements: H400 Very toxic to aquatic life
H412 Harmful 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/regional/national/international regulations
Hazards not otherwise classified: None
GHS Classification: Acute aquatic toxicity - 1
Chronic aquatic toxicity - 3
HMIS ratings (scale 0-4): Health hazard: 1
Flammability: 0
Physical hazard: 0

3 Composition/Information on ingredients

Chemical name: Copper metal
Designation:
CAS number: 7440-50-8
EC number: 231-159-6
Formula: Cu
Synonyms: Bronze powder, raney copper, gold bronze

4 First aid measures

After inhalation: Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice
After skin contact: Immediately wash with water and soap and rinse thoroughly
Seek immediate medical advice
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After ingestion: Do not induce vomiting; immediately call for medical help
Information for doctor: Show this safety data sheet to the doctor in attendance
Symptoms/effects; acute and delayed: Harmful if inhaled or swallowed. An experimental tumorigen and teratogen. Other experimental reproductive effects. Human systemic effects by ingestion include nausea, vomiting, stomach pains, diarrhea and blood effects. Dust and fumes may cause irritation of the eyes, nose, throat and respiratory tract. In addition, inhalation of fumes from this material can cause metal fume fever which is characterized by flu-like symptoms including coughing, fatigue, muscular pain, and nausea, chills and fever. Prolonged or repeated exposure to copper may cause skin irritation and discoloration of the skin or hair. Questionable carcinogen with experimental tumorigenic data.
Immediate medical attention and special treatment needed: No further relevant information available

5 Fire-fighting measures

Suitable and unsuitable extinguishing agents:	Special powder for metal fires. Cover with dry sand or limestone. Do not use water.
Special hazards caused by the material, its products of combustion or resulting gases:	Copper fume and oxides of copper
Special fire fighting procedures:	Wear SCBA. Always wear fully protective fire fighting equipment/clothing in fire situations.

6 Accidental release measures

Person-related safety precautions:	Wear 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:	Avoid raising dust. Sweep or scoop up and remove. Wear appropriate personal protective equipment. Ventilate area and wash spill site after material pickup 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 See Section 15 for regulatory information

7 Handling and storage

Information for safe handling:	Wash thoroughly after handling. Do not get in eyes, on skin or on clothing. Do not breathe dust, vapor mist, or gas.
Information about protection against explosions and fires:	Keep away from heat, sparks, and open flames.
Storage requirements to be met by storerooms and containers:	Store in a cool, dry place under inert gas
Incompatibility (avoid contact with):	Acid chlorides, halogens, acetylene, ammonium nitrate, ethylene oxide, hydrogen peroxide, hydrazine monitrate, hydrogen sulfide, lead azide, potassium peroxide, sodium azide, sodium peroxide
Further information about storage conditions:	Store away from strong acids and strong oxidizers

8 Exposure controls/personal protection

Ventilation requirements:	Chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute
Components with exposure limits that require monitoring:	OSHA PEL: TWA 0.1 mg(Cu)/m ³ (fume); 1.0 mg(Cu)/m ³ (dust, mist) ACGIH TLV: TWA 0.2 mg(Cu)/m ³ (fume); 1.0 mg(Cu)/m ³ (dust, mist)
Additional information:	No data
General protective and hygienic measures:	The usual precautionary measures for handling chemicals should be adhered to 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 only NIOSH or CEN approved Equipment)	Filter-dust, fume, mist
Hand protection:	Impervious gloves. Check protective gloves prior to each use for their proper condition.
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, or gas.

9 Physical and chemical properties

Physical state:	Powder, flakes, shot, slugs, rods
Color:	High luster copper color. Surface oxidation of powders may cause a brown tint. Weathers to a greenish-blue color.
Odor:	Odorless
Odor threshold:	No data available
Molecular Weight (Calculated):	63.55
pH	No data available
Melting point/freezing point/range:	1083.4 C
Boiling point/range:	2567 C
Sublimation temperature/start:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	No data available
Flash point:	No data available
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):	1 mmHg @ 1628 C
Vapor density:	No data available
Specific gravity:	8.94
Bulk density:	No data available
Solubility in/Miscibility with water:	Insoluble

Partition coefficient n-octanol/water: No data available
Viscosity: No data available
Other information: No further relevant information available

10 Stability and reactivity

Reactivity: No data available
Chemical stability: Stable under recommended storage conditions
Possibility of hazardous reactions: Reacts vigorously with oxidizing materials and with some concentrated acids. Very reactive with hydrogen peroxide.
Conditions to be avoided: See section 7 for information on proper handling and storage
Materials to be avoided: Strong acids, strong oxidizers
Acid chlorides, halogens, acetylene, ammonium nitrate, ethylene oxide, hydrogen peroxide, hydrazine monitrate, hydrogen sulfide, lead azide, potassium peroxide, sodium azide, sodium peroxide
Hazardous decomposition products: (thermal and other) Copper fumes and oxides of copper

11 Toxicological information

LD/LC50 values that are relevant for classification: oral-rat TDLo: 152 mg/kg (22W pre):TER
oral-human TDLo: 120 ug/kg:GIT
Irritation or corrosion of skin: No data available
Irritation or corrosion of eyes: No data available
Primary irritant or corrosive effect: on the skin: May cause irritation
on the eye: May cause irritation
Sensitization: No sensitizing effects known
Potential health effects: Inhalation: See below
Ingestion: See below
Skin: May cause irritation
Eyes: May cause irritation
Signs and symptoms of exposure: Harmful if inhaled or swallowed. An experimental tumorigen and teratogen. Other experimental reproductive effects. Human systemic effects by ingestion include nausea, vomiting, stomach pains, diarrhea and blood effects. Dust and fumes may cause irritation of the eyes, nose, throat and respiratory tract. In addition, inhalation of fumes from this material can cause metal fume fever which is characterized by flu-like symptoms including coughing, fatigue, muscular pain, and nausea, chills and fever. Prolonged or repeated exposure to copper may cause skin irritation and discoloration of the skin or hair. Questionable carcinogen with experimental tumorigenic data.
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known
Carcinogenicity: See above
Additional information: No additional information

12 Ecotoxicological information

Toxicity: Toxicity to fish: Rainbow trout LC₅₀: 0.15 mg/L:96H
Cyprinus carpio LC₅₀: 0.8 mg/L:96H
Toxicity to daphnia and other aquatic invertebrates: Daphnia magna EC₅₀: 0.04 - 0.05 mg/L:48H
Daphnia magna NOEC: 0.004 mg/L:24H
Algae EC₅₀: 0.01 - 0.02 mg/L:72H
Toxicity to algae:
Persistence and degradability: Biodegradability: Readily biodegradable
Bioaccumulative potential: Bioaccumulation: Bioconcentration factor (BCF): 180
Cyprinus carpio - 40D - 200 mg/L
Mobility in soil: No further relevant information available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal
Very toxic to aquatic life
Avoid release to the environment

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 packagings recommendation: Disposal must be made according to official regulations

14 Transport information

Land transport DOT (domestic)
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Technical name: Copper metal
DOT Hazard Class: 9

UN Identification number: UN3077
Label(s): Class 9, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 2270 kg (if particle size is 100 microns or less)
North American Emergency Response Guidebook No.: 171

Air transport ICAO-TI and IATA-DGR:

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Technical name: Copper metal
DOT Hazard Class: 9
UN Identification number: UN3077
Label(s): Class 9, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 2270 kg (if particle size is 100 microns or less)
North American Emergency Response Guidebook No.: 171

UPS Ground / FedEx Ground

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Technical name: Copper metal
DOT Hazard Class: 9
UN Identification number: UN3077
Label(s): Class 9, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 2270 kg (if particle size is 100 microns or less)
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UPS Air

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
Technical name: Copper metal
DOT Hazard Class: 9
UN Identification number: UN3077
Label(s): Class 9, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 2270 kg (if particle size is 100 microns or less)
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15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs: Substance not listed
SARA Section 311 / 312 hazards: Chronic Health Hazard
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 40 CFR 372
California Proposition 65 components: Substance not listed
TSCA: Listed on 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.