



Copper, powder (dendritic), 45 micron

Safety Data Sheet

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

Version: 1.4

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product Identifier

Product Form: Substance

Product Name: Copper, powder (dendritic), 45 micron

CAS No: 7440-50-8

Product Code: VOLO10056

Standard InChI: InChI=1S/Cu

1.2. Intended Use of the Product

Use of the substance/mixture: For laboratory research purposes

1.3. Name, Address, and Telephone of the Responsible Party

Manufacturer

Volochem, Inc.

2600 Hilltop Dr.

Bldg B #C211

Richmond, CA 94806

T 510.748.0159

www.volochem.com

1.4. Emergency Telephone Number

Emergency Number : 510-748-0159 (9a-5p M-F)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Flammable solids (Category 1)

Eye irritant (Category 2B)

Respiratory sensitizer (Category 1)

Germ cell mutagenicity (Category 2)

Carcinogenicity (Category 2)

Reproductive toxicity (Category 1B)

Specific target organ toxicity – Single exposure (Category 1)

Specific target organ toxicity – Repeated exposure (Category 1)

Hazardous to aquatic environment – Acute Hazard (Category 1)

Hazardous to aquatic environment – Chronic Hazard (Category 1)

2.2. Label Elements

GHS-US Labeling

Pictogram(s): GHS02, GHS08, GHS09



Signal word: Danger

Hazard statement(s)

H228 Flammable solid.

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H320	Causes eye irritation.
H334	May cause allergy to asthma symptoms or breathing difficulties if inhaled.
H341	Suspect of causing genetic defects.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs – kidneys, respiratory system.
H372	Causes damage to organs - respiratory system, skin - through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P260	Do not breathe dust/ fume/ gas/mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P284	Wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P308+P311	If exposed or concerned: Call a POISON CENTER/ doctor.
P370+P378	In case of fire: Use special powder, dry sand. NO other agents.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name	Synonyms	Product Identifiers
Copper	None	CAS No. 7440-50-8 EC No. 231-159-6

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes.

First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting.

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4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

Symptoms/Injuries After Inhalation: Overexposure may be irritating to the respiratory system. Inhalation of fume may cause metal fume fever..

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause eye irritation.

Symptoms/Injuries After Ingestion: May be harmful if swallowed.

Chronic Symptoms: Repeated or prolonged contact may cause skin sensitization. Also see Section 11.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Special powder for metal fires. Do NOT use water.

5.2. Special hazards arising from the substance or mixture

Fire Hazard: Product is combustible. Fire conditions may release toxic gases of copper and copper oxide.

Explosion Hazard: Product is not explosive, but dust/air mixtures may form an explosive environment.

5.3. Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Wear self-contained breathing apparatus for fire fighting if necessary.

5.4. NFPA Rating

Health hazard: 2

Fire: 1

Reactivity Hazard: 0

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Collect spillage. Avoid generation of dust during clean-up of spills. Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

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SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Provide appropriate exhaust ventilation at places where dust is formed.

Also see precautionary statements in section 2.2.

7.2. Conditions for Safe Storage

Keep container tightly closed in a dry and well-ventilated place. Store under inert gas. Air sensitive.

7.3. Specific End Use(s) For laboratory research purposes

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Components	CAS-No.	Value	Control Parameters	Basis
Copper	7440-50-9	TWA	1 mg/m ³	USA. NIOSH Recommended Exposure Limits
		TWA	1 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants PEL

8.2. Exposure Controls

Appropriate Engineering Controls:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Avoid high dust concentration. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment:

Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection.



Hand Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye Protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Respiratory Protection:

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin and body protection:

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State:

Solid

Appearance:

Light red, Wire

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Odor:	No data available
Odor Threshold:	No data available
pH:	No data available
Relative Evaporation Rate (butylacetate=1):	No data available
Melting Point:	Melting point/range: 1,083.4 °C (1,982.1 °F)
Boiling Point:	2,567 °C (4,653 °F)
Flash Point:	No data available
Ignition temperature:	No data available
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	No data available
Relative Vapor Density at 20 °C:	No data available
Relative Density:	No data available
Specific Gravity:	No data available
Solubility:	No data available
Log Pow:	No data available
Log Kow:	No data available
Viscosity, Kinematic:	No data available
Viscosity, Dynamic:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Explosive Limits:	No data available
Bulk Density	No data available

9.2. Other Information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	No data available
10.2. Chemical Stability	Stable under recommended storage conditions
10.3. Possibility of Hazardous Reactions	No data available
10.4. Conditions to Avoid	No data available
10.5. Incompatible Materials	Strong acids, strong oxidizing agents, acid chlorides, halogens
10.6. Hazardous Decomposition Products	No data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity:	Oral LD50	No data available
	Inhalation LC50	No data available
	Dermal LD50	No data available
	Other information on acute toxicity	No data available
Skin Corrosion/Irritation:		No data available
Serious Eye Damage/Irritation:		No data available
Respiratory or Skin Sensitization:		No data available
Germ Cell Mutagenicity:		No data available
Carcinogenicity:		Not classified

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Reproductive Toxicity:	no data available
Specific Target Organ Toxicity (Single Exposure):	No data available
Specific Target Organ Toxicity (Repeated Exposure):	No data available
Aspiration Hazard:	No data available
Signs and symptoms of exposure:	Sneezing, nausea, weakness. 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.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

96 Hr LC50 Pimephales promelas	0.0068 - 0.0156 mg/L
96 Hr LC50 Pimephales promelas	<0.3 mg/L [static]
96 Hr LC50 Pimephales promelas	0.2 mg/L [flowthrough]
96 Hr LC50 Oncorhynchus mykiss	0.052 mg/L [flowthrough]
96 Hr LC50 Lepomis macrochirus	1.25 mg/L [static]
96 Hr LC50 Cyprinus carpio	0.3 mg/L [semistatic]
96 Hr LC50 Cyprinus carpio	0.8 mg/L [static]
96 Hr LC50 Poecilia reticulata	0.112 mg/L [flowthrough]
72 Hr EC50 Pseudokirchneriella subcapitata	0.0426 - 0.0535 mg/L [static]
96 Hr EC50 Pseudokirchneriella subcapitata	0.031 - 0.054 mg/L [static]
48 Hr EC50 Daphnia magna	0.03 mg/L [Static]

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. Other Adverse Effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Contact a licensed professional waste disposal service to dispose of this material. Dispose of waste material in accordance with all local, regional, national, and international regulations

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SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

14.1.	UN Number	3089
14.2.	UN Proper Shipping Name	Metal powders, flammable, n.o.s. (copper powder)
14.3.	Transport hazard class(es)	4.1
14.4.	Packing group	II
14.5.1.	Marine Pollutant	Yes
14.5.2.	Reportable Quantity	No
14.6.1.	Toxic Inhalation Hazard	No
14.6.2.	Mode specific comments	See below
14.6.3.	Ground transportation - DOT (US)	No comments
14.6.4.	Marine transportation - IMDG	EMS-No: F-G, S-G
14.6.5.	Air transportation - IATA/ICAO	No comments

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

EPA TSCA Inventory

Listed

SARA 302 Components

SARA 302: 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 CAS No. 7440-50-8 Revision Date 07-01-2007

SARA 311/312 Components

No SARA Hazards

15.2. US State Regulations

California Proposition 65 List 2014

Not listed

Maine Chemicals of High Concern List 2012

Not listed

Massachusetts Right to Know Hazardous Substance List 2014

Listed

New Jersey Right to Know Hazardous Substance List 2010

Listed

Pennsylvania Right to Know Hazardous Substance List 2010

Listed

SECTION 16: OTHER INFORMATION

16.1. Other Classifications

HMIS

Health hazard:	1
Chronic health hazard	*
Flammability:	2
Physical hazards:	1

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16.2. References

International Chemical Safety Card

0240 (Validated September 24, 1993)

Revision date : 1/3/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Volochem chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household goods, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.

SDS US (GHS HazCom) - US Only