

SAFETY DATA SHEET

1. Identification

Product identifier: COPPER METAL

Other means of identification

Product No.: 4649, 1736, 1732, 1720, 24600

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Details of the supplier of the safety data sheet

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
E-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard Classification

Environmental Hazards

Acute hazards to the aquatic environment Category 1

Chronic hazards to the aquatic environment Category 1

Label Elements

Hazard Symbol:



Signal Word: Warning

Hazard Statement: Very toxic to aquatic life with long lasting effects.

Precautionary Statement

Prevention: Avoid release to the environment.

Response: Collect spillage.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
COPPER		7440-50-8	90 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms: May cause skin and eye irritation.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.
Methods and material for containment and cleaning up:	Stop leak if possible without any risk. Shovel up and place in a container for salvage or disposal. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
Notification Procedures:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:	Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities:	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a cool, well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
COPPER - Fume.	TWA	0.2 mg/m3	US. ACGIH Threshold Limit Values (2011)
COPPER - Dust and mist. - as Cu	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
COPPER - Fume. - as Cu	PEL	0.1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
COPPER - Dust and mist. - as Cu	PEL	1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
COPPER - Fume. - as Cu	TWA	0.1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
COPPER - Dust and mist. - as Cu	TWA	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
COPPER - Fume. - as Cu	TWA	0.2 mg/m3	US. ACGIH Threshold Limit Values (03 2014)

Appropriate Engineering Controls	No data available.
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Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.
Eye/face protection:	Wear safety glasses with side shields (or goggles).
Skin Protection	
Hand Protection:	Chemical resistant gloves
Other:	Wear suitable protective clothing.
Respiratory Protection:	In case of inadequate ventilation use suitable respirator.
Hygiene measures:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance

Physical state:	solid
Form:	solid
Color:	Red-orange
Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	1,083 °C
Initial boiling point and boiling range:	2,595 °C
Flash Point:	Not determined.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	8.94 (20 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

Other information

Molecular weight:	63.55 g/mol (Cu)
SDS_US - SDS000001443	

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization does not occur.
Conditions to Avoid:	Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Acetylene. Chlorinated compounds. Nitric acid. Phosphorus. Oxidizable metals. Bromides. Iodides. Ethylene Oxide Hydrazine. Sulfur oxides. Acids. Chlorine. Fluorine. Avoid alkalis and/or heat.
Hazardous Decomposition Products:	Fire or excessive heat may produce hazardous decomposition products.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May be harmful if swallowed.
Inhalation:	May be harmful if inhaled.
Skin Contact:	May cause irritation.
Eye contact:	May irritate eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	No data available.
Dermal Product:	No data available.
Inhalation Product:	No data available.
Repeated dose toxicity Product:	No data available.

Skin Corrosion/Irritation Product:	May cause skin irritation.
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Serious Eye Damage/Eye Irritation Product:	May irritate eyes.
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Respiratory or Skin Sensitization Product:	Not a skin sensitizer.
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Carcinogenicity Product:	This substance has no evidence of carcinogenic properties.
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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity
In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: None known.

Specific Target Organ Toxicity - Repeated Exposure
Product: None known.

Aspiration Hazard
Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:
Fish
Product: No data available.

Specified substance(s):

COPPER LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 3.3 mg/l Mortality

Aquatic Invertebrates
Product: No data available.

Specified substance(s):

COPPER EC 50 (Water flea (*Daphnia magna*), 48 h): 0.102 mg/l Intoxication
LC 50 (Water flea (*Daphnia magna*), 48 h): 0.026 - 0.036 mg/l Mortality

Chronic hazards to the aquatic environment:
Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Specified substance(s):

COPPER

LC 50 (Green algae (Scenedesmus dimorphus), 9 d): 0.0627 mg/l Mortality

Persistence and Degradability
Biodegradation
Product:

There are no data on the degradability of this product.

BOD/COD Ratio
Product:

No data available.

Bioaccumulative Potential
Bioconcentration Factor (BCF)
Product:

No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)
Product:

No data available.

Mobility in Soil:

No data available.

Other Adverse Effects:

Very toxic to aquatic life with long lasting effects.

13. Disposal considerations
Disposal instructions:

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information
DOT

UN Number:

UN 3077

UN Proper Shipping Name:

Environmentally hazardous substance, solid, n.o.s.(COPPER)

Transport Hazard Class(es)

Class(es):

9

Label(s):

9

Packing Group:

III

Marine Pollutant:

Yes

Special precautions for user:

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IMDG

UN Number:

UN 3077

UN Proper Shipping Name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(COPPER)

Transport Hazard Class(es)

Class(es):

9

Label(s):

9

EmS No.:

F-A, S-F

Packing Group:

III

Marine Pollutant:

Yes

Special precautions for user:

—

IATA

UN Number:	UN 3077
Proper Shipping Name:	Environmentally hazardous substance, solid, n.o.s.(COPPER)
Transport Hazard Class(es):	
Class(es):	9
Label(s):	9
Marine Pollutant:	Yes
Packing Group:	III
Special precautions for user:	—

15. Regulatory information
US Federal Regulations
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
COPPER	5000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories

Acute (Immediate)

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
COPPER	5000 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
COPPER	10000 lbs

SARA 313 (TRI Reporting)

	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
<u>Chemical Identity</u>		
COPPER	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations
US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
COPPER

US. Massachusetts RTK - Substance List

Chemical Identity

COPPER

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

COPPER

US. Rhode Island RTK

Chemical Identity

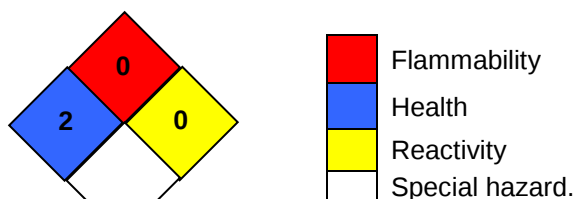
COPPER

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	03-17-2015
Revision Date:	No data available.
Version #:	1.0
Further Information:	No data available.

Disclaimer:

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