



MATERIAL SAFETY DATA SHEET

PAR3 Technology, LLC
1 South Jefferson Ave
Cookeville, TN 38501

Emergency telephone number

Poison Control: 1-800-222-1222

Phone Number: 931-528-8596

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name:	EMI Copper Powder 2	Date of Preparation: 11/30/2004
Chemical Family:	Metals	
Chemical Name:	Copper	
Formula:	Cu	
CAS-No.:	7440-50-8	
Product code:	1015775	

2. COMPOSITION/INFORMATION ON INGREDIENTS

Exposure limits				
Components	CAS-No	Weight %	OSHA	ACGIH
Copper compounds, as Cu	7440-50-8	100%	0.1 mg/m ³ TWA (fume) 1 mg/m ³ TWA (dusts and mists)	0.2 mg/m ³ TWA (fume) 1 mg/m ³ TWA (dusts and mists)

OSHA particulate (not otherwise regulated) limit: 5 mg/m³ (respirable); 15 mg/m³ (total).

3. HAZARDS IDENTIFICATION

Emergency Overview

Caution

NFPA 704

Color:	Red-brown	Health:	1
Physical state:	Powder	Fire:	1
Odour:	Odorless	Instability:	0

May cause respiratory tract, eye and skin irritation. Avoid breathing vapors or mists.

Potential Health Effects

Principle routes of exposure: Inhalation. Skin contact.

Eye contact: Contact with eyes may cause irritation.

Skin contact: Prolonged skin contact may cause skin irritation. May cause skin discoloration.

Inhalation: May cause irritation of respiratory tract.

Ingestion: May be toxic by ingestion.

Chronic toxicity: Repeated inhalation can cause chronic respiratory disease, liver damage, and ulcerated tissue in the nose and throat.

Aggravated Medical Conditions: Conjunctivitis of the eye, dermatitis, asthma, respiratory diseases.

HMIS

Health: 1

Fire: 1

Physical hazard: 0

PPE: E

4. FIRST AID MEASURES

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

Skin contact: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice. If conscious, drink plenty of water.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point: No data available

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.

Unusual hazards: Copper ignites on contact with chlorine, fluorine, chlorine trifluoride, and hydrazinium nitrate. Remove all sources of ignition. High dust formation may present and explosion hazard.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate area of all unnecessary personnel. Avoid dust formation. Avoid contact with skin, eyes and clothing. Do not breathe vapors/dust. Use personal protective equipment.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up: Wear personal protective equipment. Sweep up and shovel into suitable containers for disposal. Dispose of promptly.

7. HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. In case of insufficient ventilation, wear suitable respiratory equipment. Provide appropriate exhaust ventilation at places where dust is formed. Wash hands thoroughly before eating, drinking or smoking.

Storage: Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Respiratory protection: Use NIOSH approved respirator when ventilation is inadequate.

Hand protection: Impervious gloves.

Skin and body protection: Lightweight protective clothing.

Eye protection: Tightly fitting safety goggles.

Exposure limits: See Section 2.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Red-brown	Physical state:	Powder
Odour:	Odorless	Molecular weight:	63.50
Boiling point/range (°C):	2,202.0	pH:	No data available
Melting point/range (°C):	1082	Specific gravity (Water =1):	8.800 - 9.000
Vapor pressure (mmHg):	No data available	Evaporation rate (Water =1):	No data available
Water solubility (mg/l):	Insoluble	VOC content (%)	No data available

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Polymerization: Will not occur.

Hazardous decomposition products: Metal fumes.

Materials to avoid: Hydrazoic acid. Potassium oxide, sulfuric acid, hydrogen peroxide, hydrogen sulfide + air, bromates, iodates, chlorates, ethylene oxide, hydrazoic acid, dimethyl sulfoxide + trichloroacetic acid, copper-ammonium nitrate, sodium peroxide, sodium azide, lead azide, and acetylene compounds. Copper ignites on contact with chlorine, fluorine, chlorine trifluoride, and hydrazinium nitrate.

Conditions to avoid: Avoid dust formation. Fine dust dispersed in air may ignite.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

No data is available on the product itself.

Carcinogenic effects: Not listed by IARC, NTP or OSHA as a carcinogen.

Target Organ Effects: Copper: Skin, liver, kidney, eyes.

Component Information

No information available.

12. ECOLOGICAL INFORMATION

Persistence and degradability: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste must be disposed of in accordance with federal, state and local environmental control regulations. This product has reclamation value.

14. TRANSPORT INFORMATION

DOT:

Proper shipping name: Not regulated.

Other shipping information: This material meets the definition of a marine pollutant. Applies only to containers with a Reportable Quantity or for shipments in bulk or via water transportation.

TDG (Canada):

Proper shipping name: Not regulated.

15. REGULATORY INFORMATION

U.S. Regulations:

Not subject to TSCA 12(b) Export Notification

Copper compounds, as Cu (100%)

SARA 313: 1.0 percent de minimis concentration (Chemical Category N100)

State Regulations

This product or its ingredients have been evaluated for New Jersey, Pennsylvania, and California Prop 65 supplier notification requirements. Substances that are subject to notification requirements, if any, are listed below.

Copper compounds, as Cu (100%)

NJRTK: sn 0528

PARTK: Listed

Canadian WHMIS

WHMIS hazard class: Non-controlled

Components

Copper compounds, as Cu (100%)

WHMIS Ingredient Disclosure:

1%

International Inventories

TSCA 8(b): All the ingredients are on the TSCA list.

Canadian DSL: All the ingredients are on the DSL.

EINECS: All the ingredients are on the EINECS list.

Phillipines (PICCS): Listed.

Japan (ENCS): Not listed.

Korea (KECL): Listed.

China (IECS): Listed.

Australia (AICS): Listed.

16. OTHER INFORMATION

For Industrial Use Only

Prepared by: PAR3 Technical Center

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

End of Safety Data Sheet