

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name: COPPER POWDER  
 Product Codes: SM400101R, SM400105R, SM4001010R  
 Synonyms: Copper Powder, Copper  
 Emergency: CONTACT: (908) 273-5401 Mon-Sat  
 8:00AM-8:00PM

MSDS Number: Copper Powder  
 Product Use: For Powder Metallurgy Applications.  
 Restrictions: Industrial use only.  
 Manufacturer: EnvironMolds, LLC  
 18 bank St. Suite 1  
 Summit, NJ 07901  
 (908) 273-5401

**2. HAZARDS IDENTIFICATION**

**Health Hazards**

Acute Toxicity, Oral – Category 4  
 Acute Toxicity, Inhalation – Category 4  
 Irritant, Eye – Category 2B  
 Copper Fume: Irritant, Respiratory – Category 3

**ENVIRONMENTAL HAZARDS**

Acute Aquatic Toxicity – Category 1

**PHYSICAL HAZARDS**

None Known

**Hazard Statements:**

H302 – Harmful if swallowed.  
 H335 – May cause respiratory irritation.  
 H320 – Causes eye irritation.  
 H412 – Harmful to aquatic life with long lasting effects.

**Pictogram:**



**Signal Word: Warning**

**Precautionary Statements:**

P264 – Wash hands thoroughly after handling.  
 P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.  
 P270 – Do not eat, drink or smoke when using this product.  
 P273 – Avoid release to the environment.  
 P284 – Wear respiratory protection.  
 P301 + P330 – IF SWALLOWED: Rinse mouth with water.  
 P304 + P340 – IF INHALED: Remove victim to fresh air and  
 Keep at rest in a position comfortable for breathing.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Component</u>	<u>CAS #</u>	<u>Range % by Wt.</u>	<u>EINECS #</u>
Copper	7440-50-8	99.4-100	231-159-6
Lithium Stearate	4485-12-5	0-0.6	224-772-5

**4. FIRST AID MEASURES**

**EYES:**

Flush eyes with plenty of water, lifting the upper and lower eyelids occasionally. Get medical attention if irritation develops.

**SKIN:**

Wash the skin using soap or a mild detergent and warm water.

**INHALATION:**

Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Get immediate medical attention. Fume from metallizing, welding or similar processes can cause respiratory irritation and/or metal fume fever (respiratory irritation, chills, nausea).

**INGESTION:**

If person is conscious, rinse mouth and give large quantities of water to drink. Get medical attention.

## 5. FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA:

Graphite, dolomite or sodium chloride. Do NOT use water.

### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Copper powder with particles sizes 50µ size range are classified as weakly explosive by the U.S. Bureau of Mines Report RI-6516. When present as a dust cloud, will NOT explode readily in air. Not easily ignited by sparks.

### FIRE FIGHTING EQUIPMENT:

Wear full bunker gear including a positive pressure self-contained breathing apparatus.

### PRECAUTIONS:

Keep away from ignition sources (e.g. heat and open flames). None required. Keep container closed.

### HAZARDOUS DECOMPOSITION:

Upon heating in the presence of air, material decomposes to sulphur dioxide, cuprous oxide, and copper sulphate.

## 6. ACCIDENTAL RELEASE MEASURES

1. Restrict the area to those persons wearing respiratory protection. Do not allow unprotected people into the area until cleanup has been completed.
2. Ventilate the area thoroughly.
3. Collect the powder in a manner that minimizes further dust generation.
4. Keep out of sewers and waterways.
5. Recycle or dispose of as a waste (see Section 13).

## 7. HANDLING AND STORAGE

Avoid dust generation. Wash thoroughly after handling. Eating, drinking, and smoking are prohibited in work areas. Store powder in a dry area, -18° to 38°C.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ventilation Requirements:

Keep dust and fume levels below occupational exposure limits. Local exhaust ventilation may be necessary for some operations.

### Personal Protective Equipment:

#### EYES:

Wear dust-proof safety goggles. Contact lenses are not recommended.

#### SKIN:

None required; however, use of protective gloves and clothing is good industrial practice. The use of impervious gloves or barrier cream to protect the skin is recommended.

#### INHALATION:

Do not breathe dust or fume. Use with adequate ventilation. Use NIOSH/MSHA approved respirator.

### OCCUPATIONAL EXPOSURE LIMITS:

#### Copper Dust and Mists

ACGIH TLV	1.0 mg/m <sup>3</sup>
NIOSH IDLH	100 mg/m <sup>3</sup>
OSHA PEL	1.0 mg/m <sup>3</sup>

*IDLH = Immediately dangerous to life and health.*

*Copper is on the Sara Title III, Section 313 Toxic Chemicals List.*

#### Copper Fume

ACGIH TLV	0.2 mg/m <sup>3</sup>
NIOSH IDLH	100 mg/m <sup>3</sup>
OSHA PEL	0.1 mg/m <sup>3</sup>

*IDLH = Immediately dangerous to life and health.*

*Copper is on the Sara Title III, Section 313 Toxic Chemicals List.*

## 9. CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE AND ODOR	Red to reddish-brown; odorless
FLASH POINT	Above 700°C
FLAMMABILITY	Non-flammable
AUTOIGNITION TEMPERATURE	Not determined
pH	Not applicable
VAPOR PRESSURE	1mm Hg @ 1628°C
VAPOR DENSITY	Not determined
MELTING POINT	1083°C
BOILING POINT	2580°C @ 760 mm Hg
SOLUBILITY IN WATER	Not soluble
SOLUBILITY IN FAT	Not determined
OCTANOL/WATER PARTITION COEFFICIENT	Not determined
RELATIVE DENSITY (Water=1)	8.2
VISCOSITY	Not applicable

## 10. STABILITY AND REACTIVITY

### STABILITY:

Stable to ignition temperature of 700°C.

### INCOMPATIBLE MATERIALS:

Copper is explosively incompatible with sodium azide. Copper dusts may react with acetylene gas to form copper acetylides, which are sensitive to shock. Copper mists may react with magnesium to form flammable hydrogen gas.

### HAZARDOUS DECOMPOSITION:

None identified.

### HAZARDOUS POLYMERIZATION:

Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Copper is an essential element of mammalian metabolism. Copper metal has little or no serious toxicity. The most common adverse effect associated with copper is the acute inhalation of copper fume during refining or welding. Inhalation of copper fume or dust may result in metal fume fever, which is characterized by upper respiratory irritation, chills, metallic or sweet taste, nausea, and aching muscles. Attacks usually begin after 4-8 hours of exposure and last only 24-48 hours. Inhalation of fumes has been reported to sometimes cause discoloration of the skin and hair. Nausea and vomiting may result if larger amounts of copper metal are ingested. This is probably due to the conversion of the swallowed metal copper to its irritating salts. It is unlikely that poisoning by ingestion in industry would progress to a serious point because small amounts induce vomiting, emptying the stomach of copper salts. High airborne concentrations of copper metal would be expected to cause mechanical irritation of the eyes and respiratory tract. Metallic copper may cause keratinization of the hands and soles of the feet, but it is not commonly associated with industrial dermatitis.

No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program, the U.S. Occupational Safety and Health Act, or the International Agency for Research on Cancer (IARC).

## 12. ECOLOGICAL INFORMATION

No data on the ecological effects of this product have been developed.

## 13. DISPOSAL CONSIDERATIONS

Disposal must be in accordance with applicable local, state and federal regulations (contact local, state, or federal environmental agency for specific rules). Do not dump into sewers, on the ground, or into any body of water.

## 14. TRANSPORTATION INFORMATION

DOT: RQ, Environmentally Hazardous Substance, Solid NOS (contains Copper), 9, UN3077, III Marine Pollutant.

DOT EXCEPTION: Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars, and aircraft.

ADR/RID: UN3077, Environmentally Hazardous Substances, Solid, NOS (contains Copper), 9, III Marine Pollutant.

IMO/IMDG: UN3077, Environmentally Hazardous Substances, Solid, NOS (contains Copper), 9, III Marine Pollutant.

ICAO/IATA : Not regulated if shipped in non-bulk packaging.

REPORTABLE QUANTITY: Copper 5,000 lbs.

**15. HAZARDOUS MATERIAL IDENTIFICATION SYSTEM/REGULATORY INFORMATION**

Health Hazard: 1 – Slight: Slightly Toxic – May cause slight irritation.

Flammability Hazard: 0 – Minimal: Will not burn under normal conditions.

Reactivity Hazard: 0 – Minimal: Normally stable, does not react with water.

Maximum Personal Protection: E – Safety Glasses, Gloves & Dust Respirator.

All chemical constituents of these products are listed on the TSCA inventory of chemical substances maintained by the U.S. Environmental Protection Agency (EPA).

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**16. OTHER INFORMATION**

Revision: A

May 14, 2015

Format has been updated to meet the new OSHA Hazard Communication Standard.

The information in this SDS relates to this specific product group. It may not be valid for this product if used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his own particular use.