

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name: Copper Powder
Synonym: Copper, Navy 125S
Manufacturer: AMEREX CORPORATION
Internet Address: www.amerex-fire.com
Address: 7595 Gadsden Highway
P.O. Box 81
Trussville, AL 35173-0081
Telephone: (205) 655-3271
Emergency Contacts: Chemtrec 1(800) 424-9300 or
(703) 527-3887
Revised: March, 2006

Section 2. Hazard identification and emergency overview

Emergency overview: reddish, fine solid powder, odorless.

Adverse health effects and symptoms: May cause mechanical irritation to the respiratory system, eyes and skin. Symptoms may include coughing, shortness of breath, and irritation of the lungs, eyes, and skin.

Exposure guidelines:

Ingredient	OSHA PEL	ACGIH TLV	DFG MAK*	NIOSH IDLH
Copper dust	1.0 mg/m ³	1.0 mg/m ³	1.0 mg/m ³ peak	100 mg/m ³
Copper fume	0.1 mg/m ³	0.2 mg/m ³	0.1 mg/m ³	100 mg/m ³

*German regulatory limits NOTE: values are eight hour time weighted average (TWA) concentrations unless specified otherwise

Hazard symbols: WHMIS (Canadian workplace hazardous materials identification system)

D2B – Irritant to eyes, respiratory system

Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Copper	>99.5	7440-50-8

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes at eye wash station and repeat until pain free. Seek medical attention if irritation develops or persists, or if visual changes occur.

Skin Exposure: In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops or persists.

Inhalation: If respiratory irritation or distress occurs from dust remove victim to fresh air. Inhalation of fume can cause metal fume fever, including chills, fever, and nausea. Seek medical attention if these symptoms develop.

Ingestion: If victim is conscious and alert, give 2-3 glasses of water to drink.

Medical conditions possibly aggravated by exposure: Inhalation of product, particularly fume, may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Prolonged skin contact may aggravate existing skin disease. Chronic overexposure to dust may cause pneumoconiosis ("dusty lung" disease).

Section 5. Fire fighting measures

Extinguishing media: Graphite, dolomite, or sodium chloride. Do NOT use water.

Unusual fire/explosion hazards: Fine copper powder is potentially, but not readily explosive as a dust cloud in air. (see Section 10).

Insensitive to mechanical impact. Avoid proximity to static discharge or other ignition sources.

HMIS Hazard Ranking:

health = 1, flammability = 0, reactivity = 0, personal protective equipment: ½ mask APR w/HEPA cartridges, eye protection. (see Section 8)

Section 6. Accidental release measures

Clean up released material using vacuum or wet sweep and shovel to minimize generation of dust. Wear appropriate respiratory protection. Bag and drum for disposal. If product is used and/or contaminated, use PPE and containment appropriate to the nature of the mixture. Prevent material from entering waterways.

Section 7. Handling and storage

Avoid skin, eye, or respiratory exposure. Use appropriate PPE when handling or maintaining equipment, and wash thoroughly after handling (see Section 8). Keep product in original container or extinguisher. Contents may be under pressure – inspect for extinguisher rust periodically to insure container integrity. Do not mix with other extinguishing agents.

Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a dust mask or air purifying respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use N95 dust mask for limited exposure, use air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters for prolonged exposure.

Eye protection: wear chemical goggles.

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Section 9. Physical and chemical properties

Appearance: reddish finely divided odorless solid.

Density: 8.94

Solubility: not soluble in water

Non –flammable

Flash point: above 700° C

Vapor pressure: 1 mm Hg @ 1628° C

pH: not applicable

Boiling point: 2595° C

Melting point: 1083° C

No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable to ignition temperature of 700° C

Incompatibles: Copper reacts explosively with sodium azide, lead azide, ethylene oxide, and ammonium nitrate. Copper ignites on contact with oxidizers such as chlorine and hydrogen peroxide. Copper dust may react with acetylene to form shock-sensitive copper acetylide. Copper fume may react with magnesium to release explosive hydrogen gas.

Decomposition products: no

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: Copper LD₅₀ intraperitoneal mouse: 3500 ug/kg body weight

Copper TDLo (lowest published toxic dose) oral human: 120 ug/kg,
toxic effects: gastrointestinal – nausea, vomiting

Target organs in man: respiratory system, eyes, skin. This product is an irritant to epithelial tissue, and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Chronic toxicity: This product's ingredients are not considered as "probable" or "suspected" carcinogens by OSHA, IARC, or ACGIH. There is experimental tumorigenic data. Pneumoconiosis, or "dusty lung" disease, and dermatitis may result from chronic exposure. Chronic exposure may aggravate those with pre-existing liver or kidney disease.

Reproductive toxicity: This product's ingredients are known to have experimental reproductive and teratogenic effects.

Section 12. Ecological information

Ecotoxicity: extent unknown, fungicidal

Persistence/
Degradability: oxidizes slowly

Bioaccumulation: extent unknown, stored in bone marrow, liver, long half-life

Mobility in soil: solid, insoluble, low mobility

Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations.

Section 14. Transportation information

This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT.

Section 15. Regulatory information

International Inventory Status All ingredients are on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ELINCS	Yes
Australia	AICS	Yes
Japan	MITI	No

European Risk and Safety phrases:

EU Classification: Xi. Irritant
R Phrases: 22 Harmful if swallowed.
36/37/38 Irritating to eyes, respiratory system, and skin.
S Phrases: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36 Wear suitable protective clothing.

U.S. federal regulatory information:

This product is not under SARA reporting requirements nor has SARA threshold planning quantities (TPQs). Copper is listed in the CERCLA Community Right-to-know list and has a reportable quantity (RQ) of 5000 pounds.

State regulatory information:

Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Florida – Substance List: None
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: None
Minnesota – List of Hazardous Substances: None

Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: None
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: None
Texas – Hazardous Substance List: No
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None

California Proposition 65: No component is listed on the California Proposition 65 lists.

Section 16. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the proposed 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by Lindsay R. Hill, CIH.