

MATERIAL SAFETY DATA SHEET



SCM METAL PRODUCTS, INC.

11000 CEDAR AVENUE • CLEVELAND, OHIO 44106
TELEPHONE: (216) 795-5000 • TELEX: 196-072 (SCM MTL UT) • FAX: (216) 795-4916

I. PRODUCT IDENTIFICATION

MSDS NO. 276 DATE: September 1, 1990
TRADE NAME: NAVY 125S, Matl. 322
SYNONYMS: Copper Powder

II. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	CAS. NO.	%	PEL	TLV
1. Copper, dusts	7440-50-8	>98.75	1.0 mg/m ³	1.0 mg/m ³
" , fume			0.1 mg/m ³	0.1 mg/m ³

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

N/A = Not Applicable

III. PHYSICAL DATA

N/D = Not Determined

BOILING POINT, 760mm Hg:	2595 C (4703 F)	MELTING POINT	1083 C (1981 F)
SPECIFIC GRAVITY (H ₂ O = 1):	1.0 to 3.6	VAPOR PRESSURE:	1 mm Hg @ 1628 C (2962 F)
VAPOR DENSITY (AIR = 1):	Not Volatile	SOL. IN H ₂ O % BY WT:	Not Soluble
% VOLATILES BY WT:	Not Volatile	EVAPORATION RATE:	Not Volatile
APPEARANCE/ODOR: Reddish color powder - Odorless		pH (10% slurry):	N/A

IV. FIRE AND EXPLOSION DATA

FLASH POINT: Above 700 C (1290 F)	AUTOIGNITION TEMPERATURE:	N/D
FLAMMABLE LIMITS IN AIR, % BY VOL.:	LOWER:	UPPER:
N/D	N/D	N/D

EXTINGUISHING MEDIA: Graphite, Dolomite, or Sodium Chloride

SPECIAL FIRE FIGHTING PROCEDURES: Do not use water.

UNUSUAL FIRE AND EXPLOSION HAZARD: Copper powder below 50 micrometers size range is classified as weakly explosive in 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.

V. HEALTH HAZARD INFORMATION

ROUTES OF EXPOSURE

INHALATION:

Follow the 1.0 milligram per cubic meter (mg/m³) OSHA/TLV guidelines for copper dust. For copper fume the TLV is 0.2 mg/m³; OSHA 0.1 mg/m³. Very fine copper dust or fume may cause metal fume fever. Breathing copper dust may worsen symptoms of individuals with preexisting chronic respiratory disease.

SKIN CONTACT:

Little or no toxicity has been reported. Copper dust exposure in hot, humid atmospheres may cause skin irritation. Allergic contact dermatitis is rarely encountered.

SKIN ABSORPTION:

Absorption of inorganic copper from the skin is generally not of great significance except in hot, humid conditions.

EYE CONTACT:

As a foreign body in the eye, the body will attempt expulsion by a purulent inflammatory action. As a dust, copper may cause irritation, discolorization, and damage. As a foreign body in the lens, copper may cause a dense cataract and discolor the lens.

INGESTION:

Copper is an essential element of mammalian metabolism; adult intake of copper is from 2 to 2.5 mg. Gastrointestinal irritation has been reported from carbonated beverages that had been in contact with copper tubing or vessels. Rare occurrences: Wilson's disease (inability to metabolize copper) and chronic liver disease. Lowest toxic dose (human) is 120 micrograms per kilogram resulting in GI tract irritation.

EMERGENCY AND FIRST AID PROCEDURES

EYES: Flush eyes immediately with large amounts of water, lifting the lower and upper lids occasionally; get medical attention.

SKIN: Wash the skin using soap or mild detergent and water. Get medical attention if irritation is involved or persists.

INHALATION:

Move a person exposed to large amounts of copper dust to fresh air at once. Keep warm and at rest. If breathing has stopped, perform artificial respiration and get medical attention as soon as possible.

INGESTION:

If copper powder is swallowed and person is conscious, give large quantities of water to drink. Induce vomiting. Get medical attention as soon as possible.

NOTES TO PHYSICIAN:

None

VI. REACTIVITY INFORMATION

Stable to ignition temperature of 700 C (1290 F). 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. There are no hazardous decomposition products.

VII. SPILL AND LEAK PROCEDURES

If large amounts of copper powder are spilled:

1. Restrict the area to those with respiratory protection.
2. Ventilate the area.
3. Collect the spilled material in a manner which will not create more dust (i.e. wet methods or vacuum methods).
4. Recycle or dispose of as waste (Section XI).

VIII. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS:

Keep copper dust levels below the OSHA Permissible Exposure Limits and TLV's using principles in the ACGIH manual "Industrial Ventilation".

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: When control is not possible, follow OSHA 29 CFR 1910.132,133,134. Use NIOSH/MSHA TC-21 disposable mask or approved respirator for concentrations over PEL.

EYE: Provide dust proof safety goggles when dust level nears or exceeds PEL/TLV. Do not permit contact lenses.

GLOVES: As appropriate against physical hazards.

OTHER: Eating and smoking should not be permitted in areas where dust is present. The use of barrier cream to protect skin is recommended. Workers should wash before meals. They should bathe and change clothing before leaving work.

IX. SPECIAL PRECAUTIONS

Store powder inside in dry area, -20 to 40 C (0 to 100 F).
Mixing copper powder with strong acids releases flammable hydrogen.

X. HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS)

HEALTH HAZARD:	1
FLAMMABILITY HAZARD:	0
REACTIVITY HAZARD:	0
MAXIMUM PERSONAL PROTECTION:	E

XI. ENVIRONMENTAL INFORMATION

WASTE DISPOSAL METHOD:

Follow all federal and state EPA regulations and local ordinances in disposing of any quantity of the powder. Refer to EPA regulation 40 CFR part 250 and consult regional EPA for proper disposal methods. If no regulations exist, dispose of powder in sealed containers in a secured sanitary landfill.

Copper has not been found to be carcinogenic by NTP or IARC.

H. D. AMBS

PREPARED BY: _____
TITLE: _____
COMPANY: _____
ADDRESS: _____
TELEPHONE: _____

MANAGER - TECHNICAL SUPPORT
SCM METAL PRODUCTS, INC.
11000 CEDAR AVENUE, CLEVELAND, OH 44106
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