

Copper
05430

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Copper

Catalog Numbers:

S72895, S72896, S79977, S79977-1, S79977-2, S79977-3, S79978, S79978-1,
S79979, S79979-1, C430 500, C430-500, C430500, C431 500, C431-500,
C431500,
C434 500, C434-500, C434500, C575 500, C575-500, C575500, S4821A, S4821B,
S4821C, S4821D, S4821E, S72895ND, S799771, S799772, S799773, S799781,
S79978ND, S799791

Synonyms:

Allbri natural copper, bronze powder, copper slag-airborne

Company Identification: Fisher Scientific

1 Reagent Lane

Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7440-50-8	COPPER	100	231-159-6

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: red to brown.

Warning! Causes respiratory tract irritation. May cause lung damage.

May cause liver and kidney damage. Causes eye and skin irritation.

Inhalation of fumes may cause metal-fume fever. Can be explosive when exposed to heat or flames. May cause digestive tract irritation with nausea, vomiting, and diarrhea.

Target Organs: Kidneys, liver, lungs.

Potential Health Effects

Eye:

Causes eye irritation.

Skin:

Causes skin irritation. May cause skin discoloration.

Ingestion:

Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage.

Inhalation:

Dust is irritating to the respiratory tract. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. May cause

liver and kidney damage. May cause lung damage.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion:

Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.

Inhalation:

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Individuals with Wilson's disease are more susceptible to chronic copper poisoning.

Antidote:

Use of a metal chelator may be of value.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material can spontaneously ignite (pyrophoric) when exposed to air at normal or slightly elevated temperatures.

Extinguishing Media:

Use extinguishing media most appropriate for the surrounding fire.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne

concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA-FinalPELs
COPPER	fume: 0.2 mg/m ³ ; dusts and mists, as Cu: 1 mg/m ³	as Cu: 1 mg/m ³ TWA (dusts and mists); 0.1 mg/m ³ TWA (fume) dusts as mists as Cu: 100 mg/m ³ IDLH	fume, as Cu:0.1 mg/m ³ TWA;dusts and mists, as Cu: 1 mg/m ³ TWA

OSHA Vacated PELs:

COPPER:

fume, as Cu: 0.1 mg/m³ TWA

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Solid
 Appearance: red to brown
 Odor: None reported
 pH: Not available.
 Vapor Pressure: 1 mm Hg @1628C
 Vapor Density: Not available.
 Evaporation Rate: Not applicable.
 Viscosity: Not applicable.
 Boiling Point: 2595 deg C
 Freezing/Melting Point: 1083 deg C
 Autoignition Temperature: Not applicable.
 Flash Point: Not applicable.
 NFPA Rating: (est.) Health: 2; Flammability: 1; Reactivity: 0
 Explosion Limits, Lower: Not available.
 Upper: Not available.
 Decomposition Temperature: Not available.

Solubility: Insoluble in water.
Specific Gravity/Density: 8.92
Molecular Formula: Cu
Molecular Weight: 63.546

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions. Explosive peroxides may form on concentration.

Conditions to Avoid:

Incompatible materials, dust generation, moisture, exposure to air.

Incompatibilities with Other Materials:

Liquid copper explodes on contact with water. Reacts violently with ammonium nitrate, bromates, iodates, chlorates, ethylene oxide, hydrazoic acid, potassium oxide, dimethyl sulfoxide + trichloroacetic acid, hydrogen peroxide, sodium peroxide, sodium azide, sulfuric acid, hydrogen sulfide + air, and lead azide.

Ignites on contact with chlorine, fluorine (above 121C), chlorine trifluoride, and hydrazinium nitrate (above 70C). Incompatible with 1-bromo-2-propyne, potassium dioxide, and acetylenic compounds.

Hazardous Decomposition Products:

Copper fumes.

Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:

CAS# 7440-50-8: GL5325000

LD50/LC50:

Not available.

Carcinogenicity:

COPPER -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

No data available.

Teratogenicity:

Experimental studies show teratogenic effects in laboratory animals.

Reproductive Effects:

No data available.

Neurotoxicity:

No data available.

Mutagenicity:

No data available.

Other Studies:

Experimental studies show tumorigenic effects in laboratory animals.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Chemical waste generators must determine whether a discarded chemical is class if as a hazardous waste.

US EPA guidelines for the classification determination are listed in 40 CFR Part 136. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT

No information available

Canadian TDG

No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL

TSCA

CAS# 7440-50-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 7440-50-8: final RQ = 5000 pounds (2270 kg) (no reporting of release)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7440-50-8: acute, chronic, flammable.

Section 313

This material contains COPPER (CAS# 7440-50-8, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

CAS# 7440-50-8 is listed as a Priority Pollutant under the Clean Water Act.

CAS# 7440-50-8 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly Hazardous by OSHA.

STATE

COPPER can be found on the following state right to know lists:

California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level:

None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 7440-50-8: 0

United Kingdom Occupational Exposure Limits

CAS# 7440-50-8: OES-United Kingdom, TWA fume: 0.2 ppm TWA; dusts and mists, as Cu: 1 mg/m3 TWA

CAS# 7440-50-8: OES-United Kingdom, STEL dusts and mists, as Cu: 2 mg/m3 STEL

Canada

CAS# 7440-50-8 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of D2B.

CAS# 7440-50-8 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 7440-50-8: OEL-ARAB Republic of Egypt:TWA 0.1 mg/m3 (fume)

OEL-AUSTRALIA:TWA 0.2 mg/m3 (fume)

OEL-AUSTRALIA:TWA 1 mg/m3 (dust)

OEL-BELGIUM:TWA 0.2 mg/m3 (fume)

OEL-BELGIUM:TWA 1 mg/m3 (dust)

OEL-DENMARK:TWA 0.1 mg/m3 (fume)

OEL-DENMARK:TWA 1 mg/m3 (dust)

OEL-FINLAND:TWA 0.2 mg/m3 (fume)

OEL-FINLAND:TWA 1 mg/m3

OEL-FINLAND:TWA 1 mg/m3 (dust)

OEL-FRANCE:TWA 0.2 mg/m3 (fume)

OEL-FRANCE:TWA 1 mg/m3;STEL 2 mg/m3 (dust)

OEL-GERMANY:TWA 0.1 mg/m3 (fume)

OEL-GERMANY:TWA 1 mg/m3

OEL-GERMANY:TWA 1 mg/m3 (dust)

OEL-HUNGARY:TWA 0.2 mg/m3;STEL 0.4 mg/m3 (dust)

OEL-INDIA:TWA 0.2 mg/m3 (fume)

OEL-THE NETHERLANDS:TWA 0.2 mg/m3 (fume)

OEL-THE NETHERLANDS:TWA 1 mg/m3 (dust)

OEL-THE PHILIPPINES:TWA 1.0 mg/m3 (fume)

OEL-POLAND:TWA 0.1 mg/m3 (fume)

OEL-RUSSIA:STEL 0.5 ppm (1 mg/m3) (dust)

OEL-SWEDEN:TWA 0.2 mg/m3 (resp. dust)

OEL-SWEDEN:TWA 0.2 mg/m3 (fume)

OEL-SWEDEN:TWA 1 mg/m3 (total dust)

OEL-SWITZERLAND:TWA 0.1 mg/m3;STEL 0.2 mg/m3 (fume)

OEL-SWITZERLAND:TWA 1 mg/m3;STEL 1 mg/m3

OEL-THAILAND:TWA 0.1 mg/m3 (fume)

OEL-THAILAND:TWA 1 mg/m3

OEL-UNITED KINGDOM:TWA 0.2 mg/m3 (fume)

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 12/12/1997 Revision #1 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect

to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.
