COPPER METAL

Material Safety Data Sheet

Mallinckrodt Chemical Inc.

P.O. Box 800

Paris, Kentucky 40362

Emergency Telephone Number 314-539-1600

Effective Date: 04-06-89 Supersedes 08-28-85

1 %

Formula CAS No.: 7440-50-8 Molecular Weight: 63.54

Hazardous Ingredients: Copper Chemical Formula: Cu

PRECAUTIONARY MEASURES

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES EYE IRRITATION. CHRONIC EXPOSURE MAY CAUSE TISSUE DAMAGE.

Avoid breathing dust.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.
Avoid contact with eyes.

EMERGENCY FIRST AID

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious erson. If inhaled, remove to fresh air. If not breathing, give artificial espiration. If breathing is difficult, give oxygen. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. In all cases call a physician.

SEE SECTION 5.

Physical Data SECTION 1

Appearance: Reddish, metallic solid.

Odor: Odorless.

Solubility: Insoluble in water.

Boiling Point: 2324 C (4215 F). Vapor Density (Air=1):No information

found.

Melting Point: 1083 C (1981 F). Vapor Pressure (mm Hg):1 @ 1628 C (2962

F).

Density: 8.92 Evaporation Rate:No information

found.

Fire and Explosion

SECTION 2

Information

Fire:

Not considered to be a fire hazard.

explosion: Not considered to be an explosion hazard.

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Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Reactivity Data

SECTION 3

Stability:

Stable under ordinary conditions of use and

storage.

Hazardous Decomposition

Products:

Non-hazardous decomposition.

Hazardous Polymerization:

This substance does not polymerize.

Incompatibilities:

Acetylene, ammonium nitrate, bromates, chlorates, chlorine, chlorine plus oxygen difluoride, chlorine trifluoride, ethylene oxide, fluorine, hydrazine, mononitrate, hydrozoic acid, hydrogen peroxide, hydrogen sulfide, iodates, lead azide, phosphorus, nitric acid, potassium peroxide, sodium azide, sodium peroxide, sulfur plus

chlorates, and 1-bromo-2-propyne.

Leak/Spill Disposal Information

SECTION 4

Sweep or scoop up and place in a suitable container for reclamation or disposal. Package unreclaimable material for disposal in an approved waste disposal facility. Do not flush to sewer. Toxic to fish.

Ensure compliance with local, state and federal regulations.

Health Hazard Information

SECTION 5

A. Exposure/Health Effects

Inhalation:

Dusts may cause irritation to the upper respiratory tract, metallic taste in mouth, metal fume fever, and discoloration of the skin and hair. Inhalation of high concentrations of dust may cause sneezing, nausea, weakness and fever. Nasal ulcerations and bleed may occur from inhaling fine dust.

Ingestion:

Large oral doses may cause nausea, vomiting, abdominal pain, metallic taste, and diarrhea. If vomiting does not occur immediately, systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure.

Skin Contact:

May cause rough, scaly skin on the hands and feet.

Eye Contact:

Small copper particles in the eyes may cause

irritation, discoloration, and damage.

Chronic Exposure:

Prolonged or repeated exposure to copper dusts may cause runny nose, atrophic changes and irritation

of the mucous membranes, and renal damage.

Aggravation of

Pre-existing Conditions:

Persons with pre-existing skin disorders or impaired liver, kidney, or pulmonary function or

pre-existing Wilson's disease may be more susceptible to the effects of this material.

B. FIRST AID

Inhalation:

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Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

Skin Exposure:

Remove any contaminated clothing. Wipe off excess from skin. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Eye Exposure:

Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY

(RTECS, 1986)

No LD50/LC50 information found relating to normal routes of occupational exposure. Reproductive effects cited.

Occupational Control Measures

SECTION 6

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL): 1 mg/m3 (TWA) dusts and mists as Cu -ACGIH Threshold Limit Value (TLV): 1 mg/m3 (TWA) dusts and mists as Cu

entilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved)

If the TLV is exceeded, a dust/mist respirator with chemical goggles may be worn, in general, up to ten times the TLV. Consult respirator supplier for limitations. Alternatively, a supplied air full facepiece respirator or airlined hood may be worn.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work

Storage and Special Information

SECTION 7

deep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage.

Isolate from incompatible substances.

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Addendum to Material Safety Data Sheet

REGULATORY STATUS

This Addendum Must Not Be Detached from the MSDS Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS must include a copy of this addendum

Hazard Categories for SARA Section 311/312 Reporting

| Acute | Chronic | Fire | Pressure | Reactive |
|-------|---------|------|----------|----------|
| | | | | |
| X | X | | | |

| | SARA | EHS | | Sec. 313 emicals | CERCLA | RCRA |
|-----------------------------------|------------|------------|--------------|----------------------|--------|----------------|
| Product or Components of Product: | Sec. RQ | 302 TPQ | Name List | Chemical Category | | Sec. 261.33 |
| | | | | | | |
| COPPER METAL (7440-50-8) | No | No | Yes | No | No | No |

SARA Section 302 EHS RQ: Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:

Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:

Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

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