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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Copper Tubing (all sizes and wall thicknesses)

Cerro Flow Products LLC

PO Box 66800, St Louis, MO 63166-6800 Telephone number 618-337-6000

Recommended use: Plumbing and industrial copper tubing. Restricted use: None known

SECTION 2. HAZARD IDENTIFICATION

CAUTION

Inhalation Hazard Fumes are created by heating copper past its melting point. Proper soldering or sweating copper tubes will not produce fumes. Brazing of copper tube may produce fumes. Consult the Copper Development Association Inc. (CDA) "The Copper Tube Handbook" for proper joining methods, and recommended solders, fluxes and filler metals (see CDA link https://www.copper.org/publications/publist/pdf/copper tube handbook.pdf to obtain handbook).

Ingestion Hazard Ingestion of metallic copper is not a primary route of exposure. Metallic copper may be moderately irritating to the gastrointestinal tract.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL OR COMPONENT	C.A.S. No.	WT. %	
Copper	7440-50-8	99.9+	

SECTION 4. FIRST AID MEASURES

Inhalation: Remove from exposure; place individual under care of a physician. Ingestion: Induce vomiting in conscious individual and call a physician. Skin or Eyes; Flush with plenty of water. If symptoms develop, consult a physician.

SECTION 5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS	FIRE EXTINGUISHING AGENTS RECOMMEN	DED FIRE EXTINGUISHING AGENTS TO AVOID .					
Not Applicable	No specific agents recommended	No specific agents recommended					
SPECIAL FIRE FIGHTING PRECAUTIONS .							
Copper tube will not burn or give off toxic gases in normal fires Use fire fighting methods compatible with surrounding materials.							

SECTION 6. RELEASE MEASURES

SPILLS OR LEAKS Proper installation of copper tubing will not produce dust. Consult Copper Development Association, Inc (CDA)"The Copper Tube Handbook" for proper joining methods (See CDA link at ttps://www.copper.org/publications/pub_list/pdf/copper_tube_handbook.pdf) Vacuuming is preferred for dust. Do not use compressed air for cleaning. Recycle unused or scrap copper tube at a local scrap metal dealer.

SECTION 7. HANDLING AND STORAGE NORMAL HANDLING Avoid conditions which create fumes or fine dust. Use of approved respirators is required where adequate ventilation cannot be provided. Do not use copper tubing where incompatible materials may be present, (see section X). **STORAGE** Avoid storage near incompatible materials, see Section 10. SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION Permissible Air Conc. (mg/m3) **OSHA ACGIH** Dust 1.0 1.0 0.2 Fume 0.1 **ENGINEERING CONTROLS.** Local exhaust is recommended for dust and/or fume generating operations where airborne exposure may exceed permissible air concentrations. PERSONAL HYGIENE Avoid inhalation or ingestion. Practice good housekeeping and personal hygiene procedures. Showering is recommended if significant dust exposure occurs. SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS **LABEL SIGNAL WORD:** NOT APPLICABLE No special precautions. RESPIRATORY PROTECTION Where airborne exposures may exceed OSHA/ACGIH permissible air concentrations, the minimum respiratory protection recommended is a negative pressure air purifying respirator with cartridges that are NIOSH/MSHA approved against dust, fumes, and mists having a TWA not less than 0.05 mg/m3 EYES AND FACE Safety glasses recommended when dust or shavings may exist. OTHER CLOTHING AND EQUIPMENT Protective clothing is recommended to prevent burns during installation of tube or splattering of fluxes, solder or filler metals. **SECTION 9. PHYSICAL/CHEMICAL PROPERTIES MATERIAL IS (AT NORMAL CONDITIONS)** APPEARANCE AND ODOR Solid Yellow-red metal, various shapes and sizes. MELTING POINT (DEGREES C) BOILING POINT (DEGREES C) SPECIFIC GRAVITY (H2O = 1) VAPOR DENSITY (AIR = 1) Not applicable SOLUBILITY IN WATER (% BY WT.) VAPOR PRESSURE (mm Hg) **EVAPORATION RATE** pН Insoluble Not Applicable Not Applicable Not Applicable

SECTION 10. STABILITY AND REACTIVITY

STABILITY CONDITIONS TO AVOID

Stable Not Applicable

INCOMPATIBILITY (MATERIALS TO AVOID)

Reacts violently with acetylene, hydrogen peroxides, gaseous chlorine, ammonia nitrate, bromates, chlorates, hydrogen sulfide, lead azide, and hydrazine.

HAZARDOUS DECOMPOSITION PRODUCTS HAZARDOUS POLYMERIZATION CONDITIONS TO AVOID.

Copper does not decompose

Will not occur

Not Applicable

SECTION 11. TOXICOLOGICAL INFORMATION

PRIMARY ROUTES OF ENTRY INHALATION CARCINOGENICITY

Not listed as a carcinogen by NTP, IARC, or OSHA $\underline{\mathbf{X}}$

ACUTE OVER EXPOSURE (SYMPTOMS AND EFFECTS)

A. Fumes are created by heating metallic copper past its melting point. Proper soldering or sweating copper tubes will not produce fumes. Brazing of copper tube may produce fumes. Consult Copper Development Association, Inc. (CDA) "The Copper Tube Handbook" for proper joining methods, and recommended solders, fluxes and filler metals (see CDA link on Cerro Flow Products, LLC website to obtain handbook). Use approved ventilation or respiratory protection if the possibility of fumes exists. Inhalation of fume may cause irritation of the respiratory tract or metal fume fever (chills, fever, aching muscles, dry mouth and throat, headache, nausea, vomiting, and diarrhea). Onset may be delayed several hours.

B. Ingestion of metallic copper is not a primary route of exposure. Metallic copper may be moderately irritating to the gastrointestinal tract.

CHRONIC OVEREXPOSURE (SYMPTOMS AND EFFECTS)

No long term effects. Skin irritation or discoloration of the skin and hair are short term.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED

Wilson's Disease (an abnormal genetic condition) could be aggravated.

LD50 (SPECIES, ROUTE) LC50 (SPECIES) MUTAGENICITY

Copper: 3.5 mg/kg (mouse, intraperitoneal) Not Available Not positive in Ames test

Health Hazard Ratings						
	Health	Flammability	Reactivity	Other		
NFPA	1	0	0			
HMIS	1	0	0	Е		

SECTION 12. ECOLOGICAL

ECOTOXICITY

The LC50 for copper in the fathead minnow is 12 mg/L. Acid solutions promote mobility and solubility of copper.

ENVIRONMENTAL FATE

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE, AND LOCAL DISPOSAL OR

DISCHARGE LAWS).

Recycling or disposal must be in accordance with the appropriate federal, state, or local statutes or regulations.

SECTION 14. TRANSPORT

DOT REGULATION AND ID (OR PIN) NUMBER

Not a DOT controlled material (United States).

Special Provisions for Transport: Marine Pollutant

SECTION 15. REGULATORY INFORMATION

WHMIS CLASSIFICATION, SARA REGULATION AND OTHER INFORMATION

WHMIS does not classify this material

TSCA Status ----- On TSCA Inventory

Regulated under SARA Title III:

Sect. 302 ----- None

Sect. 311/312 ----- Immediate and Delayed

Sect. 313 Chemicals ----- Copper

CERCLA Reportable Quantity ----- 5,000 pounds for Copper Powder

Federal and State Regulations:

Pennsylvania RTK: Copper Massachusetts RTK: Copper TSCA 8(b) inventory: Copper CERCLA: Hazardous

substances. Copper

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

SECTION 16. OTHER INFORMATION

ISSUED DATE SUPERSEDES .
June 13, 2022 August 15, 2013

PERMISSIBLE CONCENTRATION REFERENCE

OSHA regulations for airborne contaminants 29 CFR 1910.1000 and 1018; ACGIH Threshold Limit Values for Chemical Substances

HAZARD INFORMATION REFERENCES

Documentation Up to date, curated data provided by Mathematica's ElementData function from Wolfram Research, Inc

GENERAL

Copper Development Association, The Copper Tube Handbook, https://www.copper.org/publications/pub list/pdf/copper tube handbook.pdf

Notes

No additional information.

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