Always Moving Forward.®
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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 on www.cerroflow.com 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 RECOMMENDED	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 on http://www.cerroflow.com to obtain handbook) 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
Fume	0.1		0.2

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:**

No special precautions. **NOT APPLICABLE**

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)
1083	2595	8.96	Not applicable

SOLUBILITY IN WATER (% BY WT.)	pH	VAPOR PRESSURE (mm Hg)	EVAPORATION RATE
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** .

X **Not listed as a carcinogen by NTP, IARC, or OSHA**

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	E

SECTION 12. ECOLOGICAL

ECOTOXICITY **ENVIRONMENTAL FATE** .

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

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** .
October 1, 2016 **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, 2016

Notes

No additional information.