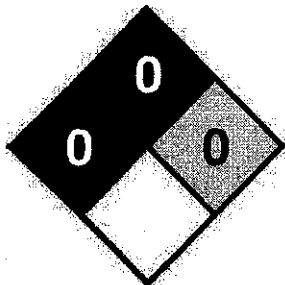


**1-A****PRODUCT IDENTIFIER****SIGNAL WORD:****WARNING  
ADVISO****COPPER  
COIL LINE  
SET****GHS Hazard Statement**

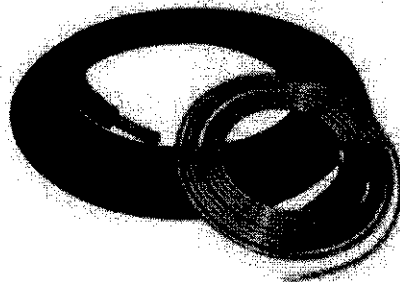
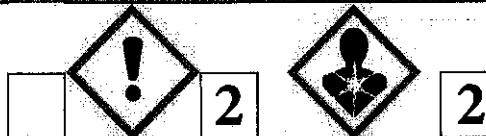
Non-combustible as supplied. Small chips, fine turnings and dust from processing may be readily ignitable if dispersed in air. Dust and fines are in contact with certain metal oxides (rust, copper oxide).

**INGESTION:** Ingestion hazards.

**SKIN:** CAT-2 Dust/fumes from processing can cause irritation of the skin.

**RESPIRATORY:** Acute Toxicity CAT- 4 Harmful if inhaled. Dust and fumes from processing can cause irritation of the respiratory tract from cutting, grinding. Welding could result in some serious hazardous materials being emitted.

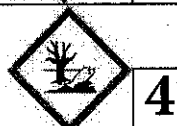
**EYES:** CAT-2B Dust and fumes from processing can cause irritation of the eyes.

**GHS Classification and Pictograms****HEALTH  
HAZARDS****PHYSICAL  
HAZARDS**

**S.D.S Does Not Indicate a GHS PICTOGRAM for  
PHYSICAL HAZARDS**

**ENVIRONMENTAL  
HAZARDS**

NONE

**TARGET ORGAN  
EFFECTS****FIRE FIGHTING  
EQUIPMENT**

**Type D Extinguisher**  
on fine or moltened metal

**PPE  
EPP**

**FIRST  
AID**

**EYES:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention if eye irritation persists.

**SKIN:** Wash affected area with mild soap and water. Seek medical attention if skin irritation persists.

**INHALATION:** Remove individual to fresh air. Check for clear airway, breathing and presence of pulse. If necessary administer CPR. Consult a physician immediately.

**INGESTION:** Dust may irritate mouth and gastrointestinal tract. If ingested, seek medical attention.

## Safety Data Sheet: Copper

### Section 1: Product Identification

**Manufacturer/Supplier:**

Wolverine Tube, Inc.  
2100 Market Street NE  
Decatur, AL 35601  
(800) 633-3972

**Recommended Use and Restrictions:**

Solid copper, various forms and uses. Manufacture of articles.

**Emergency Information:**

CHEMTREC (24HR Emergency Telephone), call:  
1-800-424-9300

**GHS Product Identifier:** Copper




**Other Means of ID:** Cu, Copper Dust, Copper Fume

International CHEMTREC, call: 1-703-527-3887

### Section 2: Hazard Identification

**Classification:** Copper and copper alloys are considered an "article" and are not hazardous in its solid form. However, certain processes such as cutting, milling, grinding, melting and welding could result in some serious hazardous materials being emitted. The GHS classification below pertains to these emitted products during these processes.

**Signal Word, Hazard Statements & Symbols:** WARNING

Symbols	Hazard	GHS Classification	Hazard Statements
	STOT (repeated exposure)	Category – 2	Causes damage to lungs, kidney and blood through prolonged or repeated exposure.
	Skin Irritation	Category – 2	Causes skin irritation.
	Acute Toxicity – Inhalation	Category – 4	Harmful if inhaled.
	Acute Toxic to Aquatic Life	Category – 1	Very toxic to aquatic life.
	Chronic Toxic to Aquatic Life	Category – 1	Very toxic to aquatic life with long lasting effects.
N/A	Eye Irritation	Category – 2B	Causes eye irritations.

**Notes:**

STOT – Specific Target Organ Toxicity

### Section 5: Fire and Explosion Data

**Suitable Extinguishing Media:** Non-flammable. Not applicable for solid product. Use Class D extinguishing agents or sand on fires involving dusts or fines. Use extinguishers appropriate for surrounding materials. DO NOT use water on molten metal. DO NOT use water on dust, powder or fume fires.

**Specific Hazards:** Dusts from grinding operations may burn if they are ignited. Dust, powder and fumes are flammable when exposed to flame or by chemical reaction with oxidizing agents.

**Hazardous Combustion Products:** At temperatures above the melting point, fumes containing copper oxides and smaller amounts of other alloying elements (if present) may be liberated.

**Special Protective Equipment and Precautions for Firefighters:** Firefighters should wear self-contained NIOSH-approved breathing apparatus and full protective clothing.

**Explosion Data:** Molten metal in contact with water may be explosive.

### Section 6: Accidental Release Measures

**Personal Precautions, PPE and Emergency Procedures:** Not applicable to copper in solid state. Avoid dust formation. Ensure adequate ventilation. Clean-up personnel should be protected against contact with eyes and skin protection.

**Environmental Precautions:** Not applicable to copper in solid state. Do not flush into surface water or sanitary sewer system.

**Methods and Materials for Containment and Clean-up:** Solid metal does not pose any problems. Dust spills should be cleaned up avoiding dust generation. Wash down with water if in contact with acids. Avoid inhalation of dusts. Collect scrap copper for recycling.

### Section 7: Handling and Storage

**Precautions:**

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible.

**Storage:**

Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool well-ventilated place.

**Incompatibilities:**

Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

### Section 11: Toxicological Data

**LD<sub>50</sub> Oral:** No Data  
**LD<sub>50</sub> Dermal:** No Data  
**LD<sub>50</sub> Inhalation:** No Data  
**Other:** No Data

**Likely Routes of Entry:** None for copper and alloys in their natural solid form. Inhalation of metal particulate or elemental oxide fumes generated during welding, burning, grinding or machining may pose acute or chronic health effects. In finely divided form, skin contact may produce localized irritation and/or contact dermatitis.

**Eyes:** High concentrations of dust may cause irritation to the eyes. Fumes can cause eye irritation.

**Skin:** May cause skin irritations. Prolonged skin contact with coated copper may cause skin irritation in sensitive individuals. Workers with anemia, kidney damage, digestive, respiratory, nervous system, pregnant women and fertile females warrant particular attention.

**Inhalation:** Dust may irritate the nose and throat. If heated, copper fumes may cause metal fume fever, a delayed, benign, transient flu-like condition.

**Symptoms related to Product Characteristics:** None for copper and alloys in their natural solid state.

**Effects of Acute Exposure to Material:** Can cause metal fume fever, a metallic taste in the mouth, dryness or irritation of the throat, and coughing. After 4-48 hours symptoms can include sweating, shivering, headache, fever, muscle aches, nausea, vomiting, weakness and tiredness.

**STOT (Single Exposure):** Causes damage to organs (kidneys, respiratory system).

**STOT (Repeated Exposure):** Respiratory system. Skin irritation. Reproductive system.

**Mutagenicity:** Suspected of causing genetic effects.

**Carcinogenicity:**

IARC: N/A

EPA-D (Not classifiable as to human carcinogenicity).

**LD<sub>50</sub>:** Not established

**LC<sub>50</sub>:** Not established

### Section 12: Ecological Data

**Ecotoxicity:** No data available for copper and alloys in their natural solid state. However, individual components of the material have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Component	Toxicity to Fish	Toxicity to Algae	Toxicity to Microorganisms
Copper	LC <sub>50</sub> Fathead Minnow 96 hr. 0.0068-0.0156 mg/L	EC <sub>50</sub> Freshwater Algae 72 hr. 0.0426-0.0535 mg/L	EC <sub>50</sub> Water Flea 48 hr. 0.03 mg/L

**Persistence and Degradability:** No Data

**Bioaccumulative Potential:** No Data

**Mobility in Soil:** No Data

**Other Adverse Effects:** None Known.

#### Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 05/11/2015 09:00

**Last Updated:** 05/18/2015 09:00

*The information contained herein is believed to be accurate but is not warranted to be so. All hazard classifications involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of a specific hazard. To deal adequately with the safe handling of this product, all the information contained in this SDS must be considered and reasonable safety precautions followed. The information contained in the Safety Data Sheet is based on the individual properties of the components of the mixture. Terrell Technical Services, Inc. has compiled the information and recommendations contained in this Safety Data Sheet from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the SDS was prepared. No warranty, guarantee, or representation is made as to the correctness or sufficiency of the information. The user of this product must decide for itself what specific safety measures are necessary to safely use this product, either alone or in combination with other products.*

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