

## Bronze SAFETY DATA SHEET

# Bronze

### 1 PRODUCT AND SUPPLIER IDENTIFICATION

**Product Name:** Bronze - sheet, foil, wire  
**Other:** Commercial Bronze, Copper Alloy C22000, Phosphor Bronze

**Supplier:** Eagle Alloys Corporation  
178 West Park Court  
Talbott, TN 37877

**Telephone:** 423-586-8738  
**Fax:** 423-586-7456  
**Email:** [sales@eaglealloys.com](mailto:sales@eaglealloys.com)

**24 HOUR EMERGENCY ASSISTANCE:** CHEMTREC 800-424-9300

Recommended Uses: Scientific Research

### 2 HAZARDS IDENTIFICATION

**GHS Classification (29 CFR 1910.1200):** Not classified as hazardous

**GHS Label Elements:**

**Signal Word:** N/A

**Hazard Statements:** N/A

**Precautionary Statements:** N/A

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

<b>Ingredient:</b>	<b>CAS#:</b>	<b>%:</b>	<b>EC#:</b>
Copper	7440-50-8	Balance	231-159-6
Zinc	7440-66-6	0-11	231-175-3
Tin	7440-31-5	0-11	231-141-8
Lead	7439-92-1	<1	231-100-4
Iron	7439-89-6	<1	231-096-4
Phosphorus	7723-14-0	<0.5	231-768-7

### 4 FIRST AID MEASURES

**General Measures:** Under normal handling and use, exposure to solid forms of this material present few health hazards. Subsequent operations such as grinding, melting or welding may produce potentially hazardous dust or fumes which can be inhaled or come in contact with the skin or eyes.

**INHALATION:** Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

**INGESTION:** Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

**SKIN:** Remove contaminated clothing, brush material off skin, wash affected area with soap and water. Seek medical attention if symptoms persist.

**EYES:** Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

**Most Important Symptoms/Effects, Acute and Delayed:** May cause irritation. See section 11 for more information.

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**Indication of Immediate Medical Attention and Special Treatment:** No other relevant information available.

### 5 FIREFIGHTING MEASURES

**Extinguishing Media:** Use suitable extinguishing media for surrounding material and type of fire.

**Unsuitable Extinguishing Media:** No information available.

**Specific Hazards Arising from the Material:** This product does not present fire or explosion hazards as shipped. Small chips, fine turnings and dust from processing may be ignitable. May emit metal oxide fumes under fire conditions.

**Special Protective Equipment and Precautions for Firefighters:** Full face, self-contained breathing apparatus and full protective clothing when necessary.

### 6 ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment, and Emergency Procedures:** Wear appropriate respiratory and protective equipment specified in section 8. Avoid dust formation. Avoid contact with skin and eyes. Avoid breathing dust or fume.

**Methods and Materials for Containment and Cleaning Up:** Sweep or scoop up. Place in a closed container for further handling and disposal. Scrap can be collected for recycling.

**Environmental Precautions:** Do not allow to enter drains or to be released to the environment.

### 7 HANDLING AND STORAGE

**Precautions for Safe Handling:** Avoid creating dust. Provide adequate ventilation if dusts are created. See section 8 for information on personal protection equipment.

**Conditions for Safe Storage:** Store in a sealed container. Store in a cool, dry area. See section 10 for more information on incompatible materials.

### 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

<b>Exposure Limits:</b>	<b>OSHA/PEL:</b>	<b>ACGIH/TLV:</b>
Copper	0.1 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
Zinc	No exposure limit established	No exposure limit established
Tin	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Lead	50 µg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
Iron	No exposure limit established	No exposure limit established

**Engineering Controls:** Ensure adequate ventilation to maintain exposures below occupational limits. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

**Respiratory Protection:** If permissible levels are exceeded, use NIOSH approved dust respirator.

**Eye Protection:** Safety glasses

**Skin Protection:** Wear impermeable gloves, protective work clothing as necessary.

### 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

**Form:** Solid in various forms

**Color:** Copper colored

**Odor:** Odorless

**Odor Threshold:** Not determined

**pH:** N/A

**Melting Point:** ~950 - 1050 °C

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<b>Boiling Point:</b>	No data
<b>Flash Point:</b>	N/A
<b>Evaporation Rate:</b>	N/A
<b>Flammability:</b>	No data
<b>Upper Flammable Limit:</b>	No data
<b>Lower Flammable Limit:</b>	No data
<b>Vapor Pressure:</b>	No data
<b>Vapor Density:</b>	N/A
<b>Relative Density (Specific Gravity):</b>	~8.8 g/cc
<b>Solubility in H<sub>2</sub>O:</b>	Insoluble
<b>Partition Coefficient (n-octanol/water):</b>	Not determined
<b>Autoignition Temperature:</b>	No data
<b>Decomposition Temperature:</b>	No data
<b>Viscosity:</b>	N/A

### 10 STABILITY AND REACTIVITY

**Reactivity:** No data

**Chemical Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** No data

**Conditions to Avoid:** Avoid creating or accumulating fines or dusts.

**Incompatible Materials:** Acids, halogens, alkalis, oxidizers.

**Hazardous Decomposition Products:** Metal oxide fume.

### 11 TOXICOLOGICAL INFORMATION

**Likely Routes of Exposure:** Inhalation, skin, eyes. Product as shipped does not present an inhalation hazard; however subsequent operations may create dusts or fumes which could be inhaled.

**Symptoms of Exposure:** Fines/dusts may irritate skin and eyes.

#### **Acute and Chronic Effects:**

**Copper:** Copper is a trace element that is essential for human health. Chronic exposure to copper dust can irritate the respiratory tract, nose, mouth and eyes, and cause headaches, dizziness, nausea and diarrhea. Ingestion of excessive amounts of copper may cause gastrointestinal distress. Chronic ingestion may damage the liver and kidneys.

**Zinc:** Zinc is an essential trace element and necessary for human health. It is involved in the synthesis and metabolism of nutrients, cell and organ structure and integrity, cell division, immune function and wound healing. Acute ingestion of high amounts of zinc may cause nausea, vomiting, loss of appetite, abdominal cramps, diarrhea and headaches. Chronic ingestion of high amounts may cause copper deficiency, altered iron function and reduced immune function. Inhalation of fumes containing zinc oxide may cause metal fume fever. Symptoms include cough, shortness of breath, sore throat, chest pain, headache and fever.

**Tin:** Elemental tin is considered to have low toxicity. Ingestion of food contaminated with tin may cause transient gastrointestinal disturbances such as nausea, vomiting, diarrhea, fever and headache. Inhalation of tin as dust or fumes may cause a benign pneumoconiosis in exposed workers.

**Lead:** Skin or eye contact with dust or fume may cause local irritation. Inhalation of dust or fumes may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia, and pain in legs, arms, and joints. An acute short-term dose of lead could cause acute encephalopathy with seizures, coma, and death. However, short-term exposure of this magnitude is rare. Kidney damage, as well as anemia, can occur from acute exposure. Symptoms due to ingestion of lead dust or fume would be similar to those from inhalation. Other health effects such as metallic taste in the mouth and constipation or bloody diarrhea might also be expected to occur.

**Acute Toxicity:** No data

**Carcinogenicity:** **Lead:** NTP: R - Reasonably anticipated to be a carcinogen **IARC:** 2B - Possibly carcinogenic to humans

## **Bronze SAFETY DATA SHEET**

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

### **12 ECOLOGICAL INFORMATION**

**Ecotoxicity:** No data

**Persistence and Degradability:** No data

**Bioaccumulative Potential:** No data

**Mobility in Soil:** No data

**Other Adverse Effects:** No further relevant information available.

### **13 DISPOSAL CONSIDERATIONS**

**Waste Disposal Method:**

**Product:** Dispose of in accordance with Federal, State and Local regulations.

**Packaging:** Dispose of in accordance with Federal, State and Local regulations.

### **14 TRANSPORT INFORMATION**

**DOT/ADR/IATA/IMDG Regulations:** Not regulated

**UN Number:** N/A

**UN Proper Shipping Name:** N/A

**Transport Hazard Class:** N/A

**Packing Group:** N/A

**Marine Pollutant:** No

**Special Precautions:** N/A

### **15 REGULATORY INFORMATION**

**TSCA Listed:** All components are listed.

**Regulation (EC) No 1272/2008 (CLP):** N/A

**Canada WHMIS Classification (CPR, SOR/88-66):** N/A

**HMIS Ratings: Health:** 0 **Flammability:** 0 **Reactivity:** 0

**NFPA Ratings: Health:** 0 **Flammability:** 0 **Reactivity:** 0

**Chemical Safety Assessment:** A chemical safety assessment has not been carried out.

### **16 OTHER INFORMATION**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Eagle Alloys Corporation shall not be held liable for any damages resulting from handling or from contact with the above product.

**Prepared by:** Eagle Alloys Corporation

**Revised/Reviewed:** December 2014

**24 HOUR EMERGENCY ASSISTANCE:** CHEMTREC 800-424-9300