

SAFETY DATASHEET

BRASS METAL

Issue Date: 09/17/2020

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical Formula: Copper (Cu) and Zinc (Zn)

Emergency Telephone: 704-482-8200
Outside the US Call: 011-704-482-8200

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview:

Solid. Gold-yellow or reddish color. Odorless. Non-combustible as supplied.

Explosion/fire hazards may be present when (See Sections 5, 7 and 10 for additional information):

- * Heavily concentrated dust clouds are dispersed in the air.
- * Molten metal is in contact with water/moisture.

Dust and fume from processing can cause irritation of eyes, skin and upper respiratory tract and metal fume fever.

POTENTIAL HEALTH EFFECTS

The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual. Additional health information can be found in Section 11. The health effects listed below are not likely to occur unless processing or recycling/combustion generate dusts or fumes.

Eyes Dust or fume from processing: Can cause irritation.

Skin Dust or fume from processing: Can cause irritation, sensitization and discolorations.

Inhalation

Health effects from mechanical processing (e.g., cutting, grinding): Can cause irritation of upper respiratory tract. **Acute overexposures:** Can cause nausea and muscle cramps. **Chronic overexposures:** Can cause reduction in the number of red blood cells (anemia), skin abnormalities (pigmentation changes), central nervous system damage, respiratory sensitization, scarring of the lungs and reproductive harm.

Additional health effects from elevated temperature processing (e.g., welding, melting): **Acute overexposures:** Can cause nausea, fever, chills, shortness of breath and malaise (metal fume fever) and central nervous system effects. **Chronic overexposures:** Can cause lung cancer.

Carcinogenicity and Reproductive Hazard

Product as shipped: Does not present any cancer or reproductive hazards.

Dust and fumes from mechanical processing: Can present a cancer hazard (lead, nickel). Can present a reproductive hazard (lead).

Dust and fumes from welding or elevated temperature processing: Can present a cancer hazard (nickel compounds, lead compounds, welding fumes). Can present a reproductive hazard (lead).

Medical Conditions Aggravated By Exposure to Product, Components or Compounds Formed During Processing

Dust or fume from processing: Asthma, chronic lung disease, and skin rashes.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Complete composition is provided below and may include some components classified as non-hazardous.

CAS #	Component	Percent
7440-50-8	Copper	60-90
7440-66-6	Zinc	10-40

SECTION 4: FIRST AID MEASURES

First Aid: Eyes

Dust or fume from processing: Flush eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

First Aid: Skin

Dust or fume from processing: Wash skin with soap and water for at least 15 minutes. Consult a physician if irritation persists.

First Aid: Inhalation

Dust or fume from processing: Remove to fresh air. If unconscious or severely injured, check for clear airway, breathing and presence of pulse. Perform CPR if there is no pulse or respiration. Consult a physician.

SECTION 5: FIRE FIGHTING MEASURES

Flammable/Combustible Properties

This product does not present fire or explosion hazards as shipped. Dust and fines may be readily ignitable.

Fire/Explosion

May be a potential hazard under the following conditions:

- * Heavily concentrated dust clouds are dispersed in the air. Dust or fines dispersed in the air can be explosive if subjected to a strong ignition source.
- * Molten metal in contact with water/moisture. Moisture entrapped by molten metal can be explosive.

Extinguishing Media

Use Class D extinguishing agents on dust, fines or molten metal.

Unsuitable Extinguishing Media

DO NOT USE:

- * Halogenated agents on dust or fines.
- * Water around molten metal.

These agents will react with the burning material.

Fire Fighting Equipment/Instructions

Fire Fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small/Large Spill

Recover using mechanical means. *If molten:* Contain the flow using dry sand or salt flux as a dam. Do not use shovels or hand tools to halt the flow of molten metal. Allow the spill to cool before remelting as scrap.

SECTION 7: HANDLING AND STORAGE

Handling/Storage

Product should be kept dry. Avoid contact with sharp edges or heated metal. Avoid generating dust.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

If dust or fumes are generated through processing: Use with adequate ventilation to meet the limits listed in Section 8, Exposure Guidelines.

Personal Protective Equipment

Respiratory Protection

If dust or fumes are generated through processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8, Exposure Guidelines. Suggested respiratory protection: P100.

Eye Protection

Wear safety glasses/goggles to avoid eye injury.

Skin Protection

Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils and to avoid any skin injury.

General

Sampling to establish **lead** exposures is advised where exposures to airborne particulate or fumes are possible. Consult OSHA Lead Standard 29 CFR 1910.1025 for specific health/industrial hygiene precautions and requirements to follow when handling lead compounds.

Exposure Guidelines

A: General Product Information

IMC-MA recommends an Occupational Exposure Limit for **Oil Mist** of 0.5 mg/m³ TWA.

B: Component Exposure Limits

Copper (7440-50-8)

ACGIH 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist, as Cu)

OSHA 0.1 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)

C: Exposure Limits for Additional Compounds Which May Be Formed During Processing Zinc

Oxide (1314-13-2)

ACGIH 2 mg/m³ TWA (respirable fraction)

ACGIH 10 mg/m³ STEL (respirable fraction)

OSHA 5 mg/m³ TWA (fume); 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

Oil mist, mineral (8012-95-1)

ACGIH 5 mg/m³ TWA (sampled by method that does not collect vapor)

ACGIH 10 mg/m³ STEL

OSHA 5 mg/m³ TWA

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Physical State: Solid

Boiling Point: 4700°F (2595°C)

Vapor Pressure: Not Applicable

Solubility in Water: Not soluble

Density: 0.28-0.32 lb/in³ (7.7-9.0 g/cm³)

Odor: Odorless

Octanol-Water Coefficient: Not Applicable

Appearance: Gold/yellow or reddish color

Melting Point: 1600-2000°F (870-1095°C)

Vapor Density: Not Applicable

Specific Gravity: See Density

pH Level: Not Applicable

Odor Threshold: Not Applicable

SECTION 10: CHEMICAL STABILITY & REACTIVITY INFORMATION

Stability

Stable under normal conditions of use, storage, and transportation.

Conditions to Avoid

* **Water:** Molten metal can react violently/explosively with water or moisture, particularly when the water is entrapped.

* **Halogenated compounds:** Many halogenated compounds, including halogenated fire extinguishing agents, can react violently with finely divided metal.

Incompatibility Mercury, ammonia, acetylene, halogens, strong acids, strong alkalis and strong oxidizers.

SECTION 11: TOXICOLOGICAL INFORMATION

Health Effects Associated with Individual Ingredients

Copper dust and mists Can cause irritation of eyes, mucous membranes, skin and respiratory tract. Chronic overexposures: Can cause reduction in the number of red blood cells (anemia), skin abnormalities (pigmentation changes) and hair discoloration.

Some products are supplied with a lubricant/oil coating or have residual oil from the manufacturing process. **Oil** Can cause irritation of skin. Skin contact (prolonged or repeated): Can cause dermatitis.

Health Effects Associated with Individual Compounds Formed During Processing

(The following could be expected if welded, remelted or otherwise processed at elevated temperatures.)

Copper fume Can cause irritation of eyes, mucous membranes and respiratory tract. Acute overexposures: Can cause nausea, fever, chills, shortness of breath and malaise (metal fume fever).

Zinc oxide fumes Can cause irritation of upper respiratory tract. Acute overexposures: Can cause nausea, fever, chills, shortness of breath and malaise (metal fume fever).

If the product is heated well above ambient temperatures or machined, oil vapor or mist may be generated. **Oil vapor and mist** Can cause irritation of respiratory tract. Acute overexposures: Can cause bronchitis, headache, central nervous system effects (nausea, dizziness and loss of coordination) and drowsiness (narcosis).

Welding fumes IARC/NTP: Listed as possibly carcinogenic to humans by IARC (Group 2B)*.

Acute Toxicity of Ingredients/Formed Compounds A:

General Product Information

No information available for product.

B: Formed Compound Toxicity - LD50s/LC50s

Zinc oxide (1314-13-2)

Oral LD50 Rat: >5000 mg/kg

Oil mist, mineral (8012-95-1)

Oral LD50 Mouse: 22 g/kg

Descriptions of IARC and NTP Classifications

IARC 1: The agent is carcinogenic to humans. There is sufficient evidence that a causal relationship existed between exposure to the agent and human cancer.

IARC 2A: The agent is probably carcinogenic to humans. Generally includes agents for which there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

IARC 2B: The agent is possibly carcinogenic to humans. Generally includes agents for which there is limited evidence in humans and less than sufficient evidence in experimental animals.

IARC 3: The agent is not classifiable as to its carcinogenicity to humans. Generally includes agents for which there is inadequate evidence in humans and inadequate or limited evidence in experimental animals.

IARC 4: The agent is probably not carcinogenic to humans. Generally includes agents for which there is evidence suggesting lack of carcinogenicity in humans and in experimental animals.

NTP K: Known to be a human carcinogen.

NTP RA: Reasonably anticipated to be a human carcinogen.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

A: General Product Information

No information available for product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Copper (7440-50-8)

96 Hr LC50 Pimephales promelas: 23 µg/L; 96 Hr LC50 Oncorhynchus mykiss: 13.8 µg/L; 96 Hr LC50 Lepomis macrochirus: 236 µg/L

72 Hr EC50 Scenedesmus subspicatus: 120 µg/L

96 Hr EC50 water flea: 10 µg/L; 96 Hr EC50 water flea: 200 µg/L

Zinc (7440-66-6)

96 Hr LC50 Pimephales promelas: 6.4 mg/L

96 Hr EC50 Selenastrum capricornutum: 30 µg/L

72 Hr EC50 water flea: 5 µg/L

Environmental Fate

No information available for product.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Instructions Reuse or recycle material whenever possible.

US EPA Waste Number & Descriptions**A: General Product Information**

If reuse or recycle is not possible, then characterize in accordance with applicable regulations (40 CFR 261 or state equivalent in the U.S.) prior to disposal. TCLP testing is recommended for lead.

B: Component Waste Numbers

RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalent in the U.S.

SECTION 14: TRANSPORTATION INFORMATION

Special Transportation

	PSN #1	PSN #2	PSN #3	PSN #4
Notes:	(1)(2)(3)(4)(5)			
UN NA Number:	-			
Proper Shipping Name:	Not regulated			
Hazard Class:	-			
Packing Group:	-			
RQ:	-			
Other - Tech Name:	-			
Other - Marine Pollutant:	-			
Other:	MSDS-507 Brass Metal (New & Scrap)			
NMFC:	30760			
STCC:	40-212-40			
HTS:	7404.00.6045			

Notes:

- (1) Classification applies in the U.S. only when not a hazardous waste and when containing pieces of metal having a diameter greater than 100 micrometers (0.004inches).
- (2) NMFC (National Motor Freight Classification) item 30760 brass, bronze or copper; scrap may be used for the B/L description for NMFC Association member carriers.
- (3) Standard Transportation Commodity Code (STCC) 40-212-40 brass or bronze scrap n.e.c. having value for remelting purposes applies and is required for rail shipments.
- (4) The import/export HTSUS (Harmonized Tariff Schedule) subheading 7404.00.6045 copper waste and scrap: of copper-zinc alloys (brass) applies.
- (5) When "Not regulated," enter the proper freight classification, "MSDS Number," and "Product Name" on the shipping paperwork.

Canadian Controlled Products Regulation PIN:	Not regulated
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SECTION 15: REGULATORY INFORMATION

US Federal Regulations**A: General Product Information**

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Copper (7440-50-8)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the solid metal released is larger than 100 micrometers)

Zinc (7440-66-6)

SARA 313: 1.0 % de minimis concentration (dust or fume only)

CERCLA: 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

SARA 311/312 Physical and Health Hazard Categories:

Immediate (acute) Health Hazard: Yes, if particulates/fumes generated during processing
Delayed (chronic) Health Hazard: Yes, if particulates/fumes generated during processing
Fire Hazard: No
Sudden Release of Pressure: No
Reactive: No

State Regulations**A: General Product Information****B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS#	CA	FL	MA	MN	NJ	PA
Copper	7440-50-8	Yes	No	Yes	Yes	Yes	Yes
Zinc	7440-66-6	Yes	No	Yes	No	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer. **WARNING!** This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Other Regulations

A: General Product Information Material meets the criteria for inclusion in WHMIS Class D2A.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS#	Minimum Concentration
Copper	7440-50-8	1%

C: Component Analysis - Inventory

Component	CAS#	TSCA	DSL	EINECS	AUST.	MITI
Copper	7440-50-8	Yes	Yes	Yes	Yes	No
Zinc	7440-66-6	Yes	Yes	Yes	Yes	No

Inventory Information

MITI Inventory: Pure metals are not specifically listed by CAS or MITI number on the MITI Inventory. However, the class of the compounds for each of these metals is listed.

SECTION 16: OTHER INFORMATION

MSDS History

Original: October 28, 1985

Supersedes: July 29, 2004

Revised: January 15, 2008

Revised: September 17, 2020

Other Information

* [Guide to Occupational Exposure Values-2007](#), Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).

* [Documentation of the Threshold Limit Values and Biological Exposure Indices](#), Sixth Edition, 1991, Compiled by the American Conference of Governmental Industrial Hygienist, Inc. (ACGIH).

* [NIOSH Pocket Guide to Chemical Hazards](#), U.S. Department of Health and Human Services, February 2004.

* [Patty's Industrial Hygiene and Toxicology](#): Volume II: Toxicology, 4th ed., 1994, Patty, F. A.; edited by Clayton, G. D. and Clayton, F. E.: New York; John Wiley & Sons, Inc.

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