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Material Safety Data Sheet

Brass Alloys C21000 – C28000

1.0 Product and Company Identification

HM Wire International INC
PO BOX 9181, Canton, Ohio 44711-9181
Telephone: 330-244-8501
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Product Names:

HM Wire Alloy #	Common Name	UNS # / CDA #
210	Gilding Metal	C21000
220	Commercial Bronze	C22000
230	Red Brass	C23000
240	Low Brass	C24000
260	Cartridge Brass	C26000
268	Yellow Brass	C26800

Chemical Family: Copper Alloy
Issue Date: March 26, 2004

2.0 Hazards Identification

Emergency Overview:
Copper Alloy products in the natural state do not present a hazard for emergency response personnel.

Potential Health Effects:
Copper alloy products in the natural state do not present an inhalation, ingestion, or contact hazard. However, operations such as burning, welding, sawing, brazing, or grinding may release fumes and/or dusts which may present health hazards if occupational exposure limits are exceeded.

Likely Route of Exposure: Inhalation, Eye contact, Skin contact
Inhalation: Short-term exposure to fumes/dust may produce irritation of the respiratory system. Exposure to high concentrations of oxide fumes of copper or zinc may cause metal fume fever.

Eye: Short-term exposure to fumes/dust may cause irritation.
Skin: Repeated or prolonged exposure to copper dusts or mists may cause irritant or allergic contact dermatitis.
Ingestion: Abdominal pain, nausea, and/or vomiting.

Medical Conditions Aggravated by Exposure:
Exposure to fumes or dust may aggravate existing respiratory disease or dermatitis.

Target Organs: Upper Respiratory tract, eyes, skin

Signs and Symptoms:
Metal fume fever – metallic taste in mouth, dryness, and irritation of the throat, and influenza-like symptoms. The effects may be delayed.

Carcinogenicity:

Component	ACGIH	IARC	NTP
Copper (fumes, dusts & mists)	No	No	No
Zinc Oxide Fume	No	No	No

See Toxicological Information (Section #11)

Potential Environment Effects:
None Known. Product has not been tested for environmental properties.

3.0 Chemical Components

Note: This MSDS applies to a range of alloys. For actual compositions refer to the specific allot specification. All percentages are by weight.

Component	CAS #	%
Copper	7440-50-8	66 – 95
Zinc	7440-66-6	5 - 34

4.0 First Aid Measures

Inhalation: If exposed to excessive levels of metal fumes, remove to fresh air. Seek medical attention.
Eye: Flush with water for at least 15 minutes.
Skin: Wash with soap and water.

5.0 Fire Fighting Measures

Suitable Extinguishing Media: Use extinguishing media appropriate to the surrounding material.
Special Firefighting Instructions: Copper alloy products in the solid state present no fire or explosion hazard, but may react with strong acids, bases, or oxidizing agents.

6.0 Accidental Release Measures

Steps to be taken in the event of spills, leaks, or releases: None Applicable

7.0 Handling and Storage

Handling: In welding, precautions should be taken for airborne contaminants that may originate from components of the welding rod.

8.0 Exposure Controls/Personal Protection

Exposure Guidelines

COMPONENT	OSHA PEL TWA	ACGIH® TLV® TWA	ACGIH® TLV® STEL
Copper dust, mist	1.0 mg/m³	1.0 mg/m³	Not Established
Copper fume	0.1 mg/m³	0.2 mg/m³	Not Established
Zinc oxide	5.0 mg/m³	2.0 mg/m³ R	10.0 mg/m³ R

Engineering Controls: Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding, or machining when exposure exceeds occupational exposure limits.
Eye Protection: Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by welding standards.
Skin Protection: Wear appropriate personal protective clothing to prevent skin contact with copper dusts or mists.
Respiratory Protection: NIOSH-approved dust or fume respirator should be used to avoid excessive inhalation of particulates when exposure exceeds occupational exposure limits.
Other Preventive Measures: Do not eat, drink, or smoke during work. Wash hands before eating or smoking.

9.0 Physical and Chemical Properties

Appearance: Salmon-colored, lustrous metal.
Odor: None
Physical State: Solid
Lower Explosive Limit (%): None
Upper Explosive Limit (%): None

10.0 Stability and Reactivity

Chemical Stability: Stable
Conditions to Avoid: None
Incompatible Material: Mercury, ammonia, acetylene acids. Contact with strong acids, bases, or oxidizing agents.
Hazardous Decomposition Products: Metallic dust or fumes may be produced during welding, burning, sawing, brazing, grinding, or machining.
Possibility of Hazardous Reactions: Will not occur

11.0 Toxicology Information

Acute Toxicity Data for Components

Copper	TDLo:	120 µg/kg (human, oral—gastrointestinal effects)
	$LD_{50:}$	0.07 mg/kg (mouse, intraperitoneal)
Zinc	TCLo:	124 mg/m³ / 50 minutes (human, inhalation—respiratory effects)
	LDLo	388 mg/kg (bird, oral)

Chronic Effects: Repeated or prolonged overexposure to copper fumes may cause the skin and hair to change color.

12.0 Ecological Information

Not applicable

13.0 Disposal Considerations

Waste Disposal Methods: According to local, state, and federal regulations.

14.0 Transport Information

Not applicable

15.0 Regulatory Information

Global Inventories

	Copper	Zinc
TSCA: United States	Included	Included
DSL: Canada	Included	Included
EINECS: European Union	Included	Included

Sara Title III Section 302 Extremely Hazardous Substances (40 CFR 355):
These alloys are not regulated under Section 302 of SARA and 40 CFR 355.

Sara Title III Section 311/312 Hazardous Categorization (40 CFR 370):
OSHA defines these alloys as hazardous under 29 CFR 1910.1200(d).

Sara Title III Section 313 Toxic Chemicals (40 CFR 372):
These Alloys may contain the following toxic chemical(s) subject to reporting requirements under this section of SARAH and of 40 CFR 372:

Component	CAS #	% by Weight
Copper	7440-50-8	66 – 70
Zinc (fume or dust only)	7440-66-6	5 - 34

Other Lists

Chemical Name	CA Prop 65 Chemical	MA Toxic Substance List	MI Critical Materials Register	NJ Hazardous Substance List	PA Right-to-Know List
Copper	No	Yes	Yes	Yes	Yes
Zinc	No	Yes	Yes	Yes	Yes

16.0 Other Information

References:

ACGIH® Threshold Limit Values (TLV®)(2004)
Agency for Toxic Substances and Disease Registry (ATSDR):
Toxicological Profile for Copper, Sept 2002
Draft Toxicological Profile for Zinc, Sept 2002
International Agency for Research on Cancer (IARC) Monographs
National Library of Medicine (NLM) Databases:
ChemID
Integrated Risk information (IRIS)
Integrated Toxicity Estimates for Risk (ITER)
Chemical Carcinogenesis Risk Information System (CCRIS)
Hazardous Substance Data Bank (HSDB)
National Toxicology Program (NTP) Reports
NIOSH Pocket Guide to Chemical Hazards (2003)
NIOSH/OSHA Occupational Health Guideline for Copper Fume
NIOSH/OSHA Occupational Health Guideline for Copper Dust and Mists
NIOSH/OSHA Occupational Health Guideline for Zinc Oxide Fume
OSHA General Industry Standards (29 CFR 1910)
Registry of Toxic Effects of Chemical Substances (RTECS®)

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