

MSDS No.: FP-4

Creation Date: 06/01/1989

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## MATERIAL SAFETY DATA SHEET

SECTION I	GENERAL INFORMATION		
A.	<b>Material Name:</b> <u>Cast Copper Alloy Fittings</u>		
	<b>Other Names:</b> <u>Red bronze, brass castings</u> <b>Chemical Family:</b> <u>Copper</u>		
B.	<b>Manufacturer:</b>	NIBCO INC. 1516 Middlebury Street P.O. Box 1167 Elkhart, IN 46515	Telephone: 574-295-3000 For chemical emergency - spill, leak, fire exposure or accident, call: CHEMTEL 1-800-255-3924 day or night

SECTION II		HAZARDOUS INGREDIENTS			
Ingredient	CAS #	Weight %	ACGIH TLV	OSHA PEL	
Antimony	74470-36-0	0.0-0.25	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	
Bismuth	7440-69--9	0.0-0.10	None established	None established	
Copper	7440-50-8	78-82	0.2 mg/m <sup>3</sup> fume 1 mg/m <sup>3</sup> dust	0.1 mg/m <sup>3</sup> fume 1 mg/m <sup>3</sup> dust	
Iron	7439-89-6	0-0.4	5 mg/m <sup>3</sup> iron oxide fume (as Fe)	10 mg/m <sup>3</sup> iron oxide fume (as Fe)	
Lead	7439-92-1	6.0-8.0	0.15 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	
Nickel	7440-02-0	0.0-1.0	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	
Phosphorus	7723-14-0	0.0-0.02	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	
Sulfur	7704-34-9	0.0-0.08	None established	None established	
Tin	7440-31-5	2.3-3.5	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	
Zinc	7440-66-6	7.0-10.0	5 mg/m <sup>3</sup> fume (as ZnO) 10 mg/m <sup>3</sup> dust (total, as ZnO)	5 mg/m <sup>3</sup> fume (as ZnO) 5 mg/m <sup>3</sup> dust (respirable, as ZnO) 15 mg/m <sup>3</sup> dust (total, as ZnO)	

KNOWN HAZARDS UNDER 29 CFR 1910.1200											
	Yes	No		Yes	No		Yes	No		Yes	No
Combustible Liquid		x	Skin Hazard		x	Oxidizer		x	Reproductive Toxin	x	
Flammable Material		x	Eye Hazard		x	Organic Peroxide		x	Blood Toxin	x	
Pyrophoric Material		x	Toxic Agent	x		Corrosive Material		x	Nervous Sys. Toxin	x	
Explosive Material		x	Highly Toxic Agent		x	Compressed Gas		x	Lung Toxin		x
Unstable Material		x	Sensitizer		x	Irritant	x		Liver Toxin		x
Water Reactive Mat.		x	Carcinogen	x					Kidney Toxin	x	

**Comments:** The following ingredients must be reported under section 313 of SARA - antimony, copper, lead, phosphorus, zinc.

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\_\_\_\_\_

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SECTION II HAZARDOUS INGREDIENTS (CONTINUED)	
SHIPPING INFORMATION	SPECIAL HAZARD DESIGNATIONS
DOT HAZARD CLASS: N/A	HMIS 0 NFPA 0 HAZARD RATING 0 - MINIMAL
DOT SHIPPING NAME: N/A	HEALTH: 0 FLAMMABILITY: 0 REACTIVITY: 0 PROTECTIVE EQUIPMENT: -
SHIPPING I.D. NUMBER: N/A	HAZARD RATING 1 - SLIGHT 2 - MODERATE 3 - SERIOUS 4 - SEVERE

SECTION III PHYSICAL DATA	
Melting Point: <u>1840 °F</u>	Vapor Pressure (mm Hg): <u>N/A</u>
Boiling Point: <u>N/A</u>	Vapor Density (AIR=1): <u>N/A</u>
Specific Gravity (H <sub>2</sub> O=1): <u>8.7</u>	Solubility in Water: <u>insoluble</u>
Appearance and Odor: <u>Orange-red (copper) solid with no odor</u>	

SECTION IV FIRE AND EXPLOSION HAZARD DATA	
Flash Point (method used): <u>N/A</u>	
LEL: <u>N/A</u>	UEL: <u>N/A</u>
Extinguishing Media: <u>N/A</u>	
Special Fire fighting Procedures: <u>Castings will not burn or explode.</u>	
Unusual Fire and Explosion Hazards: <u>N/A</u>	

SECTION V REACTIVITY DATA	
A. Stability	<input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable
Conditions to Avoid: <u>N/A</u>	
B. Hazardous Polymerization:	<input type="checkbox"/> May Occur <input checked="" type="checkbox"/> Will Not Occur
Conditions to Avoid: <u>N/A</u>	
C. Incompatible Materials:	<u>None known</u>
D. Hazardous Decomposition Products:	<u>N/A</u>

**SECTION VI****HEALTH HAZARD DATA**

**Route(s) of Entry:**             Inhalation             Ingestion             Skin

**Health Hazards (Acute and Chronic):**

Fittings as received do not present an inhalation, ingestion, skin contact or eye contact hazard. Listed hazards may result from remelting, soldering or brazing.

**A. Metals:**

**Antimony:** Most antimony compounds are poisons by ingestion, inhalation, and intraperitoneal routes. Antimony compounds irritate the skin and mucous membranes.

**Bismuth:** Bismuth and its compounds can cause kidney damage, although the degree of such damage is usually mild.

**Copper:** Exposure to fumes or dusts may produce "metal fume fever" with flu-like symptoms including: fever, chills, aches, dry throat and nausea. Other symptoms of overexposure may include metallic taste, discoloration of the skin or hair and irritation of eyes, nose or throat.

**Iron:** Exposure to iron oxide fumes or dusts has not been linked to illness but prolonged exposure may produce siderosis, or "iron pigmentation" of the lungs, which may appear on X-rays.

**Lead:** Suspected carcinogen. Poison by ingestion. Moderately toxic by intraperitoneal route. Human systemic effects by ingestion and inhalation: loss of appetite, anemia, malaise, insomnia, headache, irritability, muscle and joint pains, tremors, flaccid paralysis without anesthesia, hallucinations, and distorted perceptions, muscle weakness, gastritis and liver changes. The major organ systems affected are the nervous system, blood system, and kidneys. Low levels of lead impair neurotransmission and immune system function and may increase systolic blood pressure. Reversible kidney damage can occur from acute exposure. Chronic exposure can lead to irreversible vascular sclerosis, tubular cell atrophy, interstitial fibrosis and glomerular sclerosis. Severe toxicity can cause sterility, abortion, and neonatal mortality and morbidity. An experimental teratogen. Experimental reproductive effects. Human mutation data reported.

**Nickel:** Elemental nickel has been identified as a possible carcinogen. The fume is a respiratory irritant and may cause respiratory diseases. Skin contact may cause an allergic reaction.

**Phosphorus:** Phosphorus is a human poison by ingestion. Chronic exposure by inhalation or ingestion can cause anemia, gastrointestinal effects and brittleness of the long bones leading to spontaneous fractures.

**Sulfur:** Sulfur is a poison by ingestion, intravenous and intraperitoneal routes. It is a human eye irritant. Chronic exposure can cause irritation of the mucous membranes.

**Tin:** Tin may cause irritation of the eyes, nose, throat and skin.

**Zinc:** Exposure to zinc oxide fumes or dusts may produce "metal fume fever" with flu-like symptoms including: fever, chills, aches, dry throat and nausea. Other symptoms of overexposure may include metallic taste, discoloration of the skin or hair and irritation of eyes, nose or throat.

**B. Other Constituents:**

Not applicable.

**C. Carcinogenicity:**             NTP             IARC             OSHA

According to the NTP, elemental nickel is a substance that may reasonably be anticipated to be a carcinogen. Elemental nickel is classified by IARC in group 2B as possibly carcinogenic to humans based on limited evidence of carcinogenicity to humans in the absence of sufficient evidence of carcinogenicity in experimental animals.

Lead is classified by IARC in group 2B as possibly carcinogenic to humans based on limited evidence of carcinogenicity to humans in the absence of sufficient evidence of carcinogenicity in experimental animals.

**SECTION VI CONT'D**

- D. **Emergency First Aid:**  
Not applicable to finished fittings.

**SECTION VII SPILL OR LEAK PROCEDURES**

- A. **Special Handling or Storage:**  
Keep dry if metal is to be remelted.
- B. **Spill or Leak Containment:**  
Recover solid material, no environmental hazard anticipated.
- C. **Waste Disposal:**  
Recycle where possible, consult state and federal regulations for landfill disposal.
- D. **Other Precautions:**  
None.

**SECTION VIII SPECIAL PROTECTION INFORMATION**

- A. **Respiratory Protection (specify type):** NIOSH approved for toxic dust/ fumes when remelting, soldering, or brazing
- B. **Ventilation:**       Local Exhaust                       Mechanical (General)  
**Other (specify):** N/A
- C. **Eye Protection:**       Yes               No              Type: glasses or goggles when soldering or brazing
- D. **Protective Gloves:**       Yes               No              Type: \_\_\_\_\_
- E. **Other Protective Equipment or Clothing:**       Yes               No  
**Type:** N/A
- F. **Special Precautions or Work Practices:** N/A

**DISCLAIMER OF LIABILITY**

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

**PRODUCT NAME:** Red Brass Fittings

MSDS No: FP-4

Refer to Material Safety Data Sheet for more information



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1516 Middlebury St.  
P.O. BOX 1167  
ELKHART, IN 46516  
574-295-3000

## NFPA RATING AS SHIPPED

<b>HEALTH HAZARD</b> 4. EXTREME HAZARD - AVOID CONTACT OR BREATHING VAPOR 3. SEVERE HAZARD - USE SPECIAL CLOTHING AND MASKS 2. HAZARDOUS - USE MASKS OR SPECIAL VENTILATION 1. SLIGHTLY HAZARDOUS - IRRITATING 0. NORMAL MATERIAL	<b>FIRE HAZARD</b> 4. EXTREMELY DANGEROUS AND EXPLOSION HAZARD 3. FIRE AND EXPLOSION HAZARD 2. WILL BURN AT TEMPS ABOVE 100 °F 1. WILL BURN AT TEMPS ABOVE 200 °F 0. WILL NOT BURN	<b>REACTIVITY HAZARD</b> 4. EXTREME HAZARD - VACATE AREA IN CASE OF FIRE 3. SEVERE EXPLOSION HAZARD 2. VIOLENT CHEMICAL CHANGE POSSIBLE 1. UNSTABLE IF HEATED 0. NORMALLY STABLE
(BLUE) 0	(RED) 0	(YELLOW) 0
	W USE NO WATER	P POLYMERIZES
<b>CAUTION!</b> Welding, cutting or remelting of this product may generate toxic fumes or dust. Refer to MSDS and health hazards and target organ effects listed below.		

### INGREDIENTS

Iron, silicon, manganese. See Material Safety data Sheet for a listing of minor ingredients.

### STORAGE AND HANDLING

Material should be kept dry if it is to be melted to prevent steam explosion.

### SARA SECT. 313 NOTIFICATION

Aluminum, chromium, copper, nickel, manganese.

- TOXIC
- HIGHLY TOXIC
- REPRODUCTIVE TOXIC

### HEALTH HAZARDS

- IRRITANT
- CORROSIVE
- SENSITIZER

- CARCINOGEN
- \_\_\_\_\_
- NO KNOWN EFFECTS

### IMMEDIATE AND DELAYED HEALTH EFFECTS

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> HEPATOXINS (LIVER DAMAGE) - jaundice, liver enlargement   | <input type="checkbox"/> HEMATOPOIETICS (BLOOD DAMAGE) - cyanosis, unconsciousness                          | <input type="checkbox"/> CUTANEOUS HAZARDS - skin damage, rashes, irritation, defatting of skin |
| <input type="checkbox"/> NEPHROTOXINS (KIDNEY DAMAGE) - edema, proteinuria   | <input type="checkbox"/> PULMONARY DYSFUNCTIONS (Lung Damage) - shortness of breath, chest tightness, cough | <input type="checkbox"/> EYE HAZARDS - impaired vision, conjunctivitis, corneal damage          |
| <input type="checkbox"/> NEUROTOXINS (NERVOUS SYSTEM DAMAGE) - narcosis, behavioral changes, decrease in motor functions | <input type="checkbox"/> REPRODUCTIVE TOXINS - birth defects, sterility                                     | <input checked="" type="checkbox"/> NONE - no known immediate or delayed effects                |