

MATERIAL SAFETY DATA SHEET

REV: 05/18/05

U.S. OSHA HAZARD COMMUNICATION STANDARD,
29 CFR 1910.1200/ILL TSDA Pa 38-20

DULUTH BRASS

MANUFACTURING

2301 COMMONWEALTH AVENUE / DULUTH, MN 55808-1643

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SECTION 1

EMERGENCY TELEPHONE NO.

(312) 226-6600

CHEMICAL NAME and SYNONYMS

Tin Bronze (88-10-0-2)

TRADE NAME and SYNONYMS

Tin Bronze - 210

CHEMICAL FAMILY

N/A

FORMULA

ASTM C90500

SECTION II - HAZARDOUS INGREDIENTS

| ELEMENT | CAS NUMBER | PERCENTAGE | PEL | TLV |
|---------|------------|---------------|---------------------|----------------------|
| | | | OSHA 8-HR TWA MG/M3 | ACGIH 8-HR TWA MG/M3 |
| Copper | 7440-50-8 | 86.00 - 89.00 | 0.1 (Fume) | 0.1 (Fume) |
| Tin | 7440-31-5 | 9.50 - 10.50 | 2 | 2 |
| Lead | 7439-92-1 | .25 Max | 0.05 (Fume) | 0.05 (Fume) |
| Zinc | 7440-66-6 | 1.50 - 3.00 | 5 (Oxide Fume) | 5 (Oxide Fume) |
| Iron | 1309-37-1 | .15 Max | 10 (Oxide Fume) | 5 (Fume) |
| Nickel | 7440-02-0 | .80 Max | 1 | 1 |

** This material is inert and non-toxic in the solid state **

SECTION III - PHYSICAL DATA

BOILING POINT (F°)

SPECIFIC GRAVITY (H₂O=1)

8.73

| | |
|--------|------|
| Copper | 4703 |
| Tin | 4120 |
| Lead | 3137 |
| Zinc | 1663 |
| Iron | 5430 |
| Nickel | 4900 |

Molten state operating temperature is 1850 to 2350 F

APPEARANCE & ODOR: Odorless red metal

SECTION IV - FIRE and EXPLOSION HAZARD DATA

FLASH POINT (Method used)

N/A

FLAMMABLE LIMITS

(%V)

LEI

N/A

UST

N/A

EXTINGUISHING MEDIA

Dry chemicals or sand should be used with molten metals.

SPECIAL FIRE FIGHTING PROCEDURES

Fire Fighters should wear full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS

DO NOT USE WATER ON MOLTEN METALS.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

SEE SECTION II

EFFECTS OF OVEREXPOSURE

SEE ATTACHMENT ITEMS 8, 17, 10, 18, 9, 13

EMERGENCY AND FIRST AID PROCEDURES

SEE ATTACHMENT ITEMS 8, 17, 10, 18, 9, 13

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

N/A

INCOMPATIBILITY (MATERIALS TO AVOID)

STRONG OXIDIZERS

HAZARDOUS DECOMPOSITION PRODUCTS

N/A

HAZARDOUS

MAY OCCUR

CONDITIONS TO AVOID

POLYMERIZATION

WILL NOT OCCUR

X

N/A

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Special care should be taken when handling molten metal. Always wear proper safety equipment.

Accumulations of dust should be vacuumed or wet-swept to prevent airborne exposure.

WASTE DISPOSAL METHOD

Metal turnings, chips, risers, grindings, etc. are recycled. If not recycled, dispose of material in accordance with the requirements of 40 CFR subtitle C and other applicable federal, state, and local regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)

NIOSH Certified (3M 9920, etc.)

VENTILATION

LOCAL EXHAUST

X

SPECIAL

MECHANICAL (GENERAL)

OTHER

PROTECTIVE GLOVES

Industrial Type

EYE PROTECTION

Safety Glasses/Goggles/Shields

OTHER PROTECTIVE EQUIPMENT

Compliance with OSHA Regulations and other accepted safety and hygiene practices.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Material in storage can become wet from condensation. It must be thoroughly dried before adding to molten metal. See other sections, references and sources.