

# 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

### SECTION 1

EMERGENCY TELEPHONE NO.

(312) 226-6600

2301 COMMONWEALTH AVENUE / DULUTH, MN 55808-1643

218-626-2564 / FAX 218-626-2615

CHEMICAL NAME and SYNONYMS

Manganese Bronze ( 58-39-1-1-1 )

TRADE NAME and SYNONYMS

421 - 65,000 Tensile Mang. Bronze

CHEMICAL FAMILY

N/A

FORMULA

ASTM C86500

### 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	55.00 - 60.00	0.1 (Fume)	0.1 (Fume)
Tin	7440-31-5	1.00 Max	2	2
Lead	7439-92-1	.30 Max	0.05 (Fume)	0.05 (Fume)
Zinc	7440-66-6	36.00 - 42.00	5 (Oxide Fume)	5 (Oxide Fume)
Iron	1309-37-1	.40 - 2.00	10 (Oxide Fume)	5 (Fume)
Nickel	7440-02-0	.80 Max	1	1
Aluminum	7429-90-5	.50 - 1.50	5 (Dust)	5 (Dust)
Manganese	7439-96-5	.10 - 1.50	5 (Fume)	1 (Fume)

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

### SECTION III - PHYSICAL DATA

BOILING POINT (F°)

SPECIFIC GRAVITY (H<sub>2</sub>O=1)

8.30

Copper	4703
Tin	4120
Lead	3137
Zinc	1663
Iron	5430
Nickel	4900
Aluminum	4442
Manganese	3806

Molten state operating temperature is 1800 to 2200 F

APPEARANCE & ODOR: Odorless yellow metal

### SECTION IV - FIRE and EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS (%V)	LEL	USI
			N/A	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, 1, 12

EMERGENCY AND FIRST AID PROCEDURES

SEE ATTACHMENT ITEMS 8, 17, 10, 18, 9, 13, 1, 12

**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.