

# 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

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### SECTION 1

EMERGENCY TELEPHONE NO.  
(312) 226-6600

#### CHEMICAL NAME and SYNONYMS

Tin Bronze ( 89-11 )

#### TRADE NAME and SYNONYMS

Gear Bronze, 205

#### CHEMICAL FAMILY

N/A

#### FORMULA

ASTM C90700

### 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	88.00 - 90.00	0.1 (Fume)	0.1 (Fume)
Tin	7440-31-5	10.30 - 12.00	2	2
Lead	7439-92-1	.50 Max	0.05 (Fume)	0.05 (Fume)
Zinc	7440-66-6	.50 Max	5 (Oxide Fume)	5 (Oxide Fume)
Iron	1309-37-1	.15 Max	10 (Oxide Fume)	5 (Fume)
Nickel	7440-02-0	.10 Max	1	1

\*\* 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)
Copper 4703	8.78
Tin 4120	
Lead 3137	
Zinc 1663	
Iron 5430	
Nickel 4900	

Molten state operating temperature is 1750 to 2350 F

**APPEARANCE & ODOR:** Odorless red metal

### SECTION IV - FIRE and EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS (%V)	LEI	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

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 POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	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		EYE PROTECTION	
Industrial Type		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.