

MUELLER BRASS Co. MATERIAL SAFETY DATA SHEET

IDENTITY (As Used on Label and List)

BRONZE ALLOY

SECTION I

Manufacture's Name Mueller Brass Co.	Emergency Telephone Number (810) 987-7770
Address (Number, Street, City, State and Zip Code) 2199 Lapeer Avenue	Telephone Number for Information (810) 987-7770
Port Huron, Michigan 48060	Revision Date March 1, 2000
	Reviewed By David Tipton

SECTION II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity/Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%
*Copper (7440-50-8) (Dust & Mist)	1 mg/m ³	1 mg/m ³	N/A	88.65 - 92.2
*Copper (7440-50-8) (Fume)	0.1 mg/m ³	0.2 mg/m ³	N/A	88.65 - 92.2
*Aluminum (7429-90-5)	N/A	10mg/m ³	N/A	6.3 - 7.6
Silicon (7440-21-3)	N/A	10 mg/m ³	N/A	1.5 - 2.2

**Denotes a toxic chemical or chemicals subject to reporting requirements of Section 313 Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR Part 372.*

SECTION III — Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H ₂ O=1)	7.7
Vapor Pressure (mm Hg.)	N/A	Melting Point	1,800 - 1,840° F
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	NIL		
Appearance and Odor	Bronze colored metal/no odor		

SECTION IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	N/A	Flammable Limits	N/A	LEL	N/A	UEL	N/A
Extinguishing Media	N/A						

Special Fire Fighting Procedures Water on hot material may cause splattering which could result in scalding.

Unusual Fire and Explosion Hazards N/A

SECTION V — Reactivity Data

Stability	Unstable		Conditions to Avoid N/A
	Stable	X	

Incompatibility (Materials to Avoid) Acids, oxidizers, ammonia.

Hazardous Decomposition or Byproducts Exposure to Nitric Acid will cause generation of NOx fumes.

Hazardous Polymerization	May Occur		Conditions to Avoid N/A
	Will Not Occur	X	

SECTION VI — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
Prevent exposure to acids, oxidizers, and ammonia products.

Waste Disposal Method
In accordance with Federal, State and local regulations.

Precautions to Be Taken in Handling and Storing
Material may be heavy. Prevent spillage from high storage areas.

Other Precautions
N/A

SECTION VII — Control Measures

Respiratory Protection (Specify Type)
May be applicable if cutting, welding, grinding, etc. depending on exhaust.

Ventilation	Local Exhaust	If grinding, welding, etc.	Special	N/A
	Mechanical (General)	N/A	Other	N/A

Protective Gloves Recommended when handling metal. Eye Protection Goggles if grinding, cutting, etc.

Other Protective Clothing or Equipment
Not applicable as shipped but protective clothing is determined by processing activity, i.e. casting, machining, etc.

Work/Hygienic/Maintenance Practices
Wash with soap and water after handling.

SECTION VIII — Health Hazard Data

Route(s) of Entry: Inhalation? YES Skin? YES Ingestion? YES

Health Hazards (Acute and Chronic)
See page three of MSDS

Carcinogenicity: NTP? NO IARC Monographs? NO OSHA Regulated? NO

Signs and Symptoms of Exposure
See page three of MSDS

Medical Conditions
Generally Aggravated by Exposure Anyone with pre-existing respiratory disease should avoid overexposure to dust, fumes, and respiratory irritants.

Emergency and First Aid Procedures
If exposed to excessive levels of dust or fumes, remove the victim to fresh air and seek medical assistance immediately. Eyes and skin - flush with water for at least 15 minutes.

SECTION VIII — HEALTH HAZARD DATA

HEALTH HAZARDS (SHORT TERM AND LONG TERM)

- ALUMINUM:** Chronic inhalation of aluminum fumes or dust may cause pulmonary fibrosis. Aluminum fragments left in the cornea may cause irreversible eye damage. Aluminum has been implicated in Alzheimer's disease.
- COPPER:** Inhalation of copper fumes or dust may cause metal fume fever and damage to nasal membranes. The skin and hair may turn green in severe cases. Skin and eye irritation may occur. Skin sensitization may occur. Chronic exposure may cause Wilson's disease which is characterized by damage to the blood cells, brain, kidneys, liver, and pancreas. Copper fragments left in the cornea may cause cataracts. Copper fragments that penetrate the eye may cause irreversible eye damage if not removed immediately.
- SILICON:** Silicon itself poses little health risk. It has been shown to cause only minimal effects on the lungs if inhaled. Silicon dioxide formed by heating silicon in the presence of air may cause pulmonary fibrosis and silicosis in chronically exposed employees.

SIGNS AND SYMPTOMS OF EXPOSURE

- ALUMINUM:** Pulmonary fibrosis is characterized by difficulty in breathing, coughing, shortness of breath, wheezing, and other respiratory symptoms.
- COPPER:** Metal fume fever is characterized by a dry irritated throat, chills, fever, and elevated white blood cell count, and general flu-like symptoms. Skin, eye, and nasal irritation and skin sensitization are characterized by pain, swelling, and reddening of the affected tissue. Wilson's disease is characterized by weakness, anemia, abdominal pain, and yellowing of the skin or jaundice.
- SILICON:** Pulmonary fibrosis is characterized by difficulty in breathing, coughing, shortness of breath, wheezing, and other respiratory symptoms.