



Material Safety Data Sheet

Section 1 – Manufacturer's Identification

Company Mueller Brass 2199 Lapeer Avenue Port Huron, Michigan 48060	Issue Date 05/07/09	Identification Number
Trade Name (Common Name or Synonym) Bronze Alloy	Emergency Phone Number 810-987-7770	Information Phone # (EHS Manager) 616-794-4866
Chemical Name	Formula	DOT Identification Number

Section 2 - Ingredients

Material or Compound	CAS Number	% Composition by Weight
<u>Compound</u>		
*Copper	7440-50-8	88.65%-92.2%
*Aluminum	7429-90-5	6.3%-7.6%
Silicon	7440-21-3	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 40CFR Part 372.

Section 3 – 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 N/A			
Appearance and Odor Bronze colored metal/no odor			

Section 4 – 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 N/A			
Unusual Fire and Explosion Hazards Water on hot material may cause splattering which could result in scalding.			

Section 5 – Reactivity Data

Stability	Unstable	Conditions to Avoid	
	Stable XXX	N/A	
Incompatibility (Materials to Avoid) Acids, oxidizers, ammonia.			
Hazardous Decomposition or Byproducts Exposure to Nitric Acid will cause generation of NOx fumes.			
Hazardous Polymerizations	May Occur	Conditions to Avoid	
	Will Not Occur XXX	N/A	

Section 6 – Health Hazard Data

Route(s) of Entry	Inhalation? Yes	Skin? Yes	Ingestion ? Yes
Health Hazards (Acute and Chronic) See page four of MSDS.			
Carcinogenicity	NTP? No	IARC Monographs? No	OSHA Regulated? No
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Signs and Symptoms of Exposure See Page four 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. Eyes and skin flush with water for at least 15 minutes and seek medical assistance immediately.			

Section 7 – Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled	Prevent exposure to acids, oxidizers, ammonia products.
Waste Disposal Method	Material has high metals content, recycling is preferable. Must be disposed of in accordance with applicable local, state and federal regulations.
Precautions to be Taken in Handling and Storage	Avoid releasing dust.
Other Precautions	Wash hands before eating, drinking or tobacco use. Use P100 or N100 respirator

Section 8 – Control Measures

Respiratory Protection (Specify Type) May be applicable if cutting, welding, grinding, etc. depending on exhaust.		
Ventilation	Local Exhaust. If grinding, welding, etc. depending on exhaust	Special N/A
	Mechanical (General) N/A	Other N/A
PPE	Gloves Recommended when handling metal.	Eye Safety glasses, Goggles if cutting, welding, brazing, grinding. Etc.
	Other N/A as shipped but protective clothing is determined by processing activity, i.e. casting, machining, etc.	
Work/ Hygiene Practices Wash hands before eating, drinking or tobacco consumption. Full body and hair shower ASAP to avoid exposing others. Normal washing of contaminated clothes and equipment is acceptable for decontamination.		

Section 9 – Prepared By

<p>Laura Shears Mueller Brass Safety / Environmental Manager 616.794.4866</p>

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.