

Material Safety Data Sheet

Identity: Ferromolybdenum

Common Name: Ferromolybdenum

CAS Number: None listed

Section I – Manufacturer Information

Manufacturer's Name: *Bear Metallurgical Company*

Address: *679 East Butler Road
Butler, PA 16002*

Emergency Telephone: (724) 283-6800 **Information Telephone:** (724) 283-6800

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Section II

Material	CAS Number	% Weight	OSHA PEL	ACGIH TLV
Molybdenum	7439-92-7	60-64%	15 mg/m ³	10 mg/m ³
Iron	7439-89-6	35-39%	10 mg/m ³ Dust & Fume	5 mg/m ³ Dust & Fume
Silicon dioxide As SiO ₂	14808-60-7	1%	<u>10 mg/m³</u> SiO ₂ +2	0.1 mg/m ³ Resp. Dust

Note: SARA Title III, Section 313

EPA SARA Title III Hazard Categorization

As defined by 40 CFR 370, the product is categorized as both an “immediate (acute) health hazard”, and a “delayed (chronic) health hazard.”

Section III - Physical/ Chemical Characteristics

Boiling Point: NA

Freezing Point: NA

Vapor Pressure (mm Hg): NA

Specific Gravity: NA

Vapor Density (AIR= 1): NA

Evaporation Rate: NA

Melting Point: Approximately 1630° C

Solubility in water: Insoluble

Section IV - Fire and Explosion Hazard Data

Flash Point: NA

Flammable Limits: NA

LEL: NA

UEL: NA

Extinguishing Media: As appropriate for surrounding materials. Not normally combustible.

Special Fire Fighting Procedures: Wear protective fire-fighting clothing and self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: As with any material, high concentrations of airborne dust in an enclosed area can explode or burn if exposed to a source of ignition.

Section V- Reactivity Data

Stability: Unstable:
Stable: X

Conditions to avoid: Avoid creating concentrated airborne particulate.

Incompatibility: Oxidizers

Hazardous Decomposition or Byproducts: None known.

Hazardous Polymerization: Will not occur

Conditions to Avoid: See Incompatibility.

Section IV- Health and Hazard Data

Route(s) of Entry: Inhalation: Yes Skin: Yes Ingestion: Yes Other: Eyes

Health Hazards:

Acute:

Some compounds of **molybdenum** have been shown to be irritating in animal studies, and to cause loss of appetite and weight; as well as diarrhea, muscular incoordination, and loss of hair. Ingestion of large quantities could be fatal. High concentrations of metallic fumes and dusts can result in irritation of the eyes, skin, mucous membranes and respiratory system.

Iron oxide has been associated with metal fume fever. Symptoms consist of chills and fever (very similar and easily confused with flu symptoms), a metallic taste in the mouth, dryness and irritation of the throat. The symptoms occur a few hours after excessive exposures and usually last from 12 to 48 hours. Long term effects from metal fume fever have not been noted.

Silicon dioxide or crystalline silica (quartz) is an acute irritant dust.

Chronic:

Reports of animal studies and studies of humans having chronic exposure to **molybdenum** have indicated hepatotoxic (liver) effects resulting in decreased liver function. There is one study that suggests that chronic exposure above the PEL of 5 mg/m³ could result in gout.

Iron oxide fume or dust exposures, when excessive, may result in development of a benign pneumoconiosis, called siderosis, which is observable as an x-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Silicon dioxide or crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans. The prolonged inhalation of excessive levels of dusts containing free silica can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive; it may lead to disability and death. Silicosis is associated with the increased incidence of scleroderma, an autoimmune disorder manifested by a fibrosis of the skin and internal organs.

Signs and Symptoms of Exposure: Exposure to metal fumes and dusts may cause respiratory irritation. Also see Health Effects (above) for more information.

Medical Conditions Generally Aggravated by Exposure: Excessive dust and fume exposures may aggravate impaired respiratory systems.

Emergency and First Aid Procedures:

Inhalation: If acute overexposure to dusts or fumes occurs, remove the victim from the adverse environment and seek medical attention. Give artificial respiration if victim has stopped breathing.

Eye Contact: Should eye contact occur flush with large amounts of water for 15 minutes. Seek prompt medical attention.

Skin Contact: If dust gets on the skin, immediately wash the contaminated area with soap and water.

Ingestion: Ingestion is not a probable source of exposure to the dust or fume. If particles are ingested, give 1-2 glasses of water or milk. Induce vomiting only if the victim is fully conscious and has not convulsed. Seek prompt medical attention.

Section VII – Precautions for Safe Handling, Storage, Use and Disposal

Steps to be Taken in Cast Material is Released or Spilled: If there is a spill of this material, clean up using methods which avoid dust generation such as dry or wet vacuuming. Compressed air should not be used to clean up spills. During cleanup, skin and eye contact and inhalation of dust should be avoided as much as practical. Provide local exhaust or dilution ventilation as required. Collect material in appropriately labeled containers.

Waste Disposal Method: Dispose of in accordance with applicable regulations.

Precautions to be taken in Handling and Storing: Keep away from oxidizers.

Other Precautions: NA

Section VIII – Control Measures

Respiratory Protection: When engineering controls are not sufficient to prevent overexposure, appropriate NIOSH approved respirators should be used, such as half-mask air-purifying respirators. A competent occupational health professional should be consulted for respirator selection.

Ventilation:

Local Exhaust: As needed, to control dust and fume.

Mechanical (General): As needed, to control dust and fume.

Special and Other: NA

Protective Gloves: Use where physical hazards such as hot surfaces are present.

Eye Protection: Safety glasses with side shields are recommended when there is a reasonable probability of exposure or injury during handling.

Other Protective Clothing or Equipment: NA

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