


ELECTRONIC SPACE PRODUCTS INTERNATIONAL

1050 Benson Way, Ashland, OR 97520
 Toll Free (800) 638-2581 * Fax (541) 488-8313
 E-Mail: sales@espimetals.com

MATERIAL SAFETY DATA SHEET
I PRODUCT IDENTIFICATION

Trade Name:	Molybdenum	Synonym:	Molybdenum Metal
Chemical Family:	Refractory metal	Product	
Molecular Weight:	95.94	Formula:	Mo
		CAS #:	7439-98-7

II HAZARDOUS INGREDIENTS

Hazardous Components	%	OSHA/PEL	ACGIH/ TLV
Molybdenum	0-100	15 mg/m ³	10 mg/m ³

III PHYSICAL DATA

Boiling Point:	4825 °C	Specific Gravity (H₂O=1):	10
Vapor Pressure (mm Hg):	N/A	Evaporation Rate:	N/A
Vapor Density:	N/A	% Volatile by Volume:	0
Appearance and Odor:	Gray metal, no odor.	Solubility in	
		H₂O:	

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point (Method used): N/A
Flammable Limits: Lower: N/A **Upper:** N/A

Autoignition Temp: N/A

Extinguishing Media: Fine dust generated during grinding operations may ignite if allowed to accumulate and subjected to an ignition source. Cover burning material with an inert powder, such as dry sand or limestone, to exclude oxygen.

Special Fire Fighting Procedures: For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire involving this material, firefighters should use self-contained breathing apparatus

Unusual Fire and Explosion Hazards: Dust may present a fire or explosion hazard under favoring conditions of particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

V HEALTH HAZARD INFORMATION

Effects of Exposure: Molybdenum dust and fumes (formed above 400 °C) can cause irritation of the eyes, nose, throat, and respiratory tract. Aside from isolated reports in the Russian literature suggesting an association between molybdenum exposure and pulmonary and joint disorders (gout-like condition), there are no recognized long term effects attributed to industrial exposure to molybdenum. In general, molybdenum and its compounds are considered to be of low toxicity.

Routes of Exposure: Dust, mist and/or fumes generated during physical or metallurgical treatment may be inhaled, swallowed or come in contact with the skin or eyes.

Carcinogenic Assessment: None of the components of this material have been identified as known or suspected carcinogens by NTP, IARC, or OSHA.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: If irritation occurs, remove from exposure. Seek medical attention.

INGESTION: If substantial quantities are swallowed, give person (if conscious) a large quantity of water to drink, induce vomiting. Seek medical attention.

SKIN: If irritation occurs, thoroughly wash affected area with mild soap and water and prevent further contact. If irritation persists, seek medical attention.

EYE: If irritation occurs, flush with copious amounts of water. If irritation persists seek medical attention.

VI REACTIVITY DATA

Stability: Stable

Conditions to Avoid: N/A

Incompatibility (Material to Avoid): Avoid contact of dust with strong oxidizers and acids.

Hazardous Decomposition Products: Molybdenum Trioxide fumes may form when the metal is exposed to high temperatures.

Hazardous Polymerization: Will not occur

VII SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled (Applicable for Grinding Dust): Ventilate area of spill. Clean-up using methods which avoid dust generation such as vacuuming (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

Waste Disposal Method: Dispose of in accordance with Federal, State and Local regulations.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the TLV. All appropriate requirements set forth in 29 CF 1910.134 should be met.

Ventilation: Use local exhaust ventilation which is adequate to limit personal exposure to levels which do not exceed the PEL or TLV. If such equipment is not available, use respirators as specified above.

Protective Gloves: Recommended

Eye Protection: Safety Goggles
Recommended

Other Protection: N/A

IX SPECIAL PRECAUTIONS

Work Practices: Maintain good housekeeping procedures to prevent accumulation of dust. Use clean-up methods which minimize dust generation such as vacuuming or wet clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator. Wash thoroughly after handling and before eating or smoking and at the end of the work shift. Do not shake clothing or other items to remove dust. Use a vacuum. Avoid dust inhalation and direct skin contact. Do not ingest.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damages resulting from handling or from contact with the above product.

Issued by: S. Dierks
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