

Material Safety Data Sheet

Identity: Molybdenum

Formula: Mo

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Form Weight: 95.94

CAS #	OSHA PEL	ACGIH TLV	%
7439-98-7	10mg/m ³	10mg/m ³	100.0%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 5560.0 °C

Melting Point: 2610.00 °C

Evaporation Rate: N/A

Solubility in water: Insoluble

Vapor Pressure (vs. air or mmHg): N/A

Percent Volatile: N/A

Specific Gravity (H₂O=1): 10.2gm/cc

Vapor Density (vs. air=1): N/A

Appearance and odor: Grey to black sheets or powder, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point: N/A*Method Used:* Flammable solid*Explosive Limits:* LEL: N/A UEL: N/A*Extinguishing Media:* Use suitable extinguishing agent for surrounding material and type of fire.*Special Fire Fighting Procedures:*

Firefighters must wear full face, self-contaminated breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards:

When heated to decomposition, molybdenum metal may emit fumes of molybdenum. May have violent reaction with oxidizing agents. Molybdenum oxidizes rapidly above 100 F in air at sea level. Dust and air mixtures may be explosive.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None

Incompatibility: Bromine pentafluoride, bromine trifluoride, chlorine trifluoride, fluorine gas, iodine pentafluoride. Lead dioxide, nitryl fluoride, strong oxidizers, potassium perchlorate and sodium peroxide.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition or Byproducts: Molybdenum oxide at high temperatures; thermal decomposition may release toxic or hazardous gases.

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of Entry: *Inhalation: Yes* *Skin: Yes* *Eyes: Yes* *Ingestion? Yes* *Other: No*

Signs and Symptoms of Overexposure:

Inhalation: May cause a red, dry throat and coughing.

Ingestion: May cause severe gastrointestinal irritation, diarrhea, and cardiac failure. May also show weight loss, anemia, deficient lactation, sterility, osteoporosis and bone joint abnormalities.

Skin: May cause redness, itching and burning.

Eye: May cause redness, itching, burning and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to upper respiratory tract.

Chronic: May cause pneumoconiosis.

Ingestion:

Acute: May cause acute and/or chronic molybdenum poisoning.

Chronic: No chronic health effects recorded.

Skin:

Acute: Prolonged contact may cause irritation.

Chronic: No chronic health effects recorded.

Eye:

Acute: Prolonged contact may cause irritation.

Chronic: No chronic health effects recorded.

Target Organ: Lungs, bone, spleen, and heart.

Medical Conditions Aggravated by Exposure: Pre-existing respiratory disease.

Molybdenum metal is not considered a carcinogen by the NTP, IARC or OSHA..

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

Ingestion: 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

Skin: Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist.

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII-Control Measures. Isolate spill area, provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Use non-sparking tools.

Waste disposal method:

Dispose of in accordance with state, local, and federal regulations.

Hazard Label Information:

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at or below the PEL, TLV.

Mechanical (General): Recommended.

Work/Hygienic/Maintenance Practices:

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established