



Molybdenum (Pellets, Evaporation Slugs, Sputter Targets)

1. Product Identification

Trade Name: Molybdenum (Pellets, Evaporation Slugs, Sputter Targets)
Chemical Formula: Mo
Recommended Use: Scientific research and development

2. Hazards Identification

Signal Word: None in provided form

Hazard Statements: Not Classified

Precautionary Statements: Not Classified

HMIS Ratings (0-4): Bulk

Health: 0

Flammability: 0

Physical: 0

3. Composition

Chemical Family: Metal

Additional Names: None

Molybdenum (Mo):

Percentage: 100 wt%

CAS #: 7439-98-7

EC #: 231-107-2

4. First Aid Procedures

General Treatment: Seek medical attention if symptoms persist.

Special Treatment: None

Important Symptoms: None

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.

Ingestion: Seek medical attention.

Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.

Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

5. Firefighting Measures

Flammability: Non-flammable.

Extinguishing Media: Do not use water for metal fires – use CO₂, sand, extinguishing powder.

Molybdenum (Pellets, Evaporation Slugs, Sputter Targets)

Spec. Fire Fighting Procedure: Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.

Environmental Precautions: Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions: Wash thoroughly after handling.

Storage Conditions: Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.

Work/Hygienic Maintenance: Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits: 5 mg/m³as Mo, soluble compounds, long-term value
15 mg/m³as Mo, insoluble compounds, total dust, long-term value

Threshold Limit Value: 10 mg/m³as Mo, inhalable fraction, long-term value
3 mg/m³as Mo, respirable fraction, long-term value

Special Equipment: None

Respiratory Protection: Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protective Gloves: Nitrile rubber, NBR 0.11mm thick.

Penetration time of glove material: 480 minutes

Eye Protection: Safety glasses or goggles

Body Protection: Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Molybdenum (Pellets, Evaporation Slugs, Sputter Targets)

9. Physical and Chemical Characteristics

Color	Grey/dark grey
Form:	Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	4639 °C
Melting Point:	2623 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	10.22 g/cc
Molecular weight:	95.94 g/mol

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Acids, Oxidizing agents
Incompatible Conditions:	None
Hazardous Decomposition Products:	Molybdenum oxide, Metal oxide fume

11. Toxicological Information

Potential Health Effects:	
Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A
Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	N/A
Carcinogen:	N/A

12. Ecological Information

Aquatic Toxicity:	Low
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bio-accumulative:	No
Notes:	N/A

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

Molybdenum (Pellets, Evaporation Slugs, Sputter Targets)

14. Transportation Data

Hazardous:	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT).
Hazard Class:	No transport warning sign required.
Packing Group:	Not applicable
UN Number:	Not applicable
Proper Shipping Name:	Not applicable

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	No

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. **No warranty, guarantee or representation is made to its accuracy, reliability or completeness.** These materials should only be handled by, or under the direct supervision of a “technically qualified individual”, as defined in TSCA regulations 40 CFR 710.3(ee). The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

Document Last Revised: 12/10/2017