

# SAFETY DATA SHEET

Date Printed: 05/18/2024

Date Revised: 01/15/2022

---

## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Lanthanated Molybdenum Sputtering Target

**Product Code:** LA-MO-05-ST

**CAS Number:** N/A

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

---

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

The substance is not classified according to the Globally Harmonized System (GHS).

Classification according to Directive 67/548/EEC or Directive 1999/45/EC N/A

Information concerning particular hazards for human and environment: N/A

Label elements

Labelling according to EU guidelines:

Observe the general safety regulations when handling chemicals

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 0

Flammability = 0

Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

---

## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

### Substances

Molybdenum metal (CAS #7439-98-) - 99.7 - 98%

Lanthum(III) Oxide (CAS #1312-81-8) - 0.3-2.0%

---

## **SECTION 4. FIRST AID MEASURES**

### Description of first aid measures

General information No special measures required.

If inhaled: Seek medical treatment in case of complaints.

In case of skin contact: Generally the product does not irritate the skin.

In case of eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

If swallowed:

Seek medical treatment.

---

## **SECTION 5. FIREFIGHTING MEASURES**

### Extinguishing media

#### Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

#### Advice for firefighters

Protective equipment: No special measures required.

---

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures Not required.

### Environmental precautions:

Do not allow material to be released to the environment without official permits.

Methods and materials for containment and cleanup: Pick up mechanically.

### Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

---

## **SECTION 7. HANDLING AND STORAGE**

### Handling

#### Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: None.

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

Molybdenum and compounds (as Mo)

mg/m<sup>3</sup>

ACGIH TLV 5

Austria MAK 15

Belgium TWA 5

Denmark TWA 5

Finland TWA 5

France VME 5

Germany MAK 5

Netherlands MAC-TGG 5

Sweden NGV 10 (total dust)

5 (respirable dust)

Switzerland TWA 5

United Kingdom TWA 10; 20-STEL

USA PEL 5

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Breathing equipment: Not required.

Protection of hands: Not required.

Eye protection: Safety glasses

Body protection: Protective work clothing.

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: Grey

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 2610°C (4730 °F)

Boiling point/Boiling range: 5560°C (10040 °F)

Sublimation temperature / start: No data available

Flash point: N/A

Flammability (solid, gas) Product is not flammable.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: No data available

Upper: No data available  
Vapor pressure at 3102°C (5616 °F): 1.33 hPa (1 mm Hg)  
Density at 20°C (68 °F): 10.22 g/cm<sup>3</sup> (85.286 lbs/gal)  
Relative density No data available.  
Vapor density N/A  
Evaporation rate N/A  
Solubility in / Miscibility with  
Water: Insoluble  
Segregation coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information No data available

---

## SECTION 10. STABILITY AND REACTIVITY

Reactivity  
Chemical stability  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions No dangerous reactions known  
Hazardous decomposition products: No dangerous decomposition products known

---

## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects  
Acute toxicity:  
Primary irritant effect:  
on the skin: No irritant effect.  
Sensitization: No sensitizing effects known.  
Subacute to chronic toxicity:  
Acute molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma and death from cardiac failure.  
Chronic molybdenum poisoning in laboratory animals has caused loss of weight, anorexia, anemia, deficient lactation, male sterility, osteoporosis and bone joint abnormalities.  
Additional toxicological information:  
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

---

## SECTION 12. ECOLOGICAL INFORMATION

Toxicity  
Aquatic toxicity: No data available  
Persistence and degradability No data available  
Behavior in environmental systems:  
Bioaccumulative potential No data available  
Mobility in soil No data available  
Additional ecological information:

Do not allow material to be released to the environment without official permits.

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

---

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

---

## **SECTION 14. TRANSPORT INFORMATION**

Not a hazardous material for transportation.

DOT regulations:

Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class: None

Marine pollutant: No

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Special precautions for user N/A

Transport/Additional information: Not dangerous according to the above specifications.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A

---

## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture

Product related hazard informations:

Observe the general safety regulations when handling chemicals

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

Information about limitation of use: For use only by technically qualified individuals.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

---

## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from

handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.