

# MATERIAL SAFETY DATA SHEET



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**TRANSPORTATION EMERGENCY**  
CALL CHEMTREC..... : (800) 424-9300  
INTERNATIONAL ..... : (703) 527-3887

**NON-TRANSPORTATION**  
HCST EMERGENCY PHONE : (216) 692-3990  
HCST INFORMATION PHONE: (216) 692-3990

## Section 1: Product and Company Identification

**Product Name:** Molybdenum Metal  
**Material Number:** CSMMOMP  
**Chemical Name:** Molybdenum  
**CAS Number:** 7439-98-7

## Section 2: Composition/Information on Ingredients

### HAZARDOUS INGREDIENTS

<u>Ingredient Name/ CAS Number</u>	<u>Exposure Limits</u>	<u>Concentration</u>	
		<u>Min.</u>	<u>Max.</u>
Molybdenum 7439-98-7	<b>OSHA (PEL):</b> 15.00 mg/m <sup>3</sup> TWA Total Dust <b>ACGIH (TLV):</b> 10.00 mg/m <sup>3</sup> TWA	95%	0%

## Section 3: Hazards Identification

### EMERGENCY OVERVIEW

**CAUTION!** Non-regulated. **Color:** Silver-grey, Grey to Black **Form:** Solid **Odor:** Odorless  
May cause mechanical irritation to the eyes, skin and respiratory tract. May form explosive dust-air mixtures. Do not use water to extinguish fire.

### POTENTIAL HEALTH EFFECTS

**Route(s) of Entry:** Inhalation, Skin Contact, Eye Contact, Ingestion

## HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

### General Effects of Exposure

**Acute Effects of Exposure:** Material is a non-reactive powder. May cause mechanical irritation to the eyes, skin and respiratory tract.

**Chronic Effects of Exposure:** No applicable information was found concerning adverse chronic human health effects to this product.

### Carcinogenic Components:

**NTP:** None

**IARC:** None

**OSHA:** None

**Medical Conditions** None known.

**Aggravated by Exposure:**

## Section 4: First Aid Measures

**First Aid for Eye:** In case of contact, flush eyes with plenty of lukewarm water. Get medical attention if irritation develops or persists.

**First Aid for Skin:** In case of skin contact, wash affected areas with soap and water. Wash clothing and shoes before reuse. Get medical attention if irritation develops or persists.

**First Aid for Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediately call a physician.

**First Aid for Ingestion:** Give two glasses of water for dilution. Never give anything by mouth to an unconscious person. Immediately call a physician.

## Section 5: Fire Fighting Measures

**Flash Point:** Not applicable

### Flammable Limits:

**Upper Explosion Limit** Not applicable

**(UEL %):**

**Lower Explosion Limit** Not applicable

**(LEL %):**

**Auto-ignition Temperature:** Not Established

### Extinguishing Media:

**Suitable:** Sand, Dry powder type agents specially designed for metal powder fires.

**Unsuitable:** Water

**Special Fire Fighting Procedures:**

Do not apply water to burning material. Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. During a fire, irritating and toxic gases and aerosols may be generated by thermal decomposition and combustion.

**Unusual Fire/Explosion Hazards:**

Dust and fumes from this product may be a fire and explosion hazard when exposed to high temperatures or ignition sources. Particle size and dispersion in air determine reactivity.

**Section 6: Accidental Release Measures**

**Spill or Leak Procedures:**

Vacuum or sweep up material and place in appropriate container. Avoid generation of dust. If dust is generated, use appropriate respiratory protection. After removal, flush contaminated area thoroughly with water. Collect wash water for approved disposal. Keep from entering water or ground water.

**Section 7: Handling and Storage**

**Storage Temperature:**

Minimum: Room Temperature recommended 68-77F (20-25C)  
Maximum: 122 F (50 C)

**Shelf Life:**

Unlimited in tightly closed containers.

**Special Sensitivity:**

None known.

**Handling/Storage Precautions:**

Dust may form explosive mixtures with air. Protect against the buildup of electrostatic charges. Use only with grounded equipment. Avoid breathing dust. Keep away from heat, sparks and flames. Vent storage bins, conveyors, dust collectors, ground handling equipment, etc. Wash thoroughly after handling. Keep container closed when not in use.

**Section 8: Exposure Controls/Personal Protection**

**Personal Protection Equipment**

**Eye Protection Requirements:** Safety glasses or goggles.

**Skin Protection Requirements:** Chemically resistant gloves and clothing are recommended to minimize skin contact., Employees should wash their hands and face before eating, drinking or using tobacco products.

**Ventilation Requirements:** Use local exhaust ventilation if dusting is a problem, to maintain air levels below the recommended exposure limit.

**Respirator Requirements:** Work ambient concentrations should be monitored and if the recommended exposure limits are exceeded, a NIOSH approved dust respirator should be worn.

**Additional Protective Measures:** Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product.

### Section 9: Physical and Chemical Properties

**Physical Form:** Solid  
**Color:** Silver-grey, Grey to Black  
**Odor:** Odorless  
**Molecular Weight:** 95.94  
**pH:** Approximately 7 @ 100 g/l 68 °F (20 °C)  
**Boiling Point:** Not Applicable  
**Melting/Freezing Point:** 4,730 °F (2,610 °C)  
**Viscosity:** Not Applicable  
**Solubility in Water:** Insoluble  
**Specific Gravity:** 10.2  
**Bulk Density:** Not Established  
**Vapor Pressure:** Not Applicable

### Section 10: Stability and Reactivity

**Stability:** Stable, however, powder or dust in fine size may ignite during intensive mechanical treatment.

**Hazardous Polymerization:** Will not occur

**Substances to Avoid:** Evolves hydrogen upon contact with hydrogen fluoride and nitrogen oxides upon contact with nitric acid.

**Conditions to Avoid:** Keep away from sparks or ignition sources.

**Decomposition Temperature:** Not Established

**Decomposition Products:** Thermal decomposition may produce toxic oxides and fumes of the components of this product and other potentially toxic fumes.

### Section 11: Toxicological Information

#### Toxicity Data for Molybdenum Metal

**Toxicity Note:** No data available for this product.

#### Toxicity Data for Molybdenum

**Acute oral toxicity:** LD50 = > 2,000 mg/kg

### Section 12: Ecological Information

**Ecological Data for Molybdenum Metal**

**Ecological Note:** No data available for this product.

**Ecological Data for Molybdenum**

**Ecological Note:** No data available for this component.

**Section 13: Disposal Considerations**

**Waste Disposal Method:** May be reclaimed or sold for scrap. Disposal must be in compliance with federal, state and local environmental control regulations.

**Section 14: Transportation Information**

**Technical shipping name:** Molybdenum Metal Powder

**Freight Class**

**Bulk:** Metals, N.O.I. (NMFC 136500)

**Package:** Metals, N.O.I. (NMFC 136500)

**Product Label:** Molybdenum Metal Powder

**Domestic Surface Transportation (DOT)**

**Hazard Class or Division:** Non-Regulated

**Marine Transportation (IMO / IMDG)**

**Hazard Class Division** Non-Regulated

**Number:**

**Air Transportation (ICAO / IATA)**

**Hazard Class Division** Non-Regulated

**Number:**

**Radioactive?:** Non-Radioactive

**Section 15: Regulatory Information**

**United States Federal Regulations**

**OSHA Hazcom Standard Rating:** Hazardous

**TSCA Inventory List:** On TSCA Inventory

**CERCLA Hazardous Substance:**

Component(s)

None

Reportable Quantity

**SARA Title III**

**SARA Section 302 Extremely Hazardous Substances:**

<u>Component(s)/ CAS Number</u>	<u>Concentration</u>	
	<u>Min.</u>	<u>Max.</u>
None		

**SARA Section 311/312 Hazard Categories:** Immediate Health Hazard

**SARA Section 313 Toxic Chemicals:**

<u>Component(s)/ CAS Number</u>	<u>Reporting Threshold</u>	<u>Concentration</u>	
		<u>Min.</u>	<u>Max.</u>
None			

**RCRA Status:** If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**State Right-to-Know Information**

<u>Component(s)/ CAS Number</u>	<u>State Code</u>	<u>Concentration</u>	
		<u>Min.</u>	<u>Max.</u>
Molybdenum 7439-98-7	PA-H, NJ-H, MA-H	95%	0%

**State Code Translation Table**

PA-H = Pennsylvania Hazardous Substance List  
NJ-H = New Jersey Hazardous Substance List  
MA-H = Massachusetts Hazardous Substance List

**Section 16: Other Information**

Contact Person: Product Safety Department  
Telephone: (412) 777-2835  
MSDS Number: 000000002088  
Version Date: 12/19/2006  
MSDS Version: 1.5

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|| Indicates Relevant Change Made.