



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Molybdenum (Mo)

**Other means of identification**

SDS number	1WT
Materion Code	1WT
CAS number	7439-98-7

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

<b>Company name</b>	Materion Advanced Chemicals Inc.	
<b>Address</b>	407 N 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States	
<b>Telephone</b>	414.212.0257	
<b>E-mail</b>	advancedmaterials@materion.com	
<b>Contact person</b>	Laura Hamilton	
<b>Emergency phone number</b>	Chemtrec	800.424.9300

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
<b>Environmental hazards</b>	Not classified.
<b>OSHA defined hazards</b>	Not classified.

**Label elements**



<b>Signal word</b>	Warning
<b>Hazard statement</b>	May cause respiratory irritation.
<b>Precautionary statement</b>	
<b>Prevention</b>	Avoid breathing dust. Use only outdoors or in a well-ventilated area.
<b>Response</b>	If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 3. Composition/information on ingredients

**Substances**

Chemical name	Common name and synonyms	CAS number	%
Molybdenum		7439-98-7	90 - 100

## 4. First-aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
<b>Skin contact</b>	Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Get medical advice/attention if you feel unwell.
<b>Most important symptoms/effects, acute and delayed</b>	Diarrhea. Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Wear suitable protective equipment.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
<b>Methods and materials for containment and cleaning up</b>	<p>Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. The product is immiscible with water and will spread on the water surface. Prevent entry into waterways, sewer, basements or confined areas.</p> <p>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.</p> <p>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.</p> <p>Never return spills to original containers for re-use.</p>
<b>Environmental precautions</b>	Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
Molybdenum (CAS 7439-98-7)	PEL	15 mg/m <sup>3</sup>	Total dust.

#### US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Material	Type	Value	Form
Molybdenum (CAS 7439-98-7)	PEL	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Total dust.

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust/particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

#### Skin protection

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Other** Wear suitable protective clothing.

**Respiratory protection** Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

## 9. Physical and chemical properties

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	Not available.
<b>Odor</b>	Not available.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	4751.6 °F (2622 °C)
<b>Initial boiling point and boiling range</b>	8382.2 °F (4639 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.

**Upper/lower flammability or explosive limits**

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure < 0.0000001 kPa at 25 °C

Vapor density Not available.

Relative density Not available.

**Solubility(ies)**

Solubility (water) Insoluble

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

**Other information**

Density 10.28 g/cm<sup>3</sup> estimated

Explosive properties Not explosive.

Molecular formula Mo

Molecular weight 95.94 g/mol

Oxidizing properties Not oxidizing.

Specific gravity 10.28

**10. Stability and reactivity**

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**Conditions to avoid** Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition products** No hazardous decomposition products are known.

**11. Toxicological information****Information on likely routes of exposure**

**Inhalation** Dust may irritate respiratory system. Prolonged inhalation may be harmful.

**Skin contact** Due to lack of data the classification is not possible. Dust or powder may irritate the skin.

**Eye contact** Dust may irritate the eyes.

**Ingestion** Due to lack of data the classification is not possible.

**Symptoms related to the physical, chemical and toxicological characteristics** Diarrhea. Dusts may irritate the respiratory tract, skin and eyes.

**Information on toxicological effects**

**Acute toxicity** May cause respiratory irritation.

**Skin corrosion/irritation** Due to lack of data the classification is not possible.

**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

**Respiratory or skin sensitization**  
**Respiratory sensitization** Due to lack of data the classification is not possible.  
**Skin sensitization** Due to lack of data the classification is not possible.  
**Germ cell mutagenicity** Due to lack of data the classification is not possible.  
**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)**

Not regulated.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Not listed.

**Reproductive toxicity** Due to lack of data the classification is not possible.  
**Specific target organ toxicity - single exposure** Respiratory tract irritation.  
**Specific target organ toxicity - repeated exposure** Due to lack of data the classification is not possible.  
**Aspiration hazard** Due to lack of data the classification is not possible.  
**Chronic effects** Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity** Contains a substance which causes risk of hazardous effects to the environment.

Product	Species	Test Results
Molybdenum (CAS 7439-98-7)		
<b>Aquatic</b>		
Fish	LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss)	800 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.  
**Bioaccumulative potential** No data available.  
**Mobility in soil** No data available.  
**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**13. Disposal considerations**

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.  
**Local disposal regulations** Dispose in accordance with all applicable regulations.  
**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.  
**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).  
**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory information

**US federal regulations** CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.  
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Toxic Substances Control Act (TSCA)

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

#### SARA 313 (TRI reporting)

Not regulated.

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

### California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Molybdenum (CAS 7439-98-7)

## 16. Other information, including date of preparation or last revision

**Issue date** 12-04-2013

**Revision date** 01-12-2018

**Version #** 04

**Disclaimer**

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