



# PRODUCT INFORMATION SHEET

**MATERION**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Name of the substance** Molybdenum Product  
**Identification number** 231-107-2 (EC number)  
**Registration number** -  
**Document number** 133  
**Synonyms** None.  
**Issue date** 01-June-2015  
**Version number** 07

### 1.3. Details of the supplier of the product information sheet

#### Supplier

**Company name** Materion Advanced Materials Group  
**Address** 42 Mt. Ebo Road South  
Brewster, NY 10509  
United States

#### Division

**Telephone** 1+845.279.0900  
**e-mail** Not available.  
**Contact person** Not available.

**1.4. Emergency telephone number** Chemtrec 1+703.527.3887

**Revision date** 21-February-2019

**Supersedes date** 21-February-2019

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Not available.  
**Uses advised against** None known.

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

**Company name** Materion Advanced Materials Group  
**Address** 42 Mt. Ebo Road South  
Brewster, NY 10509  
United States

#### Division

**Telephone** 1+845.279.0900  
**e-mail** Not available.  
**Contact person** Not available.

**1.4. Emergency telephone number** Chemtrec 1+703.527.3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 as amended

**Hazard summary** Not available.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Molybdenum

**Hazard pictograms** None.

**Signal word** None.

**Hazard statements** The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

## Precautionary statements

<b>Prevention</b>	Not available.
<b>Response</b>	Not available.
<b>Storage</b>	Not available.
<b>Disposal</b>	Not available.

**Supplemental label information** None.

**2.3. Other hazards** None known.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Molybdenum	100 - 100	7439-98-7 231-107-2	-	-	
<b>Classification:</b>	-				

## SECTION 4: First aid measures

**General information** Not available.

### 4.1. Description of first aid measures

<b>Inhalation</b>	Not available.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Not available.
<b>Ingestion</b>	Not available.

**4.2. Most important symptoms and effects, both acute and delayed** Not available.

**4.3. Indication of any immediate medical attention and special treatment needed** Not available.

## SECTION 5: Firefighting measures

**General fire hazards** Not available.

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Not available.
<b>Unsuitable extinguishing media</b>	Not available.

**5.2. Special hazards arising from the substance or mixture** Not available.

### 5.3. Advice for firefighters

<b>Special protective equipment for firefighters</b>	Not available.
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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Not available.
<b>For emergency responders</b>	Not available.

**6.2. Environmental precautions** Not available.

**6.3. Methods and material for containment and cleaning up** Not available.

**6.4. Reference to other sections** Not available.

## SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

7.3. Specific end use(s) Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Molybdenum Product	MAK	10 mg/m3	Inhalable fraction.
	STEL	20 mg/m3	Inhalable fraction.
Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	MAK	10 mg/m3	Inhalable fraction.
	STEL	20 mg/m3	Inhalable fraction.

##### Belgium. Exposure Limit Values.

Material	Type	Value
Molybdenum Product	TWA	10 mg/m3
	Components	Type
Molybdenum (CAS 7439-98-7)	TWA	10 mg/m3

##### Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Material	Type	Value
Molybdenum Product	TWA	10 mg/m3
	Components	Type
Molybdenum (CAS 7439-98-7)	TWA	10 mg/m3

##### Czech Republic. OELs. Government Decree 361

Material	Type	Value
Molybdenum Product	Ceiling	25 mg/m3
	TWA	5 mg/m3
Components	Type	Value
Molybdenum (CAS 7439-98-7)	Ceiling	25 mg/m3
	TWA	5 mg/m3

##### Denmark. Exposure Limit Values

Material	Type	Value
Molybdenum Product	TLV	10 mg/m3
	Components	Type
Molybdenum (CAS 7439-98-7)	TLV	10 mg/m3

##### Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Material	Type	Value	Form
Molybdenum Product	TWA	5 mg/m3	Respirable dust.
		10 mg/m3	Total dust.
Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	TWA	5 mg/m3	Respirable dust.

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**

Components	Type	Value	Form
		10 mg/m <sup>3</sup>	Total dust.

**Finland. Workplace Exposure Limits**

Material	Type	Value
Molybdenum Product	TWA	0,5 mg/m <sup>3</sup>

Components	Type	Value
Molybdenum (CAS 7439-98-7)	TWA	0,5 mg/m <sup>3</sup>

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Material	Type	Value
Molybdenum Product	STEL	60 mg/m <sup>3</sup>
	TWA	15 mg/m <sup>3</sup>

Components	Type	Value
Molybdenum (CAS 7439-98-7)	STEL	60 mg/m <sup>3</sup>
	TWA	15 mg/m <sup>3</sup>

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Material	Type	Value
Molybdenum Product	TWA	10 mg/m <sup>3</sup>

Components	Type	Value
Molybdenum (CAS 7439-98-7)	TWA	10 mg/m <sup>3</sup>

**Ireland. Occupational Exposure Limits**

Material	Type	Value	Form
Molybdenum Product	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.

Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.

**Italy. Occupational Exposure Limits**

Material	Type	Value	Form
Molybdenum Product	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.

Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

Material	Type	Value	Form
Molybdenum Product	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		5 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	Inhalable fraction.

Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		5 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	Inhalable fraction.

**Norway. Administrative Norms for Contaminants in the Workplace**

Material	Type	Value
Molybdenum Product	TLV	10 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>
Molybdenum (CAS 7439-98-7)	TLV	10 mg/m <sup>3</sup>

**Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817**

Material	Type	Value
Molybdenum Product	STEL	10 mg/m <sup>3</sup>
	TWA	4 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>
Molybdenum (CAS 7439-98-7)	STEL	10 mg/m <sup>3</sup>
	TWA	4 mg/m <sup>3</sup>

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)**

Material	Type	Value	Form
Molybdenum Product	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Molybdenum (CAS 7439-98-7)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.

**Romania. OELs. Protection of workers from exposure to chemical agents at the workplace**

Material	Type	Value
Molybdenum Product	STEL	10 mg/m <sup>3</sup>
	TWA	2 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>
Molybdenum (CAS 7439-98-7)	STEL	10 mg/m <sup>3</sup>
	TWA	2 mg/m <sup>3</sup>

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

Material	Type	Value	Form
Molybdenum Product	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		5 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	Inhalable fraction.
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Molybdenum (CAS 7439-98-7)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		5 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	Inhalable fraction.

**Spain. Occupational Exposure Limits**

Material	Type	Value	Form
Molybdenum Product	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Molybdenum (CAS 7439-98-7)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)**

<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Molybdenum Product	TWA	5 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>

Molybdenum (CAS 7439-98-7)	TWA	5 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Molybdenum Product	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>

Molybdenum (CAS 7439-98-7)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
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**UK. EH40 Workplace Exposure Limits (WELs)**

<b>Material</b>	<b>Type</b>	<b>Value</b>
Molybdenum Product	STEL	20 mg/m <sup>3</sup>
	TWA	10 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>

Molybdenum (CAS 7439-98-7)	STEL	20 mg/m <sup>3</sup>
	TWA	10 mg/m <sup>3</sup>

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

**Recommended monitoring procedures** Not available.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

**8.2. Exposure controls**

**Appropriate engineering controls** Not available.

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

**General information** Not available.

**Eye/face protection** Not available.

**Skin protection**

- **Hand protection** Not available.

- **Other** Not available.

**Respiratory protection** Not available.

**Thermal hazards** Not available.

**Hygiene measures** Not available.

**Environmental exposure controls** Not available.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties****Appearance**

**Physical state** Solid.

**Form** Not available.

**Colour** Not available.

**Odour** Not available.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 2622 °C (4751,6 °F)

<b>Initial boiling point and boiling range</b>	4639 °C (8382,2 °F)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	< 0,0000001 kPa (25 °C (77 °F))
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not available.
<b>Oxidising properties</b>	Not available.
<b>9.2. Other information</b>	
<b>Density</b>	10,28 g/cm <sup>3</sup> estimated
<b>Molecular formula</b>	Mo
<b>Molecular weight</b>	95,94 g/mol
<b>Specific gravity</b>	10,28

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	Not available.
<b>10.2. Chemical stability</b>	Not available.
<b>10.3. Possibility of hazardous reactions</b>	Not available.
<b>10.4. Conditions to avoid</b>	Not available.
<b>10.5. Incompatible materials</b>	Not available.
<b>10.6. Hazardous decomposition products</b>	Not available.

## SECTION 11: Toxicological information

<b>General information</b>	Not available.
<b>Information on likely routes of exposure</b>	
<b>Inhalation</b>	Not available.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Not available.
<b>Ingestion</b>	Not available.
<b>Symptoms</b>	Not available.
<b>11.1. Information on toxicological effects</b>	
<b>Acute toxicity</b>	No data available.
<b>Skin corrosion/irritation</b>	Not available.
<b>Serious eye damage/eye irritation</b>	Not available.
<b>Respiratory sensitisation</b>	Not available.
<b>Skin sensitisation</b>	Not available.
<b>Germ cell mutagenicity</b>	Not available.
<b>Carcinogenicity</b>	

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**

Not listed.

<b>Reproductive toxicity</b>	Not available.
<b>Specific target organ toxicity - single exposure</b>	Not available.
<b>Specific target organ toxicity - repeated exposure</b>	Not available.
<b>Aspiration hazard</b>	Not available.
<b>Mixture versus substance information</b>	Not available.
<b>Other information</b>	Not available.

**SECTION 12: Ecological information**

**12.1. Toxicity**

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

**12.2. Persistence and degradability** Not available.

**12.3. Bioaccumulative potential** Not available.

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

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** Not available.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** Not available.

**12.7. Additional information**

**Estonia Dangerous substances in groundwater Data**

Molybdenum (CAS 7439-98-7)

Molybdenum (Mo) 5 ug/l  
Molybdenum (Mo) 70 ug/l

**Estonia Dangerous substances in soil Data**

Molybdenum (CAS 7439-98-7)

Molybdenum (Mo) 10 mg/kg  
Molybdenum (Mo) 20 mg/kg  
Molybdenum (Mo) 200 mg/kg

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Residual waste** Not available.

**Contaminated packaging** Not available.

**EU waste code** Not available.

**SECTION 14: Transport information**

**ADR**

14.1. - 14.6.: Not regulated as dangerous goods.

**RID**

14.1. - 14.6.: Not regulated as dangerous goods.

**ADN**

14.1. - 14.6.: Not regulated as dangerous goods.

**IATA**

14.1. - 14.6.: Not regulated as dangerous goods.

**IMDG**

14.1. - 14.6.: Not regulated as dangerous goods.



## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

#### National regulations

Not available.

#### 15.2. Chemical safety assessment

Not available.

## SECTION 16: Other information

#### List of abbreviations

Not available.

#### References

Not available.

#### Information on evaluation method leading to the classification of mixture

Not available.

#### Revision information

None.

#### Training information

Not available.