



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
Revision date 25-February-2020
Supersedes date 21-February-2019
Version number 08

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

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

Identified uses Not available.
Uses advised against None known.

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



Signal word None.

Hazard statements

H335

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.
May cause respiratory irritation.

Precautionary statements

Prevention Not available.
Response Not available.
Storage Not available.
Disposal 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	-	-	
Classification:	-				

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion 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

Suitable extinguishing media Not available.

Unsuitable extinguishing media Not available.

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

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Not available.

For emergency responders 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	Value
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	Value
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	Value
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.
		10 mg/m3	Total dust.

Finland. Workplace Exposure Limits

Material	Type	Value
Molybdenum Product	TWA	0,5 mg/m3

Finland. Workplace Exposure Limits Components

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

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

Type	Value
Molybdenum Product STEL	60 mg/m ³
TWA	15 mg/m ³

Components

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

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

Type	Value
Molybdenum Product TWA	10 mg/m ³

Components

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

Ireland. Occupational Exposure Limits Material

Type	Value	Form
Molybdenum Product TWA	3 mg/m ³ 10 mg/m ³	Respirable fraction. Inhalable fraction.

Components

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

Italy. Occupational Exposure Limits Material

Type	Value	Form
Molybdenum Product TWA	3 mg/m ³ 10 mg/m ³	Respirable fraction. Inhalable fraction.

Components

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

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

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

Components

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

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

Type	Value	Form
Molybdenum Product TLV	10 mg/m ³	

Components

Type	Value
Molybdenum (CAS 7439-98-7) TLV	10 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace Material

Type	Value
Molybdenum Product TLV	10 mg/m ³

Components

Type	Value
Molybdenum (CAS 7439-98-7) TLV	10 mg/m ³

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 ³
	TWA	4 mg/m ³

Components	Type	Value
Molybdenum (CAS 7439-98-7)	STEL	10 mg/m ³
	TWA	4 mg/m ³

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

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

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

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

Material	Type	Value
Molybdenum Product	STEL	10 mg/m ³
	TWA	2 mg/m ³

Components	Type	Value
Molybdenum (CAS 7439-98-7)	STEL	10 mg/m ³
	TWA	2 mg/m ³

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 ³	Respirable fraction.
		5 mg/m ³	
		10 mg/m ³	Inhalable fraction.

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

Spain. Occupational Exposure Limits

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

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

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

Material	Type	Value	Form
Molybdenum Product	TWA	5 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	TWA	5 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Molybdenum Product	TWA	10 mg/m3	Inhalable fraction.
Components	Type	Value	Form
Molybdenum (CAS 7439-98-7)	TWA	10 mg/m3	Inhalable fraction.
UK. EH40 Workplace Exposure Limits (WELs)			
Material	Type	Value	
Molybdenum Product	STEL	20 mg/m3	
	TWA	10 mg/m3	
Components	Type	Value	
Molybdenum (CAS 7439-98-7)	STEL	20 mg/m3	
	TWA	10 mg/m3	

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)

Initial boiling point and boiling range 4639 °C (8382,2 °F)

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%)	Not available.
Vapour pressure	< 0,0000001 kPa (25 °C (77 °F))
Vapour 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.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information

Density	10,28 g/cm ³ estimated
Molecular formula	Mo
Molecular weight	95,94 g/mol
Specific gravity	10,28

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

General information Not available.

Information on likely routes of exposure

Inhalation	Not available.
Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.

Symptoms Not available.

11.1. Information on toxicological effects

Acute toxicity	No data available.
Skin corrosion/irritation	Not available.
Serious eye damage/eye irritation	Not available.
Respiratory sensitisation	Not available.
Skin sensitisation	Not available.
Germ cell mutagenicity	Not available.

Carcinogenicity

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

Not listed.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.

Mixture versus substance information Not available.

Other information Not available.

SECTION 12: Ecological information

12.1. Toxicity

Product	Species	Test Results
Molybdenum Product		
Aquatic		
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.

Training information

Not available.