

<a href="#">Molybdenum Disulfide Flakes</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Disulfide Ink</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Disulfide Nanoparticle Dispersion</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Disulfide Nanotubes</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Disulfide Single Crystal</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Disulfide Sputtering Target</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Disulfide Ultrafine Powder</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Sulfide</a>	<a href="#">Pricing &gt;</a>
<a href="#">Molybdenum Sulfide Nanoparticles</a>	<a href="#">Pricing &gt;</a>

<b>Linear Formula</b>	MoS <sub>2</sub>
<b>Pubchem CID</b>	14823
<b>MDL Number</b>	MFCD00003470
<b>EC No.</b>	215-263-9
<b>IUPAC Name</b>	bis(sulfanylidene)molybdenum
<b>SMILES</b>	S=[Mo]=S
<b>Inchl Identifier</b>	InChI=1S/Mo.2S
<b>Inchl Key</b>	CWQXQMHSOZUFJS-UHFFFAOYSA-N
<b>Signal Word</b>	Warning
<b>Hazard Statements</b>	H315-H319-H335
<b>Hazard Codes</b>	Xi
<b>Precautionary Statements</b>	P261-P280-P305+P351+P338-P304+P340-P405-P501
<b>Risk Codes</b>	N/A
<b>Safety Statements</b>	N/A
<b>RTECS Number</b>	QA4697000
<b>Transport Information</b>	NONH for all modes of transport

WGK Germany	3
GHS Pictograms	<a href="#">GHS07 Exclamation Point</a> 

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# SAFETY DATA SHEET

Date Accessed: 04/24/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #1317-33-5

**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:  
Domestic, North America +1 800-424-9300  
International +1 703-527-3887

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008  
GHS07  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.  
Classification according to Directive 67/548/EEC or Directive 1999/45/EC  
Xi; Irritant  
R36/37/38: Irritating to eyes, respiratory system and skin.  
Information concerning particular hazards for human and environment:  
N/A  
Hazards not otherwise classified  
No data available  
Label elements  
Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.  
Hazard pictograms



GHS07

Signal word

Warning

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing

dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

1

0

1

Health (acute effects) = 1

Flammability = 0

Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

CAS No. / Substance Name:  
1317-33-5 Molybdenum(IV) sulfide  
Identification number(s):  
EC number:  
215-263-9

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

Description of first aid measures

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

No data available

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Sulfur oxides (SO<sub>x</sub>)

Metal oxide fume

Hydrogen sulfide

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE**

## MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow product to enter drains, sewage systems, or other water courses.

Do not allow material to penetrate the ground or soil.

Methods and materials for containment and cleanup:

Ensure adequate ventilation.

Prevention of secondary hazards:

No special measures required.

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.

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## SECTION 7. HANDLING AND STORAGE

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

The product is not flammable

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:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face

velocity of at least 100 feet per minute.  
Control parameters  
Components with limit values that require monitoring  
at the workplace:  
1317-33-5 Molybdenum(IV) sulfide (100.0%)  
TLV (USA) Long-term value:  $10 \times 10^{-3}$  mg/m<sup>3</sup>  
as Mo; \*inhalable fraction  
on \*\* respirable fraction  
EL (Canada) Long-term value:  $3 \times 10^{-3}$  mg/m<sup>3</sup>  
as Mo; \*respirable \*\*inhalable  
Additional information:  
No data  
Exposure controls  
Personal protective equipment  
Follow typical protective and hygienic practices for  
handling chemicals.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing  
immediately.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working  
environment.  
Breathing equipment:  
Use suitable respirator when high concentrations are  
present.  
Protection of hands:  
Impervious gloves  
Inspect gloves prior to use.  
Suitability of gloves should be determined both by  
material and quality, the latter of which may vary by  
manufacturer.  
Penetration time of glove material (in minutes)  
No data available  
Eye protection:  
Safety glasses  
Body protection:  
Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties  
Appearance:  
Form: Solid in various forms  
Color: Black  
Odor: Odorless  
Odor threshold: No data available.  
pH: N/A  
Melting point/Melting range: 1185 °C (2165 °F)  
Boiling point/Boiling range: No data available  
Sublimation temperature / start: No data available

Flammability (solid, gas)  
No data available.  
Ignition temperature: No data available  
Decomposition temperature: No data available  
Autoignition: No data available.  
Danger of explosion: No data available.  
Explosion limits:  
Lower: No data available  
Upper: No data available  
Vapor pressure: N/A  
Density: No data available  
Relative density  
No data available.  
Vapor density  
N/A  
Evaporation rate  
N/A  
Solubility in Water (H<sub>2</sub>O): Insoluble  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information  
No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
No data available  
Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions  
Reacts with strong oxidizing agents  
Conditions to avoid  
No data available  
Incompatible materials:  
Oxidizing agents  
Hazardous decomposition products:  
Sulfur oxides (SO<sub>x</sub>)  
Metal oxide fume  
Hydrogen sulfide

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

Causes skin irritation.

Eye irritation or corrosion:

Causes serious eye damage.

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

May cause respiratory irritation.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available



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## **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.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, ADN, IMDG, IATA

N/A

UN proper shipping name

DOT, ADN, IMDG, IATA

N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

N/A

Packing group

DOT, IMDG, IATA

N/A

Environmental hazards:

N/A

Special precautions for user

N/A

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

N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

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## **SECTION 15. REGULATORY INFORMATION**

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

National regulations

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

All components of this product are listed on the  
Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)  
Substance is not listed.  
California Proposition 65  
Prop 65 - Chemicals known to cause cancer  
Substance is not listed.  
Prop 65 - Developmental toxicity  
Substance is not listed.  
Prop 65 - Developmental toxicity, female  
Substance is not listed.  
Prop 65 - Developmental toxicity, male  
Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
Other regulations, limitations and prohibitive  
regulations  
Substance of Very High Concern (SVHC) according to  
the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67  
and Annex XVII of the Regulation (EC) No 1907/2006  
(REACH) for the manufacturing, placing on the market  
and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring  
Authorisation for use)  
Substance is not listed.  
REACH - Pre-registered substances  
Substance is listed.  
Chemical safety assessment:  
A Chemical Safety Assessment has not been carried  
out.

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## **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.

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