



## Safety Data Sheet

According to 29 CFR 1910.1200 (OSHA HCS)

SDS No. 1470

Review date February 22, 2021

### 1 Identification of substance and company

#### Product details


**Product name:** ***Molybdenum (IV) Sulfide***  
**Product code:** 11267, 12856, 14132, 17360  
**Relevant identified uses of the substance:** Research and product development  
**Manufacturer/Supplier:** Noah Technologies Corporation  
1 Noah Park  
San Antonio, Texas 78249-3419  
Phone: (210) 691-2000  
Fax: (210) 691-2600  
Web site: www.noahtech.com  
Email: sales@noahtech.com

**Emergency information:** CHEMTREC  
800-424-9300

### 2 Hazards identification

**Hazard designation:** Irritant

**GHS label elements**



**Signal word:** Warning

**GHS Classification:** Skin irritation - 2  
Eye irritation - 2A  
Specific target organ toxicity - single exposure - 3, respiratory system

**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

**Response:** P301+330+331 - IF SWALLOWED: If conscious, rinse mouth and give water. Do NOT induce vomiting.  
P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 - IF INHALED: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Only qualified personnel should administer oxygen.  
P305 - IF IN EYES: Flush with plenty of water for at least 15 minutes. Lift upper and lower eyelids while flushing to ensure complete removal.  
P363 - Wash contaminated clothing before reuse  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**HMIS ratings (scale 0-4):**

Health	1
Flammability	0
Physical hazard	0

### 3 Composition/Information on ingredients

**Chemical name:** Molybdenum (IV) sulfide  
**Designation: (CAS#):** 1317-33-5  
**Formula:** MoS<sub>2</sub>  
**Synonyms:** Molybdenum disulfide, molysulfide, moly disulfide  
**Identification number(s):**  
**EC Number:** 215-263-9

### 4 First aid measures

**After inhalation:** Seek immediate medical advice  
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**After skin contact:** Instantly wash with water and soap and rinse thoroughly  
If irritation persists, consult a physician

**After eye contact:** Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.

**After swallowing:** If conscious, rinse mouth out with water and seek medical advice

### 5 Fire-fighting measures

**Fire-fighting precautions:** Will burn at high temperatures. Under standard conditions of temperature and pressure, molybdenum sulfide is slight fire hazard when exposed to heat or flame

<b>Suitable extinguishing agents:</b>	Standard extinguishing media such as water, sand, foam. Use firefighting measures that suit the location and surroundings.
<b>Special hazards caused by the material, its products of combustion or resulting gases:</b>	In case of fire, the following can be released: Oxides of molybdenum and sulfur (SOx), hydrogen sulfide
<b>Protective equipment:</b>	Wear self-contained breathing apparatus Wear fully protective fire fighting equipment/clothing in fire situations

#### 6 Accidental release measures

<b>Person-related safety precautions:</b>	Wear personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation
<b>Measures for environmental protection:</b>	Do not allow material to be released to the environment without proper governmental permits
<b>Measures for cleaning/collecting:</b>	Dispose of contaminated material as waste according to item 13 Place in a suitable container for proper disposal Ventilate and wash spill site after material removal is complete
<b>Additional information:</b>	See Section 7 for information on safe handling See Section 8 for information on personal protective equipment See Section 13 for information on disposal

#### 7 Handling and storage

<b>Information for safe handling:</b>	Keep containers tightly sealed Store in cool, dry place in tightly closed containers Ensure good ventilation/exhaustion at the workplace
<b>Information about protection against explosions and fires:</b>	This product is not flammable
<b>Storage requirements to be met by storerooms and containers:</b>	No special requirements
<b>Information about storage in one common storage facility:</b>	Do not store together with oxidizing agents
<b>Further information about storage conditions:</b>	Keep container tightly sealed Store in cool, dry conditions in well sealed containers

#### 8 Exposure controls/personal protection

<b>Additional information about design of technical systems:</b>	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute								
<b>Components with critical values that require monitoring at the workplace:</b>	<table> <tr> <td>Molybdenum (IV) sulfide</td> <td>(mg/m3)</td> </tr> <tr> <td>ACGIH TLV</td> <td>5; Not classified as a human carcinogen</td> </tr> <tr> <td>USA PEL</td> <td>15 (total dust)</td> </tr> <tr> <td></td> <td>5 (respirable fraction)</td> </tr> </table>	Molybdenum (IV) sulfide	(mg/m3)	ACGIH TLV	5; Not classified as a human carcinogen	USA PEL	15 (total dust)		5 (respirable fraction)
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<b>Additional information:</b>	None								
<b>Personal protective equipment:</b>	The usual precautionary measures should be adhered to in handling the chemicals Keep away from foodstuffs, beverages and food Instantly remove any soiled and impregnated garments Wash hands during breaks and at the end of the work								
<b>General protective and hygienic measures:</b>	Use suitable respirator when high concentrations are present Use only NIOSH/MESA or CEN approved dust mask type N95 or TYPE P1 (EN 143)								
<b>Respiratory protection:</b>	Impervious gloves								
<b>Hand protection:</b>	Safety glasses								
<b>Eye protection:</b>	Protective work clothing								
<b>Skin protection:</b>	Sufficient to prevent contact								
<b>Additional protective equipment:</b>	Emergency eyewash and safety shower								

#### 9 Physical and chemical properties

<b>General Information:</b>	
<b>Physical state:</b>	Powder
<b>Color:</b>	Blue-grey to black
<b>Smell:</b>	Odorless
<b>Molecular Weight (Calculated):</b>	160.08
<b>pH (5% solution)</b>	No data available
<b>Melting point/range:</b>	1185 °C
<b>Boiling point/range:</b>	No data available
<b>Sublimation temperature/start:</b>	No data available
<b>Flash point:</b>	Non-flammable
<b>Autoignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Danger of explosion:</b>	Product does not present an explosion hazard
<b>Flammable limits:</b>	
<b>Lower:</b>	No data available
<b>Upper:</b>	No data available
<b>Vapor pressure (mm Hg):</b>	No data available
<b>Specific gravity at 20 °C</b>	5.06
<b>Solubility in/Miscibility with water at 20 °C</b>	Insoluble

#### 10 Stability and reactivity

<b>Conditions to be avoided:</b>	No decomposition if used and stored according to specifications See section 7 for information on proper handling and storage
<b>Materials to be avoided:</b>	Hydrogen peroxide, potassium nitrate and most oxidizers
<b>Dangerous reactions:</b>	Violent reaction with hydrogen peroxide
<b>Hazardous decomposition products:</b>	Molybdenum and sulfur oxides (SOx), hydrogen sulfide

#### 11 Toxicological information

<b>Acute toxicity:</b>	
<b>LD/LC50 values that are relevant for classification:</b>	oral-rat LD <sub>50</sub> : > 2 g/kg skin-rat LD <sub>50</sub> : > 2000 mg/kg inhalation-rat LC <sub>50</sub> : > 2820 mg/kg/4H
<b>Primary irritant effect:</b>	
<b>on the skin:</b>	May cause mild irritation
<b>on the eye:</b>	May cause moderate irritation
<b>Sensitization:</b>	No sensitizing effect known
<b>Additional toxicological information:</b>	Acute molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma and death from cardiac failure. Chronic molybdenum poisoning in laboratory animals has caused loss of weight, anorexia, anemia, deficient lactation, male sterility, osteoporosis and bone joint abnormalities. Sulfides show variable toxicity. Transition metal sulfides are generally insoluble and show little toxic action except through the liberation of hydrogen sulfide.
<b>Carcinogenicity:</b>	No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

#### 12 Ecological information

<b>General notes:</b>	No further relevant toxicity information available Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system Do not allow material to be released to the environment without proper governmental permits
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#### 13 Disposal considerations

<b>Product recommendation:</b>	Consult state, local or national regulation for proper disposal Allow professional disposal company to handle waste
<b>Unclean packaging recommendation:</b>	Disposal must be made according to official regulations
<b>Recommended cleaning agent:</b>	Water, if necessary with cleaning agent

#### 14 Transport information

##### Land transport DOT

<b>Proper shipping name:</b>	Chemicals Non-Hazardous
<b>Technical name:</b>	Molybdenum (IV) sulfide

##### Air transport ICAO-TI and IATA-DGR:

<b>Proper shipping name:</b>	Chemicals Non-Hazardous
<b>Technical name:</b>	Molybdenum (IV) sulfide

##### UPS Ground / FedEx Ground

<b>Proper shipping name:</b>	Chemicals Non-Hazardous
<b>Technical name:</b>	Molybdenum (IV) sulfide

##### UPS Air

<b>Proper shipping name:</b>	Chemicals Non-Hazardous
<b>Technical name:</b>	Molybdenum (IV) sulfide

#### 15 Regulatory information

<b>National regulations:</b>	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)
<b>California Proposition 65:</b>	Not regulated
<b>Information about limitation of use:</b>	For use only by technically qualified individuals

#### 16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.