



Safety Data Sheet
According to 29 CFR 1910.1200 (OSHA HCS)

SDS No. 1450

Review date June 2, 2020

1 Identification of substance and company

Product details

Product name: **Molybdenum metal**
Product code: 11404, 12005, 14077, 15323, 16152, 17146, 18053, C2886
Recommended use of the chemical and restrictions on use: Research and product development
Manufacturer/Supplier: Noah Technologies Corporation
1 Noah Park
San Antonio, Texas 78249-3419
Phone: (210) 691-2000
Web site: www.noahtech.com
Emergency information: CHEMTREC
800-424-9300

2 Hazards identification

Signal Word: None
Pictogram: None
Classification: Not a hazardous substance
Hazard statements: None
Precautionary statements: None
HMIS ratings (scale 0-4):
HEALTH 0
FLAMMABILITY 0
PHYSICAL HAZARD 0

3 Composition/Information on ingredients

Chemical name: Molybdenum metal
Designation: (CAS#): 7439-98-7
EC Number: 231-107-2
Formula: Mo
Synonyms: None identified

4 First aid measures

After inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Seek medical advice
After skin contact: Instantly wash with water and soap and rinse thoroughly
Seek medical advice
After eye contact: Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers.
Seek medical advice
After swallowing: If conscious, rinse mouth with water. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed: None identified
Indication of any immediate medical attention and special treatment needed None identified

5 Fire-fighting measures

Suitable extinguishing agents: Special powder for metal fires, alcohol-resistant foam, dry chemical or carbon dioxide. Do not use water.
Special hazards arising from: Dust explosion hazard
Products of combustion or re Oxides of molybdenum
Protective equipment: Wear self-contained breathing apparatus
Wear fully protective fire fighting equipment/clothing in fire situations
Advice for firefighters: Do not use halogenated extinguisher

6 Accidental release measures

Person-related safety precau Wear personal protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Measures for environmental protection: Do not allow material to be released to the environment without proper governmental permits

Measures for cleaning/collecting: Evacuate area. Shut off all sources of ignition. Avoid raising dust. Use non-sparking tools.
Ventilate and wash spill site after material removal is complete

Additional information: 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

Information for safe handling: Keep container closed.
Keep away from heat, sparks and open flames.
Use explosive proof equipment
Best if stored under inert atmosphere conditions

Information about protection against explosions and fires: Dust explosion hazard

Storage requirements to be met by storerooms

and containers: Keep away from heat, sparks, and open flames. Keep container tightly closed.

Information about storage in one common

storage facility: Do not store with strong oxidizers

Further information about storage: Store under dry conditions. Moisture sensitive.

Keep container tightly sealed
Store in cool, dry conditions in well sealed containers

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

Components with critical values that require

monitoring at the workplace: This material does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: No data

Personal protective equipment

General protective and hygiene: 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
Avoid contact with the eyes and skin

Respiratory protection: Use suitable respirator when high concentrations are present. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Use a respirator with type N95 (USA) or PE (EN143) cartridges as a backup to engineering controls.

Hand protection: Impervious gloves

Eye protection: Safety glasses

Skin protection: Protective work clothing

Additional protective equipment: Sufficient to prevent contact

Emergency eyewash and safety shower

9 Physical and chemical properties

General Information:

Physical state: Powder or pieces

Color: Dark grey to silver

Smell: Odorless

Molecular Weight (Calculated): 95.94

pH (5% solution): Not determined

Melting point/range: 2617 C

Boiling point/range: 4612 C

Sublimation temperature/star: Not determined

Flash point: Not determined

Autoignition temperature: Not determined

Decomposition temperature: Not determined

Flammability (solid, gas): Not determined

Danger of explosion: Not determined

Flammable limits: Not determined

Lower: Not determined

Upper: Not determined

Vapor pressure (mm Hg): 1 mm @ 3102 C

Density at 20 °C: 10.22

Solubility in/Miscibility with water: Insoluble

10 Stability and reactivity

Conditions to be avoided:	Heat / Open flames / Sparks / Ignition sources See section 7 for information on proper handling and storage
Materials to be avoided:	Strong oxides and acids Bromine trifluoride, chlorine trifluoride, lead oxide. Moisture and air sensitive.
Dangerous reactions:	Dust explosion hazard
Hazardous decomposition products:	Oxides of molybdenum

11 Toxicological information

Acute toxicity:	
LD/LC50 values that are relevant for classification:	oral-rat LD ₅₀ : > 5000 mg/kg
Primary irritant effect:	
on the skin:	Mild irritation
on the eye:	Mild irritation
Sensitization:	None
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH
Additional information:	High levels of molybdenum dust have accumulated in the lungs, spleen, and heart of experimental animals. May cause pneumoconiosis if exposed for long periods of time. Metal dust if inhaled may cause "hard metal lung disease". Inhalation may cause irritation to upper respiratory system. Prolonged or repeated exposure may cause irritation to the skin and eyes. The lungs, bones, spleen and heart are target organs. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known

12 Ecological information

Toxicity	
Aquatic toxicity:	Rainbow trout LC ₅₀ : 644 mg/L:96H
Persistence and degradability:	No further relevant information available
Behavior in environmental systems:	
Bioaccumulative potential:	No further relevant information available
Mobility in soil:	No further relevant information available
Additional ecological information:	
General notes:	Do not allow material to be released to the environment without proper governmental permits Avoid transfer into the environment

13 Disposal considerations

Recommendation:	Consult state, local or national regulation for proper disposal Allow professional disposal company to handle waste Must be specially treated under adherence to official regulations
Unclean packaging	
Recommendation:	Disposal must be made according to official regulations

14 Transport information

Land transport DOT:

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Molybdenum metal

Air transport ICAO-TI and IATA-DGR:

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Molybdenum metal

UPS Ground/ FedEx Ground:

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Molybdenum metal

UPS Air:

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Molybdenum metal

15 Regulatory information

SARA Section 302 Extremely Hazardous Substances:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 311/312 Hazards:	None
SARA Section 313 components:	This material does not contain any chemical components with known CAS numbers that exceed the threshold

(De Minimis) reporting levels established by SARA Title III, Section 313

California Prop. 65 component This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other reproductive harm

TSCA: This material is listed on the TSCA inventory

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.