

# SAFETY DATA SHEET

Date Printed: 04/27/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Molybdenum(VI) Fluoride

**Product Code:** MO6-F-04

**CAS Number:** 7783-77-9

**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:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion(Category 1B), H314

Serious eye damage(Category 1), H318

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage.

Precautionary statement(s)

P264

Wash skin thoroughly after handling.

P280

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

P301 + P330 + P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338

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

P310

Immediately call a POISON CENTER or doctor/ physician.

P321

Specific treatment (see supplemental first aid instructions on this label).

P363

Wash contaminated clothing before reuse.

P405

Store locked up.

P501

Dispose of contents/ container to an approved waste disposal plant.

---

## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances

Synonyms: Molybdenum hexafluoride

Formula: F6Mo

Molecular weight: 209.93 g/mol

CAS-No.: 7783-77-9

EC-No.: 232-026-5

Component

Molybdenum hexafluoride

Classification

Skin Corr.1B; Eye Dam.1; H314

Concentration

<=100%

---

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

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.

Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

---

## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

Hydrogen fluoride, Molybdenum oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

---

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing Vapors, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas.

For personal protection see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

---

## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling

Avoid inhalation of Vapor or mist.

Normal measures for preventive fire protection.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hydrolyses readily.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

Component

CAS-No.

Value

Control parameters

Basis

Molybdenum hexafluoride

7783-77-9

TWA

2.5 mg/m<sup>3</sup>

USA. Occupational Exposure Limits(OSHA)-Table Z-1 Limits for Air Contaminants

Remarks

CAS number varies with compound

TWA

2.5 mg/m<sup>3</sup>

USA. Occupational Exposure Limits(OSHA)-Table Z2Z37.28-1969 TWA

2.5 mg/m<sup>3</sup>

USA. ACGIH Threshold Limit Values(TLV)

Bone damage

Fluorosis

Substances for which there is a Biological Exposure Index or Indices(see BEI® section) Not classifiable as a human carcinogen varies

TWA

2.5 mg/m<sup>3</sup>

USA. OSHA-TABLE Z-1 Limits for Air Contaminants-1910.1000

Biological occupational exposure limits

Component

CAS-No.

Parameters

Value

Biological specimen

Basis

Molybdenum hexafluoride

7783-77-9

Fluorides

3 mg/g

In urine

ACGIH-BiologicalExposure Indices(BEI)

Remarks

Prior to shift (16 hours after exposure ceases)

Fluorides

10 mg/g

In urine

ACGIH-Biological Exposure Indices(BEI)

End of shift (As soon as possible after exposure ceases)

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full

-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator

is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

Do not let product enter drains

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Form:

liquid

Odor

no data available

Odor Threshold

no data available

pH

no data available

Melting point/freezing point

Melting point/range:

17.5 °C (63.5 °F)-lit.

Initial boiling point and boiling range

37 °C (99 °F)-lit.

Flash point

not applicable

Evaporation rate

no data available

Flammability (solid, gas)

no data available

Upper/lower flammability or explosive limits

no data available

Vapor pressure

no data available

Vapor density

no data available

Relative density

2.3 g/cm<sup>3</sup> at 25 °C (77 °F)

Water solubility

no data available

Partition coefficient: n-octanol/water  
no data available  
Auto-ignition temperature  
no data available  
Decomposition temperature  
no data available  
Viscosity  
no data available  
Explosive properties  
no data available  
Oxidizing properties  
no data available  
Other safety information  
no data available

---

## SECTION 10. STABILITY AND REACTIVITY

Reactivity  
no data available  
Chemical stability  
Stable under recommended storage conditions.  
Possibility of hazardous reactions  
no data available  
Conditions to avoid  
no data available  
Incompatible materials  
acids, Strong bases  
Hazardous decomposition products  
Other decomposition products  
-no data available  
In the event of fire: see section 5

---

## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects  
Acute toxicity  
LC50 Inhalation-rat-333 mg/m<sup>3</sup>  
Remarks:  
Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi. Lungs, Thorax, or Respiration:Respiratory obstruction. Blood: Hemorrhage.  
LC50 Inhalation-mouse-339 mg/m<sup>3</sup>  
Remarks:  
Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi. Lungs, Thorax, or Respiration:Respiratory obstruction. Blood: Hemorrhage.  
Dermal:  
no data available  
no data available  
Skin corrosion/irritation  
Extremely corrosive and destructive to tissue.  
Serious eye damage/eye irritation  
no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC:

3-Group 3: Not classifiable as to its carcinogenicity to humans (Molybdenum hexafluoride)

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

no data available

Specific target organ toxicity-single exposure

no data available

Specific target organ toxicity-repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

RTECS: QA4681450

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.,

Cough, Shortness of breath, Headache, Nausea

Stomach-Irregularities-Based on Human Evidence

Stomach-Irregularities-Based on Human Evidence

---

## SECTION 12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

no data available

---

## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contact a licensed professional waste disposal service to dispose of this material.

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.  
Contaminated packaging  
Dispose of as unused product.

---

## SECTION 14. TRANSPORT INFORMATION

DOT (US)

UN number:

3264

Class:

8

Packing group:

II

Proper shipping name:

Corrosive liquid, acidic, inorganic, n.o.s.(Molybdenum hexafluoride)

Marine pollutant:

No

Poison Inhalation Hazard:

No

IMDG

UN number:

3264

Class:

8

Packing group:

II

EMS-No:

F-A,S-B

Proper shipping name:

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(Molybdenum hexafluoride)

Marine pollutant:

No

IATA

UN number:

3264

Class:

8

Packing group:

II

Proper shipping name:

Corrosive liquid, acidic, inorganic, n.o.s.(Molybdenum hexafluoride)

---

## SECTION 15. REGULATORY INFORMATION

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: 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.



SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Molybdenum hexafluoride

CAS-No. 7783-77-9

Revision Date

2008-06-01

New Jersey Right To Know Components

Molybdenum hexafluoride

CAS-No. 7783-77-9

Revision Date

2008-06-01

California Prop. 65 Components

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

---

## 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.