

## GHS Material Safety Data Sheet

MSDS No. : MOO01PAEG

Date Issued: 2011/06/17

### Section 1. Identification of the substance or mixture and of the supplier

#### 1.1 Product Information

Product name: MoO<sub>3</sub> Molybdenum( ) oxide

Product number:	Purity	Form	Size (mm) or Shape
MOO02PB	99.9%(3N)	powder	—
MOO03PB	99.99%(4N)	powder	—
MOO02GB	99.9%(3N)	grains (from powder)	—
—	99.9%(3N)	rod/tablet	10dx5t, 20dx5t, Various sizes
—	—	target	Various sizes

#### 1.2 Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd  
 1-28, 5-chome, Chiyoda, Sakado-shi, Saitama Japan 350-0284  
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### Section 2. Hazards identification

#### GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
Acute toxicity (oral) : Category 3 Carcinogenicity : Category 2 Specific target organ toxicity, single exposure : Category 1 Specific target organ toxicity, repeated exposure : Category 1 Category 2	Hazardous to the aquatic environment acute toxicity : Category 3 chronic toxicity : Category 3	Not classified.

GHS Label : T C



Pictograms or symbols

Warning word: DANGER

#### Hazard information

**Toxic if swallowed**  
**Suspected of causing cancer.**  
**Causes damage to organs.**  
     (Cardiac, kidney, liver )  
**Causes damage to organ ( Lung ) through**  
**prolonged or repeated exposure.**  
**May cause damage to organ ( Liver, kidney )**  
**through prolonged or repeated exposure.**  
**Harmful to aquatic life.**  
**Harmful to aquatic life with long lasting effects.**

#### Description of precaution

Obtain special instructions. Read and understand all safety precautions before handling.  
 Wear protective gloves/protective clothing/eye protection/respiratory protection/face protection during handling.  
 Avoid breathing dust/ fume/ vapours.  
 Do not eat, drink or smoke when using this product, and wash hands thoroughly after handling.  
 Use only outdoors or in well-ventilated area.  
 Avoid release to the environment and collect spillage.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.  
 Call a POISON CENTER or doctor/physician if you feel unwell.

Store locked up. Dispose of contents/ container in accordance with local/ national regulations.
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**Additional hazard information :**

Heating may liberate toxic gases/ fume.

With respect to additional hazard information, see Section 11.

**Section 3. Composition / information on ingredients**

Chemical or common name:	Molybdenum ( ) oxide
Chemical formula:	MoO <sub>3</sub>
Single Substance or Compound:	Single substance
Composition:	100%
CAS#:	1313-27-5
RTECS#:	QA4725000
TSCA inventory:	listed
EINECS:	2152047

**Section 4. First aid measures**

Eye contact: Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

Skin contact: Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.

Inhalation: Remove the exposed person immediately and provide fresh air. Get medical attention.

Ingestion: Rinse mouth and throat with water. Get medical attention immediately.

**Section 5. Fire fighting measures**

Extinguishing media:  
This product cannot catch fire. Use media appropriate for surrounding fire.

Fire fighting: The product is nonflammable.

Specific hazards arising from the chemical:  
Heating may liberate toxic gases/ fume.

**Section 6. Accidental release measures**

Personal Precautions: Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor.

Environmental hazard precautions:  
Shut off leak if without risk.  
Prevent flow out to river, etc. so as not to badly affect.

Method for containment and cleaning up:  
Indoor leakage: Ventilate as much as possible until the cleaning is completed.  
Outdoor leakage: Work from the windward and evacuate the leeward crowd.  
Gather up, pack in closed container as much as possible.  
Carefully collect remnant and move to a safe place.

## Section 7. Handling and storage

### Precautions to be taken in handling:

Safe handling: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen.

### Precautions to be taken in storage:

General precautions: Store in a cool, dry place away from incompatible materials.  
Keep container or bottle tightly closed.

## Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH (2008): Molybdenum and insoluble compounds  
TLV-TWA 3 mg/m<sup>3</sup> (Resprable particulate), 10 mg/m<sup>3</sup> (Inhalable particulate)  
OSHA (2006): Molybdenum, insoluble compounds PEL-TWA 15 mg/m<sup>3</sup> (Total dust)

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, air-supplied respirator, safety goggles, face shields, protective gloves, protective clothing, apron, including boots.

## Section 9. Physical and chemical properties

Color and Form: White or yellowish-white solid, odorless.

Chemical formula: MoO<sub>3</sub>

Atomic weight: 143.9

Melting point: 795

Boiling point: 1155

Density: 4.70 g/cm<sup>3</sup>

Water solubility: 0.49 g/1000ml (28 °C)

Flammable: non-flammable substance

Oxidation: None

## Section 10. Stability and reactivity

Stability: Stable in closed container.

Reactivity

Incompatibility: Strong acids.

Condition to avoid: Heat.

## Section 11. Toxicological information

Acute toxicity: GHS (Oral) ; Category 3 : Toxic if swallowed  
Oral rat LD<sub>50</sub> = 125 mg/kg (DOGOT(2008))  
LD<sub>50</sub> = 83 Mo mg/kg (HSDB(2005))

Skin corrosive / irritation: GHS ; No data available

Serious eyes damage / eye irritation: GHS ; No data available

Respiratory sensitization: GHS ; No data available

Skin sensitization:	GHS ; No data available
Germ cell mutagenicity:	GHS ; No data available
Carcinogenicity:	GHS ; Category 2 : Suspected of causing cancer.
Reproductive toxicity:	GHS ; No data available
Specific target organ toxicity —single exposure:	GHS ; Category 1 Causes damage to organs. (Cardiac, kidney, liver)
Specific target organ toxicity —repeated exposure:	GHS ; Category 1 Causes damage to organ ( Lung) through prolonged or repeated exposure. GHS ; Category 2 May cause damage to organs (Liver, kidney) through prolonged or repeated exposure.
Aspiration hazard:	GHS : No data available

## Section 12. Ecological information

Ecotoxicity:	
Hazards to the aquatic environment	
—acute toxicity:	GHS ; Category 3 : Harmful to aquatic life.
—chronic toxicity:	GHS ; Category 3 : Harmful to aquatic life with long lasting effects.
Fish toxicity:	Fish(Pimephales promelas) LC50(96hour) = 70 mg/L (Aquire (2008))
Degradability:	No data available
Bioaccumulative potential:	Mo biological half-life 5 day, Rate of absorption Oral=0.8 Respiratory tract=0.65
Ozone layer:	No Freon or Halon

## Section 13. Disposal considerations

Disposal method:	User of the product should contract with the local government or licensed Industrial Waste Haulers' for disposal of waste.
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## Section 14. Transport information

UN number:	3288
IATA shipping name:	Toxic Solid, inorganic, n.o.s.
IATA classification:	Hazardous Class 6.1 (Toxic substances)
IATA packing group:	
HS code:	2825.70
Marine pollution:	None

## Section 15. Regulatory information

TSCA inventory : listed.  
Please refer to any other local / national measures that may be relevant.

**Section 16. Other information**

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.