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MATERIAL DATA SAFETY SHEET

Molybdenum trioxide, 99.998%

Section 1 - Chemical Product and Company Identification

MSDS Name: Molybdenum trioxide, 99.998%

Catalog Numbers: M 2314

Synonyms: Molybdic oxide; Molybdenum trioxide; Molybdic acid anhydride; Molybdic anhydride; Molybdenum oxide (MoO).

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1313-27-5	Molybdenum trioxide	>99.998	215-204-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: yellow to green powder.

Warning! Danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Causes eye and respiratory tract irritation.

Target Organs: Lungs, respiratory system, eyes.

Potential Health Effects

Eye: Causes eye irritation.

Skin: May cause skin irritation.

Ingestion: May cause irritation of the digestive tract. Ingestion of large amounts of molybdenum may cause appetite loss, fatigue, and diarrhea.

Inhalation: Causes respiratory tract irritation.

Chronic: Aerosols of water-soluble molybdenum compounds can affect the respiratory tract if inhaled. Animal data from chronic inhalation studies have shown inflammatory changes in the lungs of rats, with cellular aggregates resembling nodules, which are consistent with some of the earlier clinical reports of lung problems among exposed workers. Data from a NTP study indicate that molybdenum trioxide, a soluble compound, is a likely animal carcinogen. Data from the NTP study showed that molybdenum trioxide, a water-soluble compound, is associated with an increased risk of lung tumors in mice and possibly

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Substance is noncombustible.

Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

Flash Point: Not applicable.

Autoignition Temperature: Not available.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Do not breathe dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Section 9 - Physical and Chemical Properties

Physical State: Powder

Appearance: yellow to green

Odor: odorless

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate:Not available.

Viscosity: Not available.

Boiling Point: 1155 deg C @ 760 mmHg

Freezing/Melting Point:795 deg C

Decomposition Temperature:Not available.

Solubility: Soluble.

Specific Gravity/Density:4.6900 g/cm³

Molecular Formula:MoO₃

Molecular Weight:143.94

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation.

Incompatibilities with Other Materials: Bromine pentafluoride, chlorine trifluoride, lithium, magnesium, **potassium, sodium, acids.**

Hazardous Decomposition Products: Oxides of molybdenum.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values that are relevant for classification:
1313-27-5 molybdenum trioxide

Oral LD50 125 mg/kg (rat)

- Primary irritant effect:
 - on the skin: No irritant effect.
 - on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
 - Carcinogenic categories
 - IARC (International Agency for Research on Cancer)
Substance is not listed.
 - NTP (National Toxicology Program)
Substance is not listed.
 - OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Waste Disposal

Comply with Federal, State, and local regulation. If approved, remove to land disposal area.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not Regulated	Not Regulated
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

Risk Phrases:

- R 36/37 Irritating to eyes and respiratory system.
- R 48/20/22 Harmful : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

Safety Phrases:

- S 22 Do not breathe dust.
- S 25 Avoid contact with eyes.

Section 16 - Additional Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if has been advised of the possibility of such damages
OSHA: Occupational Safety & Health