

MSDS**Material Safety Data Sheet**24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300National Response in Canada
CANUTEC: 613-996-6666Outside U.S. and Canada
Chemtrec: 703-527-3887From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

MOLYBDENUM TRIOXIDE

MSDS Number: M7829 --- Effective Date: 06/06/01

1. Product Identification

Synonyms: Molybdic anhydride; molybdic trioxide; molybdenum oxide**CAS No.:** 1313-27-5**Molecular Weight:** 143.94**Chemical Formula:** MoO₃**Product Codes:**

J.T. Baker: 0208

Mallinckrodt: 2684

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Molybdenum Trioxide	1313-27-5	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)**

Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 0 - None

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. May be absorbed into the bloodstream with symptoms similar to ingestion. May cause pulmonary disorders.

Ingestion:

Toxic material. Large doses can cause severe distress, cramping, vomiting, and hypertension.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain. Causes rash that is difficult to heal.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

No specific information found. Molybdenum is rapidly excreted from the body. Persons exposed for long periods suffer from anemia.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

5 mg/m³ for soluble molybdenum compounds as Mo

15 mg/m³ total dust, for insoluble molybdenum compounds as Mo

-ACGIH Threshold Limit Value (TLV):

Molybdenum, metal and insoluble compounds, inhalable fraction, as Mo: 10 mg/m³

Molybdenum, metal and insoluble compounds, respirable fraction, as Mo: 3 mg/m³

Molybdenum, soluble compounds, respirable fraction, as Mo: 0.5 mg/m³, A3 - Confirmed animal carcinogen with unknown relevance to humans

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White or slightly yellow to slightly bluish powder or granules.

Odor:

Odorless.

Solubility:

0.107 g/100 g water @ 18C

Specific Gravity:

4.69

pH:

No information found.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

1150C (2102F)

Melting Point:

795C (1463F) Begins to sublime @ 700C (1292F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Sublimes at high temperatures.

Hazardous Decomposition Products:

Toxic metal fumes may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Incompatible with alkali metals, most common metals and oxidizing agents. Explodes on contact with molten magnesium. Violent reaction with interhalogens (e.g., bromine pentafluoride; chlorine trifluoride). Incandescent reaction with hot sodium, potassium or lithium.

Conditions to Avoid:

Incompatibles.

11. Toxicological Information

Oral rat LD50: 2689 mg/kg. Inhalation rat LC50: > 5840 mg/m³/4H. Investigated as a tumorigen.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Molybdenum Trioxide (1313-27-5)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
Ingredient                                     TSCA  EC   Japan  Australia
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Molybdenum Trioxide (1313-27-5)             Yes  Yes  Yes    Yes
    
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-----\Chemical Inventory Status - Part 2\-----
Ingredient                                     Korea  --Canada--  Phil.
                                     Korea  DSL   NDSL
-----
Molybdenum Trioxide (1313-27-5)             Yes   Yes   No     Yes
    
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-----\Federal, State & International Regulations - Part 1\-----
Ingredient                                     -SARA 302-  -SARA 313-
                                     RQ   TPQ   List  Chemical Catg.
-----
Molybdenum Trioxide (1313-27-5)             No    No    Yes   No
    
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-----\Federal, State & International Regulations - Part 2\-----
Ingredient                                     CERCLA  -RCRA-  -TSCA-
                                     CERCLA  261.33  8(d)
-----
Molybdenum Trioxide (1313-27-5)             No      No      No
    
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Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.

Poison Schedule: No information found.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **2** Flammability: **0** Reactivity: **0**

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Avoid contact with eyes, skin and clothing.

Wash thoroughly after handling.

Avoid breathing dust.

Keep container closed.

Use only with adequate ventilation.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 8.

Disclaimer:

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Prepared by: Environmental & Health & Safety

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