

THE CHEM-MET COMPANY

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MATERIAL SAFETY DATA SHEET

SODIUM MOLYBDATE DIHYDRATE

PRODUCT IDENTIFICATION

Chemical Name: Sodium Molybdate Dihydrate
Common Name: Sodium Molybdate Crystals
Formula: $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$
Synonyms: Molybdic Acid Disodium Salt
Disodium Molybdate Dihydrate
Sodium Molybdate (VI)
CAS No.: 10102-40-6
NIOSH: QA 5085000
Chemical Family: Soluble Molybdenum Compounds

COMPANY IDENTIFICATION

The Chem-Met Company

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COMPOSITION/INGREDIENTS

<u>Component</u>	<u>CAS No.</u>	<u>Percent</u>
Sodium Molybdate, Na_2MoO_4	7631-95-0	85
Water, H_2O	7732-18-5	15

HAZARDS INFORMATION

Molybdate salts are safe to handle and use under most ordinary conditions of application. No special precautions are needed beyond those employed for any chemical or material of low toxicity. The U.S. Public Health Service in its Bulletin No. 293 "The Toxicity of Molybdenum" dated 1945 reports that "Molybdenum Compounds in general are of a low order of toxicity both from the point of view of observed clinical effects as well as from the histopathological point of view." The New Drug Institute, after conducting tests, reported in the Food, Drug, Cosmetic Law Journal of October, 1955 that "Sodium Molybdate may be classified as a compound with only mildly irritating mucous membrane properties and no sensitizing properties."

Inhalation may cause respiratory tract irritation and chest discomfort. The LC_{50} (4 hr., rat) was greater than 1.93 mg/l of air.

Brief skin contact is not likely to cause irritation, but prolonged contact may do so. Tests using rabbits produced no Erythema or Oedema after four days exposure.

Sodium Molybdate is likely to cause some eye discomfort, but no cornea or iris irritation. 1991 studies using rabbits resulted in only mild conjunctival inflammation.

Ingestion of small amounts of Sodium molybdate presents little or no hazard. Reports exist that correlate the incidence of high uric acid levels and gout to the intake of Molybdenum. Acute median LD_{50} value using rats was 4233 mg/kg body weight.

Molybdenum and its compounds are reported to have caused serious health problems in some animals, particularly ruminants where a copper deficiency known as "Molybdenosis" results.

FIRST AID MEASURES

Inhalation: Remove to fresh air. Give oxygen if there is difficulty in breathing. Consult a doctor.

Skin Contact: Wash with soap and water.

Eyes: Flush thoroughly with large amounts of water for at least twenty minutes. Consult a doctor.

Ingestion: Drink several glasses of water. Consult a doctor.

FIRE FIGHTING MEASURES

Sodium Molybdate is not flammable.

ACCIDENTAL RELEASE MEASURES

Within the plant. Collect the residues for disposal in accordance with u.s. epa, state and local regulations. Do not discharge to sewer or natural waters or drainages.

Outside the plant. Follow "within the plant" directions.

Sodium Molybdate is not subject to **SARA** Title III reporting.

HANDLING AND STORAGE

Store in a clean, cool and dry area.

Sodium Molybdate may be stored in glass, plastic, paper or steel containers.

Observe all Federal, State and Local regulations when storing .

EXPOSURE CONTROLS AND PERSONAL PROTECTION

Because Sodium Molybdate is of a very low order of toxicity, special protection is not necessary beyond that normally employed for any chemical or material of low toxicity.

PHYSICAL AND CHEMICAL PROPERTIES

Sodium Molybdate Dihydrate, $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$

Formula Weight:	241.95
Specific Gravity:	3.28
Melting Point:	loses $2\text{H}_2\text{O}$ at 100°C Anhydrous salt melts at 687°C
Boiling Point:	Not known
Solubility:	56gms/100ml water at 0°C 65gms/100ml water at 20°C 115.5gms/100ml water at 100°C
Appearance:	White Crystalline Powder
Odor:	None

STABILITY AND REACTIVITY

Stable, dissolves in water.

Thermal decomposition products may include Sodium Oxide.

Hazardous Polymerization is not reported .

TOXICOLOGICAL INFORMATION

Risk Phrases: R36, R37, R38

Toxicity Data:

ivn,mus	TDL ₀ :968 g/kg.	ipr,musLD ₅₀ :257 mg/kg
ipr,rat	LD ₅₀ :520 mg/kg	orl,rat LD ₅₀ :4233 mg/kg

OSHA PEL: TWA 5 mg(Mo)/m³

ACGIH TVL: TWA 5 mg(Mo)/m³ (soluble molybdenum compounds)

THR: Molybdenum and its compounds are reported by some sources to be poisonous by subcutaneous and interperitoneal routes and highly toxic based on animal experiments.

Other sources report very low toxicity and despite considerable industrial use of molybdenum and its compounds, poisoning by molybdenum itself has yet to be reported.

Some studies suggest that suitable precautions should be taken against the inhalation Of considerable amounts of the more soluble molybdenum compounds.

Molybdenum is not stored in the body to any extent because it is rapidly excreted.

Recent studies have shown that molybdenum has importance as a trace element in the normal growth and development of certain forms of plant life. It has been reported in 1993 to be important in humans for enzyme development and good metabolism. Dietary supplements can be found in most vitamin stores.

ECOLOGICAL INFORMATION

None available.

DISPOSAL INFORMATION

Do not discharge to sewer or natural waters or drainages. While Sodium Molybdate is generally considered non-hazardous, disposal must be made in accordance with EPA and/or state and local regulations. Sodium Molybdate is not a listed hazardous waste.

TRANSPORTATION INFORMATION

DOT Classification:	None
DOT Identification:	None
DOT Hazard Label:	None
DOT Packaging Requirements:	None

REGULATORY INFORMATION

Reported in EPA TSCA Inventory

OTHER INFORMATION

The data in this Material Safety Data Sheet applies only to the specific material noted herein and does not apply to any other materials or combination of materials with this or any other product. The information provided herein is based on technical data and sources The Chem-Met Company believes reliable. Chem-Met makes no warranties, expressed or implied, and assumes no responsibility or liability in connection with the use of the material described or the information contained herein.

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This Material Safety Data Sheet is composed in accordance with Chem-Mets understanding of ISO 11014 standard for Material Safety Data Sheets

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