



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# Potassium molybdate

sc-228969



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Potassium molybdate

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

Mo-O4.2K, K2Mo-O4, "molybdic acid, dipotassium salt", "dipotassium molybdate", "potassium molybdate (VI)", "potassium orthomolybdate"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	0	
Toxicity:	2	
Body Contact:	2	
Reactivity:	0	
Chronic:	2	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



### EMERGENCY OVERVIEW

## RISK

Danger of cumulative effects.  
Irritating to eyes, respiratory system and skin.

## POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

- Accidental ingestion of the material may be damaging to the health of the individual.
- Molybdenum, an essential trace element, can in large doses hamper growth and cause loss of appetite, listlessness and diarrhea. Anemia also occurs, and other symptoms include graying of hair, shrinking of the testicles, reduced fertility and milk production, shortness of breath, incoordination and irritation of the mucous membranes.

#### EYE

- This material can cause eye irritation and damage in some persons.

#### SKIN

- This material can cause inflammation of the skin on contact in some persons.
- The material may accentuate any pre-existing dermatitis condition.
- Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### INHALED

- The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
- Bronchial and alveolar exudate are apparent in animals exposed to molybdenum by inhalation. Molybdenum fume may produce bronchial irritation and moderate fatty changes in liver and kidney.

### CHRONIC HEALTH EFFECTS

- Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. High levels of molybdenum can cause joint problems in the hands and feet with pain and lameness. Molybdenum compounds can also cause liver changes with elevated levels of enzymes and cause over-activity of the thyroid gland.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
potassium molybdate	13446-49-6	> 98

## Section 4 - FIRST AID MEASURES

#### SWALLOWED

· If swallowed do NOT induce vomiting. · If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

#### EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

#### INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

### NOTES TO PHYSICIAN

- For potassium intoxications:
  - Hyperkalemia, in patients with abnormal renal function, results from reduced renal excretion following intoxication.
  - The presence of electrocardiographic evidence of hyperkalemia or serum potassium levels exceeding 7.5 mE/L indicates a medical emergency requiring an intravenous line and constant cardiac monitoring.

## Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not applicable

Specific Gravity (water=1):	2.91
Lower Explosive Limit (%):	Not applicable

### EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.

### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Non combustible.
  - Not considered to be a significant fire risk, however containers may burn.
- Decomposition may produce toxic fumes of: metal oxides.  
 May emit poisonous fumes.  
 May emit corrosive fumes.

### FIRE INCOMPATIBILITY

- None known.

### PERSONAL PROTECTION

- Glasses:  
 Chemical goggles.
- Gloves:
- Respirator:  
 Particulate

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

### MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

### RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

- Material is hygroscopic, i.e. absorbs moisture from the air. Keep containers well sealed in storage.
- Store in original containers.
- Keep containers securely sealed.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	potassium molybdate (Molybdenum (as Mo) - Soluble compounds)	-	5	-	10				

US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo) - Total dust)	15		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo) - Total dust)	10		
US - Idaho - Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo) Insoluble compounds)	5		
US - Minnesota Permissible Exposure Limits (PELs)	potassium molybdate (Molybdenum (as Mo) - Soluble compounds)	5		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	potassium molybdate (Molybdenum (as Mo) Soluble compounds)	5		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo) - Soluble compounds)	5		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo) - Soluble compounds)	5		
US - Hawaii Air Contaminant Limits	potassium molybdate (Molybdenum (as Mo) Soluble compounds)	5	10	
US - Alaska Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo) Soluble compounds)	5		
US - Washington Permissible exposure limits of air contaminants	potassium molybdate (Molybdenum (as Mo) - Soluble compounds)	5	10	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	potassium molybdate (Molybdenum, as Mo): Soluble compounds, (respirable fraction++)	0.5	1.5	
Canada - Nova Scotia Occupational Exposure Limits	potassium molybdate (Molybdenum - Soluble compounds (as	0.5		TLV Basis: lower respiratory tract irritation

	Mo))			
US OSHA Permissible Exposure Levels (PELs) - Table Z1	potassium molybdate (Molybdenum (as Mo) - Soluble compounds)	5		
US - Michigan Exposure Limits for Air Contaminants	potassium molybdate (Molybdenum, (as Mo) Soluble compounds)	5		
Canada - Northwest Territories Occupational Exposure Limits (English)	potassium molybdate (Molybdenum (as Mo) Soluble compounds)	5	10	
Canada - Alberta Occupational Exposure Limits	potassium molybdate (Molybdenum, as Mo - Soluble compounds, respirable)	0.5		
US ACGIH Threshold Limit Values (TLV)	potassium molybdate (Molybdenum - Soluble compounds (as Mo))	0.5		TLV Basis: lower respiratory tract irritation
US - California Permissible Exposure Limits for Chemical Contaminants	potassium molybdate (Molybdenum, soluble compounds, as Mo)	0.5		(n)
Canada - British Columbia Occupational Exposure Limits	potassium molybdate (Molybdenum - Soluble compounds, as Mo, Respirable)	0.5		
Canada - Prince Edward Island Occupational Exposure Limits	potassium molybdate (Molybdenum - Soluble compounds (as Mo))	0.5		TLV Basis: lower respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	potassium molybdate (Molybdenum (soluble compounds))	5		*
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	potassium molybdate (Molybdenum (as Mo): Soluble compounds)	5		
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	potassium molybdate (Molybdenum (as Mo)- Soluble compounds)	5		

ENDOELTABLE

**PERSONAL PROTECTION**



## RESPIRATOR

Particulate

Consult your EHS staff for recommendations

## EYE

- Safety glasses with side shields.
- Chemical goggles.

## HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

## OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

## ENGINEERING CONTROLS

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

· If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Mixes with water.

State	Divided solid	Molecular Weight	238.14
Melting Range (°F)	1686.2	Viscosity	Not Applicable
Boiling Range (°F)	Not applicable.	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not Applicable	pH (1% solution)	Not available
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not applicable	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	2.91
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not available.
Volatile Component (%vol)	Negligible	Evaporation Rate	Non Vol. @ 38C

### APPEARANCE

· Material is hygroscopic, i.e. absorbs moisture from the air. Keep containers well sealed in storage. Small white scales or flakes. Odourless. Deliquescent and readily soluble in water.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

- Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
- These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
- The state of subdivision may affect the results.
- **WARNING:** Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.
- The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive.
- Avoid reaction with borohydrides or cyanoborohydrides.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

potassium molybdate

### TOXICITY AND IRRITATION

#### POTASSIUM MOLYBDATE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
- Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

No significant acute toxicological data identified in literature search.

## Section 12 - ECOLOGICAL INFORMATION

No data

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

## Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**potassium molybdate (CAS: 13446-49-6) is found on the following regulatory lists;**

"Canada Non-Domestic Substances List (NDSL)", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US Toxic Substances Control



## Section 16 - OTHER INFORMATION

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:  
[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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