

## SPI Supplies Division

Structure Probe, Inc.

206 Garfield Ave., West Chester, PA 19380-4512 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

[sales@2spi.com](mailto:sales@2spi.com)

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

## Safety Data Sheet

Date Effective: October 30, 2018

SPI Catalog # 02551-AB, 02551-CF

SPI-Chem™ Ammonium Molybdate

### Section 1.1: Identification

Chemical Name/Synonyms ..... Ammonium molybdate; Diammonium molybdate

Product or Trade Name ..... SPI-Chem™ Ammonium Molybdate

CAS #'s ..... 13106-76-8

Chemical Formula..... (NH<sub>4</sub>)<sub>2</sub>MoO<sub>4</sub>

### Section 1.2: Relevant Uses/Restrictions

Laboratory chemical used for staining in the microscopy laboratory.

### Section 1.3: Supplier of the Safety Data Sheet

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### Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

### Section 2: Hazard Identification

#### 2.1 Classification of the substance

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute Toxicity (category 4)

Skin Irritant (category 2)

Eye Irritant (category 2A)

STOT-SE (category 3) (respiratory)

## 2.2 Label elements

### Pictogram



**Signal Word:** Warning

### Hazard statements:

- H302 Harmful if swallowed
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H335 May cause respiratory irritation

### Precautionary statements:

- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
- P280 Wear protective gloves/ eye protection/ face protection
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P405 Store locked up
- P501 Dispose of contents/ container in accordance with local/ regional/ national/ international regulations

**2.3 Other Hazards:** No additional information.

### Hazardous Material Information System USA

- Health ..... 2
- Fire Hazard ..... 1
- Reactivity ..... 1
- Personal Protection .....

### NFPA Rating (estimated)

- Health ..... 0
- Flammability..... 0
- Reactivity ..... 0

## **Section 3: Composition**

### 3.1 Substances:

Ammonium molybdate                      CAS # 13106-76-8                      EC # 236-031-3                      >99.9%

## **Section 4: First Aid Measures**

### 4.1 Description of first aid measures:

#### Inhalation:

If inhaled, supply fresh air.

If required, provide artificial respiration.  
Keep patient warm.  
See immediate medical advice.

**Skin Contact:**

Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.

**Eye Contact:**

Rinse opened eye for several minutes under running water.  
Then consult a doctor.

**Ingestion:**

Seek medical treatment.

**4.2 Most important symptoms and effects, both acute and delayed:**

Causes skin irritation.  
Harmful if swallowed.  
Causes serious eye irritation.

**4.3 Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

**Section 5: Fire Fighting Measures**

**5.1 Extinguishing media:**

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

**5.2 Special hazards arising from the substance or mixture:**

No data available.

**5.3 Hazardous combustion products:**

If this product is involved in a fire, Nitrogen oxides (NO<sub>x</sub>) and Molybdenum oxides may be released.

**5.4 Advice for firefighters:**

**Special protective equipment and precautions for firefighters:**

Wear fully protective impervious suit and self-contained respirator to prevent contact with skin and eyes.

**Section 6: Accidental Release Measures**

**6.1 Personal precautions:**

Wear protective equipment.  
Keep unprotected persons away.  
Ensure adequate ventilation.

**6.2 Environmental precautions:**

Do not allow product to reach sewage system or any water course.

**6.3 Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to Section 13.

**Protective Action Criteria for Chemicals:**

PAC-1: 3.1 mg/m<sup>3</sup>  
PAC-2: 22 mg/m<sup>3</sup>  
PaC-3: 130 mg/m<sup>3</sup>

**6.4 Reference to other sections:**

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 18 for information on disposal of product.

**Section 7: Handling and Storage**

**7.1 Precautions for safe handling:**

**Protective measures:**

Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:**

The product is not flammable.

**7.2 Conditions for safe storage, including any incompatibilities:**

No special requirements.  
Store away from oxidizing agents.  
Keep container tightly closed.  
Store in cool, dry conditions in well sealed containers.

**7.3 Specific end uses:**

Laboratory chemical used for staining in the microscopy laboratory.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

**Section 8: Exposure Controls and Personal Protection**

**8.1 Control parameter and Personal Protection:**

**Workplace exposure limits:**

Ammonium molybdate	CAS # 13106-76-8		
PEL (USA):	Long-term value:	5 mg/m <sup>3</sup>	as Mo
TLV (USA):	Long-term value:	0.5 mg/m <sup>3</sup>	as Mo, respirable fraction
EL (Canada):	Long-term value:	0.5 mg/m <sup>3</sup>	as Mo, respirable fraction

**Biological limit values:** No data available.

**8.2 Exposure controls:**

**8.2.1 Appropriate engineering controls:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**8.2.2 Individual protection measures:**

The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

Recommended filter device for short term use: Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

**Protection of the hands:** Use impervious gloves. Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on the quality, which will vary from manufacturer to manufacturer. Nitrile rubber, 11 mm thick, with a penetration time of 480 minutes recommended.

**Eye protection:** Safety glasses with side shields / NIOSH (US) or EN 166 (EU).

**Body protection:** Protective work clothing.

**8.2.3 Environmental exposure controls:** Do not allow product to reach sewage system or any water course.

## ***Section 9: Physical and Chemical Properties***

### **9.1 Information on basic physical and chemical properties:**

**Appearance:** White powder

**Odor:** Odorless

**Odor threshold:** No data available

**pH:** No data available

**Melting point/Freezing point:** No data available

**Boiling point/Boiling point range:** No data available

**Flash Point:** No data available

**Evaporation rate:** No data available

**Flammability (solid, gas):** No data available

**Upper/lower flammability or explosive limits:** No data available

**Vapor Pressure:** No data available

**Vapor density:** No data available

**Relative density:** No data available

**Solubility in water:** Soluble

**Partition coefficient (n-octanol/water):** No data available

**Auto-ignition temperature:** No data available

**Decomposition temperature:** No data available

**Viscosity:** No data available

**Explosive properties:** No data available

**Oxidizing Properties:** No data available

**Molecular formula:**  $(\text{NH}_4)_2\text{MoO}_4$

**Molecular weight:** 192.02

9.2 Other information: No further relevant information available.

## **Section 10: Stability and Reactivity**

10.1 Reactivity: No information known.

10.2 Chemical Stability: Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions: Reacts with strong oxidizing agents.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: Oxidizing agents.

10.6 Hazardous decomposition products: Nitrogen oxides. Molybdenum oxides.

## **Section 11: Toxicological Information**

### 11.1 Information on toxicological effects:

#### A. Acute toxicity:

Harmful if swallowed.

RTECS # QA4900000:

LD50	Oral, rat	680 mg/kg
LDLo	Oral, rabbit	1870 mg/kg
LDLo	Subcutaneous, rabbit	1600 mg/kg
LDLo	Oral, guinea pig	2200 mg/kg
LDLo	Intraperitoneal, guinea pig	800 mg/kg
LDLo	Subcutaneous, guinea pig	1380 mg/kg

#### B. Skin corrosion/irritation:

Causes skin irritation.

#### C. Serious eye damage/irritation:

Causes serious eye irritation.

#### D. Respiratory or skin sensitization:

No sensitizing effects known.

#### E. Germ cell mutagenicity:

No effects known.

#### F. Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

#### G. Reproductive toxicity:

No effects known.

#### H. STOT-single exposure:

May cause respiratory irritation.

#### I. STOT-repeated exposure:

No effects known.

#### J. Aspiration hazard:

No effects known.

## **Section 12: Ecological Information**

**12.1 Toxicity:** No further relevant information available.

Aquatic toxicity: No further relevant information available.

**12.2 Persistence and degradability:** No further relevant information available.

**12.3 Bio-accumulative potential:** No further relevant information available.

**12.4 Mobility in soil:** No further relevant information available.

**12.5 Results of PBT and vPvB assessment:** Not applicable.

**12.6 Other adverse effects:**

Do not allow undiluted product or large quantities to reach ground water, water course, or sewage system.

Avoid transfer into the environment.

No further relevant information available.

## **Section 13: Disposal Considerations**

**13.1 Waste treatment methods:**

Contact a licensed professional disposal service to dispose of this material. Dispose of in accordance with all federal, state, and local regulations.

Uncleaned packagings: Dispose of in accordance with official regulations.

## **Section 14: Transport Information**

**DOT:** Non-hazardous for transport.

**IATA:** Non-hazardous for transport.

**IMDG:** Non-hazardous for transport.

## **Section 15: Regulatory Information**

**15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture:**

**U.S. Government Regulations:**

**TSCA Active List:** CAS # 13106-76-8 is on the TSCA Active list.

**SARA Section 302:** Not listed.

**SARA Section 311/312:** Acute Health Hazard

**SARA Section 313 Chemicals:** CAS # 13106-76-8 is not listed.

**U.S. State Right-To-Know Lists:** CAS # 13106-76-8 is listed on the New Jersey Right-To-Know list.

**California Prop. 65:** This product does not contain any chemicals known to the State of California to cause cancer or any developmental harm.

**CANADA:**

This substance is listed on the Canadian DSL List.

This substance has a WHMIS Classification of D1B.

**INTERNATIONAL:**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1927/2006:**

Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed:**

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorization for use):

Substance is not listed.

**15.2 Chemical Safety Assessment:** A Chemical Safety Assessment has not been carried out.

**Date of Preparation:** 30 October 2018

**Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
CMRG: Chemical Manufacturer's Recommended Guidelines  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
AIHA: American Industrial Hygiene Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bio-accumulative and Toxicological  
vPvB: very Persistent and very Bio-accumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety Health  
ATE: Acute Toxicity Estimates  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
STEL: Short Term Exposure Limit  
CEIL: Ceiling  
TSCA: Toxic Substances Control Act (USA)  
DSL: Domestic Substances List (Canada)  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
ENCS: Existing and New Chemical Substances (Japan)  
AICS: Australian Inventory of Chemical Substances  
IECSC: Inventory of Existing Chemical Substances in China  
KECL: Korea Existing Chemicals List

**Section 16: Other Information**

**Disclaimer of Liability:**



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