



# SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Ammonium Molybdate(VI), Tetrahydrate, ACS Reagent  
PRODUCT NUMBER: A112  
COMPANY INFO: *PhytoTechnology Laboratories*<sup>®</sup>  
PO Box 12205, Shawnee, KS 66282-2205  
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EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only  
1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories*<sup>®</sup> are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification:

H402 – Acute aquatic toxicity (Category 3)  
H412 – Chronic aquatic toxicity (Category 3)

GHS Label elements, including hazard and precautionary statements:

Pictogram: None

Signal Word: None

Hazard Statements:

H412 – Harmful to aquatic life with long lasting effects.

Precautionary Statements:

P273 – Avoid release to the environment.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Molybdic Acid, Ammonium Salt; Molybdic acidammonium salttetrahydrate Ammonium heptamolybdatetetrahydrate  
CAS No.: 12054-85-2  
Formula:  $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$   
Molecular Weight: 1235.9 g/mol  
EC No.: 234-320-9

Ingredient	CAS Number	Percent	Hazardous
Ammonium Molybdate, Tetrahydrate	12054-85-2	100%	No exposure limits established by OSHA or ACGIH

## 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Route of Entry	Symptoms	First Aid Procedures
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. <b>Get medical attention.</b>

Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. <b>Get medical attention.</b>
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

**5. FIRE FIGHTING MEASURES**

Suitable Extinguishing Media:	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.
Special Protective Equipment and Precaution for Firefighters:	In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.
Hazardous Combustion Products:	May emit toxic fumes under fire conditions.
Toxic Gases Produced:	Nitrogen oxides (NO <sub>x</sub> ), molybdenum oxides

**6. ACCIDENTAL RELEASE MEASURES**

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Method of Containment and Cleanup:	Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let products enter drains.

**7. HANDLING AND STORAGE**

Precaution for Safe Handling:	Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Wash thoroughly after use.
Conditions for Safe Storage:	Keep in a tightly closed container and store in a cool, dry, and well-ventilated area.
Incompatibilities:	Alkali metals, reducing agents
Recommended Storage Temperature:	Room Temperature

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

OSHA's Permissible Exposure Limits (PELs):	No data available
Threshold Limit Values (TLVs):	No data available
Engineering Controls:	Handle in accordance to general industrial hygiene and safety practice.
Personal Protective Equipment (PPE):	
Eye/Face Protection:	Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.

Skin Protection: Protective gloves  
Body Protection: Lab coat  
Respiratory Protection: Appropriate respirator

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Ammonium Molybdate(VI), Tetrahydrate, ACS Reagent  
pH: Under Development  
Solubility: Soluble in water  
Melting Point: 190 °C  
Vapor Density: No data available  
Vapor Pressure: No data available  
Odor: Odorless  
Odor Threshold: No data available  
Viscosity: No data available  
Relative Density: 2.49 g/cm<sup>3</sup>  
Evaporation Rate: No data available  
Initial Boiling Point and Boiling Range: No data available  
Flammability (solid, gas): No data available  
Partition coefficient: No data available  
n-octanol/water):  
Auto-ignition Temperature: No data available  
Decomposition Temperature: No data available  
Flash Point (Closed Cup): No data available  
Flammable Limits: Upper (%) – No data available Lower (%) – No data available

## 10. STABILITY AND REACTIVITY

Reactivity: No data available  
Chemical Stability: Stable under normal conditions of use  
Possibility of Hazard Reactions: Will not occur  
Conditions to Avoid: Heat, incompatibles  
Incompatibles Materials: Alkali metals, reducing agents  
Hazardous Decomposition Products: Nitrogen oxides (NO<sub>x</sub>), molybdenum oxides

## 11. TOXICOLOGICAL INFORMATION

Toxicity: LD<sub>50</sub> (Oral-Rat)(mg/Kg): No data available  
LD<sub>50</sub> (Oral-Mouse)(mg/Kg): No data available  
LD<sub>50</sub> (Dermal-Rabbit)(mg/Kg): No data available  
Carcinogenicity: NTP: No  
IARC: No  
Z List: No  
OSHA Reg: No  
Reproductive Toxicity: No data available

Symptoms Associated with Overexposure:	Irritation, itching, severe gastrointestinal upset, vomiting, anemia	
Specific Target Organ Toxicity:	Single Exposure:	No data available
	Repeated Exposure:	No data available
Target Organs:	None identified	
Medical Conditions Aggravated By Exposure:	None identified	
Routes of Entry:	Ingestion	
NIOSH/RTECS NO:	QA5076000	

***The toxicological properties of this product have not been thoroughly investigated***

**12. ECOLOGICAL INFORMATION**

Ecotoxicity:	Toxicity to fish – LC50 – Oncorhynchus mykiss (rainbow trout) – 320 mg/L – 96 hr
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No data available

**13. DISPOSAL CONSIDERATION**

Disposal Procedure:	Dispose in accordance with all applicable federal, state, and local environmental regulations.
EPA Hazardous Waste Number:	No data available

**14. TRANSPORT INFORMATION**

Domestic (D.O.T.):	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

International:

IMDG:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

IATA:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

**15. REGULATORY INFORMATION**

TSCA:	Yes (Listed as Anhydrous form 12027-67-7)
Chemical Test Rules Section 12b	No (Neither Anhydrous or Tetrahydrate form)
TSCA Significant New Use Rule	No
CERCLA	No

Hazardous Substances and corresponding RQs No

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: No

Section 304 (EHS/CERCLA) Ingredients: No

Section 311/312 Hazard: No SARA Hazards

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components: CAS No.: 12054-85-2 Ammonium molybdenum oxide tetrahydrate

New Jersey Right to Know Components: CAS No.: 12054-85-2 Ammonium molybdenum oxide tetrahydrate

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating:	<b>Health Hazard</b>	<b>Chronic Health Hazard</b>	<b>Flammability</b>	<b>Physical Hazard</b>
	2		0	0
NFPA Rating:	<b>Health Hazard</b>	<b>Fire Hazard</b>	<b>Reactivity Hazard</b>	<b>Special Hazard</b>
	2	0	0	

***PhytoTechnology Laboratories®* provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. *PhytoTechnology Laboratories®* shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

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