

# Material Safety Data Sheet

## Ammonium molybdate(VI) tetrahydrate, p.a.

ACC# 95481

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ammonium molybdate(VI) tetrahydrate, p.a.

**Catalog Numbers:** AC205850000, AC205851000, AC205855000

**Synonyms:** Ammonium heptamolybdate ((NH<sub>4</sub>)<sub>6</sub>Mo<sub>7</sub>O<sub>24</sub>) tetrahydrate; Ammonium paramolybdate tetrahydrate; Moybdic acid (H<sub>6</sub>Mo<sub>7</sub>O<sub>24</sub>), hexaammonium salt, tetrahydrate.

#### Company Identification:

Acros Organics N.V.  
One Reagent Lane  
Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
12054-85-2	Ammonium molybdate(VI) tetrahydrate	>99	unlisted

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white or yellow powder.

**Warning!** Causes respiratory tract irritation. Causes eye and skin irritation. May be harmful if inhaled. May be harmful if swallowed.

**Target Organs:** Blood, lungs.

#### Potential Health Effects

**Eye:** Causes eye irritation.

**Skin:** Causes skin irritation.

**Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Molybdenum toxicity in ruminants is characterized by symptoms of copper deficiency.

**Inhalation:** Causes upper respiratory tract irritation. Causes irritation of the mucous membrane. In an inhalation study, rats were administered 60 ug ammonium molybdate/ m<sup>3</sup>, 24 hours a day for 17 weeks. Changes in erythrocyte and leukocyte cell counts were observed.

**Chronic:** Not available. Rats were fed 25 or 50 ppm of ammonium molybdate in their food for 100 days, at which time they were killed and examined. Ammonium molybdate at 25 ppm had no effect on growth; at 50 ppm a slight decrease in the growth rate was observed. No deaths or significant effects on hemoglobin levels were observed at 25 or 50 ppm.

### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Treat symptomatically and supportively.

### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Wash hands before eating. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Avoid breathing dust.

**Storage:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**Exposure Limits**

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium molybdate(VI) tetrahydrate	none listed	none listed	none listed
Ammonium molybdate(VI) anhydrous	none listed	none listed	none listed

**OSHA Vacated PELs:** Ammonium molybdate(VI) tetrahydrate: No OSHA Vacated PELs are listed for this chemical. Ammonium molybdate(VI) anhydrous: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Powder

**Appearance:** white or yellow

**Odor:** none reported

**pH:** Not available.

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Evaporation Rate:** Not applicable.

**Viscosity:** Not applicable.

**Boiling Point:** decomposes

**Freezing/Melting Point:** 190 deg C

**Decomposition Temperature:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** 2.49

**Molecular Formula:** (NH<sub>4</sub>)<sub>6</sub>Mo<sub>7</sub>O<sub>24</sub>.4H<sub>2</sub>O

**Molecular Weight:** 1235.86

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Dust generation, excess heat.

**Incompatibilities with Other Materials:** Strong acids.

**Hazardous Decomposition Products:** Nitrogen oxides, ammonia and/or derivatives, oxides of molybdenum.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 12054-85-2 unlisted.

**CAS#** 12027-67-7: QA5076000

**LD50/LC50:**

Not available.

Not available.

**Carcinogenicity:**

CAS# 12054-85-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 12027-67-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Neurotoxicity:** No information available.

**Mutagenicity:** No information available.

**Other Studies:** NTP Carcinogenesis studies; selected, October 2000.

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	<b>US DOT</b>	<b>Canada TDG</b>
<b>Shipping Name:</b>	Please contact Fisher Scientific for shipping information	No information available.
<b>Hazard Class:</b>		
<b>UN Number:</b>		
<b>Packing Group:</b>		

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 12054-85-2 is not on the TSCA Inventory. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 12027-67-7 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 12054-85-2: acute, chronic.

CAS # 12027-67-7: acute, chronic.

#### Section 313

No chemicals are reportable under Section 313.

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 12054-85-2 can be found on the following state right to know lists: California, (listed as Molybdenum compounds, n.o.s.).

CAS# 12027-67-7 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

#### California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

#### European/International Regulations

#### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

XN

#### Risk Phrases:

R 22 Harmful if swallowed.

#### Safety Phrases:

S 22 Do not breathe dust.

S 24/25 Avoid contact with skin and eyes.

**WGK (Water Danger/Protection)**

CAS# 12054-85-2: 1

CAS# 12027-67-7: 1

**Canada - DSL/NDSL**

CAS# 12027-67-7 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of D2A, D2B.

**Canadian Ingredient Disclosure List**

CAS# 12054-85-2 (listed as Molybdenum compounds, n.o.s.) is listed on the Canadian Ingredient Disclosure List.

CAS# 12027-67-7 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 9/02/1997**Revision #7 Date:** 10/05/2004

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*