

MSDS# 01284

Section 1 - Chemical Product and Company Identification

MSDS Name: Ammonium molybdate(VI) tetrahydrate

Catalog Numbers: AC205850000, AC205851000, AC205855000, AC423310000, AC423310050, AC423311000  
AC423311000, 42331-5000, A674-10, A674-3, A674-500, NC9419177

Synonyms: Ammonium heptamolybdate tetrahydrate; Ammonium heptamolybdate tetrahydrate; Ammonium paramolybdate tetrahydrate.

Company Identification: Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410

For information in the US, call: 201-796-7100

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

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Risk Phrases:

CAS#: 12054-85-2  
Chemical Name: Ammonium molybdate(VI) tetrahydrate  
%: 99+  
EINECS#: unlisted  
Hazard Symbols:

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Text for R-phrases: see Section 16

Hazard Symbols: XN



Risk Phrases: 22 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Harmful if swallowed. May cause liver and kidney damage. May cause blood abnormalities. Causes eye, skin, and respiratory tract irritation. Target Organs: Blood, kidneys, liver, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.  
Skin: Causes skin irritation. May be harmful if absorbed through the skin.  
Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause liver and kidney damage.  
Inhalation: Causes respiratory tract irritation. May be harmful if inhaled. Exposure may cause blood abnormalities.  
Chronic: No information found.

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: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid immediately. Call a poison control center.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician:

### 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.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: Not available.

Flash Point: Not applicable.

Explosion Limits: Not available  
Lower:

Explosion Limits: Not available  
Upper:

NFPA Rating: 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. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

### Section 7 - Handling and Storage

Handling: Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only with adequate ventilation.

Storage: Store in a cool, dry place. Store in a tightly closed container.

### Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium molybdate(VI) anhydrous	0.5 mg/m3 TWA (respirable fraction, as Mo) (listed under Molybdenum soluble compounds).	1000 mg/m3 IDLH (as Mo) (listed under Molybdenum soluble compounds).	5 mg/m3 TWA (as Mo) (listed under Molybdenum soluble compounds).
Ammonium molybdate(VI) tetrahydrate	0.5 mg/m3 TWA (respirable fraction, as Mo) (listed under Molybdenum soluble compounds).	1000 mg/m3 IDLH (as Mo) (listed under Molybdenum soluble compounds).	5 mg/m3 TWA (as Mo) (listed under Molybdenum soluble compounds).

OSHA Vacated PELs: Ammonium molybdate(VI) anhydrous: 5 mg/m3 TWA (as Mo) (listed under Molybdenum soluble compounds) Ammonium molybdate(VI) tetrahydrate: 5 mg/m3 TWA (as Mo) (listed under Molybdenum soluble compounds)

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face

- Eyes: 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 respirator use.

#### Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder  
Color: white  
Odor: none reported  
pH: 5.0 - 5.5 (5% aq.sol.)  
Vapor Pressure: Not applicable.  
Vapor Density: Not available  
Evaporation Rate: Not applicable.  
Viscosity: Not applicable.  
Boiling Point: decomposes  
Freezing/Melting Point: 190 deg C ( 374.00°F)  
Decomposition Temperature: Not available  
Solubility in water: Soluble  
Specific Gravity/Density: 2.490  
Molecular Formula: H<sub>24</sub>Mo<sub>7</sub>N<sub>6</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: Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, ammonia and/or derivatives, oxides of molybdenum.

Hazardous Polymerization: Will not occur.

#### Section 11 - Toxicological Information

RTECS#: CAS# 12027-67-7: QA5076000  
CAS# 12054-85-2: None listed

LD50/LC50: RTECS: Not available. RTECS: Not available. Other: Oral median lethal dose for daily repeated doses was found to be 333 mg Mo/kg/day (up to 232 days) for ammonium molybdate. This is not an acute oral LD50 value, which is a dose administered once.

Carcinogenicity: Ammonium molybdate(VI) anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Ammonium molybdate(VI) tetrahydrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

#### Section 12 - Ecological Information

Other: Do not empty into drains.

#### Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

#### Section 14 - Transport Information

US DOT  
Shipping Name: Not Regulated  
Hazard Class:  
UN Number:

Packing Group:  
Canada TDG  
Shipping Name: Not regulated as a hazardous material  
Hazard Class:  
UN Number:  
Packing Group:

## Section 15 - Regulatory Information

### European/International Regulations

#### European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

#### WGK (Water Danger/Protection)

CAS# 12027-67-7: 1

CAS# 12054-85-2: 1

#### Canada

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

Canadian WHMIS Classifications: D1B, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 12027-67-7 is listed on Canada's Ingredient Disclosure List

CAS# 12054-85-2 is not listed on Canada's Ingredient Disclosure List.

#### US Federal

##### TSCA

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

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

## Section 16 - Other Information

MSDS Creation Date: 12/12/1997

Revision #11 Date 7/20/2009

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 the company 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 the company has been advised of the possibility of such damages.

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