Material Safety Data Sheet
Ammonium Molybdate Tetrahydrate

ACC# 01284

Section 1 - Chemical Product and Company Identification

MSDS Name: Ammonium Molybdate Tetrahydrate
Catalog Numbers: S79898, S79898ACS, S79899, A674 10, A674 3, A674 500, A67410, A6743, A674500
Synonyms: Ammonium paramolybdate; ammonium heptamolybdate, 4H2O
Company Identification:
Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12054-85-2</td>
<td>Ammonium Molybdate, Tetrahydrate</td>
<td>100.0</td>
<td>unlisted</td>
</tr>
</tbody>
</table>

Hazard Symbols: XN
Risk Phrases: 22

Section 3 - Hazards Identification
EMERGENCY OVERVIEW

Appearance: white. **Caution!** May cause eye and skin irritation. May cause respiratory and digestive tract irritation. **Target Organs:** None.

**Potential Health Effects**

**Eye:** May cause eye irritation.
**Skin:** May cause skin irritation. Low hazard for usual industrial handling.
**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation.
**Inhalation:** May cause respiratory tract irritation.
**Chronic:** No information found.

### Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.
**Skin:** Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
**Ingestion:** Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.
**Inhalation:** Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
**Notes to Physician:** Treat symptomatically and supportively.
**Antidote:** None reported.

### Section 5 - Firefighting 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:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
**Autoignition Temperature:** Not applicable.
**Flash Point:** Not applicable. (estimated) Health: 0; Flammability: 0; Reactivity: 0
**Explosion Limits, Lower:** Not available. **Upper:** Not available.

### 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.

### Section 7 - Handling and Storage
Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage: Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Molybdate, Tetrahydrate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Ammonium Molybdate, Tetrahydrate: 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 gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: white
Odor: odorless
pH: 5.0-5.5: 5% solution
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate:
Viscosity: Not available.
Boiling Point: 373 deg F
Freezing/Melting Point: 194 deg F
Decomposition Temperature: 374 deg F
Solubility: 43% in cold water.
Specific Gravity/Density: 2.5 (Water = 1)
Molecular Formula: H24N6Mo7O24.4H2O
Molecular Weight:

Section 10 - Stability and Reactivity
Chemical Stability: Stable.
Conditions to Avoid: Strong oxidants.
Incompatibilities with Other Materials: Strong oxidizers.
Hazardous Decomposition Products: Nitric oxide (NOx) and ammonia (NH3) fumes.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 12054-85-2 unlisted.
LD50/LC50:
Not available.

Carcinogenicity:
CAS# 12054-85-2: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Neurotoxicity: No data available.
Mutagenicity: No data available.
Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: Not available.
Environmental Fate: Not available.
Physical/Chemical: Not available.
Other: Not available.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: None listed.
RCRA D-Series Chronic Toxicity Reference Levels: None listed.
RCRA F-Series: None listed.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information
US FEDERAL

TSCA
CAS# 12054-85-2 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).

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.

SARA

Section 302 (RQ)
None of the chemicals in this material have an RQ.

Section 302 (TPQ)
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 12054-85-2: acute.

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 depletors. This material does not contain any Class 2 Ozone depletors.

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 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

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 inhale dust. S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)
CAS# 12054-85-2: 1
Canada

None of the chemicals in this product are listed on the DSL/NDSL list. This product has a WHMIS classification of D2B. CAS# 12054-85-2 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

Section 16 - Additional Information

MSDS Creation Date: 1/13/1995
Revision #8 Date: 12/12/1997

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 way 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.

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