

Product Name	Ammonium molybdate tetrahydrate
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## **Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

### **1.1. Product identification:**

**Product Description:** Ammonium molybdate tetrahydrate

**Synonyms:** Molybdic acidammonium salt tetrahydrate, Ammonium heptamolybdate tetrahydrate

**CAS-No:** 12054-85-2

**EC-No.:** 234-320-9

**Molecular Formula:**  $\text{H}_{24}\text{Mo}_7\text{N}_6\text{O}_{24} \cdot 4 \text{H}_2\text{O}$

**REACH Registration No:** A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the Registration is envisaged for a later registration deadline.

### **1.2. Relevant identified uses of the substance or mixture and uses advised against:**

**Recommended Use:** Laboratory chemicals, Manufacture of substances

### **1.3 Details of the supplier of the safety data sheet:**

- Company** **Finar Limited**  
184-186/P, Chacharwadi Vasna,  
Sarkhej-Bavla Highway,  
Ta.: Sanand, Dist.: Ahmedabad,  
Email: [info@finarchemicals.com](mailto:info@finarchemicals.com)  
Web: [www.finarchemicals.com](http://www.finarchemicals.com)
- E-Mail Address** [safety.finar@actylis.com](mailto:safety.finar@actylis.com); [info.finar@actylis.com](mailto:info.finar@actylis.com)

### **1.4 Emergency Telephone Number:**

- For Emergency contact on: +91 - 2717 - 616 717

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## **SECTION 2: HAZARDS IDENTIFICATION**

### **2.1. Classification of the substance or mixture:**

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

### **2.2. Label Elements:**

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

### **2.3. Other Hazards:**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

### **3.1. Substances:** Ammonium molybdate tetrahydrate

### **3.2. Mixtures:**

Component	CAS-No	EC-No.	Weight %
Ammonium molybdate tetrahydrate	12054-85-2	234-320-9	>95

## **SECTION 4: FIRST AID MEASURES**

### **4.1. Description of first aid measures:**

- **General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

- **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

- **If Contact with skin**

Take off immediately all contaminated clothing. Rinse skin with water/ shower.

- **In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes, remove contact lenses and consult a physician.

- **If swallowed**

Immediately make victim drink water (two glasses at most). Consult a physician.

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

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The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No information available

## **SECTION 5: FIREFIGHTING MEASURES**

**5.1. Extinguishing media:**

**Suitable Extinguishing Media-** Use extinguishing measures that are appropriate to local Circumstances and the surrounding environment.

**Unsuitable extinguishing media-** For this substance/mixture no limitations of extinguishing agents are given.

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

Nitrogen oxides (NO<sub>x</sub>)

Molybdenum oxides

Not combustible.

Ambient fire may liberate hazardous vapours.

**5.3. Advice for firefighters:**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further Information:**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1. Personal precautions, protective equipment and emergency procedures:**

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area,

Observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2. Environmental precautions:**

Do not let product enter drains.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dust.

**6.4. Reference to other sections:**

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For disposal see section 13.

## **SECTION 7: HANDLING AND STORAGE**

### **7.1. Precautions for safe handling:**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

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

Keep containers tightly closed in a dry and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong acids.

### **7.3. Specific end use(s):**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1. Control parameters**

Components with workplace control parameters

### **8.2. Exposure Controls:**

#### **Appropriate Engineering Controls:**

Handle in accordance with good industrial hygiene and safety practice. Wash hands Before breaks and at the end of workday.  
Ensure that eyewash stations and safety showers are close to the workstation location.  
Ensure adequate ventilation, especially in confined areas.

#### **Personal Protective Equipment:**

##### **Eye & Face Protection-**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as OSHA, NIOSH (US) or EN 166(EU)

##### **Hand Protection -**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under Conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

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Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under Conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

- **Other Protective equipment-**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

- **Respiratory Protection-**

Required when dust is generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P1

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

**Environmental Exposure Controls-**

Do not let product enter drains.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

- **Appearance:** Colorless
- **Physical State:** Solid
- **Odor:** Odorless
- **Odor Threshold:** Not applicable

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- **pH:** 5.0 - 5.5 (in 5% aq. Solution)
- **Melting Point:** 400 °C
- **Critical Temperature:** No data available
- **Vapor Pressure:** No data available
- **Autoignition Temperature:** No data available
- **Volatility:** No data available
- **Bulk Density:** ca.800 kg/m<sup>3</sup>
- **Viscosity, dynamic:** No data available
- **Water/Oil Dist. Co eff.:** Not applicable for inorganic substances
- **Ionicity (in Water):** No data available
- **Lower Explosion Limit:** No data available
- **Upper Explosion Limit:** No data available
- **Boiling Point/Range:** No data available
- **Flash Point:** Not applicable
- **Specific Gravity:** 2.490 g/ml
- **Water Solubility:** Completely soluble

**9.2. Other information:**

- **Molecular Formula:**  $\text{H}_{24}\text{Mo}_7\text{N}_6\text{O}_{24}\cdot 4\text{H}_2\text{O}$   
**Molecular Weight:** 1235.86 g/mol

## **SECTION 10: STABILITY AND REACTIVITY**

**10.1. Reactivity:**

No data available

**10.2. Chemical stability:**

The product is chemically stable under standard ambient conditions (room temperature).

**10.3. Possibility of hazardous reactions:**

Generates dangerous gases or fumes in contact with: Strong acids

**10.4. Conditions to avoid:**

Incompatible products. Excess heat. Avoid dust formation.

**10.5. Incompatible materials:**

Strong oxidizing agents, Strong acids

**10.6. Hazardous decomposition products:**

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In the event of fire: see section 5

## **SECTION 11: TOXICOLOGICAL INFORMATION**

### **11.1 Information on toxicological effects:**

#### **Acute Oral toxicity:**

LD50 Oral - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 420)

LC50 Inhalation - Rat - male and female - 4 h - > 5,05 mg/l

(OECD Test Guideline 403)

Remarks: (in analogy to similar products)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium molybdate

#### **Skin corrosion/irritation:**

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Molybdenum dioxide

#### **Serious eye damage/eye irritation:**

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Molybdenum dioxide

#### **Respiratory or skin sensitization:**

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Remarks: (in analogy to similar products)

#### **Germ cell mutagenicity:**

Test Type: Micronucleus test

Test system: Human lymphocytes

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Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 487

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Disodium molybdate dihydrate

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Disodium molybdate dihydrate

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Disodium molybdate dihydrate

**Carcinogenicity:**

No data available

**Reproductive toxicity:**

No data available

**Teratogenicity:**

No data available

**Specific target organ toxicity - single exposure:**

No data available.

**Specific target organ toxicity - repeated exposure:**

No data available

**Aspiration hazard:**

No data available

**11.2 Further Information:**

Repeated dose toxicity - Rat - male and female - Oral - 92 days - NOAEL (No observed adverse effect level) - 17 mg/kg

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Disodium molybdate dihydrate



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RTECS: QA5076000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, hemolysis.

Symptoms of an acute molybdenum (VI) intoxication: diarrhea, anemia (decreased Hemoglobin concentration in the blood), fatigue. Toxic effect on liver and kidneys after high doses. Handle in accordance with good industrial hygiene and safety practice.

## **SECTION 12: ECOLOGICAL INFORMATION**

### **12.1. Toxicity:**

Toxicity to fish	Semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 420 mg/l - 96 h (OECD Test Guideline 203) Remarks: (anhydrous substance)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - 79 mg/l - 48 h (OECD Test Guideline 202) Remarks: (anhydrous substance)
Toxicity to bacteria	Static test EC50 - activated sludge - 820 mg/l - 3 h (OECD Test Guideline 209) Remarks: (anhydrous substance)

### **12.2 Persistence and degradability:**

The methods for determining the biological degradability are not applicable to inorganic substances.

### **12.3 Bioaccumulate potential:**

No data available

### **12.4 Mobility in soil:**

No data available

### **12.5 Results of PBT and vPvB assessment:**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at Levels of 0.1% or higher.

### **12.6 Other adverse effects:**

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No data available

### **SECTION 13: Disposal considerations**

#### **13.1 Waste treatment methods:**

##### **Product**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

##### **Contaminated packaging**

Dispose of as unused product.

### **SECTION 14: Transport information**

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	Not dangerous goods		
14.2 Proper shipping name	Not dangerous goods		
14.3 Class	Not dangerous goods		
14.4 Packing group	Not dangerous goods		
14.5 Environmentally hazardous	No		
14.6 Special precautions for user	No data available		
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			
Not Relevant			

### **SECTION 15: Regulatory information**

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

##### **National legislation**

Seveso III: Directive 2012/18/EU of the European: Not applicable

Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

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## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

## **SECTION 16: Other information**

### **Training advice:**

Provide adequate information, instruction and training for operators.

**References:** Not available

**Created:** 03/03/2022

**Updated On:** 26/09/2023

### **Disclaimer:**

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