



# MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 10/21/2012

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number	101181
Product name	Ammonium heptamolybdate tetrahydrate (ammonium molybdate) powder extra pure

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   SDS Phone Support: +1-978-715-1335   General Inquiries: +1-978-751-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)  e-mail: mm_sds@merckgroup.com
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS-Labeling

Not a dangerous substance according to GHS.

### OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Other hazards

None known.

## SECTION 3. Composition/information on ingredients

Formula	$(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4 \text{H}_2\text{O}$	$\text{H}_{24}\text{Mo}_7\text{N}_6\text{O}_{24} \cdot 4 \text{H}_2\text{O}$ (Hill)
CAS-No.	12054-85-2	
Molar mass	1,235.86 g/mol	

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pure

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**Hazardous ingredients**

*Chemical Name ( Concentration)*

CAS-No.

*Ammonium heptamolybdate ( >= 90 % - <= 100 % )*  
12027-67-7

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**SECTION 4. First aid measures**

**Description of first-aid measures**

*Inhalation*

After inhalation: fresh air.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

*Eye contact*

After eye contact: rinse out with plenty of water.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

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.

**Indication of any immediate medical attention and special treatment needed**

No information available.

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**SECTION 5. Fire-fighting measures**

**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.

**Special hazards arising from the substance or mixture**

Not combustible.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrogen oxides

**Advice for firefighters**

*Special protective equipment for fire-fighters*

In the event of fire, wear self-contained breathing apparatus.

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*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.

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**SECTION 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid generation of dusts; do not inhale dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**Environmental precautions**

Do not empty into drains.

**Methods and materials 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 dusts.

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**SECTION 7. Handling and storage**

**Precautions for safe handling**

Observe label precautions.

**Conditions for safe storage, including any incompatibilities**

Tightly closed. Dry.

Storage temperature: no restrictions.

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**SECTION 8. Exposure controls/personal protection**

**Exposure limit(s)**

*Ingredients*

Basis	Value	Threshold limits	Remarks
<i>Ammonium heptamolybdate 12027-67-7</i>			
ACGIH	Time Weighted Average (TWA):	0.5 mg/m <sup>3</sup>	Form of exposure: Respirable fraction. Expressed as: as Mo
OSHA_TRANS	PEL:	5 mg/m <sup>3</sup>	Expressed as: as Mo
Z1A	Time Weighted Average (TWA):	5 mg/m <sup>3</sup>	Expressed as: as Mo

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

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*Hygiene measures*

Change contaminated clothing. Wash hands after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Recommended:

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

*Respiratory protection*

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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**SECTION 9. Physical and chemical properties**

Physical state	solid
Color	colorless
Odor	ammoniacal
Odor Threshold	No information available.
pH	ca. 5.3 at 50 g/l 68 °F ( 20 °C)
Melting point	194 °F ( 90 °C) Elimination of water of crystallization
Boiling point/boiling range	not applicable
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.

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Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	2.498 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	400 g/l at 68 °F ( 20 °C)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	374 °F ( 190 °C)
Viscosity, dynamic	No information available.
Bulk density	ca. 800 kg/m <sup>3</sup>

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## SECTION 10. Stability and reactivity

### Reactivity

See below

### Chemical stability

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

### Possibility of hazardous reactions

Strong acids

Generates dangerous gases or fumes in contact with:

### Conditions to avoid

Heating (decomposition).

### Incompatible materials

no information available

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact, Ingestion

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### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	Confirmed animal carcinogen with unknown relevance to humans. Ammonium heptamolybdate 12027-67-7

## **Further information**

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.

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

No information available.

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

No information available.

### **Mobility in soil**

No information available.

### **Other adverse effects**

#### *Additional ecological information*

We have no quantitative data concerning the ecological effects of this product.

Further information on ecology

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Discharge into the environment must be avoided.

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**SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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**SECTION 14. Transport information**

**Land transport (DOT)**

Not classified as dangerous in the meaning of transport regulations.

**Air transport (IATA)**

Not classified as dangerous in the meaning of transport regulations.

**Sea transport (IMDG)**

Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15. Regulatory information**

**United States of America**

**OSHA Hazards**

Carcinogen

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

**TSCA list**

Not relevant

**SARA 311/312 Hazards**

Chronic Health Hazard

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

**US State Regulations**

**Massachusetts Right To Know**

Remarks

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

**Pennsylvania Right To Know**

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*Ingredients*

Ammonium heptamolybdate  
water of crystallization

**New Jersey Right To Know**

*Ingredients*

Ammonium heptamolybdate  
water of crystallization

**California Prop 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**Notification status**

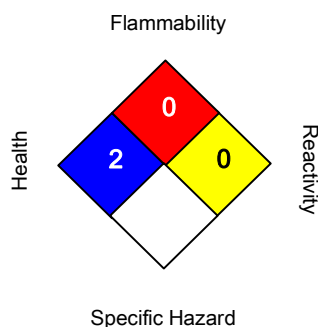
TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL.

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**SECTION 16. Other information**

**National Fire Protection Association (U.S.A)**



**Training advice**

Provide adequate information, instruction and training for operators.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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