Material Safety Data Sheet

Molybdic acid, 85% certified ACS powder (assay MoO3 > 85%, rest is water of hydration and amm

MSDS# 15130

Section 1 - Chemical Product and Company Identification

MSDS Name:	Molybdic acid, 85% certified ACS powder (assay MoO3 > 85%, rest is water of hydration and ammonium ions)
Catalog Numbers:	A173-500
Synonyms:	This reagent consists largely of ammonium molybdate. Synonyms: Ammonium heptamolybdate ((NH4) 6Mo7O24) tetrahydrate; Ammonium paramolybdate tetrahydrate; Moybdic acid (H6Mo7O24), hexaammonium salt, 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

Risk Phrases:

CAS#:	12054-85-2
Chemical Name:	Ammonium molybdate(VI) tetrahydrate
%:	100
EINECS#:	unlisted

Hazard Symbols:

Text for R-phrases: see Section 16

Hazard Symbols: XI

Risk Phrases: 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! May be harmful if swallowed. May be harmful if inhaled. Causes eye, skin, and respiratory tract irritation. Target Organs: Blood, lungs, respiratory system, eyes, skin.

Potential Health Effects

Eye:	Causes eye irritation.
Skin:	Causes skin irritation.
Ingestion:	May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation:	Causes upper respiratory tract irritation.
Chronic:	

Section 4 - First Aid Measures

Eyes:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin:	In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

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. 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.

Autoignition Temperature: Not available.

Flash Point: Not applicable.

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

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. 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. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Do not breathe dust. Use only with adequate ventilation.

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

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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure

limits.

Exposure Limits

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 respirator use.

Section 9 - Physical and Chemical Properties

Physical State:	Powder
Color:	white or yellow
Odor:	odorless
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 (374.00°F)
Decomposition Temperature:	Not available
Solubility in water:	Slightly to negligible to insoluble
Specific Gravity/Density:	2.49
Molecular Formula:	(NH4)6Mo7O24.4H2O
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	May 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:	See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

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: XI

Risk Phrases:

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

Safety Phrases:

S 22 Do not breathe dust.

S 24/25 Avoid contact with skin and eyes.

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: 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 in on the Inventory (40CFR720.3(u)(2)).

Section 16 - Other Information

MSDS Creation Date: 9/02/1997

Revision #11 Date 7/20/2009
