An ISO9001 Certified Company

Material Safety Data Sheet
Ammonium Molybdate Reagent I & II

Section 1 - Chemical Product and Company Identification

MSDS Name:
Ammonium Molybdate Reagent I & II
Catalog Numbers:
LC11230, LC11240
Synonyms:
None

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
7732-18-5	Water	balance
7664-93-9	Sulfuric acid	18-40
12054-85-2	Ammonium molybdate, tetrahydrate	2-6

Section 3 - Hazards Identification

Emergency Overview

Appearance: *clear, colorless solution*
Danger! *Corrosive. Causes severe burns by all exposure routes. Harmful if inhaled or swallowed.*
Target Organs: *eyes, skin, respiratory tract, teeth*

Potential Health Effects

Eye:
Causes severe eye burns. May cause irreversible eye injury.
Skin:
Causes skin burns.
Ingestion:
Causes gastrointestinal tract burns. May cause severe and permanent damage to the digestive tract.

Inhalation:
Harmful if inhaled. May cause severe irritation or burns of the respiratory tract with sore throat, coughing, shortness of breath, and delayed lung edema.

Chronic:
Prolonged or repeated inhalation may cause nosebleeds, nasal congestion, erosion of the teeth, perforation of the nasal septum, chest pain and bronchitis. Prolonged or repeated eye contact may cause conjunctivitis.

Section 4 - First Aid Measures

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

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

Ingestion:
Give conscious victim 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid at once.

Inhalation:
Move victim to fresh air immediately. If breathing is difficult, administer oxygen. Give artificial respiration if necessary. Get medical aid at once.

Notes to Physician:
Treat symptomatically and supportively.

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. Containers may explode in the heat of a fire. Contact with metals may evolve flammable hydrogen gas.

Extinguishing Media:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:
Not available

Flash Point:
Not available

NFPA Rating:
CAS# 7732-18-5: Health- 0, Flammability- 0, Instability- 0
CAS# 7664-93-9: Health- 3, Flammability- 0, Instability- 1
CAS# 12054-85-2: Health- 2, Flammability- 1, Instability- 0

Explosion Limits:
Lower: n/a Upper: n/a

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material such as sand, vermiculite, or diatomaceous earth, and transfer to a suitable container labeled for later disposal.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Do not ingest or inhale. Do not get in eyes, on skin, or on clothing.

Storage:

Store tightly capped in a cool, dry, well-ventilated area away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities using or storing this material should be equipped with an eyewash and safety shower. Provide local exhaust or general dilution ventilation to keep airborne levels below the permissible exposure limits.

Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Water	None listed	None listed	None listed
Sulfuric acid	0.2 mg/m3 (thoracic fraction)	1 mg/m3 TWA 15 mg/m3 IDLH	1 mg/m3 TWA
Ammonium molybdate tetrahydrate	None listed	None listed	None listed

OSHA Vacated PELs:

Sulfuric acid: 1 mg/m3 TWA

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. Do not wear contact lenses when working with chemicals.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	Colorless
Odor:	Odorless
pH:	Acidic
Vapor Pressure:	Not available
Vapor Density:	Not available
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	Not available
Freezing/Melting Point:	Not available
Decomposition Temperature:	Not available
Solubility in water:	Soluble
Specific Gravity/Density:	1.0-1.3
Molecular Formula:	Not applicable
Molecular Weight:	Not applicable

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures.

Conditions to Avoid:
Incompatible materials, excess heat.

Incompatibilities with Other Materials:
Metals, combustible materials, oxidizers, amines, bases.

Hazardous Decomposition Products:
Oxides of sulfur and nitrogen.

Hazardous Polymerization:
Has not been reported.

Section 11 - Toxicological Information

RTECS:
CAS# 7732-18-5: ZC0110000
CAS# 7664-93-9: WS5600000
CAS# 12054-85-2: QA4900000

LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg
CAS# 7664-93-9:
Inhalation, mouse: LC50 = 320 mg/m3/2H
Inhalation, rat: LC50 = 510 mg/m3/2H
Oral, rat: LD50 = 2140 mg/kg
CAS# 12054-85-2:
Inhalation, rat: LC50 =>1930 mg/m3/4H
Oral, rat: LD50 = 3883 mg/kg

Carcinogenicity:
CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.

CAS# 7664-93-9: Listed as a carcinogen by ACGIH, IARC, and California Proposition 65 (listed as strong inorganic acid mists containing sulfuric acid).
CAS# 12054-85-2: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.

Epidemiology:
See actual entry in RTECS for complete information.

Teratogenicity:
Not available

Reproductive:
Not available

Mutagenicity:
See actual entry in RTECS for complete information.

Neurotoxicity:
Not available

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Sulfuric acid
Hazard Class: 8
UN Number: UN2796
Packing Group: PGII

Section 15 - Regulatory Information

US Federal

TSCA:
CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 7664-93-9 is listed on the TSCA Inventory.
CAS# 12054-85-2 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):
CAS# 7664-93-9: final RQ = 1000 pounds (454 kg)

CERCLA/SARA Section 313:
This material contains Ammonium molybdate tetrahydrate (CAS# 12054-85-2, 2.5-6%), and Sulfuric acid (CAS# 7664-93-9, 18-40%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous:
None of the components of this product are listed.

US State

State Right to Know:

Sulfuric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Ammonium molybdate can be found on the following state Right-to-Know lists: New Jersey.

California Regulations:

None

European/International Regulations

Canadian DSL/NDSL:

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 7664-93-9 is listed on Canada's DSL List.
CAS# 12054-85-2 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 7664-93-9 is listed on Canada's Ingredient Disclosure List.
CAS# 12054-85-2 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

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