

## Material Safety Data Sheet

Version 4.2  
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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Phosphomolybdic acid hydrate

Product Number : 221856  
Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

**OSHA Hazards**  
Corrosive, Oxidizer

**GHS Classification**  
Oxidizing solids (Category 3)  
Skin corrosion (Category 1B)  
Serious eye damage (Category 1)

## GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H272 : May intensify fire; oxidiser.  
H314 : Causes severe skin burns and eye damage.

Precautionary statement(s)

P220 : Keep/Store away from clothing/ combustible materials.  
P280 : Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 : Immediately call a POISON CENTER or doctor/ physician.

## HMIS Classification

Health hazard: 3  
Flammability: 0  
Physical hazards: 3

## NFPA Rating

Health hazard: 3  
Fire: 0

Reactivity Hazard: 3  
Special hazard.: OX

## Potential Health Effects

**Inhalation** : May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin** : May be harmful if absorbed through skin. Causes skin burns.

**Eyes** : Causes eye burns.

**Ingestion** : May be harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Molybdophosphoric acid

Formula :  $H_3Mo_{12}O_{40}P \cdot xH_2O$ 

Molecular Weight : 1,825.25 g/mol

Component	Concentration
<b>Phosphomolybdic acid hydrate</b>	
CAS-No.	51429-74-4
EC-No.	234-713-5

## 4. FIRST AID MEASURES

## General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

## If inhaled

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

## In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

## In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

## If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5. FIREFIGHTING MEASURES

## Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

## Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

## Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Oxides of phosphorus, Molybdenum oxides

## Further information

Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

## Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

## Environmental precautions

Do not let product enter drains.

#### Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling

Avoid formation of dust and aerosols.  
Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition. Normal measures for preventive fire protection.

#### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Personal protective equipment

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### Eye protection

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

##### Skin and body protection

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.

##### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

Form	crystalline
Colour	yellow

#### Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 79 - 90 °C (174 - 194 °F)
Boiling point	no data available
Flash point	not applicable
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available

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Vapour pressure	no data available
Density	1.62 g/cm <sup>3</sup> at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

### 10. STABILITY AND REACTIVITY

#### Chemical stability

Stable under recommended storage conditions.

#### Possibility of hazardous reactions

no data available

#### Conditions to avoid

no data available

#### Materials to avoid

Organic materials, Powdered metals

#### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Oxides of phosphorus, Molybdenum oxides  
Other decomposition products - no data available

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Oral LD50

no data available

##### Inhalation LC50

no data available

##### Dermal LD50

no data available

#### Other information on acute toxicity

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

no data available

#### Teratogenicity

no data available

#### Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

#### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

#### Aspiration hazard

no data available

#### Potential health effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.

#### Signs and Symptoms of Exposure

Cough, Shortness of breath, Headache, Nausea, Vomiting

#### Synergistic effects

no data available

#### Additional information

RTECS: Not available

## 12. ECOLOGICAL INFORMATION

#### Toxicity

no data available

#### Persistence and degradability

no data available

#### Bioaccumulative potential

no data available

#### Mobility in soil

no data available

#### PBT and vPvB assessment

no data available

#### Other adverse effects

no data available

## 13. DISPOSAL CONSIDERATIONS

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

## 14. TRANSPORT INFORMATION

#### DOT (US)

UN number: 3084 Class: 8 (5.1) Packing group: II  
Proper shipping name: Corrosive solids, oxidizing, n.o.s. (Phosphomolybdic acid hydrate)  
Marine pollutant: No  
Poison Inhalation Hazard: No

#### IMDG

UN number: 3084 Class: 8 (5.1) Packing group: II EMS-No: F-A, S-Q  
Proper shipping name: CORROSIVE SOLID, OXIDIZING, N.O.S. (Phosphomolybdic acid hydrate)  
Marine pollutant: No

#### IATA

UN number: 3084 Class: 8 (5.1) Packing group: II  
Proper shipping name: Corrosive solid, oxidizing, n.o.s. (Phosphomolybdic acid hydrate)

## 15. REGULATORY INFORMATION

#### OSHA Hazards

Corrosive, Oxidizer

#### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 311/312 Hazards

Acute Health Hazard

#### Massachusetts Right To Know Components

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

#### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Phosphomolybdic acid hydrate	51429-74-4	

#### New Jersey Right To Know Components

	CAS-No.	Revision Date
Phosphomolybdic acid hydrate	51429-74-4	

#### California Prop. 65 Components

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

## 16. OTHER INFORMATION

#### Further information

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