

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Phosphomolybdic Acid Hydrate

**Product Code:** PHMO-H-05-C.XHYD

**CAS Number:** 51429-74-4

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

OSHA Haz Com: CFR 1910.1200: Eye Damage/Irritation [Category 1]

Oxidizing Solids [Category 3]

Skin Corrosion/Irritation [Category 1C]

Signal word: Danger!

Hazard Statement(s): Causes serious eye damage

Causes severe skin burns and eye damage

May intensify fire; oxidizer



Pictogram(s) or Symbol(s):

Precautionary Statement(s):

[Prevention] Do not breathe dusts or mists. Use only outdoors or in a well-ventilated area. Wear protective gloves,

protective clothing, eye protection and face protection. Wear eye protection. Wear face protection (full length face shield). Keep away from heat. Store away from clothing and other combustible materials.

Wear

protective gloves, eye protection and face protection.

[Response] If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all

contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of fire: Use water spray, wet sand or wet earth to extinguish. [Storage] Store locked up. [Disposal] Dispose of contents and container in accordance with US EPA guidelines for the classification and determination of hazardous waste listed in 40 CFR 261.3. (See Section 13)

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

Substance/Mixture: Substance  
Components: Phosphomolybdic Acid Hydrate  
Percent: ....  
CAS Number: 51429-74-4  
Molecular Weight: 1825.48(Anh)  
Chemical Formula:  $12\text{MoO}_3 \cdot \text{H}_3\text{PO}_4 \cdot x\text{H}_2\text{O}$   
Synonyms: Molybdo(VI)phosphoric Acid Hydrate

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### **SECTION 4. FIRST AID MEASURES**

Inhalation: Immediately call a poison center or doctor. Effects of exposure (inhalation) to substance may be delayed.  
Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.  
Skin contact: For severe burns, immediate medical attention is required. Immediately call a poison center or doctor.  
Remove and wash contaminated clothing before re-use. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.  
Eye contact: IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Eye contact with vapors or substance may cause severe injury, burns, or death. Call emergency medical service. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.  
Ingestion: Do not induce vomiting without medical advice. Call a physician or Poison Control Center immediately. Do not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Loosen tight clothing such as a collar, tie, belt or waistband. If a person vomits place them in the recovery position so

that vomit will not reenter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and

take precautions to protect themselves.

Symptoms/effects:

Acute: Pain. Redness.

Delayed: No data available

Immediate medical attention: WARNING: It might be hazardous to the person providing aid to give mouth-to-mouth respiration, because

the inhaled material is corrosive. For severe burns, immediate medical attention is required. If breathing

has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury.

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

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## **SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media: Use water. Carbon Dioxide (CO<sub>2</sub>) provide limited control Consult with local fire authorities before

attempting large scale fire fighting operations.

Unsuitable extinguishing media: Do NOT use dry chemicals or foams.

Specific hazards arising from the chemical

Hazardous combustion products: These products include: Phosphates Metallic oxides

Other specific hazards: Closed containers may explode from heat of a fire.

Special precautions for fire-fighters:

Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. These substances will

accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.).

Runoff to sewer may create fire or explosion hazard.

Containers may explode when heated. Move containers from fire area if you can do it without risk.

Special protective equipment for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations

ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may

provide little or no thermal protection.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions: Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Use sparkproof

tools and explosion-proof equipment. Remove all sources of ignition. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation.

Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Personal protective equipment: Wear eye protection (splash goggles) and face protection (full length face shield). Lab coat. Dust

respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile).

Emergency procedures: Prevent dust cloud. ELIMINATE all ignition sources (no smoking, flares,

sparks or flames in the immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.

Methods and materials for containment and cleaning up:

ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if without risk. Keep away from combustible

materials, reducing agents, acids, metal powders, light, heat, and sources of ignition. Do not get water inside container. Absorb with an inert material and

put the spilled material in an appropriate waste disposal container. Ventilate the area. Use clean non-sparking tools to collect absorbed material.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage.

Prevent entry into sewers, basements or confined areas; dike if needed.

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## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling: Avoid inhalation of vapor or mist. Manipulate under an adequate fume hood. Avoid contact with skin and

eyes. Avoid contact with combustible material (wood, paper, oil, clothing...). Keep away from heat and sources of ignition. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Keep container dry. Handle and open container

with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink,

or smoke. Keep away from sources of ignition.

Conditions for safe storage: Keep containers tightly closed in a cool, well-ventilated place. Keep away from combustible materials.

Keep away from sources of ignition. Store and use away from heat, sparks, open flame, or any other ignition source. Store locked up. Keep away from incompatibles. Containers which are opened must be

carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods.

Storage incompatibilities: Combustible substances, Reducing Agents

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

Exposure limits:

ACGIH TLV (TWA): 0.5 mg (Mo)/m<sup>3</sup> (R)

OSHA PEL (TWA): 5 mg (Mo)/m<sup>3</sup>

Appropriate engineering controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Ventilation

is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers

could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.

Personal protective equipment

Respiratory protection: Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

Hand protection: Wear protective gloves.

Eye protection: Safety glasses.

Skin and body protection: Lab coat.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C): Solid

Form: Crystal - Powder

Color: Pale yellow - Deep yellow

Odor: No data available

Odor threshold: No data available

TCI AMERICA

Decomposition temperature: No data available Vapor density: No data available

Melting point/freezing point:

Relative density: No data available

90°C (194°F)

Dynamic Viscosity: No data available

Kinematic Viscosity: No data available

pH: No data available

Partition coefficient:

n-octanol/water (log Pow)

No data available

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Evaporation rate:

(Butyl Acetate = 1)

No data available

Boiling point/range: No data available

Phosphomolybdic Acid Hydrate

Vapor pressure: No data available

Flash point: No data available

Flammability (solid, gas): No data available

Solubility(ies):

Autoignition temperature: No data available

Flammability or explosive limits:

Lower: No data available

Upper: No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not Available.

Chemical Stability: Stable under recommended storage conditions. (See Section 7)

Possibility of Hazardous Reactions: Oxidizing agents may form explosive peroxides.

Conditions to avoid: Avoid excessive heat and light.

Incompatible materials: Oxidizing agents

Hazardous Decomposition Products: No data available

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## SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

No data available

Skin corrosion/irritation:

No data available

Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

No data available

Carcinogenicity:

No data available

IARC: No data available

Flammability (solid, gas):

NTP: No data available

No data available

OSHA: No data available

Reproductive toxicity:

No data available

Routes of Exposure: Inhalation, Eye contact, Ingestion, Skin contact.

Symptoms related to exposure:

Skin contact may produce burns. Skin contact may result in inflammation; characterized by itching, scaling, reddening, or occasionally blistering. Eye contact can result in corneal damage or blindness.

Potential Health Effects:

No specific information available; skin and eye contact may result in irritation. May be harmful if inhaled or ingested.

Target organ(s): No data available

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## **SECTION 12. ECOLOGICAL INFORMATION**

Ecotoxicity

Fish: No data available

Crustacea: No data available

Algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential (BCF): No data available

Mobility in soil: No data available

Partition coefficient:

n-octanol/water (log Pow)

No data available

Soil adsorption (Koc): No data available

Henry's Law:

constant (PaM<sup>3</sup>/mol)

No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal of product: Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local

rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a

chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide

assistance but does not replace these laws, nor does compliance in accordance with this section

ensure

regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous

Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container: Dispose of as unused product. Do not re-use empty containers.

Other considerations: Observe all federal, state and local regulations when disposing of the substance.

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## **SECTION 14. TRANSPORT INFORMATION**

DOT (US)

UN number:

UN3085

Proper Shipping Name:

Oxidizing solid, corrosive, n.o.s.

Class or Division:

5.1 Oxidizer

Subrisk(s):

8 Corrosive material

Packing Group:

III

IATA

UN number:

UN3085

Proper Shipping Name:

Oxidizing solid, corrosive, n.o.s.

Class or Division:

5.1 Oxidizer

Subrisk(s):

8 Corrosive material

Packing Group:

III

IMDG

UN number:

UN3085

Proper Shipping Name:

Oxidizing solid, corrosive, n.o.s.

Class or Division:

5.1 Oxidizer

Subrisk(s):

8 Corrosive material

Packing Group:

III

EmS number: F-A, S-Q

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## **SECTION 15. REGULATORY INFORMATION**

Toxic Substance Control Act (TSCA 8b.):

This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations  
CERCLA Hazardous substance and Reportable Quantity:  
SARA 313: Not Listed  
SARA 302: Not Listed  
State Regulations  
State Right-to-Know  
Massachusetts Not Listed  
New Jersey Not Listed  
Pennsylvania Not Listed  
California Proposition 65: Not Listed  
Other Information  
NFPA Rating:  
Health: 3  
Flammability: 0  
Instability: 3  
HMIS Classification:  
Health: 3  
Flammability: 0  
Physical: 3  
International Inventories  
WHMIS hazard class: C: Oxidizing Material.  
E: Corrosive material.  
Canada: DSL On DSL

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.