



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.10

Section 1 - Product and Company Information

Product Name PHOSPHORIC ACID, CRYSTALS, 98+%
Product Number 310271
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
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Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>
PHOSPHORIC ACID	7664-38-2	Yes

Formula H3PO4
Synonyms Acide phosphorique (French), Acido fosforico (Italian), Fosforzuuroplossingen (Dutch), Hydrogen phosphate, Orthophosphoric acid, Phosphoric acid (ACGIH:OSHA), Phosphorsaeureloesungen (German)

Section 3 - Hazards Identification

Emergency Overview

Corrosive.
Causes burns. Harmful if swallowed.
Target organ(s): Liver, Blood.

HMIS Rating

Health: 3* Flammability: 0 Reactivity: 0

NFPA Ratings

Health: 3 Flammability: 0 Reactivity: 0

*Chronic hazards present. For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media

Suitable

Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed. Store under nitrogen. Refrigerate.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment

Respiratory

NIOSH/MSHA-approved respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Exposure Limits, RTECS

Country	Source	Type	Value	Remarks
USA	ACGIH	STEL	3 MG/M3	
USA	ACGIH	TWA	1 MG/M3	
USA	MSHA Standard-air	TWA	1 MG/M3	
USA	OSHA	PEL	8H TWA 1 MG/M3	

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New Zealand OEL
USA NIOSH TWA STEL 1 MG/M3 3 MG/M3 check ACGIH TLV

Section 9 - Physical/Chemical Properties

Appearance	Color	Form
Physical State Solid	White	Crystals
Molecular Weight:	98.00 AMU	
Property	Value	
pH	N/A	
BP/BP Range	213 °C	
MP/MP Range	41 - 44 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.830 g/cm ³	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	N/A	
Flash Point °C	N/A	
Explosion Limits	N/A	
Autoignition Temp	N/A	
Solubility	N/A	

Section 10 - Stability and Reactivity

Stability
Conditions to Avoid
Protect from moisture.
Materials to Avoid
Strong bases, Finely powdered metals.

Hazardous Decomposition Products
Hazardous Decomposition Products
Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes burns.
Skin Absorption
May be harmful if absorbed through the skin.
Eye Contact
Causes burns.

Inhalation

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

Ingestion

Harmful if swallowed.

Target Organ(s) or System(s)

Liver. Blood. Bone marrow.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. May cause cyanosis (blue-gray coloring of skin and lips caused by lack of oxygen).

RTECS Number: TB6300000

Toxicity Data

Oral - Rat: 1,530 mg/kg (LD50)
Remarks: Behavioral:Somnolence (general depressed activity).
Kidney, Ureter, Bladder:Hematuria.
Skin and Appendages: Other: Hair.

Inhalation - Rat: > 850 mg/m³ (LC50)

Skin - Rabbit: 2,740 mg/kg (LD50)
Remarks: Behavioral:Somnolence (general depressed activity).
Behavioral:Excitement.

Irritation Data

Skin - Rabbit: 595 mg 24H
Remarks: Severe irritation effect

Eyes - Rabbit: 119 mg
Remarks: Severe irritation effect

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Phosphoric acid
UN#: 1805
Class: 8
Packing Group: Packing Group III
PIH: Not PIH

IATA

Proper Shipping Name: Phosphoric acid
IATA Number: 1805
Hazard Class: 8
Packing Group: III

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: C

Indication of Danger

Corrosive.

Risk Statements

R: 34

Causes burns.

Safety Statements

S: 26 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Classification and Label Text

Indication of Danger

Corrosive.

Risk Statements

Causes burns. Harmful if swallowed.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

Target organ(s): Liver. Blood.

Handling and Storage

Hygroscopic. Store under nitrogen. Refrigerate.

United States Regulatory Information

SARA 313 Listed: Yes

Deminimis: 1 %

Notes: This product is subject to SARA section 313 reporting requirements.

TSCA Inventory Item: Yes

Section 16 - Other Information

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., 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 2002 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.