

SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

Date Printed: 12/21/2005
Date Updated: 06/30/2005
Version 1.3

Section 1 - Product and Company Information

Product Name PHOSPHORIC ACID 85% WT SOLUTION IN
WATER, FCC
Product Number W290017
Brand ALDRICH
Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS MO 63103 US
Technical Phone: 314 771 5765
Emergency Phone: 414 273 3850 Ext. 5996
Fax: 800 325 5052

Section 2 - Composition/Information on Ingredient

| Substance Name | CAS # | SARA 313 |
|---|-------|----------|
| PHOSPHORIC ACID, 85 WT% SOLUTION IN WATER, FOR MANUFACTURING | None | Yes |

| Ingredient Name | CAS # | Percent | SARA 313 |
|-----------------|-----------|---------|----------|
| PHOSPHORIC ACID | 7664-38-2 | 85 | Yes |
| WATER | 7732-18-5 | 15 | No |

Synonyms Acide phosphorique (French) * Acido fosforico
(Italian) * Fosforzuuroplossingen (Dutch) *
Hydrogen phosphate * Orthophosphoric acid *
Phosphoric acid (ACGIH:OSHA) *
Phosphorsaureloesungen (German)
RTECS Number: TB6300000

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 RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 0

*additional 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. Do not induce vomiting.

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

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

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

Cover with dry lime or soda ash, pick up, keep in a closed container, 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 vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

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

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

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

EXPOSURE LIMITS, RTECS

| Country | Source | Type | Value |
|--------------------------|-------------------|------|----------------|
| 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 |
| New Zealand | OEL | | |
| Remarks: check ACGIH TLV | | | |
| USA | NIOSH | TWA | 1 MG/M3 |
| | | STEL | 3 MG/M3 |

Section 9 - Physical/Chemical Properties

| | | |
|-----------------------|--|----------------------------|
| Appearance | Physical State: Clear liquid | |
| Property | Value | At Temperature or Pressure |
| pH | N/A | |
| BP/BP Range | N/A | |
| MP/MP Range | N/A | |
| Freezing Point | N/A | |
| Vapor Pressure | N/A | |
| Vapor Density | N/A | |
| Saturated Vapor Conc. | N/A | |
| SG/Density | 1.685 g/cm3 | |
| 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 | |
| Surface Tension | N/A | |
| Partition Coefficient | N/A | |
| Decomposition Temp. | N/A | |
| Flash Point | N/A | |
| Explosion Limits | N/A | |
| Flammability | N/A | |
| Autoignition Temp | N/A | |
| Refractive Index | 1.433 | |
| Optical Rotation | N/A | |
| Miscellaneous Data | N/A | |
| Solubility | Solubility in Water:complete, colorless 1 M in H2O, 20°C | |

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

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

Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Bone marrow. Blood. Liver.

SIGNS AND SYMPTOMS OF EXPOSURE

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

TOXICITY DATA

Oral

Rat

1530 mg/kg

LD50

Remarks: Skin and Appendages: Other: Hair. Behavioral: Somnolence (general depressed activity). Kidney, Ureter, Bladder: Hematuria.

Inhalation

Rat

> 850 mg/m³

LC50

Skin

Rabbit

2740 mg/kg

LD50

Remarks: Behavioral: Excitement. Behavioral: Somnolence (general depressed activity).

IRRITATION DATA

Skin

Rabbit
595 mg
'24H'
Remarks: Severe irritation effect

Eyes
Rabbit
119 mg
Remarks: Severe irritation effect

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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. 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
Hazard Label: Corrosive
PIH: Not PIH

IATA

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

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C
Indication of Danger: Corrosive.
R: 34
Risk Statements: Causes burns.
S: 26-36/37/39-45
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. 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.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DEMINIMIS: 1 %

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

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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. 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. 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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.