

Material Safety Data Sheet

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Version 1.2

According to 91/155/EEC

1 - Product and Company Information

Product Name PHOSPHORIC ACID, CRYSTALS, 99.999+%
Product Number 466123

Company Sigma-Aldrich Pte Ltd
#08-01 Citilink Warehouse
Singapore 118529
Singapore

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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
PHOSPHORIC ACID	7664-38-2	231-633-2	015-011-00-6

Formula H3PO4
Molecular Weight 98 AMU
Synonyms Acide phosphorique (French) * Acido fosforico
(Italian) * Fosforzuuroplossingen (Dutch) *
Hydrogen phosphate * Orthophosphoric acid *
Phosphoric acid (ACGIH:OSHA) *
Phosphorsaureloesungen (German)

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Causes burns.

4 - First Aid Measures

AFTER INHALATION

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

AFTER SKIN CONTACT

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

AFTER EYE CONTACT

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.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is
conscious. Call a physician immediately. Do not induce vomiting.

5 - Fire Fighting Measures

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

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

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES 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.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Store under nitrogen.

SPECIAL REQUIREMENTS: Store under inert gas. Hygroscopic.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

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

GENERAL HYGIENE MEASURES

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

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	1 MG/M3
Poland		NDSch	2 MG/M3
Poland		NDSP	-

EXPOSURE LIMITS - EUROPEAN UNION

Source	Type	Value
OEL	OEL	1 mg/m3

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	1 mg/m3

EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	1 mg/m3

EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level)	1 mg/m3

EXPOSURE LIMITS - SWITZERLAND			
Source	Type	Value	
OEL	OEL	1 mg/m3	

EXPOSURE LIMITS - UNITED KINGDOM			
Source	Type	Value	
OEL	STEL	2 mg/m3	

Remarks: Indicative limit value

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Solid
	Color: White
	Form: Crystals

Property	Value	At Temperature or Pressure
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pH	N/A	
BP/BP Range	213 °C	
MP/MP Range	41 - 44 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	1.685 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Conditions to Avoid: 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

11 - Toxicological Information

ACUTE TOXICITY

LD50

Oral

Rat

1530 mg/kg

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

LC50

Inhalation

Rat

> 850 mg/m3

1H

LD50

Skin

Rabbit

2740 mg/kg

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

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).

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 INFORMATION

Liver. Blood. Bone marrow.

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

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

14 - Transport Information

RID/ADR

UN#: 1805
Class: 8
PG: III
Proper Shipping Name: Phosphoric acid, solid

IMDG

UN#: 1805
Class: 8
PG: III
Proper Shipping Name: Phosphoric acid, solid
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 1805
Class: 8
PG: III
Proper Shipping Name: Phosphoric acid, solid
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 015-011-00-6

NOTA: B

INDICATION OF DANGER: C

Corrosive.

R-PHRASES: 34

Causes burns.

S-PHRASES: 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).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: 2

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

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