

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Phosphorus oxychloride
Product Number : 18498
Brand : Fluka
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
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Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Phosphorus oxide chloride
Phosphoryl chloride
Formula : Cl_3OP
Molecular Weight : 153.33 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Phosphoryl trichloride			
10025-87-3	233-046-7	015-009-00-5	-

3. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Highly toxic by inhalation, Highly toxic by ingestion, Corrosive, Water Reactive

HMIS Classification

Health Hazard: 3
Flammability: 0
Physical hazards: 3

NFPA Rating

Health Hazard: 3
Fire: 0
Reactivity Hazard: 3
Special hazard.: W

Potential Health Effects**Inhalation**

May be fatal 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. May be fatal if absorbed through skin.
Eyes	Causes eye burns.
Ingestion	May be fatal if swallowed. Causes burns.

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

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

If swallowed

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

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point no data available

Ignition temperature no data available

Suitable extinguishing media

Carbon dioxide (CO₂) Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry powder

Extinguishing media which shall not be used for safety reasons

Water

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas. The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapour or mist.

Storage

Store under inert gas. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Keep away from water. Never allow product to get in contact with water during storage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Phosphoryl trichloride	10025-87-3	TWA	0.1 ppm 0.63 mg/m ³	1994-09-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
		TWA	0.1 ppm 0.6 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form liquid

Safety data

pH 1 at 20 °C (68 °F)

Melting point	1.25 °C (34.25 °F)
Boiling point	105 - 110 °C (221 - 230 °F)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	37 hPa (28 mmHg) at 20 °C (68 °F) 139 hPa (104 mmHg) at 50 °C (122 °F)
Density	1.675 g/mL at 20 °C (68 °F)
Water solubility	no data available
Relative vapour density	5.29 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Exposure to moisture.

Materials to avoid

Strong bases, Alcohols, Amines, Phenol, Metals, Strong oxidizing agents, Reacts violently with water., Acetone reacts violently with phosphorous oxychloride.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine, Hydrogen chloride gas

Hazardous reactions

Reacts violently with water.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 36 mg/kg

Remarks: Gastrointestinal:Other changes. Liver:Other changes. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

LC50 Inhalation - rat - 4 h - 32 ppm

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

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.

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.

Potential Health Effects

Inhalation May be fatal 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. May be fatal if absorbed through skin.

Eyes Causes eye burns.

Ingestion May be fatal if swallowed. Causes burns.

Additional Information

RTECS: TH4897000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

May be harmful to aquatic organisms due to the shift of the pH.

13. DISPOSAL CONSIDERATIONS

Product

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

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 1810 Class: 8 (6.1) Packing group: II

Proper shipping name: Phosphorus oxychloride

Marine pollutant: No

Poison Inhalation Hazard: Hazard zone B

IMDG

UN-Number: 1810 Class: 8 Packing group: II

EMS-No: F-A, S-B

Proper shipping name: PHOSPHORUS OXYCHLORIDE

Marine pollutant: No

IATA

UN-Number: 1810 Class: 8

Proper shipping name: Phosphorus oxychloride

IATA Passenger: Not permitted for transport

IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards

Highly toxic by inhalation, Highly toxic by ingestion, Corrosive, Water Reactive

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

	CAS-No.	Revision Date
Phosphoryl trichloride	10025-87-3	1989-12-01

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

	CAS-No.	Revision Date
Phosphoryl trichloride	10025-87-3	1989-12-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Phosphoryl trichloride	10025-87-3	1989-12-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Phosphoryl trichloride	10025-87-3	1989-12-01

California Prop. 65 Components

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

16. OTHER INFORMATION**Further information**

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