

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Phosphorus trichloride

Product Number : 79670
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(III) chloride

Formula : Cl_3P

Molecular Weight : 137.33 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Phosphorus trichloride			
7719-12-2	231-749-3	015-007-00-4	-

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

Toxic by inhalation., Highly toxic by ingestion, Corrosive

HMIS Classification

Health Hazard: 4
Flammability: 0
Physical hazards: 3

NFPA Rating

Health Hazard: 4
Fire: 0
Reactivity Hazard: 0
Special hazard.: W

Potential Health Effects

Inhalation Toxic 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

Eyes
Ingestion

absorbed through skin.
Causes eye burns.
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 not applicable

Ignition temperature no data available

Suitable extinguishing media

Carbon dioxide (CO₂) 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.

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.
Normal measures for preventive fire protection.

Storage

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.

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

Moisture sensitive. Store under inert gas. Light sensitive. Metals

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Phosphorus trichloride	7719-12-2	TWA	0.2 ppm 1.1 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)
		STEL	0.5 ppm 2.8 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	0.2 ppm 1.5 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		STEL	0.5 ppm 3 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	0.5 ppm 3 mg/m ³	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

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	no data available
Melting point	-112 °C (-170 °F)
Boiling point	74 - 78 °C (165 - 172 °F)
Flash point	not applicable
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	167 hPa (125 mmHg) at 25 °C (77 °F) 133 hPa (100 mmHg) at 21 °C (70 °F)
Density	1.574 g/mL at 20 °C (68 °F)
Water solubility	no data available
Relative vapour density	4.74 - (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, Sodium/sodium oxides, Strong oxidizing agents, Potassium, Ammonia, Alcohols, Dimethyl sulfoxide. (DMSO), Metals

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Oxides of phosphorus, Hydrogen chloride gas
Reacts with water to form: - hydrochloric acid, Phosphorus trihydride (phosphine)

Hazardous reactions

Reacts violently with water.

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 18 mg/kg

Remarks: Behavioral:Food intake (animal). Lungs, Thorax, or Respiration:Chronic pulmonary edema.
Gastrointestinal:Peritonitis.

LC50 Inhalation - rat - 4 h - 104 ppm

Remarks: Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi. Lungs, Thorax, or Respiration:Other changes. Blood: Hemorrhage.

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.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.,
Cough, Shortness of breath, Headache, Nausea

Potential Health Effects

Inhalation Toxic 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: TH3675000

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS**Product**

Observe all federal, state, and local environmental regulations. 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.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 1809 Class: 6.1 (8) Packing group: I
Proper shipping name: Phosphorus trichloride
Marine pollutant: No
Poison Inhalation Hazard: Hazard zone B

IMDG

UN-Number: 1809 Class: 6.1 (8) Packing group: I EMS-No: F-A, S-B
Proper shipping name: PHOSPHORUS TRICHLORIDE
Marine pollutant: No

IATA

UN-Number: 1809 Class: 6.1 (8)
Proper shipping name: Phosphorus trichloride
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION**OSHA Hazards**

Toxic by inhalation., Highly toxic by ingestion, Corrosive

DSL Status

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

SARA 302 Components

	CAS-No.	Revision Date
Phosphorus trichloride	7719-12-2	1991-07-01

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
Phosphorus trichloride	7719-12-2	1991-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
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Phosphorus trichloride

7719-12-2

1991-07-01

New Jersey Right To Know Components

Phosphorus trichloride

CAS-No.

Revision Date

7719-12-2

1991-07-01

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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