MATERIAL SAFETY DATA SHEET
PHOSPHORUS OXYCHLORIDE

1. Chemical Product and Company Identification

Product Name : Phosphorus Oxychloride
Manufacturer : Sandhya Industrial Chemicals
Address : Sandhya Industrial Chemicals
312, Nand Prem, 142, Nehru Road, Vile Parle (E)
Mumbai- 400057
INDIA
Tel no. 91-22-26104202/26151500/26136732
Fax no. 91-22-26104201
Regd. Office
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District Valsad, Gujarat
Tel No. 91-260-2781049/2780149/2781013
www.sandhya-group.com
socpl@vsnl.com

Emergency Contact No. : 91-22-26104202/26151500/26136732

2. Composition, Information on Ingredients

INGREDIENT	PEL-OSHA	TLV-ACGIH	LD50 or LC50 Route/Species
Phosphorus Oxychloride FORMULA: $POCl_3$ CAS: 10025-87-3 RTECS #: TH4897000	Not Available	0.1ppm TWA	LC50 48 ppm/4HR - inhalation (rat)

3. Hazards Identification

EMERGENCY OVERVIEW

Colourless fuming liquid with pungent odor. Corrosive and irritating to the eyes, skin, and mucous membranes. Inhalation may result in chemical pneumonitis and pulmonary edema.

ROUTE OF ENTRY

Skin Contact	Skin Absorption	Eye Contact	Inhalation	Ingestion
Yes	No	Yes	Yes	Yes

HEALTH EFFECTS

Exposure Limits	Irritant	Sensitization
Yes	Yes	No
Teratogen	**Reproductive Hazard**	**Mutagen**
No	No	No

Synergistic Effects : None Reported
Carcinogenicity : No

EYE EFFECTS:
Corrosive and irritating to the eyes. Contact with the liquid or vapor causes painful burns and ulcerations. Burns to the eyes result in lesions and possible loss of vision.

SKIN EFFECTS:
Corrosive and irritating to the skin and all living tissue. Toxic level exposure to dermal tissue causes acid-like burns and skin lesions resulting in early necrosis and scarring. It hydrolyzes very rapidly with the liberation of heat yielding hydrochloric and phosphoric acid. Acid burns exhibit severe pain, redness, possible swelling and early necrosis.

INGESTION EFFECTS:
None specified.

INHALATION EFFECTS:
Corrosive and irritating to the upper and lower respiratory tract and all mucosal tissue. Symptoms include lacrimation, cough, labored breathing, and excessive salivary and sputum formation. Excessive irritation causes chemical pneumonitis and pulmonary edema which could be fatal.

NFPA HAZARD CODES		HMIS HAZARD CODES		RATINGS SYSTEM	
Health:	4	Health:	4	0	No Hazard
Flammability:	0	Flammability:	0	1	Slight Hazard
Reactivity:	2	Reactivity:	2	2	Moderate Hazard
WATER REACTIVE				3	Serious Hazard
				4	Severe Hazard

4. First Aid Measures

EYES:
PERSONS WITH POTENTIAL EXPOSURE SHOULD NOT WEAR CONTACT LENSES. Flush contaminated eyes with copious quantities of water. Part eyelids to assure complete flushing. Continue for a minimum of 15 minutes. Seek immediate medical attention.

SKIN:
Remove contaminated clothing as rapidly as possible. Flush affected area with copious quantities of water. Seek immediate medical attention.

INGESTION:
Not specified. Seek immediate medical attention.

INHALATION:
PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.
Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, and if breathing has stopped, administer artificial resuscitation and supplemental oxygen. Keep victim warm and quiet. Assure that mucus or vomited material does not obstruct the airway by use of positional drainage. Delayed pulmonary edema may occur. Keep patient under medical observation for at least 24 hours.

5. Fire Fighting Measures

Conditions of Flammability	: Nonflammable
Flash point	: None
Method	: None
Autoignition Temperature	: None
LEL(%)	: None
UEL(%)	: None
Hazardous combustion products	: Phosphine , HCl & phosphoric acid
Sensitivity to mechanical shock	: None

Sensitivity to static discharge: None

FIRE AND EXPLOSION HAZARDS : Potentially explosive reaction with water yielding phosphine & HCl. Sufficient quantities of phosphine may ignite.
EXTINGUISHING MEDIA : Dry chemical or carbon dioxide. If water is used, the amount should be enough to overcome heat and acid build-up.
FIRE FIGHTING INSTRUCTIONS : In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving this material. Stay away from sealed

containers. Do not let water enter containers of phosphorus oxychloride, explosion or rupture hazard. Forms hydrogen chloride fumes and hydrochloric or phosphoric acid with water. Fumes are irritating; acids may form hydrogen with metals

6. Accidental Release Measures

Evacuate all personnel from affected area. Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified. Treat spilled material with an excess of soda ash or slaked lime, mix and add water cautiously to yield acid(s) and react with the alkali until fully neutralized. Collect the residual for disposal. Flush spill area with plenty of water.

7. Handling and Storage

Electrical classification : Non-hazardous.
Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Keep away from water. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls, Personal Protection

Airborne Exposure Limits:
ACGIH Threshold Limit Value (TLV): 0.1 ppm (TWA)
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Liquid	
Vapor pressure at 68F	: 0.54	psia
Vapor density (Air = 1)	: Not Available	
Evaporation point	: Not Available	
Boiling point	: 223	F
	: 106	C
Freezing point :	: 36	F
	: 2	C
pH	: Not Available	
Specific gravity (H2O = 1)	: 1.675 (20/20C)	
Oil/water partition coefficient	: Not Available	
Solubility (H20)	: Reacts violently	
Odor threshold	: Not Available	
Odor and appearance	: Pungent odor; Colorless, fuming liquid.	

10. Stability and Reactivity

STABILITY	**:**	Stable.
INCOMPATIBLE MATERIALS	**:**	Water and water vapor. In water, reacts violently. Acids, alkali & alcohols
HAZARDOUS DECOMPOSITION PRODUCTS	**:**	Hydrochloric and phosphoric acid upon hydrolysis.
HAZARDOUS POLYMERIZATION	**:**	Will not occur.

11. Toxicological Information

Oral rat LD50: 380 mg/kg; Inhalation rat LC50: 48 ppm/4-hr.

12. Ecological Information

No data given.

13. Disposal Considerations

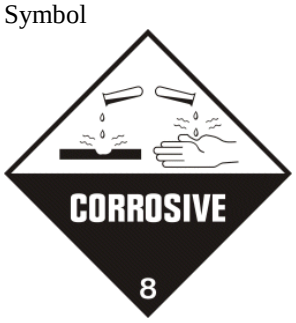
Do not attempt to dispose of residual waste or unused quantities. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste.

14. Transport Information

PROPER SHIPPING NAME	**:** Phosphorus Oxychloride
HAZARD CLASS	**:** 8
IDENTIFICATION NUMBER	**:** UN 1810
SHIPPING LABEL	**:** CORROSIVE
Packing Group	**:** II

15. Regulatory Information

Symbol



16. Other Information

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This information is based on our present state of knowledge. It should not therefore be constructed as guaranteeing specific properties of this product or their suitability for a particular application.