



**Qualikems**

# Qualikems Lifesciences Pvt. Ltd.

(Formerly known as Qualikems fine chem Pvt Ltd)

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Material Safety Data Sheet  
Phosphorus Oxychloride

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** Phosphorus Oxychloride

**Synonyms:** Phosphorus (III) Chloride Oxide; Phosphorus Oxytrichloride; Phosphoryl Chloride

## Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10025-87-3	Phosphorus oxychloride	100	233-046-7

## Section 3 - Hazards Identification

### EMERGENCY OVERVIEW

Appearance: colorless liquid.

**Danger!** Corrosive. Causes severe eye and skin burns. Causes severe digestive and respiratory tract burns. Water-reactive. Harmful if inhaled. Harmful if swallowed.

**Target Organs:** Kidneys, liver.

#### Potential Health Effects

**Eye:** Causes severe eye burns. Lachrymator (substance which increases the flow of tears).

**Skin:** Causes skin burns. Causes redness and pain.

**Ingestion:** Harmful if swallowed. Causes digestive tract burns with immediate pain, swelling of the throat, convulsions, and possible coma.

**Inhalation:** Harmful if inhaled. Causes chemical burns to the respiratory tract. May cause burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

**Chronic:** Prolonged or repeated exposure may lead to asthma and perforation of the nasal septum. May cause liver and kidney damage.

#### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Call a poison control center.

**Inhalation:** Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Treat symptomatically and supportively.

#### Section 5 - Fire Fighting Measures

**General Information:** Evacuate area and fight fire from a safe distance. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Water Reactive. Material will react with water and may release a flammable and/or toxic gas. Substance is noncombustible. Contact with water can cause violent liberation of heat and splattering of the material.

**Extinguishing Media:** Do NOT use water directly on fire. Do NOT use alcohol foams. Use carbon dioxide or dry chemical. DO NOT USE WATER!

**Flash Point:** Not available.

**Autoignition Temperature:** Noncombustible

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 2; Special Hazard: -W-

#### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in

Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Wash hands before eating. Follow all MSDS and label precautions even after container is emptied because they may contain product residues. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Do not allow contact with water.

**Storage:** Store in a cool place in the original container and protect from sunlight. Store in a dry area. Heat can cause thermal decomposition and pressure build-up inside containers. Store protected from moisture. Store under nitrogen.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Phosphorus oxychloride	0.1 ppm TWA	0.1 ppm TWA; 0.6 mg/m <sup>3</sup> TWA	none listed

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** colorless

**Odor:** pungent odor

**pH:** Not available.

**Vapor Pressure:** 40 mm Hg @ 27.3

**Vapor Density:** 5.3

**Evaporation Rate:** 1

**Viscosity:** Not available.  
**Boiling Point:** 107 deg C  
**Freezing/Melting Point:** 1.2 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Decomposes in water.  
**Specific Gravity/Density:** 1.625 at 25°C  
**Molecular Formula:** POCl<sub>3</sub>  
**Molecular Weight:** 153.3322

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable. However, may decompose if heated. Combines vigorously with water with the evolution of heat.

**Conditions to Avoid:** Contact with water.

**Incompatibilities with Other Materials:** Reacts violently with water to yield phosphoric acid (H<sub>3</sub>PO<sub>4</sub>) and hydrochloric acid (HCl). The resulting acids can react with metals to yield hydrogen gas. Reacts violently or explosively with dimethyl sulfoxide and 2,6-dimethylpyridine N-oxide in the absence of diluent. Reaction with sodium metal may cause explosion. Zinc dust ignites on contact with phosphorus oxychloride, addition of water produces phosphine which ignites.

**Hazardous Decomposition Products:** Hydrogen chloride, phosphine, oxides of phosphorus, phosphorous fumes.

**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 10025-87-3: TH4897000

**LD50/LC50:**

CAS# 10025-87-3:

Inhalation, mouse: LC50 = 404 mg/m<sup>3</sup>/2H;

Inhalation, rat: LC50 = 32 ppm/4H;

Oral, mouse: LD50 = 327 mg/kg;

Oral, rat: LD50 = 36 mg/kg;

Oral, rat: LD50 = 380 mg/kg;

**Carcinogenicity:**

CAS# 10025-87-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No data available.

**Teratogenicity:** No data available.

**Reproductive Effects:** No data available.

**Mutagenicity:** No data available.

**Neurotoxicity:** No data available.

**Other Studies:**

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	IATA	
<b>Shipping Name:</b>	PHOSPHORUS OXYCHLORIDE	
<b>Hazard Class:</b>	8	
<b>UN Number:</b>	UN1810	
<b>Packing Group:</b>	II	

## Section 15 - Regulatory Information

### Hazard Symbols:

T+ C

### Risk Phrases:

R 14 Reacts violently with water.

R 22 Harmful if swallowed.

R 26 Very toxic by inhalation.

R 35 Causes severe burns.

R 48/23 Toxic : danger of serious damage to health by prolonged exposure through inhalation.

### Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 7/8 Keep container tightly closed and dry.

#### Section 16 - Additional Information

**MSDS Creation Date:** 12/12/1997

**Revision #3 Date:** 10/03/2005

**Revision #4 Date:** 09/03/2010

**Revision #5 Date:** 08/03/2015

**Revision #6 Date:** 07/03/2020

**Revision #7 Date:** 06/03/2025

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