

Material Safety Data Sheet

Phosphorus Pentachloride

ACC# 01313

Section 1 - Chemical Product and Company Identification

MSDS Name: Phosphorus Pentachloride

Catalog Numbers: AC169460000, AC169460010, AC169460050, AC169461000, AC9706610, AC9707695, XXAC1694620K, XXAC1694660K

Synonyms: Phosphorus Perchloride; Phosphoric Chloride.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10026-13-8	Phosphorus Pentachloride	ca 100	233-060-3

Hazard Symbols: C

Risk Phrases: 34 37

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white to pale yellow solid. **Danger!** Corrosive. Causes severe eye and skin burns. Causes severe digestive and respiratory tract burns. Water-Reactive. May be harmful if swallowed.

Target Organs: None known.

Potential Health Effects

Eye: Causes severe eye burns.

Skin: Causes skin burns. Skin contact can cause brown stains in the area, and possible hardening of the outer skin layer.

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

Inhalation: May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract.

Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated 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: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. 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: 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. Use extinguishing media appropriate to the surrounding fire. 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. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. If water is the only media available, use in flooding amounts. Use carbon dioxide or dry chemical.

Flash Point: Not available.

Autoignition Temperature: Noncombustible

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 1; Special Hazard: -W-

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal 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. Minimize dust generation and accumulation. 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, dry, well-ventilated area away from incompatible substances. Corrosives area. Keep containers tightly closed.

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 Pentachloride	0.1 ppm TWA	1 mg/m ³ TWA 70 mg/m ³ IDLH	1 mg/m ³ TWA

OSHA Vacated PELs: Phosphorus Pentachloride: 1 mg/m³ TWA

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.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: solid

Appearance: white to pale yellow

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 167 deg C

Decomposition Temperature: Not available.

Solubility: Reacts with water.

Specific Gravity/Density: Not available.

Molecular Formula: PCl₅

Molecular Weight: 208.2388

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, contact with water.

Incompatibilities with Other Materials: Reacts violently with water. Alcohols, amines, aluminum, sodium, potassium acids.

Hazardous Decomposition Products: Hydrogen chloride, oxides of phosphorus, irritating and toxic fumes and gases, phosphorous fumes.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 10026-13-8: TB6125000

LD50/LC50:

CAS# 10026-13-8:

Inhalation, rat: LC50 = 205 mg/m³;

Oral, rat: LD50 = 660 mg/kg;

Carcinogenicity:

CAS# 10026-13-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.
Neurotoxicity: No information available.
Mutagenicity: No information available.
Other Studies: See actual entry in RTECS for complete information.

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

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	PHOSPHORUS PENTACHLORIDE				No information available.
Hazard Class:	8				
UN Number:	UN1806				
Packing Group:	II				

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 10026-13-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

CAS# 10026-13-8: 500 lb TPQ (This material is a reactive solid. The TP Q does not default to 10,000 pounds for non-powder, non-molten, non-solution form)

SARA Codes

CAS # 10026-13-8: acute, chronic, reactive.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 10026-13-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C

Risk Phrases:

R 34 Causes burns.

R 37 Irritating to respiratory system.

Safety Phrases:

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

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.

WGK (Water Danger/Protection)

CAS# 10026-13-8: 1

Canada - DSL/NDSL

CAS# 10026-13-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E.

Canadian Ingredient Disclosure List

CAS# 10026-13-8 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 10026-13-8: OEL-AUSTRALIA:TWA 0.1 ppm (1 mg/m³) OEL-BELGIUM:TWA 0.1 ppm (0.85 mg/m³) OEL-DENMARK:TWA 1 mg/m³ OEL-FINLAND:STEL 1 mg/m³;Skin OEL-FRANCE:TWA 0.1 ppm (1 mg/m³) OEL-GERMANY:TWA 1 mg/m³ OEL-JAPAN:TWA 0.1 ppm (0.85 mg/m³) OEL-THE NETHERLANDS:TWA 1 mg/m³ OEL-THE PHILIPPINES:TWA 1 mg/m³ OEL-POLAND:TWA 0.3 mg/m³ OEL-RUSSIA:TWA 0.1 ppm;STEL 0.2 mg/m³;Skin OEL-SWITZERLAND:TWA 1 mg/m³;STEL 2 mg/m³ OEL-THAILAND:TWA 1 mg/m³ OEL-TURKEY:TWA 1 mg/m³ OEL-UNITED KINGDOM:TWA 0.1 ppm (1 mg/m³) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 4/16/1999

Revision #5 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.