

Material Safety Data Sheet

Phosphorus Pentoxide

ACC# 18700

Section 1 - Chemical Product and Company Identification

MSDS Name: Phosphorus Pentoxide

Catalog Numbers: S80125, A244-500, A245-100, A245-500, NC9001226, S80125MF, S80125MF*

Synonyms: Diphosphorus Pentoxide; Phosphoric Anhydride; Phosphorus (V) Oxide; POX

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
1314-56-3	Diphosphorus pentoxide	100%	215-236-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid.

Danger! Corrosive. Causes eye and skin burns. Eye contact may result in permanent eye damage. Causes digestive and respiratory tract burns. Water-reactive. Harmful if inhaled. Hygroscopic (absorbs moisture from the air).

Target Organs: None.

Potential Health Effects

Eye: Causes eye burns. May cause irreversible eye injury.

Skin: Causes severe skin irritation and burns.

Ingestion: Causes gastrointestinal tract burns. Causes severe pain, nausea, vomiting, diarrhea, and shock.

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. May cause pulmonary edema and severe respiratory disturbances. Harmful if inhaled.

Chronic: Early symptoms of chronic phosphorous intoxication include gastrointestinal distress and possibly a garlic-like odor to the breath. Chronic exposure can lead to necrosis of the jaw, or 'phossy-jaw'.

Section 4 - First Aid Measures

Eyes: 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. 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.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. 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. Will react with water to form toxic and corrosive fumes. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media: Do NOT use water directly on fire. Use dry chemical, carbon dioxide, or alcohol-resistant foam. Do NOT get water inside containers. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

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: Do not flush into a sewer. Wash area with soap and water. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Provide ventilation. Do not get water on spilled substances or inside containers.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Do not allow water to get into the container because of violent reaction. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Do not store near combustible materials.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Keep away from metals. Corrosives area. Keep containers tightly closed. Keep away from strong bases.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Diphosphorus pentoxide	none listed	none listed	none listed

OSHA Vacated PELs: Diphosphorus pentoxide: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical goggles and a face shield if splashing is possible. 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 butyl rubber gloves, apron, and/or clothing. Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: white

Odor: odorless

pH: 1

Vapor Pressure: .975 mm Hg @384

Vapor Density: 4.9

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 360 deg C

Freezing/Melting Point: 340 - 360 deg C

Decomposition Temperature: Not available.

Solubility: Reacts with water.

Specific Gravity/Density: 2.3900

Molecular Formula: P₂O₅

Molecular Weight: 141.9446

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, moisture.

Incompatibilities with Other Materials: Incompatible with sodium, aluminum, potassium, ammonia, peroxides, and magnesium. Upon contact with water, diphosphorus pentoxide reacts violently producing heat and an acidic solution. Diphosphorus pentoxide reacts violently with barium sulfide, hydrogen fluoride, and iodides. Forms an explosive mixture with methyl hydroperoxide. Contact with 3-propynol causes ignition to occur.

Hazardous Decomposition Products: Oxides of phosphorus, phosphorous fumes.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 1314-56-3: TH3945000

LD50/LC50:

CAS# 1314-56-3:

Inhalation, mouse: LC50 = 271 mg/m³/1H;

Inhalation, rabbit: LC50 = 1689 mg/m³/1H;

Inhalation, rat: LC50 = 1217 mg/m³/1H;

Carcinogenicity:

CAS# 1314-56-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information 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

	US DOT	Canada TDG
Shipping Name:	PHOSPHORUS PENTOXIDE	No information available.
Hazard Class:	8	
UN Number:	UN1807	
Packing Group:	II	

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 1314-56-3 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.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 1314-56-3: immediate, 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# 1314-56-3 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

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 35 Causes severe burns.

Safety Phrases:

S 22 Do not breathe dust.

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).

WGK (Water Danger/Protection)

CAS# 1314-56-3: 1

Canada - DSL/NDSL

CAS# 1314-56-3 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1A, E.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 1314-56-3 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 2/25/1999

Revision #5 Date: 6/08/2006

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.