

**Safety data sheet as per COMMISSION REGULATION (EU) No 453/2010
of 20 May 2010 amending Regulation (EC) No 1907/2006
Product: Phosphorous pentoxide**



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Phosphorous pentoxide

CAS No.: 1314-56-3

EC No.: 215-236-1

Pre-Registration number 05-2114672531-50-0000

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Phosphorus pentoxide is common material and reagent in chemical industry.

- Phosphorus pentoxide is widely used in the industries of medicine, coating auxiliaries, printing and dyeing auxiliaries, anti-static additive, titanate coupling agent, phosphorus oxychloride.

Sector of use: SU 3 industrial uses

Environmental release category: Manufacture (ERC1) and formulations (ERC2)

Uses identified against: Food additive, medicinal products

1.3 Details of the supplier of the safety data sheet: Manufacturer/Supplier:

Prasol Chemicals Ltd.,
Prasol House, Plot No.A-17/2/3,
T.T.C. Indl. Area, Khairne M.I.D.C.,
Navi Mumbai - 400 710,
Maharashtra, India.
Tel: +91-22-27782555
Fax: +91-22-27782430

Further information obtainable from:

Mr. Dhaval Parikh

e-mail:sales@prasolchem.com; inquiry@prasolchem.com

1.4 Information in case of emergency:

Product safety department Tel: +91-22- 27782555; Fax:+91-22- 27782430

Other Comments (e.g. language(s) of the phone service): English

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008(CLP)



GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage

Eye Damage 1 H318 Causes serious eye damage

EUH014 reacts violently with water

2.1.2 Classification according to Directive 67/548/EEC or Directive 1999/45/EC



C; Corrosive

R35: Causes severe burns

Information concerning particular hazards for human and environment: Not applicable

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008(CLP)

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



GHS05

Signal word Danger

Hazard-determining components of labeling: Void

Hazard statements

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

EUH014 reacts violently with water

Revision: 15-01

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Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment: Not applicable

SECTION 3: Composition/information on ingredients

Chemical characterization:

CAS No.	Description
1314-56-3	Phosphorus pentoxide

Identification number(s)

EC Number: 215-236-1

Index number: 015-010-00-0

Additional information:

Molecular Formula: O5P2

Molecular Weight: 141.94g/mol

SECTION 4: First aid measures

4.1 General information:

Immediately remove any clothing soiled by the product.

Consult a physician. Show this safety data sheet to the doctor in attendance.

After inhalation:

Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

After skin contact:

Corrosive. Contact can cause severe irritation, burns, redness, and pain. Burns usually penetrate the skin with sharply defined edges, and heal slowly with the formation of scar tissue.

After eye contact:

Corrosive. Fumes and airborne powder cause eye irritation. Contact with substance can cause severe eye burns and permanent damage.

After swallowing:

Corrosive. Releases heat on contact with moisture and will burn mucous surfaces. Sore throat, abdominal pain, nausea, vomiting, and diarrhea may result. Brown or yellow stains will be found around the mouth. Suffocation may occur from swelling of the tongue. Aspiration into the lungs can cause chemical pneumonitis. Ingestion of this material has caused human fatalities.

4.2 Most important symptoms and effects, both acute and delayed

Eye contact: Inflammation of the eye is characterized by redness, watering, and itching

Skin contact: Inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

Information for doctor: Treat symptomatically and supportively

SECTION 5: Firefighting measures

5.1 Suitable extinguishing agents: CO2, Dry powder, sand.

For safety reasons unsuitable extinguishing agents: Foam, Water

5.2 Special hazards caused by the substance, its products of combustion or resulting gases:

Fumes from fire are hazardous. Phosphorus (V) oxide may emit toxic fumes if involved in a fire.

5.3 Advice for firefighters: Stay in danger area only with self-contained breathing apparatus. Prevent skin

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contact by keeping a safe distance or by wearing suitable protective clothing.

Additional information

Collect contaminated fire-fighting water separately. It must not enter the sewage system..

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Measures for environmental protection: Do not let product enter drains.

6.3 Methods and material for containment and cleaning up: Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment

See Section 13 for disposal information

SECTION 7: Handling and storage

7.1 Precautions for safe handling: Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage.

Information about fire - and explosion protection: Isolate from incompatible substances. Reacts violently with water.

7.2 Conditions for safe storage, including any incompatibilities:

Mild steel is the preferred material of construction of process equipment, storage or shipping containers when the product is kept dry.

Information about storage in one common storage facility: Store away from flammable substances.

Further information about storage conditions: Store in dry conditions. Protect from humidity and water Keep container tightly sealed.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities:

Use adequate ventilation to keep airborne concentrations low.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: Phosphorous pentoxide IOELV (EU) 1 mg/m³

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device

Protection of hands: Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves: Nitrile rubber, NBR

Penetration time of glove material: Break through time: >480 min

For the permanent contact gloves made of the following materials are suitable: Nitrile rubber, NBR

As protection from splashes gloves made of the following materials are suitable: Nitrile rubber, NBR

Eye protection: Tightly sealed goggles

Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : white solid

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Odour	: pungent, sharp, irritating odor
Odour threshold	: no data available
pH	: 1.5 at 10 g/l at 20°C
Melting point/Melting range	: 340-360°C
Boiling point/Boiling range	: sublimes at >572°C
Flash point	: not applicable
Evaporation rate	: not applicable
Flammability (solid, gaseous)	: Product is not flammable
Upper/lower flammability or explosive limits	: not applicable
Vapour pressure	: 1 mmHg (384°C)
Vapour density	: 4.9 (air=1)
Density at 20°C	: 2.39 g/cm ³
Solubility in / Miscibility with water	: Reacts to form water and phosphoric acid
Partition coefficient (n-octanol/water) at 25°C	: not applicable
Auto-ignition temperature	: no data available
Decomposition temperature	: not determined
Viscosity	: not applicable
Explosive properties	: none
Oxidising properties	: none

9.2 Other information

Bulk density: 300 kg/m³

SECTION 10: Stability and reactivity

10.1 Reactivity Reacts violently with water to evolve heat, dangerous fire risk.

10.2 Chemical stability Absorbs moisture from air with avidity, forming meta-poly or orthophosphoric acid depending upon condition of absorption.

10.3 Possibility of hazardous reactions Oxides of phosphorus, phosphorous fumes with the appropriate conditions it undergoes hazardous reactions with formic acid inorganic bases; iodides; methyl hydroperoxide; 3-propynol. Calcium oxide or sodium hydroxide reacts with phosphorus pentoxide extremely violently when initiated by local heating.

10.4 Conditions to avoid Heat, flames and sparks

10.5 Incompatible materials: Metals, bases, ammonia, calcium oxide, chlorine trifluoride, oxygen difluoride, sodium carbonate, sodium hydroxide, potassium, sodium, sulfides (inorganic, e.g. ferric sulfide, lead sulfide, sodium sulfide), may react with copper, rubber, and plastic, bromine pentafluoride, perchloric acid, iodides.

10.6 Hazardous decomposition products: Oxides of phosphorus, phosphorous fumes. When heated to decomposition it emits toxic fumes of phosphoxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

LC50	Inhalation	1217 mg/cu m/ 1 hr (rat)
		1689 mg/cu m/1 hr (rabbit)
		271 mg/cu m/1 hr (mouse)

Skin corrosion/irritation: Strong caustic effect on skin and mucous membranes.

Serious eye damage/irritation: Strong caustic effect.

Respiratory or skin sensitization: Sensitization possible through skin contact.

Germ cell mutagenicity: non genotoxic

Carcinogenicity: 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.

Reproductive toxicity: no data available

STOT-single exposure: no data available

STOT-repeated exposure: no data available

Aspiration hazard: no data available

Subacute to chronic toxicity:

- Inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns, or death.
- Fire will produce irritating, corrosive and/or toxic gases.

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- Reaction with water may generate much heat which will increase the concentration of fumes in the air.
- Contact with molten substance may cause severe burns to skin and eyes.

Additional toxicological information:

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

LC100	96h	56	Danio rerio (zebrafish)
EC50	48h	70.7 mg/L	Daphnia magna
EC50	72h	66.5mg/L	Desmodesmus subspicatus

12.2 Persistence and degradability

Biodegradation readily biodegradable

12.3 Bio accumulative potential not expected to bioaccumulate.

12.4 Mobility in soil no data available

12.5 Results of PBT and vPvB assessment Not required for inorganic substance

12.6 Other adverse effects May be harmful to aquatic organisms due to the shift of the pH

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product:

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contaminated packaging:

Empty containers must be decontaminated before returning for recycling as the containers of this material may be hazardous when empty since they retain product residues (dust, solids). Dispose of container and unused contents in accordance with federal, state and local requirements.

Recommended cleansing agents: Water, carefully, if necessary together with cleansing agents

SECTION 14: Transport information

Land Transport (ADR/RID) Marine Transport (IMDG) Air Transport (ICAO/ IATA)

14.1 UN/ID Number: 1807

14.2 UN proper shipping name: 1807 PHOSPHORUS PENTOXIDE

14.3 Transport hazard class: 8 Corrosive substances

14.4 Packaging group: II

14.5 Environmental hazards: not a marine pollutant

14.6 Special precautions for the user:

Danger code (Kemler) : 830

Tunnel restriction code : E

EMS Number : F-A,S-B

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006

Hazard pictograms Please refer section 2

Signal word Warning

Hazard statements Please refer section 2

Precautionary statements Please refer section 2

Labeling according to EU guidelines:

Code letter and hazard designation of product: please refer Section 2

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Risk phrases: please refer Section 2.

15.2 Chemical safety assessment A Chemical Safety Assessment has not been carried out and shall be available at the time of REACH registration

Substances of very high concern (SVHC) according to REACH, Article 57 The substance is not listed as SVHC.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS:

Product safety department.

Contact:

Tel: +91-022-27782555

Fax: +91-022-27782430

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

CAS: Chemical Abstracts Service (division of the American Chemical Society)

EC50: Half minimal response concentration

EINECS: European Inventory of Existing Commercial Chemical Substances

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

IMDG: International Maritime Code for Dangerous Goods

LC50: Lethal concentration, 50 percent LC100: Absolute lethal concentration

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

Sources

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

ECHA: [http://apps.echa.europa.eu/registered/data/dossiers/DISS-9eb813e6-4184-175c-e044-00144f67d031/DISS-9eb813e6-4184-175c-e044-00144f67d031.html](http://apps.echa.europa.eu/registered/data/dossiers/DISS-9eb813e6-4184-175c-e044-00144f67d031/DISS-9eb813e6-4184-175c-e044-00144f67d031_DISS-9eb813e6-4184-175c-e044-00144f67d031.html)

Sigma Aldrich:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=IN&language=en&productNumber=04113&brand=SI&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Fsia1%2F04113%3Flang%3Den>

Data compared to the previous version altered.

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