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

Product details
Trade name: diphosphorus pentasulphide
CAS No.: 1314-80-3
EC No.: 215-242-4
Pre-Registration number 05-2114672550-50-0000

Application of the substance / the preparation
- In manufacture of lubricating oil additives and pesticides, safety matches, ignition compounds, and for introducing sulfur into organic compounds
- Used as a desiccating agent.

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

Information in case of emergency:
Contact details of European importer:
Emergency telephone number:
Telephone number of EU importer:
Opening hours:
Other Comments (e.g. language(s) of the phone service): English

2 Hazards identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS02 flame
Flam. Sol. 1 H228 Flammable solid
Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously

GHS09 environment
Aquatic Acute 1 H400 Very toxic to aquatic life

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
Xn; Harmful
R20/22: Harmful by inhalation and if swallowed
**PRASOL CHEMICALS LIMITED**  
Material Safety Data Sheet  
Product: Diphosphorous pentasulphide

**F: Highly flammable**  
**R11: Highly flammable**

**N: Dangerous for the environment**  
**R50: Very toxic to aquatic organisms**  
**R29: Contact with water liberates toxic gas**

**Information concerning particular hazards for human and environment:** Not applicable

**Label elements**  
Labeling according to Regulation (EC) No 1272/2008

**Hazard pictograms**

![GHS02](image)  
![GHS07](image)  
![GHS09](image)

**Signal word** Danger

**Hazard-determining components of labeling:** Void

**Hazard statements**

- H228 Flammable solid.
- H260 In contact with water releases flammable gases which may ignite spontaneously.
- H302+EUH029 Harmful if swallowed. Contact with water liberates toxic gas.
- H332 Harmful if inhaled.
- H400 Very toxic to aquatic life

**Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P231+P232 Handle under inert gas. Protect from moisture.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Labeling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

**Code letter and hazard designation of product:**

Xn Harmful  
F Highly flammable  
N Dangerous for the environment

**Risk phrases:**

- 11 Highly flammable.
- 20/22 Harmful by inhalation and if swallowed.
- 29 Contact with water liberates toxic gas.
- 50 Very toxic to aquatic organisms.

**Safety phrases:**

- 2 Keep out of the reach of children
- 61 Avoid release to the environment. Refer to special instructions/safety data sheets

### 3 Composition/information on ingredients

**Chemical characterization:**

**CAS No.**

1314-80-3 Diphosphorus pentasulphide

**EINECS Number:** 215-242-4

Revision: 11-01  
Issue Date: 28.01.2011
PRASOL CHEMICALS LIMITED
Material Safety Data Sheet
Product: Diphosphorous pentasulphide

Index number: 015-104-00-1
Additional information:
Molecular Formula: P2S5
Molecular Weight: 222.27

4 First aid measures

General information:
Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

After skin contact:
Immediately wash with water and soap and rinse thoroughly. If irritation develops, seek medical attention.

After eye contact:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

After swallowing:
Rinse mouth with water. Call for a doctor immediately.

Information for doctor: Treat symptomatically and supportively.
The following symptoms may occur:
Apnea, coma, and convulsions; conjunctival pain, lacrimation, photophobia, kerato-conjunctivitis, and corneal vasculature; dizziness; headache; fatigue; irritability, insomnia; gastro intestinal disturbance.

5 Firefighting measures

Suitable extinguishing agents: Use dry chemical, carbon dioxide, sodium chloride based extinguishers.
For safety reasons unsuitable extinguishing agents: Water
Special hazards caused by the substance, its products of combustion or resulting gases:
Fumes from fires are irritating to respiratory passages, eyes, skin, and may contain hydrogen sulfide, phosphine, sulfur dioxide, phosphorus pentoxide, phosphoric acid.
Protective equipment: Wear self-contained breathing apparatus for fire-fighting if necessary.

6 Accidental release measures

Person-related safety precautions:
Wear suitable protective clothing and gloves. Avoid dust formation. Avoid breathing vapors, mist or gas. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

Measures for environmental protection:
Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system.

Measures for cleaning/collection:
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Do not flush with water. Keep in suitable, closed containers for disposal.

7 Handling and storage

Handling:
Information for safe handling:
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Information about fire - and explosion protection:
Keep ignition sources away - Do not smoke. Protect against electrostatic charges.
PRASOL CHEMICALS LIMITED
Material Safety Data Sheet
Product: Diphosphorous pentasulphide

Storage:

Requirements to be met by storerooms and receptacles:
Store in tightly closed containers and in well-ventilated area.

Information about storage in one common storage facility:
Keep away from moisture, water, alcohols, strong oxidizers, acids, alkalies. Where possible, automatically transfer material from drums or other storage containers to process containers.

Further information about storage conditions:
Protect from contamination.
Never allow product to get in contact with water during storage

Specific applications
- In manufacture of lubricating oil additives and pesticides, safety matches, ignition compounds, and for introducing sulfur into organic compounds.
- Used as a desiccating agent.

8 Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.
Ingredients with limit values that require monitoring at the workplace:
1314-80-3 Diphosphorus pentasulphide
IOELV (EU) 1 mg/m³

Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.

Respiratory protection:
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protection of hands:
Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.
Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:
Tightly sealed goggles

Face shield

Body protection: Apron, boots.

9 Physical and chemical properties

General Information
Appearance:
Form: Triclinic crystals
Color: Light yellow
Odor: Odor of rotten eggs

Change in condition
Melting point/Melting range: 286°C
Boiling point/Boiling range: 514°C
Flash point: >260°C
Flammability (solid, gaseous): Contact with water liberates extremely flammable gases
Ignition temperature: 145°C
Danger of explosion: Moderate explosion hazard in solid form by spontaneous chemical reaction
Vapor pressure at 20°C: <1 hPa
Density at 20°C: 2.09 g/cm³
Solubility in / Miscibility with water: Insoluble in cold water, soluble in carbon disulfide
Additional information: Very hygroscopic; Burns in air forming phosphorus pentoxide and sulfur dioxide; decomposed by moist air
Molar Volume: 194.1 cm³
Surface Tension: 175.7 dyne/cm

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:
Keep away from ignition sources, heat and naked flame.
Keep material out of water sources and sewers. Keep material dry.
Materials to be avoided: Water, alcohols, strong oxidizers, acids, alkalis
Dangerous reactions
a) Reacts with water, steam, or acids to produce toxic flammable vapors; can react vigorously with oxidizing materials.
b) Contact with water or acids liberates poisonous and flammable hydrogen sulfide.
Dangerous decomposition products:
Decomposition on contact with water to phosphoric acid, sulfur dioxide, and hydrogen sulfide.
Hazardous decomposition products formed under fire conditions.- Sulphur oxides, Oxides of phosphorus

11 Toxicological information

Acute toxicity:

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
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<tr>
<td>Dermal</td>
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Primary irritant effect:
on the skin: Causes skin irritation
on the eye: Irritating effect.
Sensitization: May cause sensitization through skin contact.

Acute effects (acute toxicity, irritation and corrosivity)
Skin Irritation: Species: rabbit Dosage:500mg for 24 hrs Result: moderately irritating.
Eye Irritation: Species: rabbit Dosage:24hr,20mg Result: moderately irritating

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65

12 Ecological information

Behavior in environmental systems:
Mobility and bioaccumulation potential:
Mobility in soil:
Decomposes according to the amount of moisture with the development of phosphoric acid and hydrogen sulphide
Ecotoxical effects:
Remark: Very toxic for fish
Additional ecological information:
General notes:
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies. Very toxic for aquatic organisms.
Results of PBT and vPvB assessment To be provided after the REACH registration

13 Disposal considerations

Product:
Recommendation
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID (cross-border)

ADR/RID class: 4.3 Substances which, in contact with water, emit flammable gases
Danger code (Kemler): 423
UN-Number: 1340
Packaging group: II
Hazard label: 4.3+4.1
Special marking: Symbol (fish and tree)
Description of goods: 1340 PHOSPHORUS PENTASULPHIDE
Tunnel restriction code D/E

Maritime transport IMDG:

IMDG Class: 4.3
UN Number: 1340
Label: 4.3+3
Packaging group: II
EMS Number: F-G,S-N
Proper shipping name: PHOSPHORUS PENTASULPHIDE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 4.3
UN/ID Number: 1340
Label: 4.3+3
Packaging group: II
Proper shipping name: PHOSPHORUS PENTASULPHIDE
PRASOL CHEMICALS LIMITED
Material Safety Data Sheet
Product: Diphosphorous pentasulphide

UN "Model Regulation": UN1340, PHOSPHORUS PENTASULPHIDE, 4.3 (4.1), II
Environmental hazards: Environmentally hazardous substance, solid; Marine Pollutant

15 Regulatory information

Labeling according to Regulation (EC) No 1272/2008
Hazard pictograms Please refer section 2
Signal word Danger
Hazard statements Please refer section 2
Precautionary statements Please refer section 2

Labeling according to EU guidelines: The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials
Code letter and hazard designation of product: please refer Section 2
Risk phrases: please refer Section 2.

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

National regulations:

Other regulations, limitations and prohibitive regulations

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

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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
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)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

Sources
Data from chemidplus:http://chem.sis.nlm.nih.gov/chemidplus/ProxyServlet?objectHandle =Search&actionHandle=getData&3DMView=Files&nextPage=jsf/common/ChemFull.jsp%3FcalledFrom%3Dlite&chemid=0001314803&formatType=3D

Data from HSDB database: http://toxnet.nlm.nih.gov/cgi-bin/sis/searchf/?temp/~9I8aBC:1:FULL
•Data from chemspider: http://www.chemspider.com/RecordView.aspx?rid=4a31e64f-b5a2-4907-a5fe-2c792642677c
•MSDS of Sigma Aldrich: http://www.sigmaaldrich.com/catalogDisplayMSDSContent.do
•Data from Iuclid: http://ecb.jrc.ec.europa.eu/iuclid-datasheet/1314803.pdf
•Data from inchem: http://www.inchem.org/documents/icsc/icsc/eics1407.htm
•MSDS of acros organics: http://www.acros.com/DesktopModules/Acros_Search_Results/AcrosSearchResults.aspx?search type=CatalogSearch&SearchString=

Data compared to the previous version altered.
•Section 1: Identification of the substance/mixture and of the company/undertaking

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