

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

**Product: Red Phosphorous**



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

**1.1 Product identifier**

**Trade name: Red Phosphorous**

**CAS No.:** 7723-14-0

**EC No.:** 918-594-3

**1.2 Relevant identified uses of the substance or mixture and uses advised against:** *Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals and Manufacture of rubber products*

**Uses identified against:** *industrial manufacture of screening smoke ammunition or smoke payloads*

**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**



GHS02

Flam. Solid 1 H228: Flammable solid

Aquatic Chronic 3 H412: Harmful to aquatic life with long lasting effects

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

F; R11 Highly flammable

R16 Explosive when mixed with oxidising substances

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

**2.2 Label elements**

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

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

**Hazard pictograms**



GHS02

**Signal word** Danger

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

**Hazard statements**

H228: Flammable solid

H412: Harmful to aquatic life with long lasting effects

**Precautionary statements**

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240: Ground/bond container and receiving equipment

P241: Use explosion-proof electrical/ventilating/lighting/.../ equipment in areas where a dust cloud can occur

P280: Wear protective gloves/protective clothing/eye protection/face protection.

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



PRASOL

**Product: Red Phosphorous**

P273: Avoid release to the environment

P378: Use water with detergent, water spray jet, water mist, sand, foam to extinguish.

**2.3 Other hazards**

**Results of PBT and vPvB assessment:** Not applicable

**SECTION 3: Composition/information on ingredients**

**Chemical characterization:**

CAS No.	Description
7723-14-0	Red Phosphorous

**Identification number(s)**

**EC Number:** 918-594-3

**Index number:** 015-002-00-7

**Additional information:**

Molecular Formula: P<sub>4</sub>

Molecular Weight: 123.90g/mol

**SECTION 4: First aid measures**

**4.1 General information:** Remove soiled or soaked clothing immediately. Take for medical treatment.

**After inhalation:** In the event of symptoms seek medical advice. If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**After skin contact:**

In case of contact with skin, clean with soap and water.

In case of skin burns caused by contact with phosphorus, immediately physically remove any phosphorus adhering to the skin with water (e.g. by using a brush) and douse with a 2% copper sulphate solution. Cover wounds with a sterile dressing, and keep moist in all circumstances. Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds and toxication with yellow phosphorus.

**After eye contact:** In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

**After swallowing:**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Information for doctor:** Treatment: After a burn to the skin caused by phosphorus, any residual product adhering to the wound must be removed mechanically with a brush in order to prevent further burns or toxic effects through dermal absorption of yellow phosphorus. The wound must then be rinsed immediately with a commercial solution of 2% copper sulphate in order to neutralise any residual yellow phosphorous. Any such wound must be kept damp in all circumstances during movement of the victim for further medical treatment, so that any residual yellow phosphorus does not lead to further inflammation.

**4.2 Most important symptoms and effects, both acute and delayed** See Section 2.

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

**SECTION 5: Firefighting measures**

**5.1 Suitable extinguishing agents:** Water with detergent, water spray jet, water mist, sand, foam

Extinguishing media that must not be used for safety reasons: gaseous extinguishing media, carbon dioxide.

**5.2 Special hazards arising from the substance its combustion products or from its vapours:** In case of fires, hazardous combustion gases are formed: Phosphorus oxide (eg. phosphorus pentoxide). Phosphorus pentoxide in air forms a dense, non-transparent, corrosive mist of phosphoric acid.

**5.3 Protective equipment:** Use self-contained breathing apparatus

In case of fire, use acid-resistant equipment / personal protective equipment.

**Additional information** Use water spray to cool unopened containers

**SECTION 6: Accidental release measures**

**6.1 Person-related safety precautions:**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Revision: 15-01

Issue Date: 15.01.2015

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



**Product: Red Phosphorous**

**6.2 Measures for environmental protection:**

Prevent further leakage or spillage if safe to do so.  
Do not allow to enter sewers/ surface or ground water.

**6.3 Measures for cleaning/collecting:**

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 (see section 13). 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:**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Avoid the formation and deposition of dust. Avoid impact, friction and electro-static loading; risk of ignition! Earth vessels and equipment well. Use antistatic tools. Keep working area moist and well ventilated.

Ensure that dried product residues are re-dampened before transferring, handling or transporting.

**Information about fire - and explosion protection:** Keep ignition sources away. No smoking. Take measures to prevent the buildup of electrostatic charge. Take precautions against accumulation of electrostatic charge. Render equipment and apparatus inert (nitrogen, inert gases) and earth before putting into operation. Avoid impact, friction and accumulation of electrostatic charge. Use only spark-proof tools. Avoid formation of dust. Always keep working area moist and well-ventilated. Cover extinguished areas with 10% copper sulphate or soda solution. Detergents may be added to the solutions

**7.2 Conditions for safe storage, including any incompatibilities:**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Temperature class: T3

Fire class: A Dust explosion class: ST2 Capable of dust explosion

Advice on storage compatibility: Do not store with strong oxidizing agents

When stored in unopened container, the product is stable for at least 12 month

**Information about storage in one common storage facility:** Store away from incompatible materials.

**Further information about storage conditions:** Store away from moisture. Store in cool and dry place.

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

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:** Not required.

**Additional information:** The lists valid during the making were used as basis.

**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:**

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

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. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact Material:

Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material:

Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min

Revision: 15-01

Issue Date: 15.01.2015

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



PRASOL

**Product: Red Phosphorous**

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario

**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

Safety glasses with side shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Body protection:**

Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

<b>Appearance</b>	: Red-brown powder
<b>Odour</b>	: no data available
<b>Odour threshold</b>	: no data available
<b>pH</b>	: ~3 at 10 g/l at 37 °C(after 14d)
<b>Melting point/Melting range</b>	: 535-540°C (at 1011.7 hPa)
<b>Boiling point/Boiling range</b>	: not applicable (decomposes)
<b>Flash point</b>	: not applicable
<b>Evaporation rate</b>	: no data available
<b>Flammability</b>	: highly flammable
<b>Upper/lower flammability or explosive limits</b>	: no data available
<b>Vapour pressure at 20°C</b>	: no data available
<b>Vapour density</b>	: no data available
<b>Density at 20°C</b>	: 2.2g/ml
<b>Solubility in / Miscibility with water</b>	: 0.3 mg/l (at 20oC) slightly soluble
<b>Partition coefficient (n-octanol/water) at 23°C</b>	: no data available
<b>Auto-ignition temperature</b>	: >300°C
<b>Decomposition temperature</b>	: no data available
<b>Viscosity</b>	: not applicable
<b>Explosive properties</b>	: can be ignited by application of shock, friction or electrostatic sparking.
<b>Oxidising properties</b>	: not applicable

**9.2 Other information** No further relevant information available

**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

**Thermal decomposition:** > 400 °C, Method : DTA

**10.2 Chemical stability**

Under storage at normal ambient temperatures (minus 40° C to + 40° C), the product is stable.

No hazardous reaction when handled and stored according to provisions.

**10.3 Possibility of hazardous reactions** Risk of dust explosions. Reactions with peroxides. Explosive reactions with oxidising agents such as potassium chlorate and/or peroxides. At high temperatures small amounts of hydrogen phosphide are formed with water

**10.4 Conditions to avoid** Sparks, Thermal decomposition, ignition, shock, friction.

**10.5 Incompatible materials:** oxidants

**10.6 Hazardous decomposition products:** Hydrogen phosphide and White/yellow phosphorus



## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

**Acute toxicity:**

LD50 Oral rat > 15000 mg/kg(non-toxic) OECD Guideline 401 (Acute Oral Toxicity)

**Skin corrosion/irritation:** non-irritating (rabbit)

**Serious eye damage/irritation:** non-irritating (rabbit)

**Respiratory or skin sensitization:** non-sensitizing on skin (guinea pig)

**Germ cell mutagenicity:** non mutagenic

**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

**Additional information:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

## **SECTION 12: Ecological information**

### **12.1 Toxicity**

**Aquatic toxicity:**

LC50 96h 33.2 mg/l (Danio rerio)

EC50 48h 10.5 mg/l (Daphnia magna)

EC50 72h 18.3mg/l (green algae)

EC50 3h >100mg/l sludge

### **12.2 Persistence and degradability**

**Biodegradation**

No data available

**12.3 Bio accumulative potential** No further relevant information available.

### **12.4 Mobility in soil**

No data available

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects** No further relevant information available

## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

**Product:** Methods for cleaning up/taking up: Dampen, pick up mechanically and dispose of as prescribed. Do not allow to dry out. Avoid raising dust. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging:** Dispose of as unused product.

## **SECTION 14: Transport information**

### **Land Transport (ADR/RID)**

### **Marine Transport (IMDG)**

### **Air Transport (ICAO/ IATA)**

**14.1 UN/ID Number:** 1338

**14.2 UN proper shipping name** Phosphorus, amorphous

**14.3 Transport hazard class 4.1**

**14.4 Packaging group II**

**14.5 Environmental hazards** yes; marine pollutant

**14.6 Special precautions for the user:** no data available

**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 Regulation (EC) No. 1907/2006

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



PRASOL

**Product: Red Phosphorous**

*Hazard pictograms Please refer section 2*

*Signal word Warning*

*Labeling according to EU guidelines:*

*Code letter and hazard designation of product: Please refer section 2*

*Risk phrases: Please refer section 2*

**15.2 Chemical safety assessment**

*A Chemical Safety Assessment has been carried out and will 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: +91-22- 27782555*

*Fax: +91-22- 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 Maximal Effective concentration*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*GHS: Globally Harmonized System of Classification and Labelling of Chemicals*

*IATA: International Air Transport Association*

*IBC Code: International Bulk Chemical Code*

*IMDG: International Maritime Code for Dangerous Goods*

*LD50: Lethal dose, 50 percent*

*Marpol 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978*

*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-9ebc0201-2545-5adb-e044-00144f67d031/DISS-9ebc0201-2545-5adb-e044-00144f67d031\\_DISS-9ebc0201-2545-5adb-e044-00144f67d031.html](http://apps.echa.europa.eu/registered/data/dossiers/DISS-9ebc0201-2545-5adb-e044-00144f67d031/DISS-9ebc0201-2545-5adb-e044-00144f67d031_DISS-9ebc0201-2545-5adb-e044-00144f67d031.html)

•Sigma-Aldrich MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=IN&language=en&productNumber=343242&brand=ALDRICH&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Faldrich%2F343242%3Flang%3Den>

**Data compared to the previous version altered.**

- Section 1: Chemical Product and Company Identification
- Section 3: Composition and Information on Ingredients
- Section 4: First Aid Measures
- Section 5: Fire and Explosion Data
- Section 6: Accidental Release Measures
- Section 7: Handling and Storage
- Section 8: Exposure Controls/Personal Protection
- Section 9: Physical and Chemical Properties
- Section 10: Stability and Reactivity Data
- Section 11: Toxicological Information
- Section 12: Ecological Information
- Section 13: Disposal Considerations