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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>Yellow Phosphorus/ YP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>Phosphorous</td>
</tr>
<tr>
<td>CAS Number</td>
<td>12185-10-3</td>
</tr>
<tr>
<td>EC Number</td>
<td>231-768-7</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Relevant identified uses</th>
<th>Uses identified against</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacture of bulk, large scale chemicals (including petroleum products),</td>
<td>Food additive, medicinal products, cosmetic products</td>
</tr>
<tr>
<td>Manufacture of fine chemicals and Manufacture of rubber products</td>
<td></td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet:

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone</td>
<td>+91-22-27782555</td>
</tr>
<tr>
<td>Telefax</td>
<td>+91-22-27782430</td>
</tr>
<tr>
<td>e-mail address</td>
<td><a href="mailto:sales@prasolchem.com">sales@prasolchem.com</a>; <a href="mailto:inquiry@prasolchem.com">inquiry@prasolchem.com</a></td>
</tr>
</tbody>
</table>

1.4 Emergency telephone number

<table>
<thead>
<tr>
<th>Telephone</th>
<th>+91-22-27782555</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>English</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

<table>
<thead>
<tr>
<th>Pyrophoric Solid</th>
<th>Category 1</th>
<th>H250</th>
<th>Catches fire spontaneously if exposed to air.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Category 1</td>
<td>H300</td>
<td>Fatal if swallowed.</td>
</tr>
<tr>
<td>Skin Irritation</td>
<td>Category 1A</td>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>Acute Toxicity</td>
<td>Category 1</td>
<td>H330</td>
<td>Fatal if inhaled</td>
</tr>
<tr>
<td>Aquatic Acute</td>
<td>Category 1</td>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
</tbody>
</table>

Information concerning particular hazards for human and environment: No further information

2.2 Label elements

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

<table>
<thead>
<tr>
<th>Hazard pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS02</td>
</tr>
<tr>
<td>GHS05</td>
</tr>
<tr>
<td>GHS06</td>
</tr>
<tr>
<td>GHS09</td>
</tr>
</tbody>
</table>

Signal word: Danger

Hazard statements

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H250</td>
<td>Catches fire spontaneously if exposed to air.</td>
</tr>
<tr>
<td>H300</td>
<td>Fatal if swallowed.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H330</td>
<td>Fatal if inhaled</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
</tbody>
</table>

Precautionary statements

General

<table>
<thead>
<tr>
<th>P103</th>
<th>Read label before use.</th>
</tr>
</thead>
</table>

Prevention

<table>
<thead>
<tr>
<th>P210</th>
<th>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P222</td>
<td>Do not allow contact with air.</td>
</tr>
<tr>
<td>P233</td>
<td>Keep container tightly closed.</td>
</tr>
<tr>
<td>P260</td>
<td>Do not breathe dusts or mists.</td>
</tr>
<tr>
<td>P264</td>
<td>Wash hands thoroughly after handling.</td>
</tr>
<tr>
<td>P270</td>
<td>Do not eat, drink or smoke when using this product.</td>
</tr>
<tr>
<td>P271</td>
<td>Use only outdoors or in a well-ventilated area.</td>
</tr>
<tr>
<td>P273</td>
<td>Avoid release to the environment.</td>
</tr>
<tr>
<td>P280</td>
<td>Use protective gloves and eye protection.</td>
</tr>
<tr>
<td>P284</td>
<td>In case of inadequate ventilation, wear respiratory protection.</td>
</tr>
</tbody>
</table>

Response

<table>
<thead>
<tr>
<th>P301+P310</th>
<th>IF SWALLOWED: Immediately call a doctor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P301+P330+P331</td>
<td>IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</td>
</tr>
</tbody>
</table>

Revision: 17-02
Issue Date: 08.12.2017
Replaces Version: 15-01
SECTION 3: Composition/information on ingredients
3.1 Substances

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow Phosphorous/YP</td>
<td>1218-5-10-3</td>
<td>231-768-7</td>
<td>99 min</td>
</tr>
</tbody>
</table>

Additional information:
- Molecular Formula: P4
- Molecular Weight: 123.90

SECTION 4: First aid measures
4.1 Description of first aid measures

General information: Remove from exposure, lie down. Never give anything by mouth to an unconscious person.

After inhalation: Remove the patient to fresh air at once.

After skin contact: Take off all contaminated clothing immediately. If skin irritation persists, call a doctor. Wash off immediately with soap and plenty of 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: Irrigate each eye continuously with water or 0.9% saline (NS) and seek medical advice.

After swallowing: Rinse mouth. Consult a doctor immediately. Do not stimulate to vomit.

4.2 Most important symptoms and effects, both acute and delayed

- Apnea, coma, and convulsions; conjunctival pain, lacrimation, photophobia, kerato-conjunctivitis, and corneal vasculation; dizziness; headache; fatigue; irritability, insomnia; gastro intestinal disturbance

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically and supportively
- Symptoms after inhalation: coughing, photosensitivity.
- Danger of circulatory collapse. Treatment: it may be necessary to administer oxygen.

SECTION 5: Firefighting measures
5.1 Extinguishing media

- Suitable extinguishing media: Water spray jet, sand
- Unsuitable extinguishing media: Gaseous extinguishing media, powerful water jet.

5.2 Special hazards arising from the substance or mixture

- Spontaneously flammable in air. Gives off dangerous fumes in a fire.
- Fumes from fires are irritating to respiratory passages, eyes and skin.
- Fumes may contain phosphine, phosphorus pentoxide, phosphoric acid.
- Phosphorus pentoxide in air forms a dense, non-transparent, corrosive mist.
Safety data sheet as per Commission Regulation (EU) 2015/830
Product: Yellow Phosphorus

5.3 Advice for firefighters

Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid breathing dust or gas during processing.
Ensure adequate ventilation

6.2 Environmental precautions

Do not allow to enter sewers, surface or ground water.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste.
Take up with absorbent material (e.g. sand). Keep moist, use 10% copper sulphate solution to convert to harmless copper phosphide and transport to landfill. Neutralise with soda or slaked lime. Take up mechanically with alkali-resistant equipment. Rinse away residues with soda solution and plenty of water. Oxidise large quantities with chlorine bleaching lye.
Transport to waste disposal facility in tightly closed drums.

6.4 Reference to other sections

Section 8 for information on personal protection equipment.
Section 13 for disposal information

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handle under protective gas (nitrogen, carbon dioxide, inert gas) or water.
Store and transport in tightly closed drums under a layer of water.
Avoid aerosol formation. Instructions for protection against fire and explosion: keep well away from sources of ignition/do not smoke.
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.
Keep fire extinguishing equipment in readiness when opening the drum.
Always handle in moist condition under water or under protective gas (nitrogen, carbon dioxide, inert gas). Cover extinguished fire sources with 10% copper sulphate solution or soda solution. It may be necessary to add surfactants to the solution.

7.2 Conditions for safe storage, including any incompatibilities

Ensure good ventilation when handling large amounts.

Advice on protection against fire and explosion

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 months
Observe prohibition against storing together!

Maximum Storage Temperature: 30°C

7.3 Specific end use(s)

No further relevant information available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limit
Not determined, use as an intermediate under strictly controlled conditions.

8.2 Exposure controls

Appropriate engineering controls
use material transfer, metering and blending plants that are closed

Personal protective equipment

Eye/face protection
closed goggles, face shield

Skin protection
Type of material Thickness Breakthrough time
Butyl-rubber 0.5 mm > 480 min
Polychloroprene (PCP) 0.5 mm 110 min

Hand protection

Body protection
Boots, body suit
Respiratory protection: Full-face respirator. Avoid inhaling vapours.
Thermal hazards: Flammable, possibility of decomposition on excess heating. Avoid contact with skin and eyes. Remove immediately all contaminated clothing. Keep working clothes separately. Smoking, eating and drinking should be prohibited in the application area.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
- Appearance: Yellow waxy solid
- Odour: no data available
- Odour threshold: no data available
- pH: ~3 at 10 g/l at 37 °C (after 14d)
- Melting point: 44.1 °C
- Boiling point: 280 °C
- Flash point: not applicable
- Evaporation rate: not applicable
- Flammability (solid, gas): Highly Flammable
- Flammability limits: no data available
- Vapour pressure: 0.181 mmHg
- Vapour density: not determined
- Relative density: 1.83 at 20 °C
- Solubility in water: 0.33 mg/l at 15 °C
- Partition coefficient: not applicable
- Ignition temperature: no data available
- Decomposition temperature: no data available
- Viscosity: at 100 °C not applicable
- Explosive properties: Can be ignited by application of shock, friction or electrostatic sparking.
- Oxidizing properties: no oxidizing properties

9.2 Other information: No further information

SECTION 10: Stability and reactivity

10.1 Reactivity: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous polymerization will not occur.

10.2 Chemical stability: Under storage at normal ambient temperatures (-40 °C to +40 °C), the product is stable.

10.3 Possibility of hazardous reactions: In contact with strong acids, hydrogen gas, phosphine may be produced. Spontaneous flammability

10.4 Conditions to avoid: Extremes of temperature and direct sunlight. Keep away from ignition sources, heat and naked flame. Keep material out of water sources and sewers. Air

10.5 Incompatible materials: Hydrogen phosphide, phosphines

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity:
  - LD50 oral rat: 3.03 mg/kg bw Fatal, category 1
  - LC50 inhalation no data available
  - LD50 Dermal: no data available
- Skin irritation: Not irritating (0.1% solution in oil)
- Serious eye irritation: Not Irritating (0.1% solution in oil)
- Respiratory or skin sensitization: Study not conducted as product is spontaneously flammable in air at room temperature
- Germ cell mutagenicity: non mutagenic (Ames test)
- Carcinogenicity: no data available
- Reproductive toxicity: NOAEL 0.015 mg/kg bw/d; LOAEL 0.075 mg/kg bw/d.
STOT-single exposure 0.1% solution is not irritating
STOT-repeated exposure No data available

SECTION 12: Ecological information
12.1 Toxcity
Aquatic toxicity
Toxicity to fish LC50 48h 14.4µg/L Gadus morhua
Toxicity to aquatic invertebrates NOEC 48h 0.03mg/l Daphnia magna
12.2 Persistence and degradability
Biodegradation Data not required as product is inorganic
12.3 Bioaccumulative potential No indication of bioaccumulative potential
12.4 Mobility in soil Not applicable
12.5 Results of PBT and vPvB assessment Not a PBT, vPvB substance according to the REACH regulation
12.6 Other adverse effects Harmful to aquatic organisms
The material is harmful to the environment

SECTION 13: Disposal considerations
13.1 Waste treatment methods Observe all federal, state, and local environmental regulations.
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.
Do not dispose in sewage.

SECTION 14: Transport information
14.1 UN Number ADR/RID IMDG ICAO/IATA
1381 1381 Not permitted
14.2 UN proper shipping name Phosphorus, amorphous
14.3 Transport hazard class 4.2 4.2
14.4 Packaging group I I
14.5 Environmental hazards environmentally hazardous, marine pollutant
14.6 Special precautions for the user Store under water
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code See regulatory information for transport approval

SECTION 15: Regulatory information
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Major accident hazard Seveso III no
International Chemical Inventory Status
USA (TSCA) listed
Canada (DSL) listed
Australia (AICS) listed
Japan (MITI) listed
Korea (KECL) listed
Philippines (PICCS) listed
China listed
New Zealand listed
Taiwan listed

15.2 Chemical safety assessment A Chemical Safety Assessment will be carried out at the time of REACH registration

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.

Further information:
Sections in which changes have been made since the last version are marked with a diamond ◆ in the left hand margin.

Revision: 17-02 Replaces Version: 15-01
Issue Date: 08.12.2017
Abbreviations and acronyms in English language:

ADN  European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR  European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS  Australian Inventory of Chemical Substances
CAS  Chemical Abstracts Service (division of the American Chemical Society)
CLP  Classification for Labeling and Packaging
DSL  Domestic Substances List
EC  European Commission
EC50  Half maximal effective concentration
EINECS  European Inventory of Existing Commercial Chemical Substances
GHS  Globally Harmonized System of Classification and Labeling of Chemicals
IATA  International Air Transport Association
IBC  International Bulk Chemical
ICAO  International Civil Aviation Organization
IMDG  International Maritime Code for Dangerous Goods
KECL  Korea Existing Chemicals List
KOC  Soil adsorption coefficient
KOW  Partition Coefficient octanol-water
LC50  Lethal concentration, 50 percent
LD50  Lethal dose, 50 percent
MARPOL  International Convention for the Prevention of Pollution from Ships
MITI  Ministry of International Trade and Industry
NOAEC  No Observed Adverse Effect Concentration
NOAEL  No Observed Adverse Effect Level
NOEC  No Observed Effect Concentration
PBT  Persistent, bioaccumulative and toxic substances
PICCS  Philippine Inventory of Chemicals and Chemical Substances
RID  Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT  Specific target organ toxicity
TSCA  Toxic Substances Control Act
UN  United Nations
vPvB  (very) Persistent, (very) Bioaccumulative

Sources
ECHA  https://echa.europa.eu/registration-dossier/-/registered-dossier/15360/1