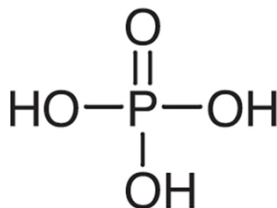


SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|--------------------|-------------------------------|
| Product form | : Substance |
| Trade name | : ORTHOPHOSPHORIC ACID 88% AR |
| EC Index-No. | : 015-011-00-6 |
| EC-No. | : 231-633-2 |
| CAS-No. | : 7664-38-2 |
| Product code | : 5063D |
| Type of product | : Acids |
| Formula | : H3PO4 |
| Chemical structure | : |



| | |
|----------|---|
| Synonyms | : Phosphoric acid, o-Phosphoric acid, OPA |
|----------|---|

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

1.2.1. Relevant identified uses

| | |
|----------------------------------|---|
| Industrial/Professional use spec | : For professional use only Industrial |
| Use of the substance/mixture | : Laboratory chemicals, Manufacture of substances |

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

| | |
|------------------|--|
| Emergency number | : + 91 22 6663 6663 (9:00am - 6:00 pm) |
|------------------|--|

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP] Mixtures/Substances: SDS EU > 2015: According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

Skin corrosion/irritation, Category 1 H314

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes severe skin burns and eye damage.

ORTHOPHOSPHORIC ACID 88% AR

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS05

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H314 - Causes severe skin burns and eye damage.

Precautionary statements (CLP) :

P280 - Wear protective clothing, eye protection, face protection, protective gloves.

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 doctor.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type :

Mono-constituent

| Name | Product identifier | % |
|--------------------------|---|----|
| ORTHOPHOSPHORIC ACID 88% | CAS-No.: 7664-38-2 EC-No.: 231-633-2 EC Index-No.: 015-011-00-6 | 88 |

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general :

Call a physician immediately.

First-aid measures after inhalation :

Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.

First-aid measures after skin contact :

Gently wash with plenty of soap and water. Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.

First-aid measures after eye contact :

Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. Call a physician immediately.

First-aid measures after ingestion :

Rinse mouth out with water. If you feel unwell, seek medical advice. Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects :

Causes severe skin burns and eye damage.

Symptoms/effects after skin contact :

Burns.

Symptoms/effects after eye contact :

Serious damage to eyes.

Symptoms/effects after ingestion :

Burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry chemical, CO₂, dry sand, or alcohol-resistant foam. Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes. Do not breathe dust, fume, gas, mist, vapours, spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Do not get in eyes, on skin, or on clothing. Do not breathe dust, fume, gas, mist, spray, vapours. Wear personal protective equipment.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original container. Keep container tightly closed. Store in a well-ventilated place. Store locked up. Keep cool.

7.3. Specific end use(s)

No additional information available

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

Wear appropriate mask

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------|--------------------------|
| Physical state | : Liquid |
| Appearance | : Clear. Viscous liquid. |
| Molecular mass | : 98 g/mol |
| Colour | : Colourless. |
| Odour | : Odourless. |
| Odour threshold | : No data available |
| pH | : 1.5 |

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| | |
|---|-----------------------------------|
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : Not applicable |
| Freezing point | : 21 |
| Boiling point | : 158 °C |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : 300 °C |
| Flammability (solid, gas) | : Not applicable |
| Vapour pressure | : 2 hPa at 20 °C |
| Relative vapour density at 20 °C | : 3.4 (Air = 1.0) |
| Relative density | : No data available |
| Density | : 1.73 g/cm ³ at 20 °C |
| Solubility | : Water: Completely miscible |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Viscosity, kinematic | : 2.231 mm ² /s |
| Viscosity, dynamic | : 3.86 mPa·s at 20 °C |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Heat.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-----------------------------------|--|
| Acute toxicity (oral) | : Not classified |
| Acute toxicity (dermal) | : Not classified |
| Acute toxicity (inhalation) | : Not classified |
| Skin corrosion/irritation | : Causes severe skin burns. pH: 1.5 |
| Serious eye damage/irritation | : Assumed to cause serious eye damage pH: 1.5 |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

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| | |
|------------------------|------------------|
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |

ORTHOPHOSPHORIC ACID 88% AR (7664-38-2)

| | |
|----------------------|--------------------------|
| Viscosity, kinematic | 2.231 mm ² /s |
|----------------------|--------------------------|

SECTION 12: Ecological information

12.1. Toxicity

| | |
|---|---|
| Ecology - general | : Before neutralisation, the product may represent a danger to aquatic organisms. |
| Hazardous to the aquatic environment, short-term (acute) | : Not classified |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------|---|
| Waste treatment methods | : Dispose of contents/container in accordance with licensed collector's sorting instructions. |
|-------------------------|---|

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number

| | |
|---------------|-----------|
| UN-No. (ADR) | : UN 1805 |
| UN-No. (IMDG) | : UN 1805 |
| UN-No. (IATA) | : UN 1805 |
| UN-No. (ADN) | : UN 1805 |
| UN-No. (RID) | : UN 1805 |

14.2. UN proper shipping name

| | |
|--------------------------------------|--|
| Proper Shipping Name (ADR) | : PHOSPHORIC ACID, SOLUTION |
| Proper Shipping Name (IMDG) | : PHOSPHORIC ACID SOLUTION |
| Proper Shipping Name (IATA) | : Phosphoric acid, solution |
| Proper Shipping Name (ADN) | : PHOSPHORIC ACID, SOLUTION |
| Proper Shipping Name (RID) | : PHOSPHORIC ACID, SOLUTION |
| Transport document description (ADR) | : UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III, (E) |

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Safety Data Sheet

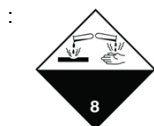
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

| | |
|---------------------------------------|---|
| Transport document description (IMDG) | : UN 1805 PHOSPHORIC ACID SOLUTION, 8, III |
| Transport document description (IATA) | : UN 1805 Phosphoric acid, solution, 8, III |
| Transport document description (ADN) | : UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III |
| Transport document description (RID) | : UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III |

14.3. Transport hazard class(es)

ADR

| | |
|----------------------------------|-----|
| Transport hazard class(es) (ADR) | : 8 |
| Danger labels (ADR) | : 8 |



IMDG

| | |
|-----------------------------------|-----|
| Transport hazard class(es) (IMDG) | : 8 |
| Danger labels (IMDG) | : 8 |



IATA

| | |
|-----------------------------------|-----|
| Transport hazard class(es) (IATA) | : 8 |
| Danger labels (IATA) | : 8 |



ADN

| | |
|----------------------------------|-----|
| Transport hazard class(es) (ADN) | : 8 |
| Danger labels (ADN) | : 8 |



RID

| | |
|----------------------------------|-----|
| Transport hazard class(es) (RID) | : 8 |
| Danger labels (RID) | : 8 |



14.4. Packing group

| | |
|----------------------|-------|
| Packing group (ADR) | : III |
| Packing group (IMDG) | : III |
| Packing group (IATA) | : III |
| Packing group (ADN) | : III |
| Packing group (RID) | : III |

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14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : C1
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P001, IBC03, LP01, R001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1
Tank code (ADR) : L4BN
Tank special provisions (ADR) : TU42
Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12
Hazard identification number (Kemler No.) : 80
Orange plates :



Tunnel restriction code (ADR) : E
EAC code : 2R

Transport by sea

Special provisions (IMDG) : 223
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P001, LP01
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : A
Segregation (IMDG) : SGG1, SG36, SG49
Properties and observations (IMDG) : Miscible in water. Mildly corrosive to most metals.

Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y841
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 852
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 856
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3, A803
ERG code (IATA) : 8L

Inland waterway transport

Classification code (ADN) : C1
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

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Rail transport

| | |
|---|---------------------------|
| Classification code (RID) | : C1 |
| Limited quantities (RID) | : 5L |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : MP19 |
| Portable tank and bulk container instructions (RID) | : T4 |
| Portable tank and bulk container special provisions (RID) | : TP1 |
| Tank codes for RID tanks (RID) | : L4BN |
| Special provisions for RID tanks (RID) | : TU42 |
| Transport category (RID) | : 3 |
| Special provisions for carriage – Packages (RID) | : W12 |
| Colis express (express parcels) (RID) | : CE8 |
| Hazard identification number (RID) | : 80 |

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)

| Reference code | Applicable on |
|----------------|-----------------------------|
| 3(b) | ORTHOPHOSPHORIC ACID 88% AR |

ORTHOPHOSPHORIC ACID 88% AR is not on the REACH Candidate List

ORTHOPHOSPHORIC ACID 88% AR is not on the REACH Annex XIV List

ORTHOPHOSPHORIC ACID 88% AR is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

ORTHOPHOSPHORIC ACID 88% AR is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 392)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

ORTHOPHOSPHORIC ACID 88% AR

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 16: Other information

| Abbreviations and acronyms | |
|----------------------------|---|
| 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 |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BLV | Biological limit value |
| BOD | Biochemical oxygen demand (BOD) |
| COD | Chemical oxygen demand (COD) |
| DMEL | Derived Minimal Effect level |
| DNEL | Derived-No Effect Level |
| EC-No. | European Community number |
| EC50 | Median effective concentration |
| EN | European Standard |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| NOAEL | No-Observed Adverse Effect Level |
| NOEC | No-Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| OEL | Occupational Exposure Limit |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| STP | Sewage treatment plant |
| ThOD | Theoretical oxygen demand (ThOD) |
| TLM | Median Tolerance Limit |
| VOC | Volatile Organic Compounds |
| CAS-No. | Chemical Abstract Service number |
| N.O.S. | Not Otherwise Specified |
| vPvB | Very Persistent and Very Bioaccumulative |
| ED | Endocrine disrupting properties |

| Full text of H- and EUH-statements | |
|------------------------------------|---------------------------------------|
| Skin Corr. 1 | Skin corrosion/irritation, Category 1 |

ORTHOPHOSPHORIC ACID 88% AR

Safety Data Sheet

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Full text of H- and EUH-statements

| | |
|------|--|
| H314 | Causes severe skin burns and eye damage. |
|------|--|

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.