

# Safety Data Sheet

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name/designation:	Orthophosphoric acid 85% laboratory reagent (Analytical Reagent)
Product No.:	O0053
Synonyms:	none
CAS No.	7664-38-2

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

Relevant identified uses:	For Laboratory, Research or Manufacturing Use.
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**1.3 Details of the supplier of the safety data sheet****Supplier****Avantor Performance Materials India Private Limited**

Street	501, 5th floor, Tiffany Building, Hiranandani Business Park,
Postal code/City	Thane, Maharashtra - 400607, India
Telephone	022-41288100

**Emergency phone number**

Telephone	18002022880
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**Preparation Information**

Product Information Compliance

**1.4 E-mail**

SDS@avantorsciences.com

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

#### Physical hazards

Substance or mixture corrosive to metals, category 1

#### Health hazards

Acute toxicity, category 4, oral

Skin corrosion, category 1B

Serious eye damage, category 1

### 2.2 Label elements

#### Hazard pictograms



**Signal word:** Danger

#### Hazard statements

H290 - May be corrosive to metals.

H302 - Harmful if swallowed.

H314 - Causes severe skin burns and eye damage.

#### Precautionary statements

##### Prevention:

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

##### Response:

P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P302+P352 - IF ON SKIN: Wash with plenty of water/...

P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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/doctor.

### 2.3 Other hazards      none

### SECTION 3: Composition/information on ingredients

#### Substances

not applicable

#### Mixtures

##### Composition / Information on ingredients

Substance name	Identifier	Concentration
Orthophosphoric acid	CAS No.: 7664-38-2	80 - 90%

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General information

Do not leave affected person unattended. If unconscious but breathing normally, place in recovery position and seek medical advice. Take off contaminated clothing. Never give anything by mouth to an unconscious person or a person with cramps. When in doubt or if symptoms are observed, get medical advice.

##### After inhalation

Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician. When in doubt or if symptoms are observed, get medical advice.

##### In case of skin contact

Remove contaminated, saturated clothing immediately. Wash off any skin contamination immediately. In case of skin irritation, consult a physician.

##### After eye contact

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist.

##### In case of ingestion

Seek medical advice immediately (poison centre). Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting.

##### Self-protection of the first aider

First aider: Pay attention to self-protection! Wear personal protection equipment (refer to section 8).

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

After inhalation: Cough. Shortness of breath. After skin contact: Causes severe burns. Causes poorly healing wounds. After eye contact: Risk of serious damage to eyes. Risk of blindness. Following ingestion: Corrosion Gastric perforation

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

No special information on medical attention and special treatment available.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

The product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

**Extinguishing media which must not be used for safety reasons**

no restriction

**5.2 Special hazards arising from the substance or mixture**

In case of fire may be liberated:

Phosphorus oxides

**5.3 Advice for firefighters**

DO NOT fight fire when fire reaches explosives.

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Do not allow run-off from fire-fighting to enter drains or water courses.

Do not inhale explosion and combustion gases.

Use water spray jet to protect personnel and to cool endangered containers.

In case of fire: Evacuate area.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Avoid contact with eyes and skin. Do not breathe gas/fumes/vapour/spray. Remove victim out of the danger area. Stop leak if safe to do so.

**6.2 Environmental precautions**

Do not allow to enter into surface water or drains.

**6.3 Methods and material for containment and cleaning up**

Large spills: Dike or dam to contain for later disposal. Take up mechanically, placing in appropriate containers for disposal. Small spills: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Dispose according to local legislation.

**6.4 Reference to other sections**

Personal protection equipment: see section 8 Disposal information: see section 13 Decomposition products in case of fire: see section 5.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advices on safe handling

Use extractor hood (laboratory).

Use only in well-ventilated areas.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with eyes and skin.

Use personal protective equipment as required.

Protect from moisture.

Measures to prevent fire, aerosol and dust generation

Usual measures for fire prevention.

Use only in well-ventilated areas.

Measures required to protect the environment

Do not empty into drains.

Collect spillage.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

## 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: Keep bottles tightly closed and away from sources of ignition and heat.

Keep container tightly closed and in a well-ventilated place. Keep/Store away from combustible materials. Protect from sunlight. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

Suitable container/equipment material: Glass High density polyethylene (HDPE) Stainless steel Unsuitable container/equipment material: Metal. PP (Polypropylene)

## 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

## 8.2 Exposure controls

### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

### Personal protection equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Recommended glove articles DIN-/EN-Norms EN ISO 374 In the case of wanting to use the gloves again, clean them before taking off and air them well.

#### By short-term hand contact

Suitable material:	NR (natural rubber, Natural latex)
Thickness of the glove material:	0,75 mm
Breakthrough time:	> 480 min

#### By long-term hand contact

Suitable material:	NR (natural rubber, Natural latex)
Thickness of the glove material:	0,75 mm
Breakthrough time:	> 480 min

#### *Respiratory protection*

no data available

Suitable respiratory protection apparatus:	no data available
Recommendation	no data available
Suitable material	no data available
Recommendation	no data available

#### Additional information

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

#### Environmental exposure controls

no data available

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state:	liquid
Colour:	colourless
Odour:	odourless

### Safety relevant basic data

pH:	< 0.5 (100 g/l; 20 °C)
Melting point/freezing point:	~21 °C
Initial boiling point and boiling range:	~158 °C
Flash point:	no data available
Flammability:	no data available
Lower and upper explosion limit	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
Vapour pressure:	2 hPa (20 °C)
Relative vapour density:	no data available
Density and/or relative density	
Density:	1.689 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility:	soluble
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	not applicable
Viscosity	
Kinematic viscosity:	30.5 cSt (25 °C)
Dynamic viscosity:	no data available
Particle characteristics:	does not apply to liquids

### 9.2 Other information

Evaporation rate:	no data available
Explosive properties:	not applicable
Oxidising properties:	not applicable
Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Corrosive to metals

**10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature).

**10.3 Possibility of hazardous reactions**

Violent reaction with:

Alkali metals

Alkaline earth metal

Alkali (lye)

light metals

The product develops hydrogen in an aqueous solution in contact with metals.

May cause strong formation of hydrogen by contact with amphoteric metals (e.g. alumina, lead, zinc) - danger of explosion.

Exothermic reaction with:

Water.

Substance, organic

**10.4 Conditions to avoid**

Humidity

**10.5 Incompatible materials**

Metal.

**10.6 Hazardous decomposition products**

Endothermal decomposition with formation of:

At high temperature formation of phosphorous oxides.

Decomposition products in case of fire: see section 5.

**SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute effects**

*Acute oral toxicity:*

Orthophosphoric acid - LD50: 300 - 2000 mg/kg - Rat - (OECD 423)

*Acute dermal toxicity:*

no data available

*Acute inhalation toxicity:*

no data available

**Irritant and corrosive effects:**

*Primary irritation to the skin:*

Causes severe skin burns and eye damage.

*Irritation to eyes:*

Causes serious eye damage.

*Irritation to respiratory tract:*

not applicable

**Respiratory or skin sensitisation**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

not applicable

**STOT-repeated exposure**

not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****Carcinogenicity**

No indication of human carcinogenicity.

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

**11.2 Information on other hazards**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

<b>SECTION 12: Ecological information</b>
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**12.1 Toxicity****Fish toxicity:**

no data available

**Daphnia toxicity:**

Orthophosphoric acid - EC50: 100 mg/l (48 h) - Daphnia Magna - OECD 202

**Algae toxicity:**

Orthophosphoric acid - EC10: 100 mg/l (72 h) - Desmodesmus subspicatus - OECD 201

Orthophosphoric acid - EC50: 100 mg/l (72 h) - Desmodesmus subspicatus - OECD 201

**Bacteria toxicity:**

Orthophosphoric acid - NOEC: 1000 mg/l (3 h) - OECD 209

**12.2 Persistence and degradability**

no data available



### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

### 12.4 Mobility in soil:

no data available

### 12.5 Results of PBT/vPvB assessment

not applicable

### 12.6 Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to the environment.

### 12.7 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Appropriate disposal / Product

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal. Before discharge into sewage plants the product normally needs to be neutralised.

#### Appropriate disposal / Package

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

#### Additional information

European waste management legislation  
none

National waste management legislation  
No further relevant information available.

## SECTION 14: Transport information

### Land transport (ADR/RID)

14.1	UN number or ID number:	1805
14.2	UN proper shipping name:	PHOSPHORIC ACID, SOLUTION
14.3	Transport hazard class(es):	8
	Classification code:	C1
	Hazard label(s):	8
14.4	Packing group:	III
14.5	Environmental hazards:	No
14.6	Special precautions for user:	
	Hazard identification number (Kemler No.):	80
	Tunnel restriction code:	E
		(Passage forbidden through tunnels of category E.)

**Sea transport (IMDG)**

14.1	UN number or ID number:	1805
14.2	UN proper shipping name:	PHOSPHORIC ACID SOLUTION
14.3	Transport hazard class(es):	8
	Classification code:	
	Hazard label(s):	8
14.4	Packing group:	III
14.5	Environmental hazards:	No
	Marine pollutant:	No
14.6	Special precautions for user:	
	Segregation group:	1
	EmS-No.:	F-A S-B
14.7	Maritime transport in bulk according to IMO instruments:	not relevant

**Air transport (ICAO-TI / IATA-DGR)**

14.1	UN number or ID number:	1805
14.2	UN proper shipping name:	PHOSPHORIC ACID SOLUTION
14.3	Transport hazard class(es):	8
	Classification code:	
	Hazard label(s):	8
14.4	Packing group:	III
14.5	Special precautions for user:	

## SECTION 15: Regulatory information

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

#### National regulations

no data available

## SECTION 16: Other information

### Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists  
 ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road  
 AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)  
 CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures  
 DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)  
 DNEL - Derived No Effect Level  
 Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)  
 IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
 ICAO-TI - International Civil Aviation Organization-Technical Instructions  
 IMDG - International Maritime Code for Dangerous Goods  
 KOSHA - Korea Occupational Safety and Health Agency  
 LTV - Long Term Value  
 NIOSH - National Institute for Occupational Safety and Health  
 OSHA - Occupational Safety & Health Administration  
 PBT - Persistent, Bioaccumulative and Toxic  
 PNEC - Predicted No Effect Concentration  
 RID - Regulation concerning the International Carriage of Dangerous Goods by Rail  
 STV - Short Term Value  
 SVHC - Substances of Very High Concern  
 vPvB - very Persistent, very Bioaccumulative

### Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

#### Revision date

06.11.2023

#### Version

1.3

#### Print date

2023-11-06

### Additional information

Indication of changes:

Section 3

If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

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