



OCI Company Ltd.

Material Safety Data Sheet

# MSDS

## Phosphoric Acid

### Section 1 - Chemical Product and Company Identification

TRADE NAMES : Phosphoric Acid

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 230, Dokbae-ro, Nam-gu, Incheon, KOREA

Tel No. : 82 - 32 - 860 - 6114

### Section 2 - Hazards Identification

#### 1) Hazard Classification

Acute toxicity (Oral) : 4

Skin corrosion / irritation : 1

Serious eye damage / Eye irritation : 1

Specific target organ toxicity following single exposure : 3(Respiratory System)

#### 2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

H335 May cause respiratory irritation

Prevention precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

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

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor/physician.  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P321 Specific treatment (see ... on this label).  
P330 Rinse mouth.  
P363 Rinse skin with water/shower.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container to the related laws.

3) NFPA

Health Rating	3
Flammability Rating	0
Reactivity Rating	0

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### Section 3 - Composition, Information on Ingredients

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COMPONENT: Phosphoric Acid  
CAS No.: 7664-38-2  
PERCENTAGE: > 85

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### Section 4 - First Aid Measures

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**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:** Move to fresh air. Call a physician or poison control center immediately. Apply artificial respiration if victim is not breathing. If breathing is difficult, give oxygen.

**Skin Contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

**Most important symptoms/effects, acute and delayed Symptoms:** Causes severe skin and eye burns. Causes digestive tract burns.

**Indication of immediate medical attention and special treatment needed Treatment:** Treat symptomatically. Symptoms may be delayed.

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### Section 5 - Fire Fighting Measures

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**General Fire Hazards:** Product is highly acidic. Wear protective gear if spilled during fire fighting.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** Not combustible, but if involved in a fire decomposes to produce toxic gases.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Product is highly acidic. Wear protective gear if spilled during fire fighting.

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**Section 6 - Accidental Release Measures**

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**Personal precautions, protective equipment and emergency procedures:** See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them.

**Methods and material for containment and cleaning up:** Neutralize with lime or soda ash. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:** Inform authorities if large amounts are involved.

**Environmental Precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

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**Section 7 - Handling and Storage**

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**Precautions for safe handling:**

Do not get in eyes, on skin, on clothing. Do not taste or swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. Use caution when adding this material to water. Add material slowly when mixing with water. Do not add water to the material; instead, add the material to the water.

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

Do not store in metal containers. Keep container tightly closed. Store in a well-ventilated place.

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**Section 8 - Exposure Controls, Personal Protection**

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**Control parameters**

**Occupational Exposure Limits**

Chemical Identity	type	Exposure Limit Values	Source
PHOSPHORIC ACID	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	STEL	3 mg/m3	US. ACGIH Threshold Limit Values (2011)
	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)

STEL	3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
PEL	1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
TWA	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
STEL	3 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

**Appropriate Engineering Controls** No data available.

**Individual protection measures, such as personal protective equipment**

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

**Skin Protection**

**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing and gloves.

**Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Respirator type: Chemical respirator with acid gas cartridge.

**Hygiene measures:** Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes. Avoid contact with skin.

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## Section 9 - Physical and Chemical Properties

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### Appearance

**Physical state:** Liquid

**Form:** Liquid

**Color:** Achromatic color

**Odor:** Odorless

**Odor threshold:** Not applicable

**pH:** 1.5 (0.1 N Aqueous solution)

**Melting point/freezing point:** 21 °C

**Initial boiling point and boiling range:** 158 °C

**Flash Point:** No data available

**Evaporation rate:** No data available

**Flammability (solid, gas):** Inflammable

**Upper/lower limit on flammability or explosive limits**

**Flammability limit - upper (%):** No data available

**Flammability limit - lower (%):** No data available

**Explosive limit - upper (%):** No data available

**Explosive limit - lower (%):** No data available

**Vapor pressure:** 4 Pa (20 °C)

**Vapor density:** 3.4

**Relative density:** 1.834 (18 °C)

**Solubility(ies)**

**Solubility in water:** No data available  
**Solubility (other):** No data available  
**Partition coefficient (n-octanol/water):** No data available  
**Auto-ignition temperature:** No data available  
**Decomposition temperature:** 213°C  
**Viscosity:** 3.86cP (20°C, 40% Aqueous solution)  
**Molecular weight :** 98

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## Section 10 - Stability and Reactivity

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**Reactivity:** No dangerous reaction known under conditions of normal use.  
**Chemical Stability:** Material is stable under normal conditions.  
**Possibility of hazardous reactions:** Hazardous polymerization does not occur.  
**Conditions to avoid:** Avoid contact with oxidizing agents. Avoid contact with strong reducing agents. Contact with alkalis.  
**Incompatible Materials:** Strong reducing agents. Alkalies. Strong oxidizing agents. Metals.  
**Hazardous Decomposition Products:** oxides of phosphorus

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## Section 11 - Toxicological Information

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### Information on likely routes of exposure

**Ingestion:** Harmful if swallowed.  
**Inhalation:** Severely irritating to respiratory system.  
**Skin Contact:** Causes severe skin burns.  
**Eye contact:** Causes serious eye damage.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

**Oral Product:** ATEmix (Rat): 1,700 mg/kg  
**Dermal Product:** ATEmix (): 3,044.44 mg/kg  
**Inhalation Product:** No data available.  
**Repeated dose toxicity Product:** No data available.

**Skin Corrosion/Irritation Product:** Causes severe skin burns.  
**Serious Eye Damage/Eye Irritation Product:** Causes serious eye damage.  
**Respiratory or Skin Sensitization Product:** Not a skin sensitizer.  
**Carcinogenicity Product:** This substance has no evidence of carcinogenic properties.

#### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

#### US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

### Germ Cell Mutagenicity

**In vitro Product:** No mutagenic components identified  
**In vivo Product:** No mutagenic components identified

**Reproductive toxicity Product:** No components toxic to reproduction

**Specific Target Organ Toxicity - Single Exposure Product:** None known.

**Specific Target Organ Toxicity - Repeated Exposure Product:** None known.

**Aspiration Hazard Product:** Not classified

**Other effects:** Not known.

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## Section 12 - Ecological Information

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### Ecotoxicity:

#### Acute hazards to the aquatic environment:

**Fish Product:** No data available.

**Aquatic Invertebrates Product:** No data available.

#### Chronic hazards to the aquatic environment:

**Fish Product:** No data available.

**Aquatic Invertebrates Product:** No data available.

**Toxicity to Aquatic Plants Product:** No data available.

### Persistence and Degradability

**Biodegradation Product:** Expected to be readily biodegradable.

**BOD/COD Ratio Product:** No data available.

### Bioaccumulative Potential

**Bioconcentration Factor (BCF) Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow) Product:** No data available.

**Mobility in Soil:** The product is water soluble and may spread in water systems.

**Other Adverse Effects:** The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

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## Section 13 - Disposal Considerations

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**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

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## Section 14 - Transport Information

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UN number: UN 1805

UN proper shipping name: PHOSPHORIC ACID SOLUTION

Hazard Class: 8

Packing group: III

Marine Pollutant: No data available.

Safety measures : Fire F-A, Flow out S-B

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## Section 15 - Regulatory Information

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### US federal regulations

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

<b>Chemical Identity</b>	<b>Reportable quantity</b>
PHOSPHORIC ACID	5000 lbs.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Acute (Immediate)

Chronic (Delayed)

**SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

<b>Chemical Identity</b>	<b>Reportable quantity</b>
PHOSPHORIC ACID	5000 lbs.

**SARA 311/312 Hazardous Chemical**

<b>Chemical Identity</b>	<b>Threshold Planning Quantity</b>
PHOSPHORIC ACID	10000 lbs

**SARA 313 (TRI Reporting)**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

<b>Chemical Identity</b>	<b>Reportable quantity</b>
PHOSPHORIC ACID	Reportable quantity: 5000 lbs.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**US State Regulations**

**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

**US. New Jersey Worker and Community Right-to-Know Act**

<b>Chemical Identity</b>
PHOSPHORIC ACID

**US. Massachusetts RTK - Substance List**

<b>Chemical Identity</b>
PHOSPHORIC ACID

**US. Pennsylvania RTK - Hazardous Substances**

<b>Chemical Identity</b>
PHOSPHORIC ACID

**US. Rhode Island RTK**

<b>Chemical Identity</b>
PHOSPHORIC ACID

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory

US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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#### **Section 16 - Other Information**

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Sources : KOSHA, National Emergency Management Agency

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