

## SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 11/10/2019

Version 1.6

**SECTION 1. Identification****Product identifier**

Product number 100573  
Product name ortho-Phosphoric acid 85% for analysis EMSURE®  
ACS, ISO, Reag. Ph Eur

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

Identified uses Reagent for analysis, Chemical production

**Details of the supplier of the safety data sheet**

Company EMD Millipore Corporation | 400 Summit Drive | Burlington |  
Massachusetts 01803 | United States of America | General  
Inquiries: +1 800-645-5476 | Monday to Friday, 9:00 AM to  
4:00 PM Eastern Time (GMT-5)  
MilliporeSigma is a business of Merck KGaA, Darmstadt,  
Germany.

**Emergency telephone** 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

**SECTION 2. Hazards identification****GHS Classification**

Corrosive to Metals, Category 1, H290  
Skin corrosion, Category 1B, H314  
Serious eye damage, Category 1, H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

**GHS-Labeling**

*Hazard pictograms*



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*Signal Word*  
Danger

*Hazard Statements*  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

*Precautionary Statements*  
P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
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 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.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
P405 Store locked up.  
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.  
P501 Dispose of contents/ container to an approved waste disposal plant.

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature                      Aqueous solution

### Hazardous ingredients

*Chemical name (Concentration)*

CAS-No.

*phosphoric acid* ( $\geq 70\%$  -  $< 90\%$ )

7664-38-2

Exact percentages are being withheld as a trade secret.

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## SECTION 4. First aid measures

### Description of first-aid measures

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## *General advice*

First aider needs to protect himself.

## *Inhalation*

After inhalation: fresh air. Call in physician.

## *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.  
Call a physician immediately.

## *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

## *Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

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

Irritation and corrosion, Cough, Shortness of breath, Pain, Spasm, shock, conjunctivitis  
Risk of blindness!

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

No information available.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Not combustible.  
Ambient fire may liberate hazardous vapors.  
Fire may cause evolution of:  
Oxides of phosphorus

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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Product number	100573	Version 1.6
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---

## *Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### **Environmental precautions**

Do not let product enter drains.

### **Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® H<sup>+</sup>, Art. No. 101595). Dispose of properly. Clean up affected area.

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## **SECTION 7. Handling and storage**

### **Precautions for safe handling**

Observe label precautions.

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

*Requirements for storage areas and containers*

No metal or light-weight-metal containers.

Tightly closed.

Store above +15°C (+59°F).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Components

Basis	Value	Threshold limits	Remarks
<i>phosphoric acid 7664-38-2</i>			
ACGIH	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	3 mg/m <sup>3</sup>	
	Recommended exposure limit (REL):	1 mg/m <sup>3</sup>	
NIOSH/GUIDE	Short Term Exposure Limit (STEL):	3 mg/m <sup>3</sup>	
	OSHA_TRANS PEL:	1 mg/m <sup>3</sup>	
	Z1A Short Term Exposure Limit (STEL):	3 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream.  
Wash hands and face after working with substance.

#### Eye/face protection

Tightly fitting safety goggles

#### Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

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---

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

### *Other protective equipment:*

Acid-resistant protective clothing.

### *Respiratory protection*

required when vapors/aerosols are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.

These measures have to be properly documented.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	< 0.5 at 100 g/l 68 °F (20 °C)
Melting point	ca. 70 °F (21 °C)
Boiling point/boiling range	ca. 316 °F (158 °C) at 1,013 mbar
Flash point	does not flash
Evaporation rate	No information available.

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Flammability (solid, gas)	No information available.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	2 hPa at 68 °F (20 °C)
Relative vapor density	No information available.
Density	1.71 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	Oxidizing potential
Ignition temperature	not combustible
Viscosity, kinematic	30.5 mm <sup>2</sup> /s at 68 °F (20 °C)
Corrosion	May be corrosive to metals.

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

Page 7 of 15

## SAFETY DATA SHEET

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

### **Possibility of hazardous reactions**

Risk of ignition or formation of inflammable gases or vapors with:

Metals, metal alloys

Possible formation of:

Hydrogen

Violent reactions possible with:

bases, metallic oxides

### **Conditions to avoid**

no information available

### **Incompatible materials**

Aluminum, iron/iron-containing compounds, Mild steel

Gives off hydrogen by reaction with metals.

### **Hazardous decomposition products**

in the event of fire: See section 5.

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## **SECTION 11. Toxicological information**

### **Information on toxicological effects**

*Likely route of exposure*

Inhalation, Eye contact, Skin contact

*Target Organs*

Eyes

Skin

Respiratory system

*Acute oral toxicity*

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach., Pain

*Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

*Skin irritation*

Mixture causes burns.

*Eye irritation*

Mixture causes serious eye damage. Risk of blindness! conjunctivitis



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## *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

## *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

## *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## **Further information**

Systemic effects:

Convulsions, shock

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## **Components**

### *phosphoric acid*

*Acute oral toxicity*

LD50 Rat: ca. 2,600 mg/kg

OECD Test Guideline 423

*Acute dermal toxicity*

LD50 Rabbit: 2,740 mg/kg (IUCLID)

*Skin irritation*

Rabbit

Result: Causes burns.

US-EPA

*Eye irritation*

Rabbit

Result: Causes burns.

(IUCLID)

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## *Sensitization*

Patch test: human

Result: negative  
(IUCLID)

## *Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Result: negative

Method: OECD Test Guideline 473

In vitro mammalian cell gene mutation test

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

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## SECTION 12. Ecological information

### **Ecotoxicity**

No information available.

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

No information available.

### **Mobility in soil**

No information available.

### *Additional ecological information*

Harmful effect due to pH shift. Caustic even in diluted form. Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.

Discharge into the environment must be avoided.

### **Components**

#### *phosphoric acid*

##### *Toxicity to fish*

LC50 Gambusia affinis (Mosquito fish): 138 mg/l; 96 h (External MSDS)

##### *Toxicity to daphnia and other aquatic invertebrates*

static test EC50 Daphnia magna (Water flea): > 100 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

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---

### *Toxicity to algae*

static test ErC50 *Desmodesmus subspicatus* (green algae): > 100 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

### *Toxicity to bacteria*

EC50 activated sludge: 270 mg/l(IUCLID)

### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

### *Partition coefficient: n-octanol/water*

log Pow: -0.77

(calculated)

(Lit.) Bioaccumulation is not expected.

PBT/vPvB: Not applicable for inorganic substances

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 1805
Proper shipping name	PHOSPHORIC ACID SOLUTION
Class	8
Packing group	III
Environmentally hazardous	--

### Air transport (IATA)

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<b>UN number</b>	UN 1805
<b>Proper shipping name</b>	PHOSPHORIC ACID, SOLUTION
<b>Class</b>	8
<b>Packing group</b>	III
<b>Environmentally hazardous</b>	--
<b>Special precautions for user</b>	no

### Sea transport (IMDG)

<b>UN number</b>	UN 1805
<b>Proper shipping name</b>	PHOSPHORIC ACID SOLUTION
<b>Class</b>	8
<b>Packing group</b>	III
<b>Environmentally hazardous</b>	--
<b>Special precautions for user</b>	yes
EmS	F-A S-B

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## SECTION 15. Regulatory information

### United States of America

#### SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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### **Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

#### *Components*

phosphoric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

#### *Components*

phosphoric acid

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

### **DEA List I**

Not listed

### **DEA List II**

Not listed

## **US State Regulations**

### **Massachusetts Right To Know**

#### *Components*

phosphoric acid

### **Pennsylvania Right To Know**

#### *Components*

phosphoric acid

### **New Jersey Right To Know**

#### *Components*

phosphoric acid

### **California Prop 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## **Notification status**

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

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## **SECTION 16. Other information**

### **Training advice**

Provide adequate information, instruction and training for operators.

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## Labeling

*Hazard pictograms*



*Signal Word*

Danger

*Hazard Statements*

H290 May be corrosive to metals.

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.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

## Full text of H-Statements referred to under sections 2 and 3.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 11/10/2019

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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