

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Created on:

22.04.2010

## 1. Identification of the substance/mixture and of the company/undertaking

### Product Information

Catalogue No.: 100245  
 Product name: Phosphoric acid 42,5%  
 Use of the Substance/Mixture: Customized use, Pharmaceutical production and analysis  
 Company: Merck KGaA \* 64271 Darmstadt \* Germany \* Phone:+49 6151 72-0  
 Emergency telephone: Please contact the regional Merck representation in your country.  
 Responsible/issuing person: EQ-EPS \* e-mail: prodsafe@merck.de

## 2. Hazards identification

### GHS Classification

Corrosive to metals H290: May be corrosive to metals.  
 Skin corrosion, Category 1B H314: Causes severe skin burns and eye damage.

### EC Classification

C; R34

For the full text of the R-phrases mentioned in this Section, see Section 16.

## 3. Composition/information on ingredients

Chemical nature Phosphoric acid solution.

### Hazardous components (GHS Classification)

#### Chemical Name (Concentration)

CAS-No.	EC-No. / Registration number	Index-No.	Classification
<i>Phosphoric acid ( 42,5 % )</i>			
7664-38-2	231-633-2	015-011-00-6	Corrosive to metals, H290 Skin corrosion, Category 1B, H314

### Hazardous components (1999/45/EC)

#### Chemical Name (Concentration)

CAS-No.	EC-No. / Registration number	Index-No.	Classification
<i>Phosphoric acid ( 42,5 % )</i>			
7664-38-2	231-633-2	015-011-00-6	C; R34

For the full text of the R-phrases mentioned in this Section, see Section 16.

## 4. First aid measures

After inhalation: fresh air. Call in physician.

After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400. Immediately remove contaminated clothing. Call a physician immediately.

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

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

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## 5. Fire-fighting measures

### *Suitable extinguishing media*

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

### *Specific hazards during fire fighting*

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Oxides of phosphorus

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

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

### *Further information*

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

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## 6. Accidental release measures

### *Personal precautions*

Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation.

### *Environmental precautions*

Do not empty into drains.

### *Methods for cleaning up*

Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Forward for disposal. Clean up affected area.

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## 7. Handling and storage

### **Handling**

#### *Advice on safe handling*

Observe label precautions.

### **Storage**

#### *Further information on storage conditions*

Tightly closed.

Store above +15°C.

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## 8. Exposure controls/personal protection

### **Personal protective equipment**

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

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*Respiratory protection*

required when vapours/aerosols are generated.

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

*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

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant 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)).

*Eye protection*

Tightly fitting safety goggles

*Protective measures*

Acid-resistant protective clothing.

*Hygiene measures*

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

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**9. Physical and chemical properties**

Form	liquid
Colour	colourless
Odour	odourless
pH	acidic
Viscosity, dynamic	no data available
	no data available
Boiling point/boiling range	no data available
Ignition temperature	no data available
Flash point	no data available
Oxidizing properties	no data available

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Flammability	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Relative vapour density	no data available
Density	1,27 g/cm <sup>3</sup> at 20 °C
Solubility/qualitative	no data available
Water solubility	at 20 °C soluble
Partition coefficient: n- octanol/water	log Pow: -0,77 Method: (calculated) (Lit.) (calculated on the pure substance) No bioaccumulation is to be expected (log Pow <1).
Corrosion	May be corrosive to metals.
Evaporation rate	no data available

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## 10. Stability and reactivity

### *Conditions to avoid*

Strong heating.

### *Materials to avoid*

Violent reactions possible with:

bases, metallic oxides

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

Metals, metal alloys

Formed could be:

Hydrogen

### *Hazardous decomposition products*

in the event of fire: See chapter 5.

### *Further information*

hygroscopic

incompatible with:

Mild steel, iron/iron-containing compounds, Aluminium, and their compounds

Contact with metals liberates hydrogen gas.

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## 11. Toxicological information

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*Acute oral toxicity*

LD50 rat

Dose: 1.530 mg/kg

(IUCLID) (Regulation (EC) No 1272/2008, Annex VI) (calculated on the pure substance)

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

*Acute inhalation toxicity*

LC50 rat

Dose: > 0,85 mg/l, 1 h

(RTECS) (calculated on the pure substance)

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

*Acute dermal toxicity*

LD50 rabbit

Dose: 2.740 mg/kg

(IUCLID) (calculated on the pure substance)

*Skin irritation*

rabbit

Result: Causes burns.

(IUCLID) (calculated on the pure substance)

Causes severe burns.

*Eye irritation*

rabbit

Result: Causes burns.

(IUCLID) (calculated on the pure substance)

Causes serious eye damage. Risk of blindness!

*Sensitisation*

Patch test (humans):

Result: negative

(IUCLID)

*Genotoxicity in vitro*

Ames test

Result: negative

(IUCLID) (calculated on the pure substance)

*Further information*

Systemic effects:

shock, Convulsions

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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## 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50

Species: Gambusia affinis (Mosquito fish)

Dose: 138 mg/l

Exposure time: 96 h

(External MSDS) (calculated on the pure substance)

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*Toxicity to bacteria*

EC50

Species: activated sludge

Dose: 270 mg/l

(IUCLID) (calculated on the pure substance)

**Persistence and degradability**

*Biodegradability*

Does not cause biological oxygen deficit.

*Partition coefficient: n-octanol/water*

log Pow: -0,77

Method: (calculated)

(Lit.) (calculated on the pure substance) No bioaccumulation is to be expected (log Pow <1).

*Additional ecological information*

Biological effects:

Caustic even in diluted form.

Harmful effect due to pH shift.

Further information on ecology

Do not allow to enter waters, waste water, or soil!

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**13. Disposal considerations**

*Product*

Chemicals must be disposed of in compliance with the respective national regulations. Under [www.retrologistik.de](http://www.retrologistik.de) you will find country- and substance-specific information as well as contact partners.

*Packaging*

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under [www.retrologistik.de](http://www.retrologistik.de) you will find special information on the respective national conditions as well as contact partners.

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**14. Transport information**

**ADR/RID**

UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III

**IATA**

UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III

**IMDG**

UN 1805 PHOSPHORIC ACID, SOLUTION, 8, III

EmS F-A S-B

The transport regulations re cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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## 15. Regulatory information

### GHS-Labeling

#### Hazard pictograms



Signal word  
Danger

#### Hazard statements

H290: May be corrosive to metals.  
H314: Causes severe skin burns and eye damage.

#### Precautionary statements

P280: Wear protective gloves/protective clothing/eye protection/face protection.  
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.  
P309 + P310: IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

#### Reduced labelling (≤125 ml)

##### Hazard pictograms



Signal word  
Danger

##### Hazard statements

H314: Causes severe skin burns and eye damage.

##### Precautionary statements

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

### Labelling according to EC Directives

Symbol(s):	C	Corrosive
R-phrase(s):	34	Causes burns.
S-phrase(s):	26-45	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### National legislation

Storage class VCI: 8 B Non combustible, corrosive substances

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Major Accident Hazard 96/82/EC Update: 2003  
Legislation: Directive 96/82/EC does not apply

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## 16. Other information

### Full text of R-phrases referred to under sections 2 and 3

R34 Causes burns.

Regional representation: This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.*