

Material Safety Data Sheet

According to 91/155 EEC(2001/58 EC)

Printing date: 19.12.2006

Reviewed on: 19.12.2006

1 Identification of substance:

- **Product details:**
- **Trade name:** Phosphoric acid
- **Application of the substance / the preparation** Basic raw material for the chemical industry
- **Supplier/Manufacturer:**
 Penpet Petrochemical Trading GmbH
 Merkur-Park
 Sieker Landstrasse 126
 22143 Hamburg
 Germany
 Tel: +49 40 675 799 0
 Fax: +49 40 675 799 99 / 88
- **Information department:** see above
- **Emergency information:** National Poisons Information Centre Tel.: +44 (0)870 6006266

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
7664-38-2 phosphoric acid
- **Identification number(s):**
- **EINECS Number:** 231-633-2
- **EU Number:** 015-011-00-6

3 Hazards identification

- **Hazard description:**



C Corrosive

- **Information pertaining to particular dangers for man and environment:**
 Acid burns have to be treated immediately, as otherwise badly curing wounds are caused.
 R 34 Causes burns.
- **Classification system:**
 The classification was made according to the latest editions of the EU-lists, and expanded using company data and specialized literature.

4 First aid measures

- **General information:**
 Immediately remove any clothing soiled by the product.
 First aid personnel should pay attention to their own safety.
- **After inhalation:**
 Remove victim from contaminated area. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a doctor.
 In case of unconsciousness, place patients on their side in a stable position for transportation.
- **After skin contact:**
 Take-off and remove wetted clothing, shoes and stocking immediately. Rinse affected parts of the body with plenty of water.
 Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
 Cover wound with a sterile dressing.
- **After eye contact:**
 Protect unharmed eye.
 Rinse the eyes with open eyelids for 10 - 15 minutes with water.
 Immediate transport to ophthalmologist or ophthalmic clinic.

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- **After swallowing:**

Wash mouth with water and drink plenty of water. Do not induce vomiting. Immediately call a doctor to the site of the accident.

Never give anything by mouth to a unconscious person.

Do not try to neutralise with bases, do not give active coal.

- **Information for doctor:**

- **Treatment:**

Symptomatic treatment

(decontamination, vital functions)

In cases of irritation to the lungs, initial treatment with Dexametason metered aerosol.

Later observation for pneumonia and pulmonary oedema

Monitor circulation, possible shock treatment.

5 Fire fighting measures

- **Suitable extinguishing agents:**

The product is not combustible and does not support the combustion.

Use fire fighting measures that suit the environment.

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Special hazards caused by the material, its products of combustion or resulting gases:**

Dangerous decomposition product see chapter 10: stability and reactivity

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

During clearance wear protective clothing and rubber boots.

- **Additional information:**

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- **Person-related safety precautions:**



Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation

Particular danger of slipping on leaked/spilled product.

- **Measures for environmental protection:**

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

Suppress gases/fumes/haze with water spray.

- **Measures for cleaning/collecting:**

Ensure adequate ventilation.

Use neutralizing agent.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to item 13.

- **Additional information:** See Section 8 for information on personal protection equipment.

7 Handling and storage

- **Handling**

- **Information for safe handling:**

Open and handle receptacle with care.

Restrict the quantity stored at the work place.

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- When diluting, always stir the product into standing water, do not add water to product.
- Ensure good ventilation/exhaustion at the workplace.
- Waste air is to be released into the atmosphere only via suitable separators.
- Prevent formation of aerosols.
- Avoid contact with eyes and skin.
- Avoid inhalation of vapours.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
- Store container tightly sealed at a cool and dry place with sufficient ventilation.
- Provide acid-resistant floor.
- Prevent any seepage into the ground.
- **Information about storage in one common storage facility:**
- Do not store together with alkalies (caustic solutions).
- Store away from foodstuffs.
- Store away from feed.
- Store separately from:
- Oxidizing substances (5.1)
- Infectious substances (6.2)
- **Further information about storage conditions:**
- Keep receptacle tightly sealed.
- Storage in a collecting room is required.
- **Storage class 8** Corrosive products (VCI)

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** Install appropriate mechanical ventilation.
- **Components with limit values that require monitoring at the workplace:**
- 7664-38-2 phosphoric acid**
- TLV (European Union) Short-term value: 2 mg/m³
- Long-term value: 1 mg/m³
- **Personal protective equipment**
- **General protective and hygienic measures:**
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Avoid contact with eyes and skin absolutely.
- Do not inhale gases / fumes / aerosols.
- Provide eye bath.
- If larger quantities are handled provide emergency showers.
- **Breathing equipment:**
- Not necessary if room is well-ventilated.
- Use suitable respiratory protective device in case of insufficient ventilation.
- Short term filter device:
- B2 - P2
- **Protection of hands:**
- Chemical resistant gloves
- Check the permeability prior to each renewed use of the glove.
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves:**
- The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- Natural rubber, NR
- Polychloroprene rubber (CR)
- Nitrile rubber, NBR
- Butyl rubber, BR
- Fluorocarbon rubber (FKM)

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- **Penetration time of glove material:**

Penetration time: > 8 hours

The exact break-through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**

Tightly sealed goggles.

If a splashing of the product is possible wear full face protection.

- **Body protection:**

Acid resistant protective clothing

Apron

Boots

9 Physical and chemical properties:

- **General Information**

Form:	Fluid
Colour:	Colourless
Odour:	Odourless

- **Change in condition:**

Melting point/Melting range: -75-21°C

Boiling point/Boiling range: 118-158°C

- **Flash point:** not applicable

- **Danger of explosion:** Product does not present an explosion hazard.

- **Vapour pressure:** (70 % w/w)

- **Density at 20°C:** 1.41-1.69 g/cm³

- **Solubility in / Miscibility with**

Water: Soluble

- **pH-value at 20°C:** 0

- **Viscosity:**

dynamic at 20°C: 7- >32 mPas

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

- **Decomposition will begin at:** 200° C

- **Materials to be avoided:**

Alkalis

Amines

Oxidants

Metals

Aluminium

Zinc

- **Dangerous reactions:**

Violent reactions with strong alkalis and oxidizing agents

Heating occurs when water is added

When diluting, always add acid to water, never vice versa

Reacts with metals forming hydrogen

- **Dangerous products of decomposition:**

Upon thermal decomposition:

Phosphorus compounds

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11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
7664-38-2 phosphoric acid
 Oral LD₅₀ 1530 mg/kg (rat)
 Dermal LD₅₀ 2740 mg/kg (rabbit)
- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
 Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

- **Ecotoxicological effects:**
- **Aquatic toxicity:** Presently there are no ecotoxicological values available.
- **Remark:** Due to the low pH-value there may be toxic effects on aquatic organisms.
- **General notes:**
 Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water.
 Must not reach sewage water or drainage ditch undiluted or unneutralized.
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
 Danger to drinking water is possible if large quantities leak into the ground or into water course.

13 Disposal considerations

- **Product:**
- **Recommendation:**



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Must be specially treated adhering to official regulations.

- **European waste catalogue:**

06 01 04 phosphoric and phosphorous acid

- **Uncleaned packagings:**

- **Recommendation:**

Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

Disposal must be made according to official regulations.

14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 8 (C1) Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 1805
- **Packaging group:** III
- **Label:** 8
- **Description of goods:** 1805 PHOSPHORIC ACID, LIQUID

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· **Remarks:** Limited quantity: 3 l inner packaging, 30 kg gross packaging unit

· **Maritime transport IMDG:**



· **IMDG Class:** 8
 · **UN Number:** 1805
 · **Label:** 8
 · **Packaging group:** III
 · **EMS Number:** F-A,S-B
 · **Proper shipping name:** PHOSPHORIC ACID, LIQUID

· **Air transport ICAO-TI and IATA-DGR:**



· **ICAO/IATA Class:** 8
 · **UN/ID Number:** 1805
 · **Label:** 8
 · **Packaging group:** III
 · **Proper shipping name:** PHOSPHORIC ACID, LIQUID
 · **Remarks:** Packing Instructions:
 For Limited Quantities: Y819 (Max Net Qty/Pkg: 1,0 l)
 Passenger and Cargo Aircraft: 819 (Max Net Qty/Pkg: 5 l)
 Cargo Aircraft only: 821 (Max Net Qty/Pkg: 60 l)

15 Regulations

· **Markings according to EC guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials EC-labelling

· **Code letter and hazard designation of product:**



C Corrosive

· **Risk phrases:**

34 Causes burns.

· **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

· **National regulations**

· **Information about limitation of use:** Restrictions on juvenile employment must be observed.

· **Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.

16 Other information:

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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