

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 5.0 Revision Date 12.12.2012

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : Phosphorus trichloride

Product Number : 320463
 Brand : Sigma-Aldrich
 Index-No. : 015-007-00-4
 CAS-No. : 7719-12-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Chemie BV
 Stationsplein 4
 3331 LL ZWIJNDRECHT
 NETHERLANDS

Telephone : +31 78-620-5411
 Fax : +31 78-620-5421
 E-mail address : eurtechserv@sial.com

1.4 Emergency telephone number

Emergency Phone # : 112

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Acute toxicity, Inhalation (Category 2)
 Acute toxicity, Oral (Category 2)
 Specific target organ toxicity - repeated exposure (Category 2)
 Skin corrosion (Category 1A)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Causes severe burns. Reacts violently with water. Contact with water liberates toxic gas. Very toxic by inhalation and if swallowed. Harmful: danger of serious damage to health by prolonged exposure through inhalation.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word : Danger

Hazard statement(s)

H300 : Fatal if swallowed.
 H314 : Causes severe skin burns and eye damage.
 H330 : Fatal if inhaled.
 H373 : May cause damage to organs through prolonged or repeated exposure.

| | |
|----------------------------|--|
| Precautionary statement(s) | |
| P260 | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. |
| P264 | Wash hands thoroughly after handling. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P284 | Wear respiratory protection. |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

Supplemental Hazard information (EU)

| | |
|--------|---|
| EUH014 | Reacts violently with water. |
| EUH029 | Contact with water liberates toxic gas. |

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)



R-phrases(s)

| | |
|--------|---|
| R14 | Reacts violently with water. |
| R26/28 | Very toxic by inhalation and if swallowed. |
| R35 | Causes severe burns. |
| R48/20 | Harmful: danger of serious damage to health by prolonged exposure through inhalation. |

S-phrases(s)

| | |
|-----------|---|
| S 7/8 | Keep container tightly closed and dry. |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | | |
|------------------|---|--------------------------|
| Synonyms | : | Phosphorus(III) chloride |
| Formula | : | Cl ₃ P |
| Molecular Weight | : | 137,33 g/mol |

| Component | Concentration |
|-------------------------------|---------------|
| Phosphorus trichloride | |
| CAS-No. | 7719-12-2 |
| EC-No. | 231-749-3 |
| Index-No. | 015-007-00-4 |

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Dry powder

5.2 Special hazards arising from the substance or mixture

Oxides of phosphorus, Hydrogen chloride gas

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Never allow product to get in contact with water during storage.

Store under inert gas. Light sensitive. Metals

7.3 Specific end use(s)

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Fluorinated rubber

Minimum layer thickness: 0,7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0,4 mm

Break through time: 37 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|--------------------|-------------------|
| a) Appearance | Form: liquid |
| b) Odour | no data available |
| c) Odour Threshold | no data available |

| | |
|---|--------------------------------------|
| d) pH | no data available |
| e) Melting point/freezing point | Melting point/range: -112 °C - lit. |
| f) Initial boiling point and boiling range | 74 - 78 °C - lit. |
| g) Flash point | not applicable |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | 167 hPa at 25 °C 133 hPa at 21 °C |
| l) Vapour density | 4,74 - (Air = 1.0) |
| m) Relative density | 1,574 g/cm ³ at 20 °C |
| n) Water solubility | no data available |
| o) Partition coefficient: n-octanol/water | no data available |
| p) Auto-ignition temperature | no data available |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties | no data available |
| t) Oxidizing properties | no data available |

9.2 Other safety information

no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Reacts violently with water.

10.4 Conditions to avoid

Exposure to moisture.

10.5 Incompatible materials

Strong bases, Sodium/sodium oxides, Strong oxidizing agents, Potassium, Ammonia, Alcohols, Dimethyl sulfoxide. (DMSO), Metals

10.6 Hazardous decomposition products

Reacts with water to form: - hydrochloric acid, Phosphorus trihydride (phosphine)

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 18 mg/kg

Remarks: Behavioral:Food intake (animal). Lungs, Thorax, or Respiration:Chronic pulmonary edema. Gastrointestinal:Peritonitis.

LC50 Inhalation - rat - 4 h - 104 ppm

Remarks: Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi. Lungs, Thorax, or Respiration:Other changes. Blood: Hemorrhage.

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

no data available

Potential health effects

| | |
|-------------------|---|
| Inhalation | May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Ingestion | May be fatal if swallowed. Causes burns. |
| Skin | Harmful if absorbed through skin. Causes skin burns. |
| Eyes | Causes eye burns. |

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Additional Information

RTECS: TH3675000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**14.1 UN number**

ADR/RID: 1809

IMDG: 1809

IATA: 1809

14.2 UN proper shipping name

ADR/RID: PHOSPHORUS TRICHLORIDE

IMDG: PHOSPHORUS TRICHLORIDE

IATA: Phosphorus trichloride

Passenger Aircraft: Not permitted for transport

Cargo Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 6.1 (8)

IMDG: 6.1 (8)

IATA: 6.1 (8)

14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: -

14.5 Environmental hazards

ADR/RID: no

IMDG Marine Pollutant: no

IATA: no

14.6 Special precautions for user

no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

15.2 Chemical Safety Assessment

no data available

16. OTHER INFORMATION**Further information**

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