PHOSPHOROUS TRICHLORIDE
CAS NO 7719-12-2

MATERIAL SAFETY DATA SHEET
SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
Product name : Phosphorous Trichloride
CAS-No. : 7719-12-2

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi -110002
INDIA
Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number
Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 2), H330
Skin corrosion (Category 1A), H314
Specific target organ toxicity - repeated exposure (Category 2), H373

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

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word
Danger

Hazard statement(s)
H300 + H330 Fatal if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s)
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Supplemental Hazard information (EU)
EUH014 Reacts violently with water.
EUH029 Contact with water liberates toxic gas.

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Reacts violently with water., Contact with water liberates toxic gas.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Phosphorus(III) chloride

Formula: PCl₃
Molecular weight: 137.33 g/mol
CAS-No.: 7719-12-2
EC-No.: 231-749-3
Index-No.: 015-007-00-4

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphorus trichloride</td>
<td>Acute Tox. 2; Skin Corr. 1A;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7719-12-2</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-749-3</td>
<td>STOT RE 2; H300, H330,</td>
</tr>
<tr>
<td>Index-No.</td>
<td>015-007-00-4</td>
<td>H314, H373</td>
</tr>
</tbody>
</table>

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

SECTION 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
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
   Suitable extinguishing media
   Dry chemical Carbon dioxide (CO2) Dry powder
   Unsuitable extinguishing media
   Water

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 firefighting if necessary.

5.4 Further information
   No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
   Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
   Evacuate personnel to safe areas.
   For personal protection see section 8.

6.2 Environmental precautions
   Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the
   environment must be avoided.

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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
   Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
   For precautions see section 2.2.

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
   Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
   Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 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.

**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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineer 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).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**SECTION 9: Physical and chemical properties**

9.1 **Information on basic physical and chemical properties**

a) Appearance Form: liquid
   Colour: clear

b) Odour pungent

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
   125 mmHg at 25 °C
   100 mmHg at 21 °C

l) Vapour density
   4.74 -(Air = 1.0)

m) Relative density
   1.574 g/cm3 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
Surface tension 27.98 mN/m at 25 °C
Relative vapour density 4.74 - (Air = 1.0)

SECTION 10: Stability and reactivity
10.1 Reactivity
No data available
10.2 Chemical stability
Stable under recommended storage conditions.
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
Hazardous decomposition products formed under fire conditions. - Oxides of phosphorus, Hydrogen chloride gas
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute toxicity
LD50 Oral - Rat - 18 mg/kg(Phosphorus trichloride)
LC50 Inhalation - Rat - female - 4 h - 0.586 mg/l(Phosphorus trichloride)

Skin corrosion/irritation
Skin - Rabbit(Phosphorus trichloride) Result: Causes severe burns.
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit(Phosphorus trichloride) Result: Corrosive - 24 h

Respiratory or skin sensitisation
No data available(Phosphorus trichloride)

Germ cell mutagenicity
Ames test(Phosphorus trichloride)
Salmonella typhimurium  
Result: negative  
(Phosphorus trichloride) Mouse - male  
Result: negative  

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(Phosphorus trichloride)

Specific target organ toxicity - single exposure  
No data available(Phosphorus trichloride)

Specific target organ toxicity - repeated exposure  
No data available  

Aspiration hazard  
No data available(Phosphorus trichloride)

Additional Information  
RTECS: TH3675000  

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

SECTION 12: Ecological information  

12.1 Toxicity  
Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 1,000 mg/l - 96 h(Phosphorus trichloride)  
(OECD Test Guideline 203)  
Toxicity to algae static test EC50 - Desmodesmus subspicatus (green algae) - 33.41 mg/l - 72 h(Phosphorus trichloride)

12.2 Persistence and degradability  
No data available

12.3 Bioaccumulative potential  
No data available

12.4 Mobility in soil  
No data available(Phosphorus trichloride)

12.5 Results of PBT and vPvB assessment  
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects  
Harmful to aquatic life.

SECTION 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.
SECTION 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)

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
EUH014 Reacts violently with water.
EUH029 Contact with water liberates toxic gas.
H300 Fatal if swallowed.
H300 + H330 Fatal if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.
H330 Fatal if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.