

1. Product and Company Identification

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Product Name PHOSPHORUS TRICHLORIDE FOR SYNTHESIS
Part Number RXSOL-19-6605-200

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
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2. Composition / Information on ingredients

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Product name	Cas No	EC No	Weight	Formula
Phosphorus trichloride for synthesis	7719-12-2	231-749-3	137,33 g/mol	PCl3

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H300 + H330 Fatal if swallowed or if inhaled. H314 Causes severe skin burns and eye damage. H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.
Precautionary statements	P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. 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. P314 Get medical advice/ attention if you feel unwell
Classification of the substance or mixture	No data available
Supplemental Hazard Statements	No data available
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.

4. First Aid Measures

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General advice	Show this material safety data sheet to the doctor in attendance
If inhaled	After inhalation fresh air.
Eye Contact	After eye contact: rinse out with plenty of water. Remove contact lenses.
Swallowed	If swallowed give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not

Skin Contact	available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.
Inhalation	In case of skin contact Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately
Ingestion	No data available
Most important symptoms and effects, both acute and delay	No data available
Indication of any immediate medical attention and special treatment needed	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
	No data available

5. Fire-fighting Measures

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Flammability	No data available
Suitable extinguishing media	Carbon dioxide (CO2) Dry powder
Unsuitable extinguishing media	Foam Water
Special hazards arising from the substance or mixture	Oxides of phosphorus Hydrogen chloride gas Not combustible. Fire may cause evolution of: Hydrogen chloride gas, Oxides of phosphorus Caution! in contact with water product releases: Oxides of phosphorus, Hydrogen chloride gas May not get in touch with: Water Ambient fire may liberate hazardous vapours.
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.
Hazardous combustion products	No data available
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Protective Equipment	No data available
Specific Hazards Arising from the Chemical	No data available

6. Accidental Release Measures

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Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Spillage	No data available
Personal Protection	No data available
Environmental Precaution	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.
Reference to other sections	For disposal see section 13.

7. Handling and Storage

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Advice on protection against fire and explosion	No data available
Incompatible materials	No data available
Hygiene measures	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Advice on safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of

Conditions for safe storage including any incompatibilities	vapours/aerosols. Keep workplace dry. Do not allow product to come into contact with water.
Storage conditions	No data available
Storage class	Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Never allow product to get in contact with water during storage. Recommended storage temperature see product label.
Specific end use(s)	Storage class (TRGS 510) 6.1B Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials
Advice on general occupational hygiene	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
	No data available

8. Exposure controls and personal protection

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Exposure controls	Personal protective equipment
Engineering Control	No data available
Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Body Protection	Protective clothing.
Skin protection	This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please Millipore- 8.22322 Page 6 of 14 The life science business of Merck operates as MilliporeSigma in the US and Canada contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: Viton® Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M) This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. 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). Splash contact Material: Nitrile rubber Minimum layer thickness: 0,4 mm Break through time: 10 min Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)
Respiratory protection	Recommended Filter type Filter B-(P2) The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Other Protection Measure	No data available

9. Physical and chemical properties

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Physical state	Liquid
Colour	Colorless
Odour	Pungent
Odor Threshold	No data available
pH	12,6 at 20 °C
Melting Point	-93,6 °C at 1.013 hPa - (ECHA)
Boiling Point	76,1 °C at 1.013 hPa
Flash Point	No data available
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data Available

Upper/lower flammability or explosive limits	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Vapour pressure	159,98 hPa at 25 °C
Viscosity	No data available
Density	1,57 g/cm ³ at 21 °C
Relative Density	No data available
Specific Gravity	No data available
Partition coefficient	No data available
Explosive properties	No data available
Solubility	No data available
Ignition temperature	No data available
Particle characteristics	No data available

10. Stability and reactivity

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Reactivity	Reacts violently with water. Contact with water liberates toxic gas
Chemical stability	Sensitive to moisture
Possibility of hazardous reactions	Water bases Aluminum Amines Iodine chloride Hydrocarbons Organic Substances Millipore- 8.22322 Page 8 of 14 The life science business of Merck operates as MilliporeSigma in the US and Canada Oxidizing agents sulfuric acid Selenium dioxide Reducing agents Risk of explosion with: Oxygen Nitric acid sodium Potassium acetic acid Peroxides dimethyl sulfoxide Alkali metals chromyl chloride Ammonia alkalines Risk of ignition or formation of inflammable gases or vapours with: Fluorine hydroxylamine Violent reactions possible with: The generally known reaction partners of water.
Conditions to avoid	Do not allow water to enter container because of violent reaction. Light. Exposure to moisture. Moisture.
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

11. Toxicological information

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Acute toxicity	Acute toxicity estimate Oral - 18,05 mg/kg (Calculation method) LD50 Oral - Rat - 18 mg/kg Remarks: Behavioral: Food intake (animal). Lungs, Thorax, or Respiration: Chronic pulmonary edema. Gastrointestinal: Peritonitis. (RTECS) Acute toxicity estimate Inhalation - 4 h - 0,5857 mg/l - vapor (Calculation method) LC50 Inhalation - Rat - female - 4 h - 0,586 mg/l - vapor (OECD Test Guideline 433)
Skin corrosion/irritation	Skin - Rabbit Causes severe burns. (OECD Test Guideline 404)
Serious eye damage/irritation	Eyes - Rabbit Corrosive (OECD Test Guideline 405)
Respiratory or skin sensitization	No data available
Carcinogenicity	No data available
Germ cell mutagenicity	Test Type Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: in vivo assay Species: Mouse Application Route: Intraperitoneal
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Additional Information	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache,

12. Ecological information

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Persistence and degradability	The methods for determining biodegradability are not applicable to inorganic substances. Chemical Oxygen Demand (COD) 116 mg/g
Toxicity to fish	Static test LC50 - Danio rerio (zebra fish) - > 1.000 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - 35,4 mg/l - 48 h (OECD Test Guideline 202)
Toxicity	No data available
Toxicity to bacteria	No data available
Toxicity to algae	Static test ErC50 - Desmodesmus subspicatus (green algae) - 33,41 mg/l - 72 h (Regulation (EC) No. 440/2008, Annex, C.3) NOEC - Desmodesmus subspicatus (green algae) - 12,5 mg/l - 72 h (Regulation (EC) No. 440/2008, Annex, C.3)
Products Biodegradation	No data available
Mobility in soil	No data available
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.
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher
Other adverse effects	Biological effects The following may develop after reaction of the product with water: hydrochloric acid phosphoric acid After hydrolysis acid effect on fish and plankton. Discharge into the environment must be avoided.

13. Disposal considerations

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Product	See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.
Contaminated packaging	No data available
Waste treatment Method	No data available

14. Transport information

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UN number	ADR/RID:1809	IMDG:1809	IATA:1809
UN proper shipping name	ADR/RID:PHOSPHORUS TRICHLORIDE	IMDG:PHOSPHORUS TRICHLORIDE	IATA:PHOSPHORUS TRICHLORIDE
Transport hazard class(es)	ADR/RID:6.1 (8)	IMDG:6.1 (8)	IATA:6.1 (8)
Packaging group	ADR/RID:I	IMDG:I	IATA:I
Environmental hazards	ADR/RID:No	IMDG:No	IATA:No
Special precautions for user	Tunnel restriction code (C/D)		
Further information	No data available		

15. Regulatory information

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Safety, health and environmental regulations/legislation specific for substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Other regulations	Observe work restrictions regarding maternity protection in accordance to

16. Other information

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Other Information

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No data available

No data available

No data available

No data available