

1. Product and Company Identification

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Product Name Hexamethyl Phosphoramidate
Part Number RXSOL-19-3739-025

Company Details:

RX MARINE INTERNATIONAL
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2. Composition / Information on ingredients

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Chemical Name	Cas No	EC No	Weight	Formula
Hexamethylphosphoramidate	680-31-9	211-653-8	179,20 g/mol	C ₆ H ₁₈ N ₃ OP

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H314 Causes severe skin burns and eye damage. H340 May cause genetic defects. H350 May cause cancer.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. 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. P363 Wash contaminated clothing before reuse.
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	First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance
If inhaled	After inhalation fresh air. Immediately call in physician. If breathing stops immediately apply artificial respiration, if necessary also oxygen.
Eye Contact	In case of skin contact Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
Swallowed	After swallowing make victim drink water (two glasses at most), avoid

	vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.
Skin Contact	In case of skin contact Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Inhalation	No data available
Ingestion	No data available
Most important symptoms and effects, both acute and delay	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Indication of any immediate medical attention and special treatment needed	No data available

5. Fire-fighting Measures

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Flammability	No data available
Suitable extinguishing media	Water Foam Carbon dioxide (CO2) Dry powder
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given
Special hazards arising from the substance or mixture	Carbon oxides Nitrogen oxides (NOx) Oxides of phosphorus Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine Carbon oxides Nitrogen oxides (NOx) Oxides of phosphorus Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire
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: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. 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 with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area
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 vapours/aerosols.
Conditions for safe storage, including any incompatibilities	No data available
Storage conditions	Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Air and moisture sensitive. Handle and store under inert gas.
Storage class	Storage class (TRGS 510) 6.1C Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
Advice on general occupational hygiene	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	No data available
Respiratory protection	Required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK 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	Beige
Odour	No data available
Odor Threshold	No data available
pH	ca.6,7 at 10 g/l at 20 °C
Melting Point	7 °C - lit.
Boiling Point	230 - 232 °C at 987 hPa - lit.
Flash Point	144 °C - closed cup
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	No data available
Viscosity	No data available
Density	1,03 g/cm ³ at 25 °C - lit.
Relative Density	No data available
Specific Gravity	No data available
Partition coefficient	No data available
Explosive properties	No data available

Solubility	1.000 g/l at 20 °C
Ignition temperature	No data available
Particle characteristics	No data available

10. Stability and reactivity

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Reactivity	Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature)
Possibility of hazardous reactions	No data available
Conditions to avoid	Strong heating.
Incompatible materials	Strong oxidizing agents, Strong acids
Hazardous product decomposition	No data available

11. Toxicological information

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Acute toxicity	LD50 Oral - Rat - 2.650 mg/kg Remarks: Behavioral:Convulsions or effect on seizure threshold. Kidney, Ureter, Bladder:Hematuria. Kidney, Ureter, Bladder:Incontinence. (RTECS) Inhalation: No data available LD50 Dermal - Rabbit - 2.600 mg/kg Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea. (RTECS)
Skin corrosion/irritation	Causes skin burns.
Serious eye damage/irritation	Causes serious eye damage.
Respiratory or skin sensitization	No data available
Carcinogenicity	Presumed to have carcinogenic potential for humans
Germ cell mutagenicity	May cause genetic defects
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. RTECS: TD0875000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Liver - Irregularities - Based on Human Evidence

12. Ecological information

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Persistence and degradability	No data available
Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 7.240 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 6.670 mg/l - 48 h
Toxicity	No data available
Toxicity to bacteria	No data available
Toxicity to algae	No data available
Bioaccumulation potential	Bioaccumulation Cyprinodon variegatus (sheepshead minnow) - 33 d - 40,4 mg/l(Hexamethylphosphoramide) Bioconcentration factor (BCF): 3,3
Mobility in soil	No data available
Results of PBT av PvB 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	No data available

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:3267 IMDG:3267 IATA:3267
UN proper shipping name	ADR/RID:CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Hexamethylphosphoramide) IMDG:CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Hexamethylphosphoramide) IATA:CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Hexamethylphosphoramide)
Transport hazard classess	ADR/RID:8 IMDG:8 IATA:8
Packaging group	ADR/RID:III IMDG:III IATA:III
Environmental hazards	ADR/RID:No IMDG Marine pollutant:No IATA: No
Special precautions for user	Tunnel restriction code : (E)
Further information	No data available

15. Regulatory information

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Safety, health and environmental regulations/legislation specific for the 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 Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.
Chemical Safety Assessment	For this product a chemical safety assessment was not carried out

16. Other information

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Other Information	The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Rx Marine International has been advised of the possibility of such damages.
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