

1. Product and Company Identification

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Product Name Dimethyl Ether
Part Number RXSOL-61-6010-002

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
Dimethyl ether	115-10-6	204-065-8	46,07 g/mol	C ₂ H ₆ O

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 In case of leakage, eliminate all ignition sources. P410 + P403 Protect from sunlight. Store in a well-ventilated place
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. 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.

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	After swallowing immediately make victim drink water (two glasses at most). Consult a physician. 4.2 Most important
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 delaye	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 Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire
Further information	Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Hazardous combustion products	No data available
Advice for firefighters	In the event of fire, wear self-contained breathing apparatus
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 gas. Avoid substance contact. Ensure adequate ventilation. 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	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Stop flow of gas, move leaking cylinder to open air if without risk.
Reference to other sections	For disposal see section 13.

7. Handling and Storage

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Advice on protection against fire and explosion	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Incompatible materials	No data available
Hygiene measures	Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.
Advice on safe handling	For precautions see section 2.2.
Conditions for safe storage including any incompatibilities	No data available
Storage conditions	Tightly closed. Keep away from combustible materials and sources of ignition. Contents under pressure.
Storage class	Storage class (TRGS 510) 2A Gases

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	Flame retardant antistatic 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 contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: butyl-rubber Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject® (KCL 898)
Respiratory protection	Required when vapours/mists 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	Liquefied gas
Colour	Colorless
Odour	Alcohol-like
Odor Threshold	No data available
pH	7,0 at 10 g/l at 20 °C
Melting Point	-141 °C - lit.
Boiling Point	-24,8 °C - lit.
Flash Point	-41 °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	Upper explosion limit 27 %(V) Lower explosion limit 3,4 %(V)
Autoignition temperature	226 °C at 1.013 - 1.027 hPa
Decomposition temperature	No data available
Vapour pressure	5.333 hPa at 20 °C
Viscosity	No data available
Density	0,661 g/cm ³ at 20 °C
Relative Density	No data available
Specific Gravity	No data available
Partition coefficient	No data available
Explosive properties	No data available
Solubility	353 g/l at 24 °C at 1.013 hPa
Ignition temperature	No data available

10. Stability and reactivity

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Reactivity

No data available

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature)

Possibility of hazardous reactions

Violent reactions possible with Strong oxidizing agents Hydrogen halides Fluorine nitrogen dioxide hydrides Chlorine

Conditions to avoid

No data available

Incompatible materials

Various plastics

Hazardous decomposition products

In the event of fire: see section 5

11. Toxicological information

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Acute toxicity

LC50 Inhalation - Rat - male - 4 h - 164000 ppm - gas (OECD Test Guideline 403) Remarks: Behavioral:Ataxia. Behavioral:General anesthetic. Behavioral:Coma.

Skin corrosion/irritation

Skin - Rabbit No skin irritation - 24 h (OECD Test Guideline 404)

Serious eye damage/irritation

Eyes - Rabbit Causes serious eye irritation. (OECD Test Guideline 405)

Respiratory or skin sensitization

Maximization Test - Guinea pig negative (OECD Test Guideline 406) (in analogy to similar products) The value is given in analogy to the following substances: Methanol

Carcinogenicity

No data available

Germ cell mutagenicity

Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: Chromosome aberration test in vitro Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative Test Type: in vivo assay Species: Drosophila melanogaster Application Route: inhalation (gas) Method: OECD Test Guideline 477 Result: negative

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: PM4780000 Blurred vision, Headache, Dizziness, Convulsions, Asphyxia, Unconsciousness, Liver disorders, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. After absorption: Pneumonia respiratory paralysis bronchitis acidosis Gastrointestinal disturbance Vomiting agitation, spasms ataxia (impaired locomotor coordination) euphoria Circulatory collapse muscular weakness Lung edema Damage to: Kidney Liver The following applies to ethers in general: the uptake of large quantities is followed by narcosis, cardiovascular disorders. Nausea and vomiting after swallowing. Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

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Persistence and degradability

Biodegradability aerobic - Exposure time 28 d 5% - Not readily biodegradable. (OECD Test Guideline 301D)

Toxicity to fish	Semi-static test LC50 - <i>Poecilia reticulata</i> (guppy) - > 4,1 g/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - <i>Daphnia magna</i> (Water flea) - > 4,4 g/l - 48 h (ECHA)
Toxicity	No data available
Toxicity to bacteria	Static test IC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to algae	Static test ErC50 - <i>Chlorella vulgaris</i> (Fresh water algae) - 275 mg/l - 72 h (OECD Test Guideline 201)
Bioaccumulation potential	Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected
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	Discharge into the environment must be avoided.

13. Disposal considerations

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Product	Pressurised gas bottle dispose of only in empty condition!
Contaminated packaging	No data available
Waste treatment Method	No data available

14. Transport information

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UN number	ADR/RID:1033	IMDG:1033	IATA:1033
UN proper shipping name	ADR/RID:DIMETHYL ETHER	IMDG:DIMETHYL ETHER	IATA:DIMETHYL ETHER
Transport hazard class(es)	ADR/RID:2.1	IMDG:2.1	IATA:2.1
Packaging group	ADR/RID:-	IMDG:-	IATA:-
Environmental hazards	ADR/RID:No	IMDG:No	IATA:No
Special precautions for user	Tunnel restriction code (B/D)		
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	Take note of Dir 94/33/EC on the protection of young people at work
Chemical Safety Assessment	A Chemical Safety Assessment was not carried out for this substance.

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
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damages, howsoever arising, even if Rx Marine International has been advised of the possibility of such damages.