

1. Product and Company Identification

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Product Name DIMETHYL CARBONATE
Part Number RXSOL-19-1124-026

Company Details:

RX MARINE INTERNATIONAL
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2. Composition / Information on ingredients

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Synonyms	CAS	EC number	Weight %	Index-No.	Formula
DMC	616-38-6	210-478-4	90,08 g/mol	607-013-00-6	C3H6O3

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H225 Highly flammable liquid and vapor
P280 Wear protective gloves.P305 + P351 + P338	Wear eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Precautionary statements - response	P210Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking P233Keep container tightly closed P240 Ground and bond container and receiving equipment. P241Use explosion-proof electrical/ ventilating/ lighting/ equipment P242 Use non-sparking tools.P243Take action to prevent static discharges
Supplemental Hazard Statements	None
Other hazards	This substance/mixture contains no components considered to be either persistent,bioaccumulative and 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.
Skin Contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
Ingestion:	Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.
Notes to Physician	Treat symptomatically

If swallowed	After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.
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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Extinguishing media	Suitable extinguishing media
Flammability	NA
Flash Point	NA
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 Forms explosive mixtures with air at ambient temperatures.
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	Fire may cause the evolution of Sulphur oxides, nitrogen oxides.
Advice for firefighters	In the event of fire, wear self-contained breathing apparatus.
Protective Equipment	Use personal protective equipment.

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. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert For personal protection
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. Chemisorb®). 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 safe handling	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge
Advice on protection against fire and explosion	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge
Hygiene measures	Change contaminated clothing. Wash hands after working with substance For precautions see section 2.2
Precautions for safe handling	Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.
Conditions for safe storage, including any incompatibilities	Store in cool place. Keep container tightly closed in opened must be carefully resealed and kept upright to Storage class (TRGS 510): Flammable liquids.
Storage conditions	Keep container tightly closed in a dry and well-ventilated place. Keep

Storage conditions	away from heat and sources of ignition Air sensitive.
Storage class	Tightly closed. Dry
Specific end use(s)	Storage class (TRGS 510): 3: Flammable liquids
	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
Handling	Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, metals

8. Exposure controls and personal protection

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Occupational Exposure limit values	No data available
Biological limit values	No data available
Exposure controls	Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the riskelimination area
Engineering Control	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday
	at the end of workday.
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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	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace type of protective equipment must be selected type of protective equipment must be selected according to the concentration and amount of the
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). Splash contact Material: butyl-rubber Minimum layer thickness: 0,7 mm Break through time: 240 min Material tested:Butoject® (KCL 898)
Respiratory protection	Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds 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	Handle in accordance with good industrial hygiene and safety practice.
Control of environmental exposure	Do not let product enter drains. Risk of explosion.
Thermal hazards	No data available



9. Physical and chemical properties

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Physical state	Liquid
Colour	Colourless
Odour	No data available
Melting point/freezing point	Melting point/range: 2 - 4 °C - lit.
pH	No data available
Melting Point	Melting point/range: -78 °C - lit
Initial boiling point and boiling range	90 °C - lit.
Boiling Point	No data available
Flash Point	16 °C - closed cup
Evaporation Rate	Not Applicable
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	Viscosity, kinematic: No data available Viscosity, dynamic: 0,585 mPa.s at 25 °C - OECD Test Guideline 114
Upper/lower flammability or explosive limits	Upper explosion limit: 12,87 %(V) Lower explosion limit: 4,22 %(V) 114,7 g/l at 20 °C - OECD Test Guideline 105- completely soluble 24 hPa at 21,1 °C log Pow: 0,354 at 20 °C - Bioaccumulation is not expected 300 °C
Water solubility	None
Vapour pressure	DMSO (Slightly), Water (Slightly)
Partition coefficient	No information available.
Auto-ignition emperature	31,92 mN/m at 0 °C
Explosive properties	3,11 - (Air = 1.0)
Solubility	1,069 g/cm3 at 25 °C - lit
Ignition temperature	3,11 - (Air = 1.0)
Surface tension	No data available
Relative vapor density	
Density	
Relative vapor density	
Particle characteristics	

10. Stability and reactivity

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Reactivity	Vapors may form explosive mixture with air.
Stability	The product is chemically stable under standard ambient conditions (room temperature)
Possibility of hazardous reactions	Reducing agents Oxidizing agents Acids Bases potassium tert-butanolate
Conditions to avoid	Air Warming.
Incompatible materials	rubber, various plastics, Strong oxidizing agents
Hazardous Polymerization	In the event of fire: see section 5

11. Toxicological information

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Acute toxicity	LD50 Oral - Rat - male and female - > 5.000 mg/kg
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(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 5,36 mg/l - vapor

(OECD Test Guideline 403)

LD50 Dermal - Rabbit - male and female - > 2.000 mg/kg

Remarks: (ECHA)

Skin - Rabbit(Pentan-1-ol)

Result: Skin irritation - 4 h

(OECD Test Guideline 404)

Eyes - Rabbit Result: No eye irritation Remarks: (ECHA)

Freund's complete adjuvant test - Guinea pig Result: negative (OECD Test Guideline 406)

No data available

Inhalation. Ingestion.

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE Acute oral toxicity (LD50): 689 mg/kg [Rat].

May cause damage to the following organs: upper respiratory tract. Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation (lung irritant, lung sensitizer).

Test Type: Chromosome aberration test in vitro

Test system: lymphocyte

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: gene mutation test

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test

Species: Mouse

Application Route: Oral

Method: OECD Test Guideline 483

Result: negative

Test Type: Chromosome aberration test

Reproductive toxicity
Specific target organ toxicity - single exposure
Special Remarks on other Toxic Effects on Humans:

Species: Mouse
No data available
No data available
Acute Potential Health Effects: Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Eyes: Causes eye irritation. Ingestion: Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, and diarrhea. May be harmful if swallowed. Inhalation: Causes respiratory tract irritation. May cause chemical pneumonitis and pulmonary edema, inflammation, edema of bronchi and larynx. Chronic Potential Health Effects: Repeated or prolonged skin exposure may cause allergic reactions in sensitive individuals. Repeated or prolonged exposure by inhalation may affect respiration and metabolism.

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: FG0450000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

12. Ecological information

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Persistence and degradability	aerobic - Exposure time 28 d Result: 86 % - Readily biodegradable (OECD Test Guideline 301C)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Bioaccumulative potential	No data available
Toxicity to fish	static test LC50 - Danio rerio (zebra fish) - 530 mg/l - 96 h (Pentam-1-ol)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 341.21 mg/l - 48 h (Pentam-1-ol)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201) static test NOEC - Pseudokirchneriella subcapitata (green algae) - >= 100 mg/l - 72 h (OECD Test Guideline 201)
Eco Toxicity	Not Available
COD and BOD 5	Not Available
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
Assessment	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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Waste treatment methods

No data available

14. Transport information

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UN number	ADR/RID: 1161 IMDG: 1161 IATA: 1161
UN proper shipping name	ADR/RID: DIMETHYL CARBONATE IMDG: DIMETHYL CARBONATE IATA: Dimethyl carbonate
Transport hazard class(es)	ADR/RID: 3 IMDG: 3 IATA: 3
Packaging group	ADR/RID: II IMDG: II IATA: II
Environmental hazards	ADR/RID: No IMDG Marine pollutant: No IATA: No
Special precautions for user	Tunnel restriction code : (D/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.
Safety, health and environmental regulations specific for the product in question	European Inventory of Existing Commercial Chemical Substances (EINECS) -Listed. EC Inventory Listed. United States Toxic Substances Control Act (TSCA) Inventory- Listed. China Catalog of Hazardous chemicals 2015 Not- Listed. New Zealand Inventory of Chemicals (NZIoC) Listed. PICCS -Listed. Vietnam National Chemical Inventory -Listed. IECSC Listed. Korea Existing Chemicals List (KECL) -Listed.
National legislation	Seveso III: Directive 2012/18/EU of the European : FLAMMABLE LIQUIDS Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
DSCL (EEC)	R8- Contact with combustible material may cause fire. R20/22- Harmful by inhalation and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R42/43- May cause sensitization by inhalation and skin contact. S22- Do not breathe dust. S24- Avoid contact with skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37- Wear suitable gloves.
Other regulations	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
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