

1. Product and Company Identification

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Product Name D Limonene
Part Number RXSOL-19-8347-173

Company Details:

RX MARINE INTERNATIONAL
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2. Composition / Information on ingredients

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Product name	Cas No	EC No	Weight	Formula
(R)-(+)-Limonene	5989-27-5	227-813-5	136,23 g/mol	C ₁₀ H ₁₆

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H226 Flammable liquid and vapor. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H410 Very toxic to aquatic life with long lasting effects
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P331 Do NOT induce vomiting.
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	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. Call a physician immediately
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	Carbon dioxide (CO2) Foam 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. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures. 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	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	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
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	For precautions see section 2.2.
Conditions for safe storage including any incompatibilities	No data available
Storage conditions	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.
Storage class	Storage class (TRGS 510): 3: Flammable liquids
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are

Advice on general occupational hygiene

stipulated
No data available

8. Exposure controls and personal protection

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Exposure controls
Engineering Control
Eye/face protection

Personal protective equipment
No data available
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Body Protection
Skin protection

Flame retardant antistatic protective clothing.
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 EN 16523-1 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) 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 EN 16523-1 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: 120 min Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Respiratory protection

Recommended Filter type Filter A (acc. to DIN 3181) for vapours of organic compoundsThe 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
Colour
Odour
Odor Threshold
pH
Melting Point
Boiling Point
Flash Point
Evaporation Rate
Flammability (solid, gas)
Explosive limits
Upper/lower flammability or explosive limits
Autoignition temperature
Decomposition temperature
Vapour pressure
Viscosity
Density
Relative Density
Specific Gravity
Partition coefficient

Liquid, clear
Colorless
Characteristic
No data available
12,6 at 20 °C
-73,97 °C - OECD Test Guideline 102
176 - 177 °C
51 °C - closed cup
No data available
No data available
No data Available
Upper explosion limit 6,1 %(V) Lower explosion limit 0,7 %(V)
245 °C at 995,44 hPa
No data available
2 hPa at 24,85 °C
No data available
0,842 g/mL at 20 °C
0,8400 - 0,8440 at 20 °C
No data available
Log Pow 4,38 at 37 °C - Potential bioaccumulation

Explosive properties	No data available
Solubility	0,00569 g/l at 20 °C - OECD Test Guideline 105
Ignition temperature	No data available
Particle characteristics	No data available

10. Stability and reactivity

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Reactivity	Vapor/air-mixtures are explosive at intense warming.
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature)
Possibility of hazardous reactions	Violent reactions possible with: Strong oxidizing agents acids
Conditions to avoid	Heating.
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	LD50 Oral - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 423) LD50 Dermal - Rabbit - > 5.000 mg/kg (RTECS)
Skin corrosion/irritation	Skin - Rabbit Mild skin irritation - 4 h (OECD Test Guideline 404) Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Serious eye damage/irritation	Eyes - Rabbit No eye irritation (OECD Test Guideline 405)
Respiratory or skin sensitization	Local lymph node assay (LLNA) - Mouse May cause sensitization by skin contact. (OECD Test Guideline 429)
Carcinogenicity	This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
Germ cell mutagenicity	Test Type In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative Test Type: Ames test Test system: S. typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative Test Type: comet assay Species: Rat Application Route Oral 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. Repeated dose toxicity - Mouse - male and female - NOAEL (No observed adverse effect level) - 1.650 mg/kg - LOAEL (Lowest observed adverse effect level) - 3.300 mg/kg RTECS: GW6360000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Liver - Irregularities - Based on Human Evidenc

12. Ecological information

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Persistence and degradability	Biodegradability aerobic - Exposure time 28 d Result: 71,4 % - Readily biodegradable. (OECD Test Guideline 301B)
Toxicity to fish	Flow-through test LC50 - Pimephales promelas (fathead minnow) - 0,72

Toxicity to daphnia and other aquatic invertebrates	mg/l - 96 h (OECD Test Guideline 203) Semi-static test EC50 - Daphnia magna (Water flea) - 0,307 mg/l - 48 h (OECD Test Guideline 202)
Toxicity	No data available
Toxicity to bacteria	EC50 - Sludge Treatment - 3,94 mg/l (OECD Test Guideline 209)
Toxicity to algae	Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 0,32 mg/l - 72 h (OECD Test Guideline 201) static test EC10 - Pseudokirchneriella subcapitata (green algae) - 0,174 mg/l - 72 h (OECD Test Guideline 201)
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	Discharge into the environment must be avoided.

13. Disposal considerations

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Product	No data available
Contaminated packaging	No data available
Waste treatment Method	No data available

14. Transport information

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UN number	ADR/RID:2052	IMDG:2052	IATA:2052
UN proper shipping name	ADR/RID:DIPENTENE	IMDG:DIPENTENE	IATA:DIPENTENE
Transport hazard class(es)	ADR/RID:3	IMDG:3	IATA:3
Packaging group	ADR/RID:III	IMDG:III	IATA:III
Environmental hazards	ADR/RID:No	IMDG: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 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 we 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.

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