

## 1. Product and Company Identification

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Product Name N-Butanol  
Part Number RXSOL-19-1571-050

### 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
1-Butanol for analysis EMSURE ACS,ISO,Reag. Ph Eur	71-36-3	200-751-6	74,12 g/mol	C <sub>4</sub> H <sub>10</sub> O

## 3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H226 Flammable liquid and vapor. H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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. Immediately call in physician.
Eye Contact	Rinse out with plenty of water. Remove contact lenses
Swallowed	Make victim drink water (two glasses at most). Consult doctor if feeling

Skin Contact	unwell. 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	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 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	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	Work under hood. Do not inhale substance/mixture. Avoid generation of

Conditions for safe storage, including any incompatibilities	vapours/aerosols.
Storage conditions	No data available
Storage class	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Recommended storage temperature see product label.
Specific end use(s)	Storage class (TRGS 510) 3 Flammable liquids
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	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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: <a href="http://www.kcl.de">www.kcl.de</a> ). 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: <a href="http://www.kcl.de">www.kcl.de</a> ). Splash contact Material: butyl-rubber Minimum layer thickness: 0,7 mm Break through time: 30 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. 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	Colorless
Odour	Ethanollic
Odor Threshold	No data available
pH	7 at 70 g/l at 20 °C
Melting Point	-90 °C
Boiling Point	119 °C at 1.013 hPa - OECD Test Guideline 103
Flash Point	35 °C - Pensky-Martens closed cup - ISO 2719

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 11,2 %(V) Lower explosion limit 1,4 %(V)
Autoignition temperature	No data available
Decomposition temperature	No data available
Vapour pressure	< 10 hPa at 20 °C
Viscosity	Dynamic: 2,95 mPa.s at 20 °C
Density	0,811 g/cm <sup>3</sup> at 20 °C
Relative Density	No data available
Specific Gravity	No data available
Partition coefficient	Log Pow 1 at 25 °C - Bioaccumulation is not expected.
Explosive properties	No data available
Solubility	66 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	Risk of ignition or formation of inflammable gases or vapours with strong oxidising agents chromium(VI) oxide Exothermic reaction with Alkali metals Alkaline earth metals Aluminum strong reducing agents Acid chlorides
Conditions to avoid	Heating
Incompatible materials	Rubber, various plastics
Hazardous product decomposition	In the event of fire: see section 5

## 11. Toxicological information

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Acute toxicity	LD50 Oral - Rat - 790 mg/kg Remarks: Liver:Fatty liver degeneration. Kidney, Ureter, Bladder:Other changes. Blood:Other changes. (RTECS) LD50 Dermal - Rabbit - male - 3.430 mg/kg (OECD Test Guideline 402)
Skin corrosion/irritation	Skin - Rabbit Result Skin irritation - 2 h (ECHA) (Regulation (EC) No 1272/2008, Annex VI)
Serious eye damage/irritation	Eyes - Rabbit Irreversible effects on the eye (OECD Test Guideline 405) Remarks: (Regulation (EC) No 1272/2008, Annex VI)
Respiratory or skin sensitization	No data available
Carcinogenicity	No data available
Germ cell mutagenicity	Test Type Mutagenicity (mammal cell test): micronucleus. Test system: Chinese hamster lung cells Metabolic activation: without metabolic activation Result: negative Remarks: (ECHA) Test Type: In vitro mammalian cell 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: Micronucleus test Species: Mouse Application Route: Oral Method: OECD Test Guideline 474 Result: negative
Reproductive toxicity	No data available
Specific target organ toxicity-single exposure	Inhalation - May cause respiratory irritation.
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. drying, cracking of

## 12. Ecological information

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Persistence and degradability	Biodegradability aerobic - Exposure time 20 d Result: 92 % - Readily biodegradable. (ECHA)Ratio BOD/ThBOD 33 % (IUCLID)
Toxicity to fish	Static test LC50 - Pimephales promelas (fathead minnow) - 1.376 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - 1.328 mg/l - 48 h (OECD Test Guideline 202)
Toxicity	No data available
Toxicity to bacteria	Static test EC50 - Pseudomonas putida - 4.390 mg/l - 17 h (DIN 38421 TEIL 8)
Toxicity to algae	Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 225 mg/l - 96 h (OECD Test Guideline 201)
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	No data available
Other adverse effects	No data available

## 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:1120 IMDG:1120 IATA:1120
UN proper shipping name	ADR/RID:BUTANOLS IMDG:BUTANOLS IATA:BUTANOLS
Transport hazard classess	ADR/RID:3 IMDG:3 IATA:3
Packaging group	ADR/RID:III IMDG:III IATA:III
Environmental hazards	ADR/RID:No MDG 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
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 has been 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
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