Material Safety Data Sheet

Butyl Alcohol (TERT-) (RXSOL-19-1245-025)

1. Product and Company Identifaction

Product Name	Buty Alcohol (TERT-)
Part Number	RXSOL-19-1245-025

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Branch : Kandla, Mumbai , Chennai, Vizag, Kolkata, UAE , OMAN , CANADA and KENYA

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Fax	+91 22 27612100 :::AOH :0091 9821214367
Email	mail@rxmarine.com
Website	www.rxmraine.com

2. Composition / informationon ingredients

Chemical Name	CAS	EC number	Weight	Formula
Butyl alcohol	71-36-3	200-751-6	= 100 %	$C_4H_{10}O$

3. Hazards Identification

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.
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	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	None.
Supplemental Hazard Statements	None.
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

General advice	Show this material safety data sheet to the doctor in attendance.
If inhaled	After inhalation: fresh air. Call in physician.
Eye Contact	After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
Swallowed	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Skin Contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Inhalation	Remove patient to fresh air, keep warm and at rest and get medical assistance in necessary.
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.
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

Flammability	May be combustible at high temperature.
Flash Point	Higher than 93.3°C (200°F).
Suitable extinguishing media	Carbon dioxide (CO2) Foam Dry powder
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.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	Fire may cause the evolution of Sulphur oxides, nitrogen oxides.
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	Use personal protective equipment.
Specific Hazards Arising from the Chemical	Has a fire-promoting effect due to the release of oxygen. Ambient fire may liberate hazardous vapours.

6. Accidental Release Measures

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	Oxidizing material. Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Prevent entry into sewers, basements or confined areas dike if needed. Eliminate all ignition sources. Call for assistance on disposal.
Personal Protection	Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: Protective equipment see section 8.
Enviromental 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.

7. Handling and Storage

Advice on safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
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	Keep away from alkalis, strong oxidizing agents and metals. Provide containment walls of adequate capacity to hold any accidental spills.
Hygiene measures	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
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 stipulated

Advice on general occupational hygiene	Advice on safe handling Observe label precautions. Change contaminated clothing. Wash hands after working with substance.
Requirements for storage	Keep in cool and store under shade.

8. Exposure controls and personal protection

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, longterm	Inhalation	Local effects	310 mg/m3
Worker DNEL, longterm	Inhalation	Local effects	55 mg/m3
Consumer DNEL, longterm	oral	Systemic effects	

Predicted No Effect Concentration (PNEC)

Compartment	Value
Sea water	0,0082 mg/l
Sea sediment	0,0178 mg/kg
Fresh water	0,082 mg/l
Sewage treatment plant	2476 mg/l

Exposure controls	No specific additional engineering controls are required. Provide good natural or artificial ventilation.
Engineering Control	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
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: Nitrile rubber Minimum layer thickness: 0,4 mm Break through time: 480 min Material tested:Camatril® (KCL 730 / Aldrich Z677442, 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 EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Chloroprene Minimum layer thickness: 0,65 mm Break through time: 120 min Material tested:KCL 720 Camapren®
Respiratory protection	Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds The entrepeneur 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 entrepeneur 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

Physical state	Liquid, clear
Colour	Colorless
Odour	Ethanolic
Odor Threshold	Not Applicable
pH	7 at 70 g/l at 20 °C
Melting Point	-90 °C
Boiling Point	119 °C at 1.013

Flash Point	35 °C
Evaporation Rate	Not Applicable
Flammability (solid, gas)	No data available
Explosive limits	No Data Available
Upper/lower flammability or explosive limits	11,2 %(V) / 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/cm3 at 20 °C
Relative Vapour Density	2,56 at 20 °C - (Air = 1.0)
Freezing point	No data available
Specific Gravity	No data available
Partition coefficient	log Pow: 1 at 25 °C
Explosive properties	No data available
Solubility	66 g/l at 20 °C
Ignition temperature	No information available.
Particle characteristics	No data available

10. Stability and reactivity

Reactivity	Vapor/air-mixtures are explosive at intense warming.
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 Polymerization	In the event of fire: see section 5

11. Toxicological information

Acute toxicity	LD50 Oral - Rat - 790 mg/kg Remarks: Liver:Fatty liver degeneration. Kidney, Ureter, Bladder:Other changes. Blood:Other changes. (RTECS) Inhalation: No data available LD50 Dermal - Rabbit - male - 3.430 mg/kg (OECD Test Guideline 402)
Skin corrosion/irritation	Skin - Rabbit Result: Skin irritation - 2 h Remarks: (ECHA) Remarks: (Regulation (EC) No 1272/2008, Annex VI)
Serious eye damage/eye irritation	Eyes - Rabbit Result: Irreversible effects on the eye (OECD Test Guideline 405) Remarks: (Regulation (EC) No 1272/2008, Annex VI)
Respiratory or skin sensitization	No data available
Toxicity to Animal	WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE Acute oral toxicity (LD50): 689 mg/kg [Rat].
Toxic Effects on Human	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).
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	May cause respiratory irritation. May cause drowsiness or dizziness.

Special Remarks on other Toxi Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. May cause skin sensitization, an allergic reation, 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.
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. RTECS: EO1400000 drying, cracking of the skin, Skin irritation To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated .

12. Ecological information

Persistence and degradability	Biodegradability aerobic - Exposure time 20 d Result: 92 % - Readily biodegradable. Remarks: (ECHA) Ratio BOD/ThBOD 33 % Remarks: (IUCLID)
Bioaccumulative potential	Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l(n-butanol) Bioconcentration factor (BCF): 0,38
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 to algae	Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 225 mg/l - 96 h (OECD Test Guideline 201)
Toxicity to bacteria	Static test EC50 - Pseudomonas putida - 4.390 mg/l - 17 h (DIN 38421 TEIL 8)
Mobility in soil	No Information 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	No data available

13. Disposal considerations

Disposal methods	The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging	Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
Waste treatment Method	See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

UN number	ADR/RID: 1120 IMDG: 1120 IATA: 1120
UN proper shipping name	ADR/RID: BUTANOLS IMDG: BUTANOLS IATA: BUTANOLS
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 : (C/E)
Further information	Not classified as dangerous in the meaning of transport regulations.
Transport in bulk according to IMOinstruments	No data available

15. Regulatory information

Inventory status	Components are on the following inventories: Polymaleic acid: - US TSCA, Canadian DSL, EU EINECS, Australian AICS, Korean, Philippine PICCS and Chinese Xi irritant R 36/38 Irritant to eyes & skin R 41 Risk of serious damage to eyes S24/25 Avoid contact with skin and eyes S26/28 In case of contact eyes & skin, rinse with plenty water and seek medical advice Section 312/313: Not listed. Not listed under California proposition 65.
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.
Authorisations and/or restrictions on use	REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : n-butanol
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 Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS
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	A Chemical Safety Assessment has been carried out for this substance.

16. Other information

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 weassume 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. DISCLAIMER OF LIABILITY :The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.