Material Safety Data Sheet

Ethanol (RXSOL-19-1211-210)

1. Product and Company Identifaction

Product Name	Ethanol
Product Type	RXSOL-19-1211-210

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

Stock Point : Mumbai, Kandla, Chennai, Visakhapatnam, Kolkata, Fujairah, Muscat BARKA Oman

Phone	+91 22 27815541 / 42
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2. Composition / informationon ingredients

Chemical Name	CAS #	% by weight
Ethylalcohol 200 Proof	64-17-5	99.5

Toxicological Data on Ingredients: Ethyl alcohol 200 Proof: ORAL (LD50): Acute: 7060 mg/kg [Rat]. 3450 mg/kg [Mouse].VAPOR (LC50):Acute: 20000 ppm 8 hours [Rat]. 39000 mg/m 4 hours [Mouse].

3. Hazards Identification

Potential Acute Health Effects	Hazardous in case of skin contact (irritant), of eye contact (irritant), . Slightly hazardous in case of skin contact(permeator), of ingestion. Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.
Potential Chronic Health Effects	Slightly hazardous in case of skin contact (sensitizer)
Carcinogenic Effecets	Classified PROVEN by State of California Proposition 65 [Ethyl alcohol .Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol].
Mutagenic Effecets	Mutagenic for mammalian somatic cells. [Ethyl alcohol Mutagenic for bacteria and/or yeast. [Ethyl alcohol].
Treatogenic Effecets	Classified PROVEN for human [Ethyl alcohol .
Developmental Toxicity	Classified Development toxin [PROVEN] [Ethyl alcohol . Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof].The substance is toxic to blood, the reproductive system, liver, upper respiratory tract, skin, central nervous

4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes,keeping eyelids open. Cold water may be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear
Serious Ingestion	Not available.

5. Fire-fighting Measures

Flammability of the Product	Flammable.
Auto-Ignition Temperature	The lowest known value is 363°C (685.4°F) (Ethyl alcohol 200 Proof).
Flash Points	CLOSED CUP: 18.5°C (65.3°F).(estimated)
Flammable Limits	The greatest known range is LOWER: 3.3% UPPER: 19% (Ethyl alcohol 200 Proof)
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of metals, of acids, of alkalis.
Explosion Hazards in Presence of Various Substances	Slightly explosive in presence of open flames and sparks, of heat, of oxidizing materials, of acids. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water.
SMALL FIRE	Use DRY chemical powder.
LARGE FIRE	Use alcohol foam, water spray or fog.
Special Remarks on Fire Hazards	

Containers should be grounded. CAUTION	MAY BURN WITH NEAR INVISIBLE FLAME Vapor may travelconsiderable distance to source of ignition and flash back. May form explosive mixtures with air.Contact with Bromine pentafluoride is likely to cause fire or explosion.Ethanol ignites on contact with chromyl chloride.Ethanol ignites on contact with iodine heptafluoride gas.It ignites than explodes upon contact with nitrosyl perchlorate.Additon of platinum black catalyst caused ignition.(Ethyl alcohol 200 Proof)

Special Remarks on Explosion Hazards:
Ethanol has an explosive reaction with the oxidized coating around potassium metal.Ethanol ignites and then explodes on contact with acetic anhydride + sodium hydrosulfate (ignites and may explode), disulfuric acid + nitric acid, phosphorous(III) oxide platinum, potassium-tert-butoxide+ acids.Ethanol forms explosive products in reaction with the following compound : ammonia + silver nitrate (forms silver nitride and silver fulminate), iodine + phosphorus (forms ethane iodide), magnesium perchlorate (forms ethyl perchlorate), mercuric nitrate, nitric acid + silver (forms silver ulminate) silver nitrate (forms ethyl nitrate) silver(I) oxide + ammonia or hydrazine (forms silver nitride and silver fulminate), sodium (evolves hydrogen gas).Sodium Hydrazide + alcohol can produce an explosion.Alcohols should not be mixed with mercuric nitrate, as explosive mercuric fulminate may be formed.May form explosive mixture with manganese perchlorate + 2,2-dimethoxypropane.Addition of alcohols to highly concentrate hydrogen peroxide forms powerful explosives.Explodes on contact with calcium hypochlorite Vapor may explode if ignited in an enclosed area.Containers may explode when heated or involved in a fire.(Ethyl alcohol 200 Proof)

6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV.Check TLV on the MSDS and with local authorities.

7. Handling and Storage

Precautions	Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. 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 incom- patibles such as oxidizing agents, acids, alkalis, moisture.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 23°C (73.4°F).

8. Exposure controls and personal protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	
Ethyl alcohol 200 Proof	

TWA	1900 (mg/m3) from OSHA (PEL) [United States]
TWA	1000 (ppm) from OSHA (PEL) [United States]
TWA	1900 (mg/m3) from NIOSH [United States]
TWA	1000 (ppm) from NIOSH [United States]
TWA	1000 (ppm) [United Kingdom (UK)]
TWA	1920 (mg/m3) [United Kingdom (UK)]
TWA	1000 STEL: 1250 (ppm) [Canada]

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Physical state and appearance	Liquid.
Odor	Alcohol like. Mild to strong. Like wine or whiskey; Ethereal, vinous. Pleasant.
Taste	Burning. Pungent.
Molecular Weight	Not applicable.
Color	Clear Colorless.
pH (1% soln/water)	Neutral.
Boiling Point	The lowest known value is 78.5°C (173.3°F) (Ethyl alcohol 200 Proof). Weighted average: 79.58°C(175.2°F)
Melting Point	May start to solidify at -114.1°C (-173.4°F) based on data for: Ethyl alcohol 200 Proof.
Critical Temperature	The lowest known value is 243°C (469.4°F) (Ethyl alcohol 200 Proof).
Specific Gravity	Weighted average: 0.8 (Water = 1)
Vapor Pressure	The highest known value is 5.7 kPa (@ 20°C) (Ethyl alcohol 200 Proof). Weighted average: 5.53 kPa (@ 20°C)
Vapor Density	The highest known value is 1.59 (Air = 1) (Ethyl alcohol 200 Proof). Weighted average: 1.54 (Air = 1)
Volatility	Not available.
Odor Threshold	100 ppm
Water/Oil Dist. Coeff	Not available.

Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, methanol, diethyl ether, acetone.
Solubility	Easily soluble in cold water, hot water, methanol, diethyl ether. Soluble in acetone

10. Stability and reactivity

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, heat, sources of ignition.
Incompatibility with various substances	Reactive with oxidizing agents, acids, alkalis.
Corrosivity	Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Ethanol rapidly absorbs moisture from the air. Can react vigorously with oxiders.The following oxidants have been demonstrated to undergo vigorous/explosive reaction with ethanol: barium perchlorate, bromine pentafluoride, calcium hypochlorite, chloryl perchlorate, chromium trioxide, chromyl chloride,dioxygen difluoride, disulfuryl difluoride, fluorine nitrate, hydrogen peroxide, iodine heptafluoride, nitric acid nitrosyl perchlorate, perchloric acid permanganic acid, peroxodisulfuric acid, potassium dioxide, potassium perchlorate,potassium permanganate, ruthenium(VIII) oxide, silver perchlorate, silver peroxide, uranium hexafluoride, uranyl perchlorate.Ethanol reacts violently/expodes with the following compounds: acetyl bromide (evolves hydrogen bromide) acetyl chloride, aluminum, sesquibromide ethylate, ammonium hydroxide & silver oxide, chlorate, chromic anhydride, cyanuric acid + water, dichloromethane + sulfuric acid + nitrate (or) nitrite, hydrogen peroxide + sulfuric acid, iodine + methanol + mercuric oxide, manganese perchlorate + 2,2-dimethoxy propane,perchlorates, permanganates + sulfuric acid, potassium superoxide, potassium tert-butoxide, silver & nitric acid, silver perchlorate, sodium hydrazide, sulfuric acid + sodium dichromate, tetrachlorisilane + water. Ethanol is also incompatible with platinium, and sodium. No really safe conditions exist under which ethyl alcohol and chlorine oxides can be handled. Reacts vigorously with acetyl chloride (Ethyl alcohol 200 Proof)

Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

11. Toxicological information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 3632 mg/kg (Mouse) (Calculated value for the mixture).

Chronic Effects on Humans

CARCINOGENIC EFFECTS	Classified PROVEN by State of California Proposition 65 [Ethyl alcohol 200 Proof].Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol 200 Proof].
MUTAGENIC EFFECTS	Mutagenic for mammalian somatic cells. [Ethyl alcohol 200 Proof]. Mutagenic for bacteria and/or yeast. [Ethyl alcohol 200 Proof].

TERATOGENIC EFFECTS	Classified PROVEN for human [Ethyl alcohol 200 Proof].
DEVELOPMENTAL TOXICITY	Classified Development toxin [PROVEN] [Ethyl alcohol 200 Proof]. Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof].
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.

Special Remarks on Toxicity to Animals

Lowest Published Dose/Conc

LDL[Human] - Route	Oral; Dose: 1400 mg/kg
LDL[Human child] - Route	Oral; Dose: 2000 mg/kg
LDL[Rabbit] - Route	Skin; Dose: 20000 mg/kg (Ethyl alcohol 200 Proof)
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic) Causes adverse reproductive effects and birth defects (teratogenic) , based on moderate to heavy consumption.May cause cancer based on animal data.
Human	passes through the placenta, excreted in maternal milk. (Ethyl alcohol 200 Proof)

Special Remarks on other Toxic Effects on Humans

Acute potential health effects

Skin	causes skin irritation
Eyes	causes eye irritation
Ingestion	May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea, and alterations in gastric secretions. May affect behavior/central nervous system (central nervous system depression - amnesia, headache, muscular incoordination, excitation, mild euphoria, slurred speech, drowsiness, staggaring gait, fatigue,changes in mood/personality, excessive talking, dizziness, ataxia, somnolence, coma/narcosis, hallucinations,distorted perceptions, general anesthetic), peripherial nervous system (spastic paralysis)vision (diplopia).Moderately toxic and narcotic in high concentrations. May also affect metabolism, blood, liver, respiration(dyspnea), and endocrine system.May affect respiratory tract, cardiovascular(cardiac arrhythmias, hypotension), and urinary systems.
Inhalation	May cause irritation of the respiratory tract and affect behavior/central nervous system with symptoms similar to ingestion
Chronic Potential Health Effects	Skin: Prolonged or repeated skin contact may casue dermatitis, an allergic reaction.Ingestion: Prolonged or repeated ingestion will have similiar effects as acute ingestion. It may also affect the brain. (Ethyl alcohol 200 Proof)

12. Ecological information

Ecotoxicity	Not available.

BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic
Special Remarks on the Products of Biodegradation	Not available.

13. Disposal considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport information

DOT Classification	CLASS 3: Flammable liquid.
Identification	Ethanol (Ethyl alcohol 200 Proof) UNNA: 1170 PG: II
Special Provisions for Transport	Not available

15. Regulatory information

Federal and State Regulations	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Ethyl alcohol 200 Proof (in alcoholic beverage) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Ethyl alcohol (in alcoholic beverage)
Connecticut hazardous material survey	Ethyl alcohol
Illinois toxic substances disclosure to employee act	Ethyl alcohol
Rhode Island RTK hazardous substances	Ethyl alcohol
Pennsylvania RTK	Ethyl alcohol
New Jersey	Ethyl alcohol
TSCA 8(b) inventory	Water; Ethyl alcohol

Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CF 1910.1200).Health Hazard: 2 Fire Hazard: 3 Reactivity: 0 Personal Protection: h
National Fire Protection Association (U.S.A.)	Health: 2 Flammability: 3 Reactivity: 0 Specific hazard:
Protective Equipment	Gloves.Lab coat.Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

16. Other information

Other Special Considerations: Not available. 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 ScienceLab.com 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 ScienceLab.com has been advised of the possibility of such damages.