1. Product and Company Identifaction

www.rxmarine.com

Product Name	Ethanol
Part Number	RXSOL-19-1211-210
Trade name	Ethanol (Industrial, Absolute or Anhydrous, Light Rectified Extra Neutral and High Purity Extra Ne
Chemical family	Aliphatic Alcohol
Chemical name	Ethanol
Synonyms	Ethyl Alcohol, See Trade name
Chemical abstract No	64-17-5
Molecular Mass	46,08
NIOSH No	KQ 6300000
Hazchem code	2(S) E; 3(S) E
UN No	1170

Company Details:
RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
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Email	123@rxmarine.com
Website	www.rxmarine.com

2. Composition / Information on ingredients

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Hazardous components	Ethyl Alcohol (75.0 -99.9%v/v)
EEC classification	200 ? 578 ? 6 30
R Phrases	R11 (Highly Flammable)

3. Hazards Identification

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Classification of the substance	EU-GHS / CLP Flammable liquid Flam. Flam. Liq. 2
	Hazard Class and Category Code(s) Liq. 2 Serious eye Irritation Eye Irrit. 2
	EU-DSD / DPD Highly flammable R11
	Indication(s) of danger and R phrase(s)
Label elements EU-GHS / CLP	
Signal word	Danger
Hazard statement(s)	**IH225** Highly flammable liquid and vapour.
	H319 Causes serious eye irritation.
Precautionary statements	**P210:** Keep away from heat / sparks / open flames / hot surfaces ? No smoking.
	P233: Keep container tightly closed.
	P240: Ground/bond container and receiving equipment.

	P241: Use explosion-proof electrical / ventilating / lighting equipment.
	P242: Use only non-sparking tools.
	P243: Take precautionary measures against static discharge.
	P280: Wear protective gloves / protective clothing /eye protection.
	P264: Wash skin thoroughly after handling.
	P303+ P361+P353: If on skin or hair remove/ 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 Continue rinsing.
	P337+P313: If eye irritation persists: Get medical advice/attention.
	P370 + P378: In case of fire: Use powder, alcohol-resistant foam, lots of water, carbon dioxide for extinction.
	P403 + P235: Store in a well-ventilated place. Keep cool.
	P501: Disposal: Dispose of contents / container to a specialised waste disposal plant in accordance with local / regional
Main Hazard	Harmful if swallowed or inhaled. Possible aspiration hazard if swallowed (can enter lungs and cause damage). May be skin, eyes and respiratory tract. Over exposure may cause CNS depression. Possible reproductive hazard.
Flammability	Flash Point 12?C. Extremely flammable liquid (R11). Ignition temperature 425?C.
Chemical Hazard	Ethanol is a flammable liquid whose vapours can form ignitable and explosive mixtures with air at normal room tempera aqueous mixture containing 30% ethanol can produce a flammable mixture of vapour and air at 29?C, and even one 5% alcohol can produce a flammable mixture at 62?C.1 Ethanol reacts vigorously with a wide range of oxidizing mat chemicals2 .e.g. Disulphuryl Difluoride, Silver Nitrate, Bromine Pentafluoride, Potassium Perchlorate, Nitrosyl Perchl Chloride, Chloryl Perchloride, Uranyl Perchlorite, Chromium Trioxide, Fluorine Nitrate, Dioxygen Difluoride, Uranium Iodine Heptafluoride, Tetrachlorosilane, Permanganic acid, Nitric acid [the nitric acid fizz reaction used formall laboratory glassware should not be used3,5], Hydrogen Peroxide, Peroxodisulphuric acid, Potassium Dioxide, Soc Potassium Permanganate, Ruthenium (VIII) Oxide, Platinum, Potassium6 , Potassium tert Butoxide, Silver Oxide and
Biological Hazard	Ethanol is rapidly oxidized in the body to acetaldehyde, then to acetate, and finally to carbon dioxide and water; un-oxi excreted in the urine and expired in the air. 8,9
Reproductive hazard	Some evidence of foetotoxicity26-28 and teratogenicity29 has been observed in experimentalanimals treated with high d during gestation. Alcohol may induce spontaneous abortions, may impair fertility, may cause harm to the unborn child harm to breast fed babies. The reproductive hazards have been determined after repeated excessive consumption of effects are not likely to occur through exposure below the Occupational Exposure Limits in the working environment.
Health effects eyes	Moderately irritating. Exposure to liquid, vapours, fumes or mist may cause irritation. Direct contact may cause irri pain, corneal inflammation and possible corneal damage.
Health effects skin	Repeated or prolonged contact may result in defatting, redness, pain, itching, inflammation, cracking and possible secon Repeated skin contact may result in allergic skin reaction in a very small proportion of individuals.
Health effects ingestion	Large doses lead to alcohol poisoning while repeated ingestion can lead to alcoholism. Alcohol abuse and dependen profound effect on work performance and tendency to accidents at work.11-13 The presence of denaturants, e.g. Meth and benzene in industrial alcohol greatly increase the toxicity on ingestion. Ethanol drinking is also suspected of incre effect of other chemicals encountered in the laboratory and the workplace by inhibition of their metabolism or excretion Trichloroethane15, Xylene, Trichloroethylene and Dimethylformamide16, Benzene17 and Lead.18, 19 May cause nervous system effects. Effects may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, fa convulsions, loss of consciousness, coma, respiratory arrest and death. Severe acute intoxication may cause H Hypothermia and extensor rigidity. Prolonged or frequent contact may result in liver injury.
Health effects inhalation	Intoxicating if continuously inhaled for a long period of time. Occupational Exposure Limits (8-hour reference pe (1900mg/m3).30May cause respiratory tract irritation.
Carcinogenicity	Long-term consumption of alcoholic beverages demonstrates an increase in the occurrence of breast cancer and col Malignant tumours of the oral cavity, Pharynx, Larynx, Oesophagus and Liver is also causally related to the consumpti beverages.31 Some studies20, 21 have shown an excess incidence of laryngeal cancer over the expected from exposu alcohol, with Diethyl Sulphate probably being the causative agent
Mutagenicity	Ethanol has been found to be non- mutagenic in the Salmonella microsome test, 22 but some transient mutagenic cha observed in male, but not female, mice treated with rather large doses.23-25 Ethanol is mutagenic in man via its f Acetaldehyde. Acetaldehyde induces chromosomal aberrations, sister-chromatid exchanges and cross-links between DN
Neurotoxicity	Over exposure may cause Central Nervous System (CNS) depression

4. First Aid Measures

Product in eye	Flush immediately with water or neutral saline solu
Product on skin	Remove contaminated clothing and rinse contamin seek medical attention.
Product ingested	If victim is conscious, give 1-3 glasses of water or vomiting occurs, or when vomiting is induced, mo unconscious or semi ? conscious person vomit. Ke for substantial ingestions and/or gastrointestinal sy
Product inhaled	Remove the victim to fresh air. If not breathin resuscitation (CPR). If breathing is weak, irregular be beneficial. Keep affected person warm and at r

5. Fire-fighting Measures

Extinguishing media	Use dry chemical, alcohol foam or carbon dioxide be used to cool fire- exposed containers, structures ventilate area and use water spray to disperse gas leak. Use water to dilute spills and to flush them a sewers or other drainage systems.
Special Hazards	Flammable Flash point : 12?C - 17?C Flammability/explosion limits : 3, 3 ? 20%v/ Dangerous when exposed to heat or flame. Vapo room temperature. Vapour or gas may spread to sewer may cause fire or explosion hazard. Co concentrate in confined areas. Irritating or toxic s Hazardous composition products such as carbon ox
Protective clothing	Exposed fire fighters should wear approved self- full protective equipment.

6. Accidental Release Measures

Personal precautions	Exposed fire fighters should wear approved self- full protective equipment.
Enviromental Precautions	Prevent liquid entering sewers. Do not allow to ent
Small spills	Take immediate steps to stop and contain the spil and exposure to be spilled material. Eliminate all s small spills onto paper towels and evaporate in a area with plenty of water.
Large spills	Stop leak if you can do it without risk. Contact you and static; restrict access to area until completi equipment, use self-contained breathing apparatu should be absorbed on to sand, vermiculite or an e for disposal. Flush the contaminated area with ple of disposal

7. Handling and Storage

Suitable material	Ethanol is not corrosive to metals and may be stor Ethanol may also be stored in HDPE containers.
Handling/ storage precautions	Ground lines and equipment used during transfer

explosion. Store in approved flammable liquid st
material readily absorbs moisture. Store away fr
ventilated area away from sparks, flames and ot
electricity. Use non sparking electrical and ventil

8. Exposure controls and personal protection

Engineering Control

Engineering control methods to reduce hazardou
mechanical ventilation (dilution and local exhaus
conditions and process modification (e.g. subst
controls and personal protective equipment ma
ventilation system separate from other exhaust ven
sufficient replacement air to make up for air remo

Personal Protection Respiratory

If exposure limits are exceeded or if irritation is e
is generally acceptable. For high concentrations a
supplied respirator. Full respiratory protection sho

Exposure Limits:

Country
US (OSHA)
US (ACGIH)
Germany (MAK)*
UK (OES)
Slovak Republic
Czech Republic

Personal protection hand

Rubber (Butyl) or neoprene gloves are recommend

Personal protection eye

Prevent eye contact with this material. Wear
reasonably probable. Provide an eyewash station i
should not be worn when working with this chemic

Personal protection skin

Avoid skin contact. When working with this substa
protective suit/ overalls. Depending upon condition
face shield, apron, etc.

Other protection

Provide a safety shower immediately accessible to

9. Physical and chemical properties

Appearance	Colourless, volatile liquid
Odour	Characteristic pleasant odour
pH	Neutral
Boiling point	74?C - 80?C
Melting point	- 130?C to - 112?C
Flash point	12?C - 17?C
Flammability	3, 3 19% v/v
Auto-flammability	363?C
Explosive properties	Vapours can form explosive mixtures with air. All sources of ignition or static must be.
excluded. Oxidizing properties	None
Vapour pressure	59 mm Hg at 20?C
Density	785.3 kg/m3 809 kg/m3 at 25?C
Solubility water	Miscible with water in all proportions
Solubility solvent	Miscible with ether, methanol, chloroform and acetone
Solubility coefficient	1100 @ 37?C33

10. Stability and reactivity

Recativity	Stable at normal ambient temperature and pressure.

Chemical Stability	No decomposition if stoned and applied as directed.
Incompatible materials	See section 3 (chemical hazards).
Hazardous decomposition products	Incomplete combustion can generate carbon monoxide and carbon dioxide
Condition to Avoid	Overheating, flames, sources of ignition or static electricity. Oxidizing agents. Vapour/ air mixtures are explosive. K heat and sources of ignition.

11. Toxicological information

Acute toxicity	Short-term hazards Acute oral toxicity Ethanol : LD50 rat: 7,060 mg/kg; literature value Acute inhalation toxicity Ethanol : LC50 rat: 66,000 mg/l; literature value; 4 h Acute dermal toxicity Ethanol : LDLo rabbit: 20,000 mg/kg; literature value NOAEL - 2400 mg/kg (2%) - for rats LOAEL □ 3600 mg/kg (3%) - for rats
Skin and eye contact	Redness, pain (refer to Section 3 for further information)
Chronic toxicity	Refer to Section 3.
Carcinogenicity	Refer to Section 3
Mutagenicity	Refer to Section 3
Neurotoxicity	Refer to Section 3
Reproductive hazards	Refer to Section 3

12. Ecological information

Aquatic toxicity □ fish	In high concentration it harms fish and plankton; LC50 (fish, 96 hours) □ 15.3 mg/L (Pimephales promelas)
Aquatic toxicity □ daphnia	Threshold for deleterious effects in small crustaceans upwards of 7.800 mg/l; EC50 (Daphnia, 48 hours) □ 5012 mg/L dubia)
Aquatic toxicity □ algae	Toxic threshold concentration: Pseudomonas putida upwards of 6.500mg/l, Scenedesmus quadricauda upwards Microsystis aeruginosa upwards of 1.450ml/L
Biodegradability	IC50 (algae, 72 hours) □ 275 mg/L This product is readily biodegradable. Ethanol is widely recognized as being readily biodegradable in the environmen metabolite of and nutrient for microbes. There are no persistent.
Bio □ accumulation	This product in not expected to bio accumulate through the food chains in the environment. The very low log KO indicative of a low bioaccumulation potentia.
Mobility	This product is likely to volatize rapidly into the air because of its high vapour pressure. The product is poorly absorb sediments. Adsorption coefficient (KOC) solid phase/liquid phase = 1 (highly mobile)
German wgk	1 (low hazard to water)

13. Disposal considerations

Disposal methods	Only under conditions approved by local authorizat
Disposal of packaging	Empty containers may contain flammable and haza

14. Transport information

UN Number	1170
Substance Identity No	UN 1170
ADR/RID class	3
ADR/RID item No	3(b)
ADR/RID hazard identity No	3
IMDG shipping name	Ethanol
IMDG class	3
IMDG packaging group	II
IMDG marine pollutant	Not a marine pollutant
IMDG EMS No	F-E, S-D
IMDG MFAG table No	3074
IATA shipping name	Ethanol Solutions
IATA class	3
IATA subsidiary risk(s)	Flammable liquid
ADNR class	UN No.:1170; Class 3, Packaging Group II
UK description	Not available
UK- emergency action class	Not available
UK classification	Not available
Tremcard No	1170

15. Regulatory information

EEC hazard classification	200 578 - 6
Risk phases	R11
Safety phases	S2, S7, S9, S16, S33
National legislation	Hazardous Substances Act 15 of 1973 and Regulat Occupational Health and Safety Act 85 of 1993 (H
International Legislation	IATA Dangerous Goods Regulation (DGR) 59th E IMDG Code, International Maritime Dangerous G

16. Other information

Other Information

The information above is believed to be accur
available to us. However, we make no warran
implied, with respect to such information, and we
make their own investigations to determine
purposes. In no event shall be liable for any claims
or any special, indirect, incidental, consequential
Marine International has been advised of the po

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