

This Safety Data Sheet complies with the requirements of Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the registration, evaluation, authorisation and restriction of chemicals (REACH)

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product Name	RECTIFIED ETHYL ALCOHOL (min 96 % vol.) DENATURED
REACH Registration Number	01-2119457610-43-0186 substance name [200-578-6] ethanol
CAS-No.	64-17-5
WE number	200-578-6
Chemical formula	mixture, ethanol as a chief ingredient
Trade/generic/other names	Bioalkohol, Bioethanol, Ethanol, Industrial Ethanol, Denatured Alcohol, Fermentation Alcohol, Spirit
1.2. Relevant Product Uses	General purpose organic solvents, aerosols, cosmetics, pharmaceuticals anti-freezing agents, heat transfer agents, intermediates
1.3. Company Name	Prima Industries Ltd Unit 2, Chesterton Court, Rotherham, S65 1SJ tel. +44 1709 524162 fax. +44 1709 273591
1.4. Emergency Telephone Number	999 or 112, +44 1709 524162

2. Hazards Identification

2.1. Classification of the substance/mixture

Classification according to Regulation (EC) No. 1272/2008 (CLP)

Flam. Liquid (Category 2) H225

Eye Irrit. (Category 2) H319

Classification according to European Directive 1999/45/EC

F Highly Flammable ; R11

Full text of H-phrases, R-phrases: see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictograms:  GHS02  GHS07

Signal word: Danger

Hazard statement(s):

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation

Precautionary statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233: Keep container tightly closed.

P243: Take precautionary measures against static discharge. P264: Wash ... thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P403+P235: Store in a well ventilated place. Keep cool.

P303+P353+P361: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

European Labelling in Accordance with EC Directives 67/548/EEC and 1999/45/EEC

Hazard symbol(s):



F Highly Flammable Product

Risk Phrase(s):

R11 Highly flammable

product Safety Phrase(s):

S2 Keep out of reach of children

S7 Keep container tightly closed

S16 Keep away from sources of ignition- No smoking

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical

advice. S46 If swallowed, seek medical advice immediately and show this container or label.

2.3. Other hazards

This substance Ethanol (CAS 64-17-5) does not meet the PBT or vPvB criteria according to regulation 1907/2006 (REACH, annex XIII).

Other hazards which do not result in classification: None know.

3. Composition and Information on Ingredients

3.1. Substances not applicable

3.2 Mixtures

Component	% by weight	REACH Reference Number	CAS – No.	EC – No.	Classification Directive 1999/45/EEC	Classification Reg. (EC) No.1272/2008
Ethanol	93 – 96	01-2119457610-43-0186	64-17-5	200-578-6	F; R11	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation
A mixture of Methyl ethyl ketone MEK CAS: 78-93-3 EC: 201-159-0 (95-96%) and Methyl isopropyl ketone CAS: 563-80-4 EC: 209-264-3 (2.5-3%) and Ethyl sec-amyl ketone CAS: 541-85-5 EC: 208-793-7 (1.5-2%)	max 1,0	01-2119457290-43-xxxx			F; R11 Xi; R36 R66 R67	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation H336 May cause drowsiness or dizziness.

Full text of H-phrases, R-phrases: see section 16

4. Emergency and First Aid Measures

4.1. Description of first aid measures

General advice. In the first instance remove victim from exposure into fresh air immediately. Consult a physician. Show this safety data sheet to the doctor in attendance.

In case of exposure by inhalation. Place the injured in a lying position. If the victim is not breathing, give artificial respiration. Seek medical attention immediately. Consult a physician.

After Ingestion. Do not induce vomiting. Never give anything by mouth to an unconscious person. If victim is conscious rinse mouth with water. Ensure the lying position of the injured. Keep them warm and calm. Get medical assistance for all cases of exposure. Consult a physician.

In case of Eye Contact. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids (check for and remove contact lenses, if easily possible). Seek medical attention if required.

In case of Skin Contact. Promptly remove contaminated clothing under running water. Flush affected area with plenty of water and wash thoroughly with water and disinfectant soap. Wash clothing before reuse. If irritation occurs seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed.

Central nervous system depression, narcosis. Damage to the heart. Liquid or vapour may cause eye irritation. Inhalation of high vapour concentrations may cause transient irritation of the respiratory tract, headache, nausea.

4.3 Indication of any immediate medical attention and special treatment needed

No special measures required. Treat symptomatically.

5. Fire-fighting Measures

5.1. Specific fire and explosion hazards

Containers can build up pressure and may explode, if exposed to heat and/or fire. Use water spray to precipitate alcohol vapours. Cool all affected containers with flooding quantities of water.

5.2. Suitable Extinguishing Media. Carbon dioxide CO₂, dry chemical, powder, foam, chemical foam, alcohol-resistant foam, water spray. **Unsuitable:** Water jet.

5.3. Special Fire Fighting Procedures. For small fires, use dry chemical media, carbon dioxide (CO₂), water spray or alcohol-resistant foam. For large fires, use alcohol-resistant foam or water spray.

NOTE: Water may be ineffective. Do not use straight streams of water. Vapours may flow along surface to distant ignition source and flash back.

5.4. Special Protective Equipment for Fire-fighters. Wear self contained breathing apparatus and protective clothing resistant to high temperatures if necessary.

5.5. Further Information. Use water spray to cool unopened containers. Hazardous products of combustion are carbon oxides (CO, CO₂). Be aware of possibility of re-ignition. This product gives off flammable vapours which may form explosive mixtures with air. Vapours with a source of ignition can create a flash fire. Run off to sewer may cause fire or explosion hazard. Containers may explode in heat of fire. Use water spray to cool fire-exposed containers and to disperse vapour.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures. Always wear appropriate protective clothing and gloves to prevent skin exposure. Wear appropriate protective eyeglasses. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Use proper respiratory protection with a filter marked with brown colour and molecular filter P 2. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2. Environmental Precautions. Prevent further leakage or spillage. Spilled substance should be collected as soon as possible. Prevent contamination of soil and water. Do not let product enter drains. Notify the appropriate authorities of the health and environmental protection. Prevent waste material from entering drains. Prohibit the use of open flames. Flammable vapours can spread along the ground and collect in low or confined areas-ensure the seal of low-lying premises.

6.3. Methods and Materials for Containment and Cleaning up/ Disposal. Contain spillage, collect with non-combustible absorbent material (e.g. sand, vermiculite) and place in container for disposal. Dispose by incineration - waste disposal must be in accordance with appropriate local regulations. Collect and deposit in sealed containers for disposal. The large quantities of waste material, if unaltered by use, should be disposed of by the process of purification and recovery (distillation) at a permitted facilities.

Specific Recommendations. If dealing with the failure is difficult or impossible, advise trained emergency response personnel or specialized emergency services of the situation. Waste must be disposed of in accordance with local environmental control regulations. Avoid spillage from entering drains, sewers or water courses. If water pollution occurs, notify the appropriate authorities and users.

6.4. Reference to other sections. Refer to sections 8 and 13.

7. Handling and Storage

7.1. Precautions for safe handling. Avoid inhaling vapour. Avoid contact with eyes, skin and clothing. Persons with a tendency to skin allergies or respiratory diseases should not have been in contact with the product. Use standard precautions in handling chemicals. Avoid inhalation of vapour or mist. Suitable equipment for dealing with fires, spills and leaks must be readily available. Earth all equipment. Use explosion protected electrical equipment and lighting. Use closed-system transfers wherever possible. Earth (ground) lines and equipment used. Do not smoke eat or drink in areas of use and storage.

Fire and Explosions Prevention. Due to the high flammability of the product, strictly follow the special fire precautions required in any workplace. Protect containers from heating. Avoid contact with heat, sparks and flame. Keep them away from incompatibles such as metals, alkalis.

7.2. Conditions for safe storage, including any incompatibilities. Store only in original, properly labelled containers. Keep containers tightly closed. Store in a cool, dry, well-ventilated area away from ignition sources, oxidizers and incompatible substances. Take precautionary measures against static discharges. Use spark-proof tools and explosion proof equipment. Take precautions to prevent static electricity build-up when transferring contents. Facilities storing or utilizing this material should be equipped with explosion-proof ventilation equipment.

7.3. Specific end use(s) No data available

8. Exposure Controls and Personal Protection

8.1. Control parameters. Exposure Limits. Components with workplace control parameters.

Component	CAS-No.	TLV-TWA	WEL TWA	TLV-STEL	TLV-C
Ethyl Alcohol	64-17-5	1920 mg/m ³	1000 ppm	none listed	none listed
Methyl Ethyl Ketone	78-93-3	200 mg/m ³	none listed	none listed	none listed

DNELs and/or DMELs and PNECs values. No data available for the mixture.

Exposure estimation: DNEL – Derived No-Effect Level for human health
 DMEL – Derived Minimal Effect Level for human health
 PNEC - Predicted No-Effect Concentration to organisms in ecosystems

Ethanol (64-17-5)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	950 mg/m ³
Long-term - systemic effects, dermal	343 mg/kg bodyweight/day
Short-term - local, inhalation	1900 mg/m ³ /day (1000ppm)
Long-term - systemic effects, inhalation	950 mg/m ³ /day (500ppm)
Ethanol (64-17-5)	
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	950 mg/m ³
Long-term - systemic effects, oral	87 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	114 mg/m ³ /day
Long-term - systemic effects, dermal	206 mg/kg bodyweight/day
Ethanol (64-17-5)	
PNEC	
PNEC aqua (freshwater):	0.96mg/l
PNEC aqua (marine water):	0.79mg/l
PNEC aqua (intermittent release):	2.75mg/l
PNEC STP:	580mg/l
PNEC sediment (freshwater):	3.6mg/kgdw
PNEC sediment (marine water):	2.9mg/kgdw
PNEC soil:	0.63 mg/kgdw
PNEC oral:	0.72g/kg food

8.2. Exposure controls. Use of the basic principles of Industrial Hygiene will enable this material to be used safely. Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular worksite depend on how the material is used and on the potential for exposure. If engineering controls and work practices are not effective in preventing or controlling exposure, then suitable personal equipment, which is known to perform satisfactorily, should be used.

Use adequate general or local exhaust ventilation to keep airborne concentrations of vapour below the permissible exposure limits.

8.3. Personal Protective Equipment.

Eye/face protection. Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection. Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	clear, colourless liquid
Odour	characteristic, lower alcohol odour
pH	6-8
Boiling Point	78 °C at 101325Pa (data available for Ethanol)
Flash Point	13 °C
Flammability of the product	highly flammable
Explosive Properties	not explosive
Explosion Limit Lower	2,5 % vol.
Upper	13,5 % vol.
Relative Vapour Pressure	5726 Pa at 20°C
Relative Density	0,810 - 0,820 g/cm ³ at 20 °C
Solubility	
in water	completely soluble
in solvents	no data available
Coefficient: n-octanol/water	log Pow : -0.32
Viscosity	1,2 mPas at 20 °C
Evaporation Rate	no data available
Melting/Freezing Point	-114 °C
Auto-ignition Temperature	363 °C at 101325Pa
Oxidising properties	not oxidising

9.2 Other safety information no data available

10. Stability and Reactivity Data

No data is available on the product itself. Data available for Ethanol (CAS 64-17-5).

10.1 Reactivity. On combustion, forms: carbon oxides (CO and CO₂).

10.2. Chemical Stability. The product is stable under normal temperature and pressures. Product highly flammable. Vapours can form an explosive mixture with air. Keep containers tightly closed. Provide low temperature storage. Containers may explode at high temperatures.

10.3 Possibility of hazardous reactions No hazardous reactions anticipated

10.4. Conditions to Avoid. High temperatures. Proximity to sources of ignition. Excess heat, flames and sparks. Leaks package. Lack of proper ventilation.

10.5. Materials to Avoid. Incompatible materials. Strong oxidising agents. Alkali metals. Oxides of alkali metals. Ammonia, Peroxides. Strong mineral acids, oxidising agents. Aluminium at higher temperatures

10.6. Hazardous Decomposition Products. Stable under normal conditions. Hazardous decomposition products formed under fire conditions- Carbon Monoxide, Carbon Dioxide.

11. Toxicological Information

No data is available on the product itself. Data available for Ethanol (CAS 64-17-5).

11.1 Information on toxicological effects.

Acute toxicity Available data indicates that classification criteria are not met.

Ethanol (64-17-5)	
Oral (OECD401 equivalent): Rat LD50:	6,2 – 15g/kgbw
Dermal RatLD50	15800 mg/kg
Inhalation (OECD403 equivalent): Rat LC50 (4hr)	> 50 mg/l

Skin corrosion/irritation Available data indicates that classification criteria are not met.

Serious eye damage/eye irritation Studies according to OECD guideline 405 generally cause moderate eye irritation. All effects disappear within 8-14 days. The level of response is insufficient to trigger classification under directive 67/548 but is sufficient in terms of conjunctival response to require classification as a category 2 irritant under regulation 1272/2008.

Respiratory or skin sensitization Available data indicates that classification criteria are not met.

Germ cell mutagenicity : Available data indicates that classification criteria are not met. **Carcinogenicity** : Available data indicates that classification criteria are not met.

Reproductive toxicity: In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Foetal Alcohol Syndrome in the offspring causing reduced birth weight and physical and mental defect to occur. There is no evidence that such effects might be caused by exposures other than direct ingestion of alcoholic drinks. Blood ethanol concentrations resulting from ethanol exposure by any route other than deliberate and repeated oral consumption are unlikely to reach levels associated with reproductive or developmental effects. From the available data, it can be concluded that it is impossible to reach the doses of ethanol required to produce any sort of adverse reproductive response other than by repeated oral consumption of large amounts of ethanol, doses normally only associated with problem drinking, and therefore classification for reproductive or developmental toxicity in the context of a chemical substance is not appropriate or warranted.

STOT - Specific target organ toxicity (single exposure) : No specific target organ effects observed following single exposure.

STOT - Specific target organ toxicity (repeated exposure): Effects are only seen at doses well above the levels that would require classification.

11.1. 5. Routes of Entry or Exposure. Inhalation is the most likely route of exposure during normal use. Dermal uptake only likely under extended exposure under occluded conditions. Substance is readily absorbed following ingestion.

11.1.6. Signs and Symptoms of Exposure.

INGESTION: Swallowing may have the following effects: central nervous system depression, nausea/vomiting, symptoms similar to alcoholic beverage intoxication. May cause liver and kidney damage.

INHALATION: Inhalation of high vapour concentrations may cause transient irritation of the respiratory tract, headache, nausea.

11.1.7. Potential, Acute and Chronic Health Effects. Delayed effects not expected

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

12. Ecological Information

12.1. Toxicity. Ethanol (CAS-No.64-17-5):

FISH: LC50 (96hr) *Salmo gairdneri*: 13g/l;

Pimephales promelas: 13.5, 14.2 and 15.3g/l.

INVERTEBRATES FRESHWATER

EC50 (48hr) *Daphnia Magna*: 12.34g/l; NOEC (reproduction, 21 days): >10mg/l.

Ceriodaphnia dubia: EC50 (48hrs): 5.012g/l; NOEC (reproduction, 10 days): 9.6mg/l.

Palaemonetes pugio NOEC (developmental, 10 days): 79mg/l.

INVERTEBRATES SALTWATER

EC50 (24hr) *Artemia salina* 23.9, >10g/l;

EC50 (48hr) *Artemia salina* nauplii: 857mg/l

AQUATIC ALGAE FRESHWATER:

Chlorella vulgaris, 72hr: EC50 275mg/l, EC10 11.5mg/l;

Selenastrum capricornutum, 72hr, EC50: 12.9g/l, EC10=0.44g/l;

Chlamydomonas eugametos, 48hr, EC50: 18g/l, NOEC=7.9g/l

AQUATIC ALGAE SALTWATER:

Skeletonema costatum, NOEC (5 days): 3.24g/l.

12.2. Persistence and degradability. The product is readily biodegradable. Substance is expected to degrade readily in sewage treatment plants.

12.3. Bioaccumulative potential. Log. P(w/o): -0,32. Based on the partition coefficient, the product has a low bioaccumulation potential. No ecological problems are to be expected when the product is handled and used with due care and attention. Product is not expected to bioaccumulate.

12.4. Mobility in soil. No data is available on the product itself. Data available for Ethanol. If released to air or water the product will disperse rapidly. If released to soil it will evaporate at a rapid rate. The product is volatile and water soluble. If released to the environment it will partition to air and water. The product is poorly absorbed on to soil or sediments.

12.5. Results of PBT and vPvB assessment. No data available. Substance Ethanol (CAS 64-17-5), as a main component of the mixture, does not meet the PBT and vPvB criteria. Substance is neither carcinogenic, mutagenic nor teratogenic.

12.6. Other adverse effects No other adverse effects known.

13. Waste Disposal Considerations

Waste Classification. Contaminated water. Other absorbent materials. Contaminated packaging.

13.1. Waste Disposal/Treatment Method.

Product disposal: Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. If correctly incinerated this material will decompose to carbon dioxide and water only.

Container disposal: Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers

Proceeding in Case of Release or Spill of Substance. Waste water dispose in the biological waste water treatment plant. Contact your local permitted waste disposal site for permissible treatment. Waste material should be disposed of in an approved incinerator or in a designated landfill site, in compliance with all local regulations.

Regulation of Hazardous Waste. Waste must be disposed of in accordance with local environmental control regulations. Comply with local regulations on reporting releases.

14. Transport Information

	Land transport (ADR/RID)	Marine transport (IMDG)	Air transport ICAO/IATA
14.1. UN Number	1170	1170	1170
14.2. Class	3	3	3
14.3. Classification code	F1	F1	F1
14.4. Proper shipping name and description	Ethyl Alcohol, Ethanol and Ethanol Solution		
14.5. Chemical name	Ethanol	Ethanol	Ethanol
14.6. Packing group	II	II	II
14.7. Labels	Risk label: 3	Risk label: 3	Risk label: 3
14.8. Environmental hazards	No	Marine pollutant: No	No

15. Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU- Regulations

1. Commission Regulation (EC) 1907/2006 of the European Parliament and the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as amended.
2. CLP - Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures as amended.

15.2. Chemical Safety Assessment. Chemical assessment has not been carried out for this product as a mixture. Chemical assessment has been carried out for substance Ethanol (CAS 64-17-5) main component of the mixture.

16. Other Information

16.1. Classifications/Text of H-code(s) and R-code(s) mentioned in Section 2 and 3.

Abbreviations: BMDL10 = Benchmark dose level of 10%

EC50 = Concentration having a 50% effect

LD50 = Dose causing 50% deaths

PBT = Persistent, Bioaccumulative, Toxic

vPvB = very persistent, very bioaccumulative.

NO(A)EL/C = No (adverse) effect level/concentration

OECD = Organisation for economic co-operation and development

DNEL – Derived No- Effect Level for human health

DMEL – Derived Minimal Effect Level for human health

PNEC - Predicted No-Effect Concentration to organisms in ecosystems

Full classification: Flam. Liquid 2, Flammable liquid category 2
Eye Irrit 2, Eye irritant category 2.

Full Hazard phrases: H225 Highly flammable liquid and vapour
H319 Causes serious eye irritation
H336 May cause drowsiness or dizziness.

Full Risk phrases: R11 Highly flammable product
R36 Irritating to eyes.
R66 Repeated exposure may cause skin dryness or cracking
R67 Vapours may cause drowsiness and dizziness.
R20/22 Harmful by inhalation and if swallowed
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

16.2. Sources of data: based on data in REACH registration dossier of Ethanol (CAS 64-17-5), the IUCLID dossier (IUCLID chapter 2.1. – 11), the Chemical Safety Report (CSR) for Ethanol (CAS 64-17 -5) and Guidance on Safe Use.

16.3. Training Programs. The training for operators of the loading and reloading equipment is required .

16.4. Changes to SDS from previous issue date are due to the following:

Update to: REACH Registration Dossier content

16.5. Further information. The information provided on this SDS is based on the present state of our knowledge and is believed to be correct and represents the best information currently available to us. The information given is intended as a guidance for safe handling, storage, transportation, disposal and for the requirements of the health, safety and environmental protection only and does not represent any guarantee of properties or quality specification of the product. Prima Industries Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.