

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name	ETHANOL
CAS-No.	64-17-5
Product code	05S0010, 05S0050

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for analysis and production.
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1.3 Details of the supplier of the safety data sheet

Company	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
Telephone number	(662) 613-7911-4
Fax number	(662) 613-7915

1.4 Emergency Telephone Number

Emergency phone	(662) 613-7911-4
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225

Eye irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H225

Highly flammable liquid and vapour.

H319

Causes serious eye irritation.

Precautionary statement(s)

Precautionary statement(s)

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233

Keep container tightly closed.

P240

Ground and bond container and receiving equipment.

P242

Use non-sparking tools.

P243

Take action to prevent static discharges.

P264

Wash hand thoroughly after handling.

P280

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

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.
 P337 + P317 If eye irritation persists: Get medical help.
 P403 + P235 Store in a well-ventilated place. Keep cool.

2.3 Other hazards None

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms Ethyl alcohol Denatured, Denatured alcohol, Ethanol Denatured.

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
64-17-5	200-578-6	603-002-00-5	C ₂ H ₅ OH	46.07 g/mol	<=100

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
Ethanol		
CAS-No 64-17-5 EC-No 200-578-6 EC-Index-No 603-002-00-5	<=100%	Flammable liquids (Category 2), H225 Eye irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Denatured

Denatoniumbenzoate

Synonyms N,N-diethyl-N-[2-(2,6-dimethylphenylamino)-2-oxoethyl]-Benzylammonium benzoate

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
3734-33-6	223-095-2	-	C ₂₈ H ₃₄ N ₂ O ₃	446.5 g/mol	<1

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
Denatoniumbenzoate		
CAS-No 3734-33-6 EC-No 223-095-2 EC-Index-No -	<1%	Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 4), H332

Tert-Butyl alcohol

Synonyms 2-Methyl-2-propanol, Trimethyl carbinol, tert-Butanol

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
75-65-0	200-889-7	603-005-00-1	C ₄ H ₁₀ O	74.12 g/mol	0.15 - 0.3

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
Tert-Butyl alcohol		
CAS-No 75-65-0 EC-No 200-889-7 EC-Index-No 603-005-00-1	0.15 - 0.3%	Flammable liquids (Category 2), H225 Acute toxicity, Inhalation (Category 4), H332 Eye irritation (Category 2), H319 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.
Eye contact	If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Immediately make victim drink water (two glasses at the most). Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed

Not Available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguish with carbon dioxide, dry chemical, foam or water. In the event of fire, cool tanks with water spray.

5.2 Special hazards arising from the substance or mixture

Vapors may form explosive mixture with air at ambient temperature. Flash back possible over considerable distance.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

5.4 Further information

Standard procedure for chemical fires. Take measures to prevent electrostatic charging. Prevent firefighting water from entering surface water or groundwater.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and materials for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel or chemical absorbent pads). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

6.4 Reference to other sections

For disposal see **Section 13**.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry, cool and well ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

Application Area	Health Effects	Exposure	Value
Worker	Acute Local effects	Inhalation	1900 mg/m ³
Worker	Long-term Systemic effects	Inhalation	950 mg/m ³
Worker	Long-term Systemic effects	Skin contact	343 mg/kg Body weight
Consumer	Acute Local effects	Inhalation	950 mg/m ³
Consumer	Long-term Systemic effects	Ingestion	87 mg/kg Body weight
Consumer	Long-term Systemic effects	Inhalation	114 mg/m ³
Consumer	Long-term Systemic effects	Skin contact	206 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

Compartment	Value
Aquatic intermittent release	2.75 mg/l
Fresh water	0.96 mg/l
Fresh water sediment	3.6 mg/kg
Marine water	0.79 mg/l
Oral	720 mg/kg
Sewage treatment plant	580 mg/l
Soil	0.63 mg/kg

8.2 Exposure controls

Appropriate engineering controls

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

Individual protection measures (Personal protective equipment, PPE)

Eye/face protection

Goggles giving complete protection to eyes.

Skin protection

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from butyl rubber material.
- Splash contact wears gloves from nitrile rubber material.

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

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter A (EN 141 or EN 14387).

Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance: Form	Liquid
: Color	Colorless
Odour	Alcohol-like
Odour Threshold	Not Available
pH	7.0 at 20°C
Melting point/range	-114.5 °C
Boiling point/range	78.3 °C at 1013 hPa
Flash point	12 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	3.5 % (V)
upper	15 % (V)
Vapor Pressure	59 hPa at 20°C
Relative Vapor Density	1.6
Density	0.790 g/ml at 20°C
Water solubility	Soluble at 20°C
Partition coefficient (n-octanol/water)	log Pow: -0.32
Auto-Ignition temperature	425 °C
Decomposition Temperature	Not Available
Viscosity	1.2 mPa.s at 20°C
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

SECTION 10: Stability and reactivity**10.1 Reactivity**

Heat sensitive/decomposition.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with chlorine, strong oxidizing agents, nitric acid, calcium hypochlorite, halogen oxides, disulphur difluoride, acetic anhydride + salts + acids, isocyanates, potassium, potassium dioxide, potassium permanganate/sulfuric acid, sodium, sodium hypochlorite, sodium peroxide, perchlorates, peracids, perchloro nitrile, mercury nitrate, oxygen (liquid), sulfuric acid + hydrogen peroxide, silver/nitric acid, silver nitrate, silver nitrate/ammonia, silver oxide/ammonia, nitrogen dioxide, conc. hydrogen peroxide.

The substance can react dangerously with alkali/alkaline earth metals, fluorine, reducing agents, acetylene bromide, acetylene chloride, barium perchlorate, bromine trifluoride, chromium trioxide, chromyl chloride, oxiran, iodine heptafluoride, potassium tert.-butoxide, lithium hydride, phosphorus trioxide, platinum black, nitric acid/potassium permanganate, acid anhydrides, acids, uranium hexafluoride, zirconium(IV)-chloride, zirconium(IV)-iodide

10.4 Conditions to avoid

Moisture, heat, flames and sparks.

10.5 Incompatible materials

Alkali metals, alkaline earth metals, alkali oxides, strong oxidizing agents, halogen-halogen compound, chromyl chloride, ethylene oxide, fluorine, perchlorates, potassium permanganate, sulfuric acid, perchloric acid, permanganic acid, oxides of phosphorus, nitric acid, nitrogen dioxide, uranium hexafluoride, hydrogen peroxide, chromium(VI) oxide.

Unsuitable working materials: various plastics, rubber.

10.6 Hazardous decomposition products

Carbon monoxides, Carbon dioxides (Hazardous decomposition products from under fire condition).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LC₅₀ (inhalation, rat): > 95.6 mg/l /4h

LD₅₀ (oral, rat): 6200 mg/kg

Acute oral toxicity

Symptoms: nausea and vomiting

Acute inhalation toxicity

Slight mucosal irritations.

Skin corrosion/irritation

Slight irritant

Serious eye damage/eye irritation

Slight irritant

Respiratory or skin sensitization

Sensitisation test: Magnusson and Kligman is negative.

Germ cell mutagenicity

Bacterial mutagenicity; Salmonella typhimurium is negative.

Carcinogenicity

Not Available

Reproductive toxicity

Not Available

Teratogenicity

Not Available

Specific target organ toxicity (STOT) - single exposure

Not Available

Specific target organ toxicity (STOT) - repeated exposure

Not Available

Aspiration hazard

Not Available

Further information

After absorption of large quantities; dizziness, inebriation, narcosis, respiratory paralysis.
The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish	LC ₅₀ L.idus: 8140 mg/l /48h.
Toxicity to daphnia and other aquatic invertebrates	EC ₅₀ Daphnia magna: 9268-14221 mg/l/48h
Toxicity to algae	IC ₅ Sc.quadricauda: 5000 mg/l /7d
Toxicity to bacteria	EC ₅ Ps. Putida: 6500 mg/l /16d.

12.2 Persistence and degradability

Biodegradability	94% Readily biodegradable
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12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water)	log Pow: -0.32 (experimental). No Bioaccumulation (log P o/w <1).
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12.4 Mobility in soil

Not Available

12.5 Other adverse effects

Biological effects: In high concentrations; Harmful effect on aquatic organisms. When used properly, no impairments in the function of waste water treatment plant are to be expected.
Do not allow to enter waters, waste water or soil.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: Transport information**Land Transport (ADR/RID)**

UN Number	1170
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UN proper shipping name	ETHANOL
Transport hazard class(es)	3
Packing group	II
Environmental hazards	No
Special precautions for user	Yes

Sea transport (IMDG)

UN Number	1170
UN proper shipping name	ETHANOL
Transport hazard class(es)	3
Packing group	II
Marine pollutant	No
Special precautions for user	Yes
EmS	F-E S-D

Air transport (IATA)

UN Number	1170
UN proper shipping name	ETHANOL
Transport hazard class(es)	3
Packing group	II
Environmental hazards	No
Special precautions for user	No

River transport (AND/ADNR)

(Not examined)

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

Not Available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3**

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation

Recommended restrictions

Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

Reference

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany,
Source: IFA for Databases on hazardous substances (GESTIS).

Further information

Contact to RCI Labscan Limited.

Revision Date

27/02/2023

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.