

Classified as hazardous according to criteria of EPA New Zealand

## Section 1 - Identification

Product Name **Ethanol, 100%**

CAS-No 64-17-5

Synonyms Ethyl alcohol; Absolute ethanol

Product Code	CSA05004G; CSA05004P; CSB05004G; CSB05004P; CSA05004STR; CSA05004GSR
Address	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
Emergency Tel.	CHEMTREC® 09 980 6780 or +64 9 980 6780
Telephone / Fax Numbers	Tel: 09 980 6700 Fax: 09 980 6788
E-mail address	NZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

## Section 2 - Hazard(s) Identification

### Classification under Work Safe New Zealand

3.1B - Flammable liquids: high hazard  
 6.4A - Substances that are irritating to the eye

Classified as hazardous according to criteria of EPA New Zealand

HSNO Approval Number HSR001144

### GHS Classification

#### Physical hazards

Flammable liquids

Category 2

#### Health hazards

Serious Eye Damage/Eye Irritation

Category 2

#### Environmental hazards

Based on available data, the classification criteria are not met

### Label Elements



Signal Word

Danger

**Hazard Statements**

H225 - Highly flammable liquid and vapor

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 non-sparking tools

P243 - Take precautionary measures against static discharge

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handling

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear eye protection/ face protection

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

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

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

P308 + P313 - IF exposed or concerned: Get medical advice/attention

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information**

No information available

## Section 3 - Composition and Information on Ingredients

Component	CAS-No	Weight %
Ethyl alcohol	64-17-5	99-100

## Section 4 - First Aid Measures

<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>General Advice</b>	If symptoms persist, call a physician.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to

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protect themselves and prevent spread of contamination.

**First Aid Facilities**

Eyewash, safety shower and washroom.

**Most important symptoms and effects**

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Notes to Physician**

Treat symptomatically. Symptoms may be delayed.

## **Section 5 - Fire Fighting Measures**

**Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

**Extinguishing media which must not be used for safety reasons**

Do not use a solid water stream as it may scatter and spread fire.

**Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

**Specific Hazards Arising from the Chemical**

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

**Special protective equipment and precautions for fire fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## **Section 6 - Accidental Release Measures**

**Emergency procedures**

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions**

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

**Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

## **Section 7 - Handling and Storage**

**Precautions for Safe Handling**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

**Conditions for Safe Storage, Including any Incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Flammables area. Keep away from heat, sparks and flame.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

AS 1940-2004 - The storage and handling of flammable and combustible liquids

## Section 8 - Exposure Controls and Personal Protection

### Exposure limits

**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

Component	New Zealand WEL
Ethyl alcohol	TWA: 1000 ppm TWA: 1880 mg/m <sup>3</sup>

### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Butyl rubber, Neoprene.	> 480 minutes	0.38 mm - 0.56 mm	AS/NZS 2161	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
PVC	> 480 minutes	0.45 mm		
Viton (R)	< 60 minutes	0.18 mm		
	> 480 minutes	0.7 mm		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### Skin and body protection

Long sleeved clothing

#### Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

#### Recommended Filter type:

Organic gases and vapours filter Type A Brown conforming to EN14387 (or AUS/NZ equivalent)

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

## Section 9 - Physical and Chemical Properties

### Information on basic physical and chemical properties

#### Appearance Physical State

Clear, Colorless  
Liquid

#### Odor

Alcohol

Odor Threshold	No data available	
pH	7 @ 20°C	10g/l aq.sol
Melting Point/Range	-114 °C / -173.2 °F	
Softening Point	No data available	
Boiling Point/Range	78 °C / 172.4 °F	
Flash Point	13 °C / 55.4 °F	<b>Method -</b> No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	<b>Lower</b> 3.3 vol % <b>Upper</b> 19 vol %	
Vapor Pressure	No data available	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	0.785 g/cm3 @20°C	
Bulk Density	Not applicable	Liquid
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	<b>log Pow</b>	
Ethyl alcohol	-0.32	
Autoignition Temperature	363 °C / 685.4 °F	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	Vapors may form explosive mixtures with air
Oxidizing Properties	No information available	
<b>Other information</b>		
Molecular Formula	C2 H6 O	
Molecular Weight	46.07	
VOC Content(%)	100% (Organic Carbon (by mass) = 52.1 %) (EC/1999/13)	

## Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Hygroscopic.
Conditions to Avoid	Incompatible products, Heat, flames and sparks, Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents, Strong acids, Acid anhydrides, Acid chlorides.
Hazardous Decomposition Products	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ).
Hazardous Polymerization	Hazardous polymerization does not occur.

## Section 11 - Toxicological Information

### Information on Toxicological Effects

#### Product Information

##### (a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl alcohol	LD50 = 10470 mg/kg OCED 401 (Rat)		LC50 = 117-125 mg/l (4h) OECD 403 (rat)

	3450 mg/kg ( Mouse )		20000 ppm/10H (rat)
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(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl alcohol 64-17-5 ( 99-100 )	Mouse Ear Swelling Test (MEST)	mouse	non-sensitising
	OECD Test Guideline 429 Local Lymph Node Assay	mouse	non-sensitising

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl alcohol 64-17-5 ( 99-100 )	AMES test OECD Test Guideline 471	in vitro Bacteria	negative
	Gene cell mutation OECD Test Guideline 476	in vitro Mammalian	negative

(f) carcinogenicity; Based on available data, the classification criteria are not met

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	Australia	New Zealand	New South Wales	Western Australia	IARC	EU	UK	Germany
Ethyl alcohol					Group 1			

(g) reproductive toxicity; Based on available data, the classification criteria are not met

Component	Test method	Test species / Duration	Study result
Ethyl alcohol 64-17-5 ( 99-100 )	OECD Test Guideline 416	Oral / mouse 2 Generation	NOAEL = 13.8 g/kg/day
	OECD Test Guideline 414	Inhalation / Rat	NOAEC = 16000 ppm

(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

## Section 12 - Ecological Information

Ecotoxicity effects

Do not empty into drains.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Ethyl alcohol	Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h	EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h	EC50 (72h) = 275 mg/l (Chlorella vulgaris)	Photobacterium phosphoreum: EC50 = 34634 mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min

**Persistence and Degradability** Readily biodegradable

**Persistence** Persistence is unlikely, based on information available.

Component	Degradability
Ethyl alcohol 64-17-5 ( 99-100 )	OECD 301E = 94%

**Bioaccumulative Potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethyl alcohol	-0.32	No data available

**Mobility** The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Ozone Depletion Potential** This product does not contain any known or suspected substance

## Section 13 - Disposal Considerations

**Waste from Residues/Unused Products** Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

**Other Information** Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

## Section 14 - Transport Information

### IMDG/IMO

UN-No UN1170  
 Proper Shipping Name ETHANOL  
 Hazard Class 3  
 Packing Group II

### NZS 5433:2012

UN-No UN1170  
 Proper Shipping Name ETHANOL  
 Hazard Class 3  
 Packing Group II

Component	Hazchem Code
Ethyl alcohol 64-17-5 ( 99-100 )	2YE 2Y

### IATA

UN-No UN1170

Proper Shipping Name ETHANOL  
 Hazard Class 3  
 Packing Group II

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

## Section 15 - Regulatory Information

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

Component	HSNO Approval Number
Ethyl alcohol	HSR001144

International Inventories X = listed

Component	NZIoC	AICS	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	KECL
Ethyl alcohol	X	X	200-578-6	-	X	X	-	X	X	X	KE-13217

**Prohibition or notification/licensing requirements** Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

## Section 16 - Other Information

This safety data sheet complies with the requirements of WorkSafe New Zealand Regulations

### Legend

**AICS** - Australian Inventory of Chemical Substances  
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**IECSC** - Chinese Inventory of Existing Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**TWA** - Time Weighted Average  
**IARC** - International Agency for Research on Cancer  
**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association  
**MARPOL** - International Convention for the Prevention of Pollution from Ships  
**NZS 5433:2012** - Transport of Dangerous Goods on Land  
**LD50** - Lethal Dose 50%  
**EC50** - Effective Concentration 50%  
**WEL** - Workplace Exposure Limit  
**DNEL** - Derived No Effect Level  
**POW** - Partition coefficient Octanol:Water  
**vPvB** - very Persistent, very Bioaccumulative  
**VOC** (volatile organic compound)

**NZIoC** - New Zealand Inventory of Chemicals  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**ENCS** - Japanese Existing and New Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**CAS** - Chemical Abstracts Service  
**ACGIH** - American Conference of Governmental Industrial Hygienists  
**PNEC** - Predicted No Effect Concentration  
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code  
**ADG** Australian Code for the Transport of Dangerous Goods by Road and Rail  
**OECD** - Organisation for Economic Co-operation and Development  
**LC50** - Lethal Concentration 50%  
**ATE** - Acute Toxicity Estimate  
**RPE** - Respiratory Protective Equipment  
**NOEC** - No Observed Effect Concentration  
**BCF** - Bioconcentration factor  
**PBT** - Persistent, Bioaccumulative, Toxic

### Key literature references and sources for data

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.



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First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.

<b>Revision Date</b>	11-Aug-2020
<b>Revision Summary</b>	Initial Release

#### Disclaimer

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 a 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

## End of Safety Data Sheet