

Safety data sheet

Safe Work Australia - Code of Practice



Ethanol \geq 96 %, denatured

article number: **T171**
Version: **GHS 2.0 en**
Replaces version of: 2017-12-12
Version: (GHS 1)

date of compilation: 2017-12-12
Revision: 2019-04-04

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

1.1 Product identifier

Identification of the substance	Ethanol
Article number	T171
Registration number (REACH)	01-2119457610-43-xxxx
Index No	603-002-00-5
EC number	200-578-6
CAS number	64-17-5

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

Identified uses:	laboratory chemical laboratory and analytical use formulation [mixing] of preparations and/or re- packaging (excluding alloys) feedstock use metal surface treatment product non-metal-surface treatment product process agent use thinner (coatings and paints)
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1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

e-mail (competent person) : sicherheit@carlroth.de

1.4 Emergency telephone number

Emergency information service **Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Safety data sheet

Safe Work Australia - Code of Practice



Ethanol $\geq 96\%$, denatured

article number: T171

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
2.6	flammable liquid	(Flam. Liq. 2)	H225
3.3	serious eye damage/eye irritation	(Eye Irrit. 2A)	H319

2.2 Label elements

Labelling GHS

Signal word

Danger

Pictograms

GHS02, GHS07



Hazard statements

H225 Highly flammable liquid and vapour
H319 Causes serious eye irritation

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.

Precautionary statements - response

P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction.

Precautionary statements - storage

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

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



H319 Causes serious eye irritation.
P337+P313 If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

There is no additional information.

Safety data sheet

Safe Work Australia - Code of Practice



Ethanol $\geq 96\%$, denatured

article number: T171

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Ethyl alcohol
Index No	603-002-00-5
Registration number (REACH)	01-2119457610-43-xxxx
EC number	200-578-6
CAS number	64-17-5
Molecular formula	C_2H_6O
Molar mass	46.07 g/mol

Impurities and additives, classification acc. to EU regulation

Name of substance	Identifier	Wt%	Classification acc. to 1272/2008/EC
2-Butanone	CAS No 78-93-3 EC No 201-159-0 Index No 606-002-00-3	1 - < 2	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336
2-Propanol	CAS No 67-63-0 EC No 200-661-7 Index No 603-117-00-0	1 - < 2	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336
Bitrex	CAS No 3734-33-6	< 0.1	Acute Tox. 4 / H302

Remarks

For full text of H-phrases: see SECTION 16. For full text of abbreviations: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Ethanol $\geq 96\%$, denatured

article number: T171

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Vertigo, Abdominal pain, Vomiting, Nausea, Narcosis, Breathing difficulties

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, alcohol resistant foam, dry extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours can form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin and eyes. Do not breathe vapour/spray. Removal of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Explosive properties.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Ethanol $\geq 96\%$, denatured

article number: T171

Advices on how to clean up a spill

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide adequate ventilation as well as local exhaust at critical locations. Keep container tightly closed.

• Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

Ground/bond container and receiving equipment.

• Ventilation requirements

Use local and general ventilation.

• Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)

No information available.

Ethanol ≥96 %, denatured

article number: T171

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
AU	ethyl alcohol (ethanol)	64-17-5		WES	1,000	1,880			WES

Notation

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

• human health values

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	1,900 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	343 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
DNEL	950 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects

• relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
2-Butanone	78-93-3	DNEL	600 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
2-Butanone	78-93-3	DNEL	1,161 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2-Propanol	67-63-0	DNEL	500 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
2-Propanol	67-63-0	DNEL	888 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

• environmental values

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	0.79 mg/cm ³	marine water	intermittent release
PNEC	2.75 mg/cm ³	air	intermittent release
PNEC	3.6 mg/cm ³	freshwater sediment	intermittent release
PNEC	0.96 mg/cm ³	freshwater	intermittent release
PNEC	0.63 mg/cm ³	soil	intermittent release
PNEC	580 mg/cm ³	sewage treatment plant (STP)	intermittent release

Ethanol ≥96 %, denatured

article number: T171

• relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
2-Butanone	78-93-3	PNEC	55.8 mg/l	freshwater	short-term (single instance)
2-Butanone	78-93-3	PNEC	55.8 mg/l	marine water	short-term (single instance)
2-Butanone	78-93-3	PNEC	709 mg/l	sewage treatment plant (STP)	short-term (single instance)
2-Butanone	78-93-3	PNEC	284.7 mg/kg	freshwater sediment	short-term (single instance)
2-Butanone	78-93-3	PNEC	284.7 mg/kg	marine sediment	short-term (single instance)
2-Butanone	78-93-3	PNEC	22.5 mg/kg	soil	short-term (single instance)
2-Propanol	67-63-0	PNEC	160 mg/kg	water	short-term (single instance)
2-Propanol	67-63-0	PNEC	140.9 mg/l	water	intermittent release
2-Propanol	67-63-0	PNEC	140.9 mg/l	freshwater	short-term (single instance)
2-Propanol	67-63-0	PNEC	140.9 mg/l	marine water	short-term (single instance)
2-Propanol	67-63-0	PNEC	2,251 mg/l	sewage treatment plant (STP)	short-term (single instance)
2-Propanol	67-63-0	PNEC	552 mg/kg	freshwater sediment	short-term (single instance)
2-Propanol	67-63-0	PNEC	552 mg/kg	marine sediment	short-term (single instance)
2-Propanol	67-63-0	PNEC	28 mg/kg	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Safety data sheet

Safe Work Australia - Code of Practice



Ethanol $\geq 96\%$, denatured

article number: T171

- **type of material**

Butyl caoutchouc (butyl rubber)

- **material thickness**

0,7mm

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Flame-retardant protective clothing.

Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of $> 65\text{ }^{\circ}\text{C}$, colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid (fluid)
Colour	colourless
Odour	pungent
Odour threshold	0.1 – 5,058 ppm

Other physical and chemical parameters

pH (value)	~ 7 (water: $10\text{ }^{\circ}\text{I}$, $20\text{ }^{\circ}\text{C}$) (neutral)
Melting point/freezing point	$-114\text{ }^{\circ}\text{C}$
Initial boiling point and boiling range	$78\text{ }^{\circ}\text{C}$ at 1,013 hPa
Flash point	$13\text{ }^{\circ}\text{C}$
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)
<u>Explosive limits</u>	
• lower explosion limit (LEL)	2.5 vol%
• upper explosion limit (UEL)	13.5 vol%
Explosion limits of dust clouds	not relevant
Vapour pressure	57.26 hPa at $19.6\text{ }^{\circ}\text{C}$
Density	$0.79\text{ }^{\circ}\text{I}/\text{cm}^3$

Ethanol $\geq 96\%$, denatured

article number: **T171**

Vapour density	This information is not available.
Bulk density	Not applicable
Relative density	Information on this property is not available.
<u>Solubility(ies)</u>	
Water solubility	$\geq 1,000 \text{ g/l}$ at 20 °C miscible in any proportion
<u>Partition coefficient</u>	
n-octanol/water (log KOW)	-0.35 (pH value: 7.4, 24 °C) (ECHA)
Auto-ignition temperature	455 °C at 1,013 hPa - ECHA 455 °C at 1,013 hPa
Decomposition temperature	no data available
Viscosity	
• kinematic viscosity	0.7468 mm^2/s
• dynamic viscosity	0.544 – 0.59 mPa s at 25 °C
Explosive properties	Shall not be classified as explosive
Oxidising properties	none

9.2 Other information

SECTION 10: Stability and reactivity

10.1 Reactivity

Risk of ignition. Vapours can form explosive mixtures with air.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Alkali metals, Alkaline earth metal, Acetic anhydride, Peroxides, Phosphorus oxides (e.g. P_2O_5), Strong oxidiser, Nitric acid, Nitrate, Perchlorates,
=> Explosive properties

10.4 Conditions to avoid

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

10.5 Incompatible materials

plastic and rubber

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

Ethanol $\geq 96\%$, denatured

article number: T171

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

Exposure route	Endpoint	Value	Species	Source
oral	LD50	10,470 mg/kg	rat	ECHA
inhalation: vapour	LC50	116.9 mg/l/4h	rat	ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

nausea, vomiting, abdominal pain, Causes damage to liver through prolonged or repeated exposure if swallowed

• If in eyes

Causes serious eye irritation

• If inhaled

vertigo, Inebriation, narcosis, breathing difficulties

• If on skin

Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation)

Other information

None

Ethanol ≥96 %, denatured

article number: T171

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	15,400 mg/l	fish	ECHA	96 h
EC50	>10,000 mg/l	aquatic invertebrates	ECHA	48 h
ErC50	22,000 mg/l	algae	ECHA	96 h

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2-Butanone	78-93-3	LC50	2,993 mg/l	fish	96 h
2-Butanone	78-93-3	EC50	308 mg/l	aquatic invertebrates	48 h
2-Butanone	78-93-3	ErC50	1,972 mg/l	algae	72 h
2-Propanol	67-63-0	LC50	10,000 mg/l	fish	96 h

Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
NOEC	250 mg/l	fish	ECHA	120 h
NOEC	2 mg/l	aquatic invertebrates	ECHA	10 d
growth rate (ErCx) 10%	86 mg/l	algae	ECHA	4 d

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2-Propanol	67-63-0	LC50	>10,000 mg/l	aquatic invertebrates	24 h

12.2 Process of degradability

The substance is readily biodegradable.

Theoretical Oxygen Demand: 2.084 mg/mg

Theoretical Carbon Dioxide: 1.911 mg/mg

Biochemical Oxygen Demand: 1,236 mg/g at 5 d

Process	Degradation rate	Time
biotic/abiotic	94 %	d
oxygen depletion	69 %	5 d

Ethanol $\geq 96\%$, denatured

article number: T171

Degradability of components of the mixture

Name of substance	CAS No	Process	Degradation rate	Time
2-Butanone	78-93-3	oxygen depletion	98 %	28 d
2-Propanol	67-63-0	biotic/abiotic	95 %	21 d
2-Propanol	67-63-0	oxygen depletion	53 %	5 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)

-0.35 (pH value: 7.4, 24 °C)

BOD5/COD

0.62110553

Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
2-Butanone	78-93-3		0.3 (pH value: 7, 40 °C)	
2-Propanol	67-63-0		0.05	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Safety data sheet

Safe Work Australia - Code of Practice




Ethanol ≥96 %, denatured

article number: T171

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	UN number	1170
14.2	UN proper shipping name	ETHANOL
	Hazardous ingredients	Ethanol
14.3	Transport hazard class(es)	
	Class	3 (flammable liquids)
14.4	Packing group	II (substance presenting medium danger)
14.5	Environmental hazards	none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	1170
Proper shipping name	ETHANOL
Particulars in the transport document	UN1170, ETHANOL, 3, II, (D/E)
Class	3
Classification code	F1
Packing group	II
Danger label(s)	3



Special provisions (SP)	144, 601
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification No	33
Emergency Action Code	2YE

Safety data sheet

Safe Work Australia - Code of Practice



Ethanol $\geq 96\%$, denatured

article number: T171

• International Maritime Dangerous Goods Code (IMDG)

UN number	1170
Proper shipping name	ETHANOL
Particulars in the shipper's declaration	UN1170, ETHANOL, 3, II, 13°C c.c.
Class	3
Marine pollutant	-
Packing group	II
Danger label(s)	3



Special provisions (SP)	144
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-E, S-D
Stowage category	A

• International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	1170
Proper shipping name	Ethanol
Particulars in the shipper's declaration	UN1170, Ethanol, 3, II
Class	3
Packing group	II
Danger label(s)	3



Special provisions (SP)	A3, A58, A180
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L

SECTION 15: Regulatory information

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

National inventories

Substance is listed in the following national inventories:

Ethanol ≥96 %, denatured

article number: **T171**

Country	National inventories	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
BCF	bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
COD	chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)

Ethanol ≥96 %, denatured

article number: **T171**

Abbr.	Descriptions of used abbreviations
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Eye Dam.	seriously damaging to the eye
Eye Irrit.	irritant to the eye
Flam. Liq.	flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
log KOW	n-octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	short-term exposure limit
STOT SE	specific target organ toxicity - single exposure
TWA	time-weighted average
vPvB	very Persistent and very Bioaccumulative
WES	Safe Work Australia: Workplace exposure standards for airborne conatminants

Key literature references and sources for data

- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

Safety data sheet

Safe Work Australia - Code of Practice



Ethanol \geq 96 %, denatured

article number: T171

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H225	highly flammable liquid and vapour
H302	harmful if swallowed
H319	causes serious eye irritation
H336	may cause drowsiness or dizziness

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.