

Ethanol

32221-2.5L

Version 1.5

Revision Date 17.12.2022

SECTION 2: Hazards identification


2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids Category 2
H225 Highly flammable liquid and vapour.
Eye irritation Category 2
H319 Causes serious eye irritation.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.
Precautionary statements	:	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 Wear protective gloves/ eye protection/ face protection. 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.

2.3. Other hazards

Vapours may form explosive mixtures with air. Results of PBT and vPvB assessment, see chapter 12.5.

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SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
ethanol; ethyl alcohol	64-17-5 603-002-00-5 200-578-6	Flam. Liq. 2; H225 Eye Irrit. 2; H319	100 %	Eye Irrit. 2; H319: >= 50 %

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.
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:

Take off all contaminated clothing immediately. Consult a physician for severe cases. No hazards which require special first aid measures.

Inhalation:

Remove to fresh air.

Skin contact:

After contact with skin, wash immediately with plenty of water.

Eye contact:

Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. If eye irritation persists, consult a specialist.

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Ingestion:

When swallowed, allow water to be drunk. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

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

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

See Section 11 for more detailed information on health effects and symptoms. :

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Extinguishing media which shall not be used for safety reasons:

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

5.2. Special hazards arising from the substance or mixture

Flammable.

Vapours may form explosive mixtures with air.

Vapours are heavier than air and may spread along floors.

Vapors may travel to areas away from work site before igniting/flashing back to vapor source.

In case of fire hazardous decomposition products may be produced such as:

Carbon monoxide
Carbon dioxide (CO₂)

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5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. The product evaporates readily.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Exhaust ventilation at the object is necessary. Keep limited supplies at workplace.

Advice on protection against fire and explosion:

The product is easily combustible. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Vapours may form explosive mixtures with air.

Hygiene measures:

Keep working clothes separately. Ensure adequate ventilation, especially in confined areas.

7.2. Conditions for safe storage, including any incompatibilities

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Further information on storage conditions:

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not leave vessels/containers open Avoid product residues in/on containers.

Advice on common storage:

Do not store together with: Oxidizing agents

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
ethanol; ethyl alcohol	EH40 WEL TWA	1.920 mg/m ³ 1.000 ppm		

TWA - Time weighted average

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
ethanol; ethyl alcohol	Workers / Acute local effects		1900 mg/m ³	Inhalation	
ethanol; ethyl alcohol	Workers / Long-term systemic effects		343mg/kg bw/d	Skin contact	
ethanol; ethyl alcohol	Workers / Long-term systemic effects		950 mg/m ³	Inhalation	
ethanol; ethyl alcohol	Consumers / Long-term systemic		114 mg/m ³	Inhalation	

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	effects				
ethanol; ethyl alcohol	Consumers / Acute local effects		950 mg/m3	Inhalation	
ethanol; ethyl alcohol	Consumers / Long-term systemic effects		206mg/kg bw/d	Skin contact	
ethanol; ethyl alcohol	Consumers / Long-term systemic effects		87mg/kg bw/d	Ingestion	

Component	Environmental compartment / Value	Remarks
ethanol; ethyl alcohol	Fresh water: 0,96 mg/l	
ethanol; ethyl alcohol	Marine water: 0,79 mg/l	
ethanol; ethyl alcohol	Fresh water sediment: 3,6 mg/kg	
ethanol; ethyl alcohol	Soil: 0,63 mg/kg	

8.2. Exposure controls

Occupational exposure controls

Do not breathe vapours/dust.

Take off all contaminated clothing immediately.

Recommended preventive skin protection

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Personal protective equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Recommended Filter type:

Organic vapour type

Hand protection:

Glove material: butyl-rubber

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Break through time: > 480 min

Glove thickness: 0,7 mm

Butoject® 898

Gloves must be inspected prior to use.

Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

Skin and body protection:

Flame retardant antistatic protective clothing.

Working clothes must not consist of textiles, which show a dangerous melting behaviour in case of fire.

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: liquid
Colour	: colourless
Odour	: characteristic
molecular weight	: 46,1 g/mol
Melting point/range	: -115 °C
Boiling point/boiling range	: 78 - 79 °C

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	at 1.013 hPa
Upper explosion limit	: 15 %(V)
Lower explosion limit	: 3,4 %(V)
Flash point	: 12 °C Method: DIN 51755
Auto-ignition temperature	: 425 °C
Decomposition temperature	: At normal pressure may be distilled without decomposition. Fire or intense heat may cause violent rupture of packages.
pH	: No data available
Water solubility	: completely miscible
Solubility in other solvents	: Soluble in most organic solvents
Partition coefficient: n-octanol/water	: log Pow -0,32
Vapour pressure	: 59 hPa at 20 °C
Density	: 0,790 - 0,791 g/cm ³ at 20 °C

9.2 Other Information

no additional data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

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At normal pressure may be distilled without decomposition.
Fire or intense heat may cause violent rupture of packages.

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Heat, flames and sparks.
Keep away from direct sunlight.

10.5. Incompatible materials

Reactions with alkali metals.
Evolution of inflammable gases/vapours easily.
Uncleaned empty vessels may contain product gases which can form explosive mixtures with air.
Explosive reactions with oxidising agents such as potassium chlorate and/or peroxides.

10.6. Hazardous decomposition products

In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50

Species: Rat

Value: 10.470 mg/kg

Method: OECD Test Guideline 401

Acute dermal toxicity:

No data available

Acute inhalation toxicity:

LC50

Species: Rat

Value: 124,7 mg/l

Exposure time: 4 h

Method: OECD Test Guideline 403

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according to Regulation (EC) No. 1907/2006

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Skin irritation:

Species: Rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

Eye irritation:

Species: Rabbit

Result: Moderate eye irritation

Method: OECD Test Guideline 405

Respiratory or skin sensitisation:

Route of exposure: Skin contact

Species: Guinea pig

Result: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 406

Repeated dose toxicity:

Species: Rat, male

Application Route: Oral

Exposure time: 90 d

LOAEL: 3.156 mg/kg

Method: OECD 408

Germ cell mutagenicity:

Test Method: Ames test

Result: negative

Method: OECD Test Guideline 471

Test Method: In vitro gene mutation study in mammalian cells

Result: negative

Method: OECD Test Guideline 476

Test Method: Chromosome aberration test

Method: OECD Test Guideline 478

Result: equivocal

Reproductive toxicity:

Species: Rat

Developmental Toxicity: NOAEL: 5.200 mg/kg bw/d

Aspiration hazard:

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No data available

11.2. Information on other hazards

Endocrine disrupting properties
No data available

Other information:

Solvent removes skin oil from the skin.
Solvent vapours have a narcotic effect if inhaled in high concentrations.
Poisoning affects the central nervous system.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

LC50
Species: Pimephales promelas (fathead minnow)
Value: 14.200 mg/l
Exposure time: 96 h

NOEC

semi-static test
Species: Danio rerio (zebra fish)
Value: 250 mg/l
Exposure time: 120 h
Method: OECD Test Guideline 212

Toxicity to aquatic plants:

EC50
Growth rate
Species: Chlorella vulgaris (Fresh water algae)
Value: 275 mg/l
Exposure time: 3 d
Method: OECD Test Guideline 201

EC50

Growth rate
Species: Chlorella vulgaris (Fresh water algae)
Value: 675 mg/l
Exposure time: 4 d
Method: OECD Test Guideline 201

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EC50

Biomass

Species: Lemna gibba (gibbous duckweed)

Value: 5.967 mg/l

Exposure time: 7 d

NOEC

Biomass

Species: Lemna gibba (gibbous duckweed)

Value: 5.967 mg/l

Exposure time: 7 d

Toxicity to aquatic invertebrates:

LC50

static test

Species: Ceriodaphnia dubia (water flea)

Value: 5.012 mg/l

Exposure time: 48 h

Chronic toxicity to aquatic invertebrates:

NOEC

semi-static test

Species: Ceriodaphnia dubia (water flea)

Value: 9,6 mg/l

Exposure time: 10 d

Chronic toxicity to aquatic invertebrates:

LC50

Reproduction Test

semi-static test

Species: Ceriodaphnia dubia (water flea)

Value: 1.806 mg/l

Exposure time: 10 d

Chronic toxicity to aquatic invertebrates:

NOEC

semi-static test

Species: Daphnia magna (Water flea)

Value: 9,6 mg/l

Exposure time: 9 d

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Chronic toxicity to aquatic invertebrates:

LC50

Reproduction Test

semi-static test

Species: Daphnia magna (Water flea)

Value: 454 mg/l

Exposure time: 9 d

12.2. Persistence and degradability

Biodegradability:

aerobic

Biodegradation: 95 %

Exposure time: 15 d

Result: Readily biodegradable.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

Packaging:

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Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number

ADR/RID:1170

IMDG:1170

IATA:1170

14.2 UN proper shipping name

ADR/RID:ETHANOL

IMDG:ETHANOL

IATA:Ethanol

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID:no

Marine pollutant: no

14.6 Special precautions for user

No data available

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC Listed in Regulation : P5c: FLAMMABLE LIQUIDS Number in Regulation: 1.2.5.3	Quantity: 5.000.000 kg Quantity: 50.000.000 kg	

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Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).
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Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+)35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240
Homburg : 06841/19240	

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Gifinformation); +46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

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	Mainz : 06131/19240
	Munich : 089/19240
Latvia	+37167042473

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

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ethanol; ethyl alcohol : H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very bioaccumulative substance
PBT Persistent, bioaccumulative und toxic substance

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. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.
