

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Ethanol (Alcohol)

Version number: 1
Issued: 2024-03-04



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

1.1. Product identifier

Trade name

Ethanol (Alcohol)

CAS number

64-17-5

EC number

200-578-6

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

Relevant identified uses

Research and development. Laboratory Chemicals. Manufacture of substances.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Eye irritation, hazard category 2

Flammable liquids, hazard category 2

Hazard statements

H225, H319

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Warning

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.

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.

P241 Use explosion-proof equipment.

P242 Use non-sparking tools.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/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.

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

P362 + P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
ethanol; ethyl alcohol	64-17-5 200-578-6 01-2120063206-63 603-002-00-5	100%	Flam. Liq. 2, Eye Irrit. 2	H225, H319 - -	-

Molecular weight

46.07

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

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Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

Eye contact

May cause temporary eye irritation.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE. Combustible.

Containers can burst violently when heated, due to excess pressure build-up.

Vapours may form explosive mixture with air at room temperature.

Carbon monoxide (CO). Carbon dioxide (CO₂).

Pay attention to flashback.

Vapours are heavier than air and may travel along the floor and in the bottom of containers.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

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6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges. Use spark-proof tools and explosion-proof equipment. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature. Store in a dry place. Store in a closed container. Handle and store contents under inert gas. Moisture Sensitive.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

TWA. 1000ppm. 1920mg/m³. UK. EH40. WEL = Workplace Exposure Limit.

DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
ethanol; ethyl alcohol (64-17-5/200-578-6)	DNEL	Chronic (long term) Inhalation	950 mg/m ³	Workers	Systemic
ethanol; ethyl alcohol (64-17-5/200-578-6)	DNEL	Chronic (long term) Dermal	343 mg/kg bw/day	Workers	Systemic

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Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
ethanol; ethyl alcohol (64-17-5/200-578-6)	DNEL	Chronic (long term) Oral	343 mg/kg bw/day	Workers	Systemic
ethanol; ethyl alcohol (64-17-5/200-578-6)	DNEL	Acute (short term) Inhalation	1900 mg/m ³	Workers	Local

PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
ethanol; ethyl alcohol (64-17-5/200-578-6)	PNEC	Soil	0.63 mg/kg
ethanol; ethyl alcohol (64-17-5/200-578-6)	PNEC	Marine water	0.79 mg/l
ethanol; ethyl alcohol (64-17-5/200-578-6)	PNEC	Freshwater	0.96 mg/l
ethanol; ethyl alcohol (64-17-5/200-578-6)	PNEC	Sediment (freshwater)	3.6 mg/l
ethanol; ethyl alcohol (64-17-5/200-578-6)	PNEC	Sewage Treatment Plant	580 mg/l

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Butyl rubber.

Glove Thickness: 0.7mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

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Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Colourless.

Odour

Alcohol.

Melting point / freezing point

114 °C

Boiling point or initial boiling point and boiling range

78 °C

Flammability

No data available

Lower and upper explosion limit

3.3 - 19 %

Flash point

13 °C

Auto-ignition temperature

363 °C

Decomposition temperature

No data available

pH

7

Kinematic viscosity

1.082 mm²/s

Solubility

Completely soluble in water.

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Partition coefficient n-octanol/water

log Pow: -0.349 at 24 °C

Vapour pressure

59.5 hPa

Density and/or relative density

0.789 g/cm³

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours may form explosive mixture with air at room temperature.

10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.

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10.3. Possibility of hazardous reactions

Risk of explosion/exothermic reaction with:

hydrogen peroxide

perrchlorates

PERCHLORIC ACID

Nitric acid.

Mercury (II) nitrate

permanganic acid

nitriles

Strong oxidising agents.

nitrosyl compounds

Peroxides

Sodium

Potassium

halogen oxides

calcium hypochlorite

nitrogen dioxide

metallic oxides

uranium hexafluoride

iodides

Chlorine.

Alkali metals.

Alkali earth metals.

alkali oxides

Ethylene oxide

silver with nitric acid

silver compounds

with ammonia

potassium permanganate with conc. sulphuric acid.

Risk of ignition or formation of inflammable gases or vapours with:

halogen-halogen compounds

chromium (VI) oxide

chromyl chloride

Fluorine.

hydrides

Oxides of phosphorus

platinum

Nitric acid with potassium permanganate

10.4. Conditions to avoid

Heat, sparks, flames.

10.5. Incompatible materials

Alkali metals. oxidising agents Peroxides Fluorine. Inorganic acids. potassium dioxide. Bromide pentafluoride. Acetyl bromide. Acetyl chloride. Platinum. Sodium.

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10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Test animals
ethanol; ethyl alcohol 64-17-5 / 200-578-6	Acute Toxicity (Oral LD50):	7060 mg/kg	Rat
ethanol; ethyl alcohol 64-17-5 / 200-578-6	Acute Toxicity (Inhalation LC50):	124.7 mg/l/4h (inh-rat)	Rat

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Other
ethanol; ethyl alcohol 64-17-5 / 200-578-6	≥ 50%: Causes serious eye irritation.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Remark
ethanol; ethyl alcohol 64-17-5 / 200-578-6	LC50	15,300mg/l	96 hours	Pimephales promelas (Fat-head Minnow)	(US-EPA)

Acute algae toxicity

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Product / Sub- stance name CAS / EC no.	Measurement type	Value / Result	Duration of expos- ure	Species	Remark
ethanol; ethyl alco- hol 64-17-5 / 200-578-6	ErC50	275mg/l	72 hours	Chlorella vulgaris	(External MSDS)

Acute crustacean toxicity

Product / Sub- stance name CAS / EC no.	Measurement type	Value / Result	Duration of expos- ure	Species	Remark
ethanol; ethyl alco- hol 64-17-5 / 200-578-6	LC50	5,012mg/l	48 hours	Ceriodaphnia dubia	(ECHA)

Micro-/macro organism toxicity

Product / Sub- stance name CAS / EC no.	Measurement type	Value / Result	Duration of expos- ure	Species	Remark
ethanol; ethyl alco- hol 64-17-5 / 200-578-6	IC50	> 1,000mg/l	3 hours	Activated sludge.	(External MSDS)

Chronical toxicity

Product / Sub- stance name CAS / EC no.	Measurement type	Value / Result	Duration of expos- ure	Species	Remark
ethanol; ethyl alco- hol 64-17-5 / 200-578-6	NOEC	250mg/l	120 hours	Brachydanio rerio (Zebra Fish)	(ECHA)
ethanol; ethyl alco- hol 64-17-5 / 200-578-6	NOEC	9.6mg/l	9 days	Daphnia magna	(ECHA)

12.2. Persistence and degradability
Persistence and degradability

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Product / Sub- stance name CAS / EC no.	Type of test	Duration	Result	Degradation	Remark
ethanol; ethyl alco- hol 64-17-5 / 200-578-6	aerobic	15 days	The substance is readily biodegrad- able.	ca. 95%	(External MSDS)

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. UN number

1170

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

ETHANOL (ETHYL ALCOHOL)

IMDG proper shipping name

ETHANOL (ETHYL ALCOHOL)

IATA proper shipping name

Ethanol

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14.3. Transport hazard class(es)

Label

ADR/RID/ADN



3

IMDG



3

IATA



3

ADR / RID Class

3

ADR / RID Classification code

F1

ADR / RID hazard identification number

33

IMDG Class

3

IATA Class

3

ADN Class

3

ADN Class Code

F1

14.4. Packing group

ADR / RID / ADN: II

IMDG: II

IATA: II

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14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Special precautions for user

Tunnel restriction code: D/E

Transport category: 2

IMDG EmS

F-E, S-D

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC02

SECTION 15: Regulatory information

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

EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Phrase meaning

Eye Irrit. 2 - Eye irritation, hazard category 2

Flam. Liq. 2 - Flammable liquids, hazard category 2

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.