

## Chemical Safety Data Sheet MSDS / SDS

## Ethanol

Revision Date:2024-03-16 Revision Number:1

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

## Product identifier

Product name : Ethanol  
CBnumber : CB2362508  
CAS : 64-17-5  
EINECS Number : 200-578-6  
Synonyms : ethanol,ETHYL ALCOHOL

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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

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

Continuerinsing.

P311 Call a POISON CENTER or doctor/physician.

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

P370+P378 In case of fire: Use ... for extinction.

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

P405 Store locked up.

#### **Hazard statements**

H225 Highly Flammable liquid and vapour

H226 Flammable liquid and vapour

H302 Harmful if swallowed

H313 May be harmful in contact with skin

H319 Causes serious eye irritation

H333 May be harmful if inhaled

H370 Causes damage to organs

H371 May cause damage to organs

H402 Harmful to aquatic life

H412 Harmful to aquatic life with long lasting effects

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Ethanol
Synonyms	: ethanol,ETHYL ALCOHOL
CAS	: 64-17-5
EC number	: 200-578-6
MF	: C <sub>2</sub> H <sub>6</sub> O
MW	: 46.07

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### **In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

#### **In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### **If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### **Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### **Indication of any immediate medical attention and special treatment needed**

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Dry powder Dry sand

#### Unsuitable extinguishing media

Do NOT use water jet.

### Special hazards arising from the substance or mixture

Carbon oxides Combustible.

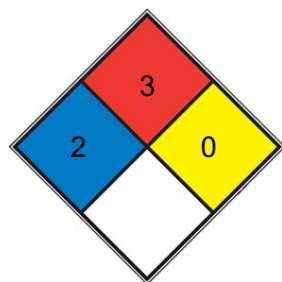
### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### Further information

Use water spray to cool unopened containers.

### NFPA 704



HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

FIRE 3 Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions. Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, [acetone](#))

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

SPEC.

HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

## Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

## Reference to other sections

For disposal see section 13.

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# SECTION 7: Handling and storage

## Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

## Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Hygroscopic.

## Specific end use(s)

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

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# SECTION 8: Exposure controls/personal protection

## control parameter

### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

## Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,3 mm Break through time: 480 min

Material tested: Butoject? (KCL 897 / Aldrich Z677647, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,2 mm Break through time: 38 min

Material tested: Dermatril? P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### Exposure limits

TLV-TWA 1900 mg/m<sup>3</sup> (1000 ppm) (ACGIH).

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	colourless liquid
Odour	pungent
Odour Threshold	0.52ppm
pH	7,0 at 10 g/l at 20 °C
Melting point/freezing point	Melting point/range: -114 °C
Initial boiling point and boiling range	78 °C
Flash point	13 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 13,5 %(V) Lower explosion limit: 2,5 %(V)
Vapour pressure	0,57 hPa at 19,6 °C
Vapour density	1,6
Relative density	0,789 g/mL at 25 °C

Water solubility	1.000 g/l at 20 °C - completely miscible
Partition coefficient: n-octanol/water	log Pow: -0,35 at 24 °C - Bioaccumulation is not expected.
Autoignition temperature	455 °C at 1.013 hPa - DIN 51794
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
λmax	λ: 240 nm Amax: 0.40 λ: 250 nm Amax: 0.30 λ: 260 nm Amax: 0.30 λ: 270 nm Amax: 0.10 λ: 340 nm Amax: 0.10

### Other safety information

Conductivity < 1 µS/cm

Surface tension 72,75 mN/m at 20 °C

Relative vapour density

1,6

## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Risk of explosion/exothermic reaction with:hydrogen peroxide, perchlorates, perchloric acid, Nitric acid, mercury(II) nitrate, permanganic acid, Nitriles, peroxi compounds, Strong oxidizing agents, nitrosyl compounds, Peroxides, sodium, Potassium, halogen oxides, calcium hypochlorite, nitrogen dioxide, metallic oxides, uranium hexafluoride, iodides, Chlorine, Alkali metals, Alkaline earth metals, alkali oxides, Ethylene oxidesilver, with, Nitric acidsilver compounds, with, Ammoniapotassium permanganate, with, conc. sulfuric acidRisk of ignition or formation of inflammable gases or vapours with:halogen-halogen compounds, chromium(VI) oxide, chromyl chloride, Fluorine, hydrides, Oxides of phosphorus, platinumNitric acid, with, potassium permanganate

### Conditions to avoid

Warming.

Heat, flames and sparks.

### Incompatible materials

rubber, various plastics

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 10.470 mg/kg (OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 124,7 mg/l (OECD Test Guideline 403)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h (OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation. (OECD Test Guideline 405)

#### Respiratory or skin sensitisation

(OECD Test Guideline 406)

Remarks: (in analogy to similar products)

#### Germ cell mutagenicity

Ames test

Salmonella typhimurium Result: negative

In vitro mammalian cell gene mutation test mouse lymphoma cells

Result: negative

OECD Test Guideline 478 Mouse - male

Result: Positive results were obtained in some in vivo tests.

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

#### Additional Information

Repeated dose toxicity - Rat - male - Oral - No observed adverse effect level - 1.730 mg/kg

- Lowest observed adverse effect level - 3.200 mg/kg RTECS: KQ6300000

irritant effects, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Toxicity

## SECTION 12: Ecological information

### Toxicity

#### Toxicity to fish

flow-through test LC50 - *Pimephales promelas* (fathead minnow) -

15.300 mg/l - 96 h (US-EPA)

#### Toxicity to daphnia and other aquatic invertebrates

static test LC50 - *Ceriodaphnia dubia* (water flea) - 5.012 mg/l - 48 h

Remarks: (ECHA)

#### Toxicity to algae

static test ErC50 - *Chlorella vulgaris* (Fresh water algae) - 275 mg/l

- 72 h

(OECD Test Guideline 201)

#### Toxicity to bacteria

static test IC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)

### Persistence and degradability

Biodegradability aerobic - Exposure time 15 d

Result: ca.95 % - Readily biodegradable. (OECD Test Guideline 301E)

Biochemical Oxygen Demand (BOD)

Theoretical oxygen demand

930 - 1.670 mg/g Remarks: (Lit.)

2.100 mg/g Remarks: (Lit.)

### Bioaccumulative potential

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

### Mobility in soil

No data available

### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Other adverse effects

Additional ecological information

No data available

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## SECTION 13: Disposal considerations

### Waste treatment methods



## Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

### Incompatibilities

In acidic conditions, ethanol solutions may react vigorously with oxidizing materials. Mixtures with alkali may darken in color owing to a reaction with residual amounts of aldehyde. Organic salts or acacia may be precipitated from aqueous solutions or dispersions. Ethanol solutions are also incompatible with aluminum containers and may interact with some drugs.

### Waste Disposal

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

### UN number

ADR/RID: 1170 IMDG: 1170

### UN proper shipping name

ADR/RID: ETHANOL IMDG: ETHANOL IATA: Ethanol

### Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

### Packaging group

ADR/RID: II IMDG: II IATA: II

### Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

### Special precautions for user

No data available

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## SECTION 15: Regulatory information

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

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

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## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

### References

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Other Information

Ethanol consumption during pregnancy may adversely affect the unborn child. Chronic ingestion of ethanol may cause liver cirrhosis and cancer.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.