

Chemical Safety Data Sheet MSDS / SDS

Ethylbenzene

Revision Date:2025-01-11 Revision Number:1

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

Product identifier

Product name : Ethylbenzene
CBnumber : CB4672779
CAS : 100-41-4
EINECS Number : 200-467-2
Synonyms : Et2O,ether

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

P405 Store locked up.
P403+P235 Store in a well-ventilated place. Keep cool.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P391 Collect spillage. Hazardous to the aquatic environment
P370+P378 In case of fire: Use ... for extinction.
P331 Do NOT induce vomiting.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

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

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

P273 Avoid release to the environment.

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

P270 Do not eat, drink or smoke when using this product.

P264 Wash skin thoroughly after handling.

P264 Wash hands thoroughly after handling.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

P240 Ground/bond container and receiving equipment.

P233 Keep container tightly closed.

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

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

P201 Obtain special instructions before use.

Hazard statements

H400 Very toxic to aquatic life

H373 May cause damage to organs through prolonged or repeated exposure

H372 Causes damage to organs through prolonged or repeated exposure

H371 May cause damage to organs

H361 Suspected of damaging fertility or the unborn child

H360 May damage fertility or the unborn child

H351 Suspected of causing cancer

H335 May cause respiratory irritation

H332 Harmful if inhaled

H331 Toxic if inhaled

H320 Causes eye irritation

H319 Causes serious eye irritation

H315 Causes skin irritation

H304 May be fatal if swallowed and enters airways

H302 Harmful if swallowed

H225 Highly Flammable liquid and vapour

Disposal

WARNING.Cancer - <https://oehha.ca.gov/proposition-65/chemicals/ethylbenzene>

SECTION 3: Composition/information on ingredients

Substance

Product name : Ethylbenzene

Synonyms : Et2O,ether

CAS : 100-41-4

EC number : 200-467-2

MF : C8H10

MW : 106.17

SECTION 4: First aid measures

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Water Carbon dioxide (CO₂) Foam Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Carbon oxides Combustible.

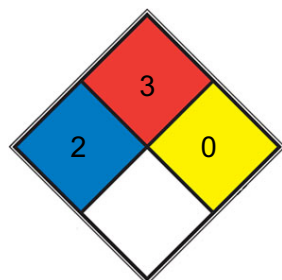
Advice for firefighters

No data available

Further information

No data available

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, [N₂](#))

SPEC.
 HAZ.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For personal protection see section 8.

Environmental precautions

No data available

Methods and materials for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

hygroscopic

Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Personal protective equipment

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: Fluorinated rubber Minimum layer thickness: 0,7 mm Break through time: 480 min
Chemical Book

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, Size M)

Splash contact

Material: Fluorinated rubber Minimum layer thickness: 0,7 mm Break through time: 480 min

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, 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 EC 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.

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Prevent product from entering drains.

Exposure limits

TLV-TWA 100 ppm ($\sim 433 \text{ mg/m}^3$) (ACGIH, NIOSH, MSHA, and OSHA); STEL 125 ppm (541 mg/m^3) (ACGIH); IDLH 2000 ppm (NIOSH).

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	colorless liquid
Odour	aromatic
Odour Threshold	0.17ppm
pH	No data available
Melting point/freezing point	Melting point/range: -95 °C - lit.
Initial boiling point and boiling range	136 °C - lit.
Flash point	23 °C - closed cup - Regulation (EC) No. 440/2008, Annex, A.9
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 6,7 %(V) Lower explosion limit: 1 %(V)
Vapour pressure	9,52 hPa at 20 °C - OECD Test Guideline 104
Vapour density	3.7 (vs air)
Relative density	0,86 - 0,87 at 20 °C
Water solubility	0,2 g/l at 25 °C - Regulation (EC) No. 440/2008, Annex, A.6- slightly soluble
Partition coefficient: n-octanol/water	Pow: 4.170; log Pow: 3,6 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.8
Autoignition temperature	430 °C at 1.013 hPa
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: 0,773 mm ² /s at 20 °C - OECD Test Guideline 114 Viscosity, dynamic: No data available

Explosive properties	No data available
Oxidizing properties	No data available
Henry's Law Constant	13.9(x 10 ⁻³ atm·m ³ /mol) at 45.00 °C, 15.1 at 50.00 °C, 17.1 at 55.00 °C, 20.1 at 60.00 °C, 20.9 at 65.00 °C, 22.7 at 70.00 °C, 34.3 at 80.00 °C (static headspace-GC, Park et al., 2004)

Other safety information

Surface tension 71,2 mN/m at 23 °C

SECTION 10: Stability and reactivity

Reactivity

No data available

Chemical stability

No data available

Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents

Conditions to avoid

No data available

Incompatible materials

rubber, various plastics

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 3.500 mg/kg Remarks:

(ECHA)

LC50 Inhalation - Rat - male - 4 h - 17,8 mg/l Remarks:

(ECHA)

LD50 Dermal - Rabbit - 15.433 mg/kg Remarks:

(RTECS)

Skin corrosion/irritation

Skin - Rabbit

Result: Moderate skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritation Remarks:

(ECHA)

Respiratory or skin sensitization

Patch test: - Human Result: negative Remarks:

(IUCLID)

Germ cell mutagenicity

Mutagenicity (mammal cell test):

Mouse lymphoma test Result: negative Ames test

Salmonella typhimurium Result: negative Hamster

ovary

Result: negative

OECD Test Guideline 474 Mouse - male and female Result: negative

Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (ethylbenzene)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure. - hearing organs

Aspiration hazard

May be fatal if swallowed and enters airways.

Toxicity

LD50 orally in rats: 5.46 g/kg (Smyth)

SECTION 12: Ecological information

Toxicity

Toxicity to fish

semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 4,2

Toxicity to daphnia and other aquatic invertebrates

mg/l - 96 h

(OECD Test Guideline 203)

static test EC50 - Daphnia magna (Water flea) - 1,8 - 2,4 mg/l - 48 h

(US-EPA)

Toxicity to algae

static test EC50 - Pseudokirchneriella subcapitata (green algae) - 3,6 mg/l - 96 h

(US-EPA)

Toxicity to bacteria

EC50 - Photobacterium phosphoreum - 9,68 mg/l - 30 min Remarks: (IUCLID)

Persistence and degradability

Biodegradability aerobic - Exposure time 28 d

Result: ca.79 % - Readily biodegradable. (ISO 14593)

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.

Toxics Screening Level

The Initial Risk Screening Level (IRSL) for ethylbenzene is 0.4 µg/m³ with annual averaging time.

Other adverse effects

No data available

SECTION 13: Disposal considerations

Waste treatment methods

Incompatibilities

Vapors may form explosive mixture with air. Incompatible with oxidizers (chlorates, nitrates, peroxides, permanganates, perchlorates, chlorine, bromine, fluorine, etc.); contact may cause fires or explosions. Keep away from alkaline materials, strong bases, strong acids, oxoacids, and epoxides. Attacks plastics and rubber. May accumulate static electrical charges, and may cause ignition of its vapors.

Product

No data available

Waste Disposal

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed

SECTION 14: Transport information

UN number

ADR/RID: 1175 IMDG: 1175

UN proper shipping name

ADR/RID: ETHYLBENZENE IMDG: ETHYLBENZENE IATA: Ethylbenzene

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

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

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

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

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

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

EC Inventory:Listed.

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

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

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

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

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

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

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

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
- 【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

The odour warning when the exposure limit value is exceeded is insufficient.

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.