

Safety Data Sheet

Product name: Ethylbenzene

CAS No.: 100-41-4

Prepared in accordance with GB/T 16483, GB/T 17519

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, Ethylbenzene

>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: Linyi Tuohui New Materials Co., Ltd.
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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. Continue rinsing.

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,Ethylbenzene
- 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

>NFPA 704

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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

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 (~ 433 mg/m³) (ACGIH, NIOSH, MSHA, and OSHA); STEL 125 ppm (541 mg/m³) (ACGIH); IDLH 2000 ppm (NIOSH).

SECTION 9: Physical and chemical properties

>Information on basic physicochemical properties

- Appearancecolorless liquid
- Odouraromatic
- Odour Threshold0.17ppm
- pHNo data available
- Melting point/freezing pointMelting point/range: -95 °C - lit.
- Initial boiling point and boiling range136 °C - lit.
- Flash point23 °C - closed cup - Regulation (EC) No. 440/2008, Annex, A.9
- Evaporation rateNo 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 density0,86 - 0,87 at 20 °C
- Water solubility0,2 g/l at 25 °C - Regulation (EC) No. 440/2008, Annex, A.6- slightly soluble
- Partition coefficient: n-octanol/waterPow: 4.170; log Pow: 3,6 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.8
- Autoignition temperature430 °C at 1.013 hPa
- Decomposition temperatureNo data available
- ViscosityViscosity, kinematic: 0,773 mm²/s at 20 °C - OECD Test Guideline 114 Viscosity, dynamic: No data available
- Explosive propertiesNo data available
- Oxidizing propertiesNo data available
- Henry's Law Constant13.9(x 10⁻³ atm·m³/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

>Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents

>Conditions to avoid

>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**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

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

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

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

EC Inventory:Listed.

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

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

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

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

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

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.