

Safety Data Sheet

Product name: Triethanolamine

CAS No.: 102-71-6

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: Triethanolamine
- CBnumber: CB9852620
- CAS: 102-71-6
- EINECS Number: 203-049-8
- Synonyms: triethanolamine, Trolamine

>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 wordWarning

Precautionary statements

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

Hazard statements

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

SECTION 3: Composition/information on ingredients

>Substance

- Product name: Triethanolamine
- Synonyms: triethanolamine, Trolamine
- CAS: 102-71-6
- EC number: 203-049-8
- MF: C₆H₁₅NO₃
- MW: 149.19

SECTION 4: First aid measures

>Description of first aid measures

If inhaled

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

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

>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

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

>Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x)

>Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

>Further information

No data available

>NFPA 704

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SECTION 6: Accidental release measures

>Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. For personal protection see section 8.

>Environmental precautions

No special environmental precautions required.

>Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal.

>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

Keep container tightly closed in a dry and well-ventilated place. Store in cool place. 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

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection

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: Nature latex/chloroprene Minimum layer thickness: 0,6 mm Break through time: 480 min

Material tested:Lapren (KCL 706 / Aldrich Z677558, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,2 mm Break through time: 30 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, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

No special environmental precautions required.

SECTION 9: Physical and chemical properties

>Information on basic physicochemical properties

- Appearancecolourless viscous
- OdourNo data available
- Odour ThresholdNo data available d) pH 10,5 - 11,5 at 149 g/l at 25 °C Melting point/freezing point Initial boiling point and boiling range 17,9 - 21,0 °C 190 - 193 °C at 7 hPa Flash point 179 °C - closed cup Evaporation rate No data available Flammability (solid, gas) Upper/lower flammability or explosive limits No data available Upper explosion limit: 8,5 %(V) Lower explosion limit: 1,3 %(V) Vapour pressure No data available Vapour density 5,15 - (Air = 1.0) Relative density 1,124 g/cm³ Water solubility 149 g/l at 20 °C - completely soluble Partition coefficient: n-octanol/water Autoignition temperature No data available No data available Decomposition temperature No data available Viscosity No data available Explosive properties No data available Oxidizing properties No data available
- Melting point/freezing point17,9 - 21,0 °C
- Initial boiling point and boiling range190 - 193 °C at 7 hPa
- Flash point179 °C - closed cup
- Evaporation rate365 °F
- Flammability (solid, gas)No data available
- Upper/lower flammability or explosive limits Upper explosion limit: 8,5 %(V) Lower explosion limit: 1,3 %(V)
- Vapour pressure3.6-7.2%(V)
- Vapour density5,15 - (Air = 1.0)
- Relative density1,124 g/cm³
- Water solubility149 g/l at 20 °C - completely soluble
- Partition coefficient: n-octanol/waterH₂O: 1 M, clear, colorless

- Autoignition temperature No data available
- Decomposition temperature No data available
- Viscosity No data available
- Explosive properties No data available
- Oxidizing properties No data available
- λ_{max} : 280 nm A_{max} : 0.1

>Other safety information

Relative vapour density

5,15 - (Air = 1.0)

SECTION 10: Stability and reactivity

>Reactivity

No data available

>Chemical stability

Stable under recommended storage conditions.

>Possibility of hazardous reactions

>Conditions to avoid

>Incompatible materials

Acids, Oxidizing agents

>Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO_x)

In the event of fire: see section 5

SECTION 11: Toxicological information

>Information on toxicological effects

Acute toxicity

LD50 Dermal - Rabbit - > 22,5 g/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Respiratory or skin sensitisation

Germ cell mutagenicity

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

Specific target organ toxicity - single exposure

Specific target organ toxicity - repeated exposure

Aspiration hazard

Additional Information

RTECS: Not available

Kidney injury may occur., Dermatitis

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

Liver - Irregularities - Based on Human Evidence

Toxicity

LD50 orally in Rabbit: > 5000 mg/kg LD50 dermal Rabbit > 2000 mg/kg

SECTION 12: Ecological information

>Toxicity

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia (water flea) - 609,98 mg/l - 48 h

>Persistence and degradability

Biodegradability Result: 96 % - Readily biodegradable.

>Bioaccumulative potential

No data available

>Mobility in soil

>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 final Initial Threshold Screening Level (ITSL) for triethanolamine is 50 µg/m³ based on an 8 hr.averaging time.

>Other adverse effects

No data available

SECTION 13: Disposal considerations

>Waste treatment methods

> Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Incompatibilities

Triethanolamine will react with mineral acids to form crystalline salts and esters. With the higher fatty acids, triethanolamine forms salts that are soluble in water and have characteristics of soaps. Triethanolamine will also react with copper to form complex salts. Discoloration and precipitation can take place in the presence of heavy metal salts.

Waste Disposal

Controlled incineration; incinerator equipped with a scrubber or thermal unit to reduce nitrogen oxides emissions

> Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

>UN number

ADR/RID: - IMDG: - IATA: -

>UN proper shipping name

ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods

>Transport hazard class(es)

>Packaging group

>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:Not Listed. website: <https://www.mem.gov.cn/>

Measures for Environmental Management of New Chemical Substances

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website:

<https://www.epa.gov/>

EC Inventory:Listed.

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

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

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

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/>

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/>