
Safety Data Sheet

Product Name	Triethanolamine
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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification:**Product Description:** Triethanolamine**Synonyms:** Trolamine; Tri-beta-hydroxy Ethanolamine; TEA**CAS-No:** 102-71-6**EC-No.:** 203-049-8**Molecular Formula:** C₆H₁₅NO₃**REACH Registration No:** A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.**1.2. Relevant identified uses of the substance or mixture and uses advised against:****Recommended Use:** Intermediate, Laboratory testing**1.3. Details of the supplier of the safety data sheet:**

- **Company** **Finar Limited**
184-186/P, Chacharwadi Vasna,
Sarkhej-Bavla Highway,
Ta.: Sanand, Dist.: Ahmedabad-382110, Gujarat, India.
Web: www.finarchemicals.com
- **E-Mail Address** safety.finar@aceto.com; info.finar@aceto.com

1.4. Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717

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SECTION 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture:**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2. Label Elements:**Labelling (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3. Other Hazards:

None Known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances:** Triethanolamine**3.2. Mixtures:**

Component	CAS-No	EC-No.	Weight %
Triethanolamine	102-71-6	203-049-8	>99 %

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures:****• If inhaled**

Fresh air.

• If case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/ shower.

• In case of eye contact

Rinse out with plenty of water. Remove contact lenses.

• If swallowed

Make victim drink water (two glasses at most). Consult doctor if feeling unwell.

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

Cough, Pain, Dizziness, Unconsciousness, Diarrhoea, Nausea, Vomiting, collapse, Tiredness

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

No information Available

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media:**

Suitable Extinguishing Media- Use water , alcohol-resistant foam, dry chemical or carbon dioxide.

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

5.2. Special hazards arising from the substance or mixture:

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

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

Fire may cause evolution of: nitrogen oxides

5.3. Advice for firefighters:

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further Information:

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures:**

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2. Environmental precautions:

Do not let product enter drains.

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6.3. Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material. Dispose of properly.

Clean up affected area.

6.4. Reference to other sections:

For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling:

Advice on safe handling

Observe label precautions.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

7.2. Conditions for safe storage, including any incompatibilities:

Avoid freezing, Keep containers tightly closed in a dry and well-ventilated place.

7.3. 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

8.1. Control parameters:

Contains no substances with occupational exposure limit values.

8.2. Exposure Controls:

- Appropriate Engineering Controls:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See section 7.1.

Personal Protective Equipment:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

- Eye & Face Protection-**

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Safety goggles.

- **Skin Protection -**

Hand Protection

Full contact

Material : Natural latex

Minimum layer thickness : 0.6 mm

Break through time : >480 min

Splash contact

Material : Nitrile rubber

Minimum layer thickness : 0.11 mm

Break through time : >60 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 706 Lapren® (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(> , <)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

- **Respiratory Protection-**

Not required; except in case of aerosol formation.

- **Environmental Exposure Controls-**

Do not let product enter drains.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties:**

- **Appearance: Form:** Liquid
Color: Colorless to Light Yellow
- **Physical State:** Liquid
- **Odour:** Amine like
- **pH:** 10.5 at 15 g/l 20°C
- **Melting Point:** Not applicable to liquids
- **Critical Temperature:** No data available
- **Boiling point:** 336.1 °C
- **Vapor Pressure:** < 0.0003 hPa at 21°C
- **Relative Vapor Density:** 5.14
- **Viscosity Dynamic:** 600 mPa.s at 25 °C
- **Lower Explosive Limit:** 3.6 %(V)
- **Upper Explosive Limit:** 7.2 %(V)
- **Decomposition Temperature:** No data available
- **Volatility:** No data available
- **Bulk Density:** No data available
- **Odor Threshold:** No data available
- **Water/Oil Dist. Co eff.:** No data available
- **Ionicity (in Water):** No data available
- **Boiling Point/Range:** 360°C at 1.013 hPa
- **Flash Point:** 179 °C (closed cup)
- **Specific Gravity / Density:** 1.126 g/cm³ at 20 °C
- **Ignition Temperature:** 325 °C
- **Water Solubility:** At 20°C Soluble

9.2. Other information:**Molecular weight:** 149.19 g/mol

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SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity: -**

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.2. Chemical stability: -

Sensitive to air.

10.3. Possibility of hazardous reactions: -

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!

Exothermic reaction with: Anhydrides, halogenating agents, Nitriles, Oxidizing agents, acids

A risk of explosion and/or of toxic gas formation exists with the following substances: Acid chlorides

10.4. Conditions to avoid: - Strong Heating.**10.5. Incompatible materials: - Nonferrous metals, Light metals****10.6. Hazardous decomposition products: - In the event of fire: See section 5.****SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute Oral toxicity**

LD50 Rat – 6,400 mg/kg

OECD Test Guideline 401

Acute Inhalation toxicity

Symptoms: Cough

Acute Dermal toxicity

LD50 Rabbit - > 2,000 mg/kg

OECD Test Guideline 402

Skin corrosion/irritation

Rabbit

Result: - No Skin Irritation

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OECD Test Guideline 404

Serious eye damage/eye irritation

Rabbit

Result: - No Eye Irritation

OECD Test Guideline 405

Respiratory or skin sensitization

Sensitisation test: Guinea pig

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(National Toxicology Program)

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 473

In vitro mammalian cell gene mutation test

Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 476

Carcinogenicity

No information available

Reproductive toxicity

No information available

Specific target organ toxicity - single exposure

No information available

Specific target organ toxicity - repeated exposure

No information available

Aspiration hazard

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No information available

11.2 Additional Information:

Systemic effects:

After uptake of large quantities:

Nausea, Vomiting, Diarrhoea, Dizziness, Tiredness, collapse, Unconsciousness

After long-term exposure to the chemical:

Damage to:

Liver, Kidney

Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Toxicity to fish Flow-through test LC50 Pimephales promelas (fathead minnow): 11,800 mg/l; 96 h (ECHA)

Toxicity to daphnia EC50 Daphnia magna (Water flea): 1,390 mg/l; 24 h
and other aquatic (IUCLID)
invertebrates

Toxicity to algae EC10 Desmodesmus subspicatus (green algae): 7.9 mg/l; 72 h
DIN 38412 part 9
ErC50 Desmodesmus subspicatus (green algae): 216 mg/l; 72 h
DIN 38412 part 9

Toxicity to Bacteria Static test EC50 activated sludge: > 1,000 mg/l; 3 h
OECD Test Guideline 209

Toxicity to daphnia Semi-static test NOEC Daphnia magna (Water flea): 16 mg/l; 21 d
and other aquatic Analytical monitoring: yes OECD Test Guideline 211
invertebrates
(Chronic toxicity)

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12.2 Persistence and degradability:

- Biodegradability 96 %
OECD Test Guideline 301E
- Readily biodegradable 82 % ; 8d
OECD Test Guideline 302B
- Readily eliminated from water Theoretical oxygen demand (ThOD)
2,040 mg/g
(IUCLID)

12.3 Bioaccumulate potential:

- Partition coefficient: n-octanol/water log Pow: -2.3 (25 °C)
OECD Test Guideline 107
- Bioaccumulation is not expected.

12.4 Mobility in soil:

No information Available

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects

Additional ecological information

- Biological effects:
- Harmful effect due to pH shift.
- Hazard for drinking water supplies.
- Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

Waste material must be disposed of in accordance with the national and local regulations.
Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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SECTION 14: Transport information

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	Not classified as dangerous in the meaning of transport regulations.		
14.2 Proper shipping name	Not classified as dangerous in the meaning of transport regulations.		
14.3 Class	Not classified as dangerous in the meaning of transport regulations.		
14.4 Packing group	Not classified as dangerous in the meaning of transport regulations.		
14.5 Environmentally hazardous	Not classified as dangerous in the meaning of transport regulations.		
14.6 Special precautions for user	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code		

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**

National legislation

15.2 Chemical safety assessment:

For this product a chemical safety assessment was not carried out.

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SECTION 16: Other information

Training advice: -

Provide adequate information, instruction and training for operators.

References: Not available

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