

## SAFETY DATA SHEET

Creation Date 11-June-2009

Revision Date 28-March-2024

Revision Number 3

### 1. Identification

**Product Name** **Ethanolamine**

**Cat No. :** **22793**

**CAS-No** 141-43-5  
**Synonyms** 2-Aminoethanol, monoethanolamine

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

##### **Importer/Distributor**

Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

|   |              |
|---|--------------|
| <b>Flammable liquids</b>                                | Category 4   |
| <b>Acute oral toxicity</b>                              | Category 4   |
| <b>Acute dermal toxicity</b>                            | Category 4   |
| <b>Acute Inhalation Toxicity</b>                        | Category 4   |
| <b>Skin Corrosion/Irritation</b>                        | Category 1 B |
| <b>Serious Eye Damage/Eye Irritation</b>                | Category 1   |
| <b>Specific target organ toxicity (single exposure)</b> | Category 3   |
| Target Organs - Respiratory system.                     |              |

#### Label Elements

**Signal Word**  
Danger

**Hazard Statements**

Combustible liquid

Harmful if swallowed, in contact with skin or if inhaled

Causes severe skin burns and eye damage

May cause respiratory irritation

Harmful if inhaled

**Precautionary Statements****Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Do not breathe dust/fumes/gas/mist/vapours/spray

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

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

**Response**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

IF INHALED: Remove person to fresh air and keep comfortable for breathing

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

Immediately call a POISON CENTER/doctor

Rinse mouth

Do NOT induce vomiting

Wash contaminated clothing before reuse

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Storage**

Store locked up

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Harmful to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

| Component    | CAS-No   | Weight % |
|--------------|----------|----------|
| Ethanolamine | 141-43-5 | >95      |

### 4. First-aid measures

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

|  |   |
|--|---|
| <b>Inhalation</b>                      | Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove from exposure, lie down. Call a physician immediately. If not breathing, give artificial respiration.  |
| <b>Ingestion</b>                       | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.  |
| <b>Most important symptoms/effects</b> | Difficulty in breathing. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>              | Treat symptomatically   |

## 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | 92 °C / 197.6 °F  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | 450 °C / 842 °F   |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | 23.5% @ 140°C   |
| <b>Lower</b>                            | 3.0% @140°C   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Combustible material. Containers may explode when heated.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Thermal decomposition can lead to release of irritating gases and vapors.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

**Health**  
3

**Flammability**  
2

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|   |  |
|---|--|
| <b>Personal Precautions</b>                 | Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. |
| <b>Environmental Precautions</b>            | Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.                                     |
| <b>Methods for Containment and Clean Up</b> | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition.   |

## 7. Handling and storage

### Handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe mist/vapors/spray. Keep away from open flames, hot surfaces and sources of ignition.

### Storage.

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat, sparks and flame. Store under an inert atmosphere. Incompatible Materials. Strong oxidizing agents.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component    | Alberta   | British Columbia          | Ontario TWA/EV            | Quebec  | ACGIH TLV                 | OSHA PEL  | NIOSH   |
|--------------|---|---------------------------|---------------------------|---|---------------------------|---|---|
| Ethanolamine | TWA: 3 ppm<br>TWA: 7.5 mg/m <sup>3</sup><br>STEL: 6 ppm<br>STEL: 15 mg/m <sup>3</sup> | TWA: 3 ppm<br>STEL: 6 ppm | TWA: 3 ppm<br>STEL: 6 ppm | TWA: 3 ppm<br>TWA: 7.5 mg/m <sup>3</sup><br>STEL: 6 ppm<br>STEL: 15 mg/m <sup>3</sup> | TWA: 3 ppm<br>STEL: 6 ppm | (Vacated) TWA: 3 ppm<br>(Vacated) TWA: 8 mg/m <sup>3</sup><br>(Vacated) STEL: 6 ppm<br>(Vacated) STEL: 15 mg/m <sup>3</sup><br>TWA: 3 ppm<br>TWA: 6 mg/m <sup>3</sup> | IDLH: 30 ppm<br>TWA: 3 ppm<br>TWA: 8 mg/m <sup>3</sup><br>STEL: 6 ppm<br>STEL: 15 mg/m <sup>3</sup> |

#### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles

#### Hand Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

| Glove material | Breakthrough time | Glove thickness | Glove comments         |
|----------------|-------------------|-----------------|------------------------|
| Natural rubber | See manufacturers | -               | Splash protection only |
| Nitrile rubber | recommendations   |                 |                        |
| Neoprene       |                   |                 |                        |
| PVC            |                   |                 |                        |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

#### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly  
**Recommended Filter type:** Ammonia and organic ammonia derivatives filter Type K Green conforming to EN14387  
Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

#### **Environmental exposure controls**

Prevent product from entering drains.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|  |                            |
|--|----------------------------|
| Physical State                         | Liquid                     |
| Appearance                             | Colorless                  |
| Odor                                   | Fishy                      |
| Odor Threshold                         | No information available   |
| pH                                     | 12 @ 20°C 20 g/l aq. sol   |
| Melting Point/Range                    | 10 °C / 50 °F              |
| Boiling Point/Range                    | 170 °C / 338 °F @ 760 mmHg |
| Flash Point                            | 92 °C / 197.6 °F           |
| Evaporation Rate                       | > 1 (Butyl Acetate = 1.0)  |
| Flammability (solid,gas)               | Not applicable             |
| Flammability or explosive limits       |                            |
| Upper                                  | 23.5% @ 140°C              |
| Lower                                  | 3.0% @140°C                |
| Vapor Pressure                         | 0.48 mmHg @ 20°C           |
| Vapor Density                          | 2.1 (Air = 1.0)            |
| Specific Gravity                       | 1.012                      |
| Solubility                             | miscible                   |
| Partition coefficient; n-octanol/water | No data available          |
| Autoignition Temperature               | 450 °C / 842 °F            |
| Decomposition Temperature              | No information available   |
| Viscosity                              | 24 cP at 20 °C             |
| Molecular Formula                      | C2 H7 N O                  |
| Molecular Weight                       | 61.08                      |

## 10. Stability and reactivity

|                                  |   |
|----------------------------------|---|
| Reactive Hazard                  | None known, based on information available  |
| Stability                        | Hygroscopic. Air sensitive.   |
| Conditions to Avoid              | Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Exposure to moist air or water.                |
| Incompatible Materials           | Strong oxidizing agents   |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> ), Thermal decomposition can lead to release of irritating gases and vapors |
| Hazardous Polymerization         | Hazardous polymerization does not occur.  |
| Hazardous Reactions              | None under normal processing.   |

## 11. Toxicological information

#### **Acute Toxicity**

**Product Information**  
**Component Information**

| Component    | LD50 Oral          | LD50 Dermal                                 | LC50 Inhalation             |
|--------------|--------------------|---|-----------------------------|
| Ethanolamine | 1720 mg/kg ( Rat ) | 1000 mg/kg ( Rabbit )<br>1 mL/kg ( Rabbit ) | LC50 > 1.3 mg/L ( Rat ) 6 h |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**
**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component    | CAS-No   | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|--------------|----------|------------|------------|------------|------------|------------|
| Ethanolamine | 141-43-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Component    | Freshwater Algae  | Freshwater Fish  | Microtox  | Water Flea        |
|--------------|-------------------|--|---|-------------------|
| Ethanolamine | EC50: 15 mg/L/72h | Leusiscus idus: LC50: >200 mg/L/48h<br>Salmo gairdneri: LC50: 150 mg/L/96h | Pseudomonas putida: EC50: 110 mg/L/17 h<br>Nitrosomonas: EC50: 12200 mg/L/2 h<br>Photobacterium phosphoreum: EC50: 13.7 mg/L/30 min | EC50: 65 mg/L/48h |

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available. Miscible with water

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

| Component    | log Pow |
|--------------|---------|
| Ethanolamine | -1.91   |

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

UN-No UN2491  
 Proper Shipping Name ETHANOLAMINE  
 Hazard Class 8  
 Packing Group III

#### TDG

UN-No UN2491  
 Proper Shipping Name ETHANOLAMINE  
 Hazard Class 8  
 Packing Group III

#### IATA

UN-No UN2491  
 Proper Shipping Name ETHANOLAMINE  
 Hazard Class 8  
 Packing Group III

#### IMDG/IMO

UN-No UN2491  
 Proper Shipping Name ETHANOLAMINE  
 Hazard Class 8  
 Packing Group III

### 15. Regulatory information

#### International Inventories

| Component    | CAS-No   | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS    | ELINCS | NLP |
|--------------|----------|-----|------|------|---|-----------|--------|-----|
| Ethanolamine | 141-43-5 | X   | -    | X    | ACTIVE  | 205-483-3 | -      | -   |

| Component    | CAS-No   | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|--------------|----------|-------|------|------|------|------|------|-------|-------|
| Ethanolamine | 141-43-5 | X     | X    | X    | X    | X    | X    | X     | X     |

#### Legend:

X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

#### Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

| Component    | Canada - National Pollutant Release Inventory (NPRI) | Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances | Canada's Chemicals Management Plan (CEPA) |
|--------------|--|--|---|
| Ethanolamine | Part 4 Substance                                     |  |   |

## Other International Regulations

## Authorisation/Restrictions according to EU REACH

| Component    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|--------------|---|---|---|
| Ethanolamine | -   | Use restricted. See item 75.<br>(see link for restriction details)            | -   |

## REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component    | CAS-No   | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--------------|----------|----------|------------------------------|---------------------------|--|
| Ethanolamine | 141-43-5 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component    | CAS-No   | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--------------|----------|---|--|----------------------------|------------------------------------|
| Ethanolamine | 141-43-5 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

## Prepared By

Product Safety Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

## Creation Date

11-June-2009

## Revision Date

28-March-2024

## Print Date

28-March-2024

## Revision Summary

New emergency telephone response service provider.

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**