

Material Safety Data Sheet

Ethanolamine

ACC# 08710

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethanolamine

Catalog Numbers: AC149580010, AC149580025, AC149580200, AC149580250, AC409530250, AC409535000, M251-1, M251-4

Synonyms: 2-Aminoethanol; Monoethanolamine.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
141-43-5	Ethanolamine	99	205-483-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear viscous liquid. Flash Point: 85 deg C.

Danger! Causes eye and skin burns. Harmful if absorbed through skin or if inhaled. **Combustible liquid and vapor.** May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause central nervous system depression. May cause liver damage. May cause kidney damage.

Target Organs: Kidneys, central nervous system, liver, lungs, eyes, skin, mucous membranes.

Potential Health Effects

Eye: Causes eye burns. May cause chemical conjunctivitis and corneal damage.

Skin: Causes moderate skin irritation. Harmful if absorbed through the skin. Causes skin burns. May cause dermatitis. May cause cyanosis of the extremities. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Ingestion: May cause severe and permanent damage to the digestive tract. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. May cause systemic effects.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes chemical burns to the respiratory tract. Aspiration may lead to pulmonary edema. May cause systemic effects. Inhalation at high concentrations may cause CNS depression and asphyxiation.

Chronic: May cause liver and kidney damage. Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Vapors mixed with air can explode when ignited. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated. Combustible liquid and vapor.

Extinguishing Media: Use water spray, dry chemical, "alcohol resistant" foam, or carbon dioxide.

Flash Point: 85 deg C (185.00 deg F)

Autoignition Temperature: 410 deg C (770.00 deg F)

Explosion Limits, Lower:3.0% @140°C

Upper: 23.5% @140°C

NFPA Rating: (estimated) Health: 3; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep away from heat and flame. Do not breathe vapor or mist.

Storage: Keep away from sources of ignition. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Isolate from oxidizing materials and acids.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethanolamine	3 ppm TWA; 6 ppm STEL	3 ppm TWA; 8 mg/m ³ TWA 30 ppm IDLH	3 ppm TWA; 6 mg/m ³ TWA

OSHA Vacated PELs: Ethanolamine: 3 ppm TWA; 8 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles and face shield.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. 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.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear viscous

Odor: ammonia-like - fish-like - objectionable

pH: 12.1 @ 1N

Vapor Pressure: .48 mm Hg @ 20 deg C

Vapor Density: 2.1(Air = 1)

Evaporation Rate:>1 (butyl acetate=1)

Viscosity: 24 cP 20 deg C

Boiling Point: 170 deg C

Freezing/Melting Point:10 deg C

Decomposition Temperature:Not available.

Solubility: Soluble.

Specific Gravity/Density:1.018 @ 20°C

Molecular Formula:C₂H₇NO

Molecular Weight:61.0551

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Absorbs carbon dioxide from the air.

Conditions to Avoid: Ignition sources, excess heat.

Incompatibilities with Other Materials: Reacts violently with acetic acid, acetic anhydride, acrolein, acrylic acid, acrylonitrile, cellulose, chlorosulfonic acid, epichlorohydrin, HCl, HF, mesityl oxide, HNO₃, oleum, H₂SO₄, b-propiolactone, vinyl acetate.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 141-43-5: KJ5775000

LD50/LC50:

CAS# 141-43-5:

Draize test, rabbit, eye: 250 ug Severe;

Oral, mouse: LD50 = 700 mg/kg;

Oral, rabbit: LD50 = 1 gm/kg;

Oral, rat: LD50 = 1720 mg/kg;
Skin, rabbit: LD50 = 1 mL/kg;

Carcinogenicity:

CAS# 141-43-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: TDLo (Oral, rat) = 500 mg/kg; Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus), fetal death, Specific Developmental Abnormalities - musculoskeletal system; TDLo(Oral, rat) = 500 mg/kg; Reproductive - Specific Developmental Abnormalities - urogenital system.

Mutagenicity: Cytogenetic analysis(Human Lymphocyte) =100 umol/LSister chromatid exchange (Human Lymphocyte) =1 mmol/L

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Goldfish: LC50 = 170.0 mg/L; 96 Hr.; Unspecified Bacteria: Phytobacterium phosphoreum: EC50 = 13.7 mg/L; 30 minutes; Microtox test No data available.

Environmental: If released to soil, 2-aminoethanol (MEA) is expected to biodegrade fairly rapidly following acclimation (half-life on the order of days to weeks). MEA is expected to leach in soil. Volatilization from soil surfaces is not expected to be an important fate process. If released to water, 2-aminoethanol should undergo biodegradation. The half-life of this compound is expected to range from a few days to a few weeks depending, in large part, on the degree of acclimation of the system.

Physical: Based on a vapor pressure of 0.26 mm Hg at 25 deg C, 2-aminoethanol (MEA) is expected to exist almost entirely in the vapor phase in the atmosphere. The dominant removal mechanism is expected to be reaction with photochemically generated hydroxyl radicals (half-life 4 hours). The complete solubility of MEA in water suggests that this compound may also be removed from the atmosphere in precipitation.

Other: A bioconcentration factor (BCF) of <1 was estimated for 2-aminoethanol (MEA) based on a log Kow of -1.31. This BCF value and complete solubility of MEA in water suggest that this compound does not bioconcentrate significantly in aquatic organisms.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ETHANOLAMINE	ETHANOLAMINE
Hazard Class:	8	8
UN Number:	UN2491	UN2491
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 141-43-5 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 141-43-5: immediate, fire.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 141-43-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C

Risk Phrases:

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 141-43-5: 1

Canada - DSL/NDSL

CAS# 141-43-5 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 141-43-5 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/24/1999

Revision #4 Date: 4/14/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.