

MATERIAL SAFETY DATA SHEET

Product Name: Ethanolamine

CAS No.: 141-43-5

Version: 0

1. Identification

Product Code : 90161, 90405
Company Name : Advent Chembio Private Limited
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
ETHANOLAMINE	141-43-5	90-100%

3. Hazards Identification**Hazard classification****Health hazards**

Acute toxicity (Oral) : Category 4
Acute toxicity (Dermal) : Category 4
Acute toxicity (Inhalation - vapor) : Category 4
Skin corrosion/irritation : Category 1
Serious eye damage/eye irritation : Category 1
Specific target organ toxicity - single exposure : Category 3

Labels elements**Hazard symbol**

Signal word : Danger
Hazard statement : Combustible liquid.
Harmful if swallowed.
Harmful if inhaled.
Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

Precautionary statement

Prevention : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wear protective gloves/protective

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clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling.

- Response** : In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Storage** : Store in a well-ventilated place. Keep container tightly closed. Store locked up.
- Disposal** : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Other hazards which do not result in GHS classification** : None.

4. First Aid Measures

- General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.
- Ingestion** : Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
- Inhalation** : Move to fresh air. If breathing is difficult, give oxygen. Apply artificial respiration if victim is not breathing Call a physician or poison control center immediately.
- Skin contact** : Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
- Eye contact** : Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air.
- Most important symptoms/effects, acute and delayed** : Causes severe skin and eye burns. Causes digestive tract burns. Mist or vapor extremely irritating to eyes and respiratory tract.
- Indication of immediate medical attention and special treatment needed** : Treat symptomatically. Symptoms may be delayed.

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5. Fire fighting measures

- General fire hazards** : Flammable liquid and vapor.
- Suitable (and unsuitable) extinguishing media**
- Suitable extinguishing media** : Water spray, foam, dry powder or carbon dioxide.
- Unsuitable extinguishing media** : Avoid water in straight hose stream; will scatter and spread fire.
- Specific hazards arising from the chemical** : Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode.
- Special protective equipment and precautions for firefighters**
- Special fire fighting procedures** : Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.
- Special protective equipment for fire-fighters** : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures** : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.
- Methods and material for containment and cleaning up** : Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharges. Stop leak if possible without any risk. Use only non-sparking tools. Neutralize with lime or soda ash. Neutralize spill area and washings with dilute acetic acid. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.
- Notification Procedures** : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
- Environmental precautions** : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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7. Handling and Storage

- Precautions for safe handling** : DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Use caution when adding this material to water.
- Conditions for safe storage, including any incompatibilities** : Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store in a cool and well-ventilated place. Store in corrosive resistant container with a resistant inner liner. Ground container and transfer equipment to eliminate static electric sparks. Do not store in metal containers. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure Controls Personal Protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
ETHANOLAMINE	TWA	3 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	6 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	6 ppm	15 mg/m ³
	REL	3 ppm	8 mg/m ³
	PEL	3 ppm	6 mg/m ³
	TWA	3 ppm	8 mg/m ³
	STEL	6 ppm	15 mg/m ³

Appropriate engineering controls : No data available.

Individual protection measures, such as personal protective equipment

- General information** : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.
- Eye/face protection** : Wear safety glasses with side shields (or goggles) and a face shield.
- Hand protection** : Chemical resistant gloves.
- Other** : Wear suitable protective clothing and gloves.

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- Respiratory protection** : If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.
- Hygiene measures** : Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Do not get this material in contact with skin. Do not get in eyes.

9. Physical and Chemical Properties

- Appearance** : Colorless Liquid.
Odor : No data available.
pH : No data available.
Melting point/freezing point : 10.3 °C
Initial boiling point and boiling range : 170 °C (101 kPa)
Flash Point : 86 °C
Vapor pressure : 0.10 kPa (25 °C)
Vapor density : 2.1 AIR=1
Relative density : 1.02 (20 °C)
Solubility in water : Miscible with water.
Solubility (other) : No data available.
Formula : C₂H₇NO
Molecular Weight : 61.08 g/mol

10. Stability and Reactivity

- Reactivity** : No dangerous reaction known under conditions of normal use.
Chemical stability : Material is stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerization does not occur.
Conditions to avoid : Heat, sparks, flames. Contact with incompatible materials.
Incompatible materials : No data available.
Hazardous decomposition products : Thermal decomposition may produce oxides of carbon and nitrogen.

11. Toxicological Information**Information on likely routes of exposure**

- Ingestion** : Harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.
Inhalation : Harmful if inhaled. Irritating to respiratory tract.
Skin contact : Harmful in contact with skin. Causes severe skin burns.

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Eye contact	:	Causes serious eye damage.
Information on toxicological effects		
Acute toxicity (list all possible routes of exposure)		
Oral Product	:	LD 50 (Rat): 10.2 g/kg
Dermal Product	:	LD 50 (Rabbit): 1,025 mg/kg
Inhalation Product	:	No data available.
Repeated dose toxicity Product	:	No data available.
Skin corrosion/irritation Product	:	Causes severe skin burns.
Serious eye damage/eye irritation Product	:	Causes serious eye damage.
Respiratory or skin sensitization Product	:	Not a skin sensitizer.
Carcinogenicity Product	:	This substance has no evidence of carcinogenic properties.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE	:	No carcinogenic components identified
US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE	:	No carcinogenic components identified
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	:	No carcinogenic components identified
Germ cell mutagenicity		
In vitro Product	:	No mutagenic components identified
In vivo Product	:	No mutagenic components identified
Reproductive toxicity Product	:	No components toxic to reproduction
Specific target organ toxicity - single exposure Product	:	Respiratory tract irritation.
Specific target organ toxicity - repeated exposure Product	:	None known.
Aspiration hazard Product	:	Not classified.
Other effects	:	None known.

12. Ecological Information**Ecotoxicity****Acute hazards to the aquatic environment :****Fish Product** : No data available.**Specified substance(s):** : LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 114 - 196 mg/l Mortality
ETHANOLAMINE : LC 50 (Fathead minnow (Pimephales promelas), 96 h): 1,810 - 2,370 mg/l Mortality
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 329.16 mg/l

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- Aquatic invertebrates Product** : Mortality
- Specified substance(s):** : No data available.
- ETHANOLAMINE** : LC 50 (Water flea (Daphnia magna), 24 h): 140 mg/l Mortality
- : LC 50 (Common shrimp, sand shrimp (Crangon crangon), 48 h): > 100 mg/l Mortality
- Chronic hazards to the aquatic environment :**
- Fish Product** : No data available.
- Aquatic invertebrates Product** : No data available.
- Toxicity to Aquatic Plants Product:** : No data available.
- Persistence and degradability**
- Biodegradation Product** : The product is not expected to be biodegradable.
- BOD/COD ratio Product** : No data available.
- Bioaccumulative potential**
- Bioconcentration factor (BCF) Product** : No data available on bioaccumulation.
- Partition coefficient n-octanol / water (log Kow) Product** : Log Kow: -1.31
- Mobility in soil** : No data available.
- Other adverse effects** : The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal consideration

- Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 2491	Ethanolamine	8	III	No
IMDG	UN 2491	Ethanolamine	8	III	No
IATA	UN 2491	Ethanolamine	8	III	No

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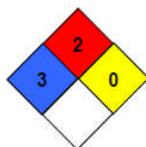
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15. Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information**NFPA Hazard ID**

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue Date :01/08/2014**Version : 0**

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