

Material Safety Data Sheet

Triethanolamine



1. Product and company identification

Product name : Triethanolamine
 Supplier : SABIC Americas, Inc.
 Houston, TX 77042 2500 City West Boulevard, Suite 650
 U.S.A.
 Phone: (713) 532-4999
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 Print date : 9/26/2011.
 CHEMTREC, U.S. : (800) 424-9300 International: (703) 527-3887

Product type : Liquid.

2. Hazards identification

Physical state : Liquid. [Clear.]
 Odor : Ammoniacal.
 OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Emergency overview : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
 No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
 Ingestion : No known significant effects or critical hazards.
 Skin : No known significant effects or critical hazards.
 Eyes : No known significant effects or critical hazards.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.
 Carcinogenicity : No known significant effects or critical hazards.
 Mutagenicity : No known significant effects or critical hazards.
 Teratogenicity : No known significant effects or critical hazards.
 Developmental effects : No known significant effects or critical hazards.
 Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.
 Ingestion : No specific data.
 Skin : No specific data.
 Eyes : No specific data.
 Medical conditions aggravated by over-exposure : None known.

See toxicological information (Section 11)

Triethanolamine

3. Composition/information on ingredients

Name	CAS number	%
2,2',2"-Nitriloethanol	102-71-6	>99

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
- Storage** : Store between the following temperatures: 30 to 45°C (86 to 113°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits
2,2',2''-Nitriloethanol	ACGIH TLV (United States, 2/2010). TWA: 5 mg/m ³ 8 hour(s).

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Closed system with local exhaust ventilation or self-contained breathing apparatus (SCBA)
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 4-8 hours (breakthrough time): butyl rubber or PVC
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: face shield or full-face mask
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Triethanolamine

8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal protective equipment (Pictograms) :



9. Physical and chemical properties

Physical state : Liquid. [Clear.]
Flash point : Closed cup: 179°C (354.2°F)
Auto-ignition temperature : 324°C (615.2°F)
Color : Colorless.
Odor : Ammoniacal.
pH : 10.2 [Conc. (% w/w): 10%]
Boiling/condensation point : 336.1°C (637°F)
Melting/freezing point : 20.5°C (68.9°F)
Density : 1.125 g/cm³
Relative density : 1.125
Vapor density : 5.14 [Air = 1]
Evaporation rate : <0.005 (butyl acetate = 1)
Solubility : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.
Conditions to avoid : No specific data.
Materials to avoid : No specific data.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2',2''-Nitriloethanol	LD50 Dermal	Rabbit	>10000 mg/kg	-
	LD50 Oral	Guinea pig	5300 mg/kg	-
	LD50 Oral	Rat - Male	6400 mg/kg	-

Conclusion/Summary : Very low toxicity to humans or animals.

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2',2''-Nitriloethanol	Chronic NOAEL Dermal	Rat	125 mg/kg	-

Conclusion/Summary : Not available.

Irritation/Corrosion

Triethanolamine**11. Toxicological information**

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,2',2"-Nitriloethanol	Skin - Mild irritant	Human	-	-	-
	Skin - Mild irritant	Rabbit	-	-	-

Conclusion/Summary

Skin : Non-irritating to the skin.
 Eyes : Non-irritating to the eyes.

Sensitizer**Conclusion/Summary**

Skin : Non-sensitizer to skin.
 Respiratory : Non-sensitizer to lungs.

Carcinogenicity

Conclusion/Summary : No carcinogenic effect.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
2,2',2"-Nitriloethanol	-	3	-	-	-	-

Mutagenicity

Product/ingredient name	Test	Experiment	Result
2,2',2"-Nitriloethanol	-	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative

Conclusion/Summary : No mutagenic effect.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
2,2',2"-Nitriloethanol	Acute EC50 512 mg/l Fresh water	Algae	72 hours
	Acute EC50 609.88 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 11800 mg/l Fresh water	Fish	96 hours
	Chronic NOEC 16 mg/l Fresh water	Crustaceans	21 days

Conclusion/Summary : Not available.

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2,2',2"-Nitriloethanol	Photolysis	50 % - 342 days	-	-

Conclusion/Summary : Not available.

Triethanolamine**13. Disposal considerations**

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

15. Regulatory information

HCS Classification : Not regulated.

U.S. Federal regulations : **TSCA 8(a) IUR**: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Commerce control list precursor: Triethanolamine
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Triethanolamine
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 Triethanolamine: Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

15. Regulatory information

- DEA List I Chemicals (Precursor Chemicals) : Not listed
- DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

- Massachusetts : The following components are listed: TRIETHANOLAMINE
- New York : None of the components are listed.
- New Jersey : The following components are listed: TRIETHANOLAMINE; ETHANOL, 2,2',2"-NITRILOTRIS-
- Pennsylvania : The following components are listed: ETHANOL, 2,2',2"-NITRILOTRIS-
- California Prop. 65

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Triethanolamine	No.	No.	No.	No.

- United States inventory (TSCA 8b) : All components are listed or exempted.

EU regulations

- Risk phrases : This product is not classified according to EU legislation.

International regulations

- International lists :
- Australia inventory (AICS):** All components are listed or exempted.
 - China Inventory (IECSC):** All components are listed or exempted.
 - Japan inventory:** All components are listed or exempted.
 - Korea inventory:** All components are listed or exempted.
 - New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
 - Philippines inventory (PICCS):** All components are listed or exempted.

- Chemical Weapons Convention List Schedule I Chemicals : Not listed

- Chemical Weapons Convention List Schedule II Chemicals : Not listed

- Chemical Weapons Convention List Schedule III Chemicals : Listed

16. Other information

- Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

- Hazardous Material Information System (U.S.A.) :

Health	0
Flammability	0
Physical hazards	0

16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



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Notice to reader

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