

Triethanolamine 99%**SECTION 1. IDENTIFICATION**

Product Identifier	Triethanolamine 99%
Other Means of Identification	2,2',2''-Nitrilotriethanol, Trihydroxytriethylamine, Trolamine
Product Code(s)	TR5020
Product Family	Alkanolamine
Recommended Use	Laboratory and industrial use.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	0509

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Eye irritation - Category 2A; Reproductive toxicity - Category 2; Specific target organ toxicity (repeated exposure) - Category 2

Label Elements

Signal Word:
Warning

Hazard Statement(s):

Causes eye irritation.

May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary Statement(s):

Wash hands and skin thoroughly after handling.

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

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of water.

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

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

If exposed or concerned: Call a POISON CENTRE or doctor.

Storage:

Product Identifier: Triethanolamine 99%

Date of Preparation: May 06, 2016

Page 01 of 06

Store in a dry place. Store in a closed container.

Disposal:

Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Triethanolamine	102-71-6	90 - 100	Daltogen, Tri(2-hydroxyethyl)amine
Diethanolamine	111-42-2	0 - 1	Diolamine, 2-(2-Hydroxyethylamino) ethanol

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor.

Skin Contact

Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. Get medical advice or attention if you feel unwell.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Immediately call a Poison Centre or doctor. Specific treatment is required.

Ingestion

Rinse mouth with water. Do not induce vomiting. If exposed or concerned, get medical advice or attention.

First-aid Comments

All first aid procedures should be periodically reviewed by a doctor familiar with the material and its condition of use in the workplace.

Most Important Symptoms and Effects, Acute and Delayed

None known.

Immediate Medical Attention and Special Treatment

Special Instructions

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog. Special "alcohol resistant fire-fighting foams".

Unsuitable Extinguishing Media

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific Hazards Arising from the Product

Heating increases the release of toxic vapour. Closed containers may rupture violently when heated releasing contents.

Product Identifier: Triethanolamine 99%

Date of Preparation: May 06, 2016

Page 02 of 06

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; very toxic, flammable formaldehyde; corrosive, oxidizing nitrogen oxides.

Special Protective Equipment and Precautions for Fire-fighters

Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. Knock down vapours or gases with water fog or fine water spray. Use water spray to flush spills away from ignition sources. Use water spray to dilute spills to non-flammable mixtures. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Dike and recover contaminated water for appropriate disposal.

A full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Emergency responders: use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources if safe to do so. Remove or isolate incompatible materials as well as other hazardous materials.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Contain spill with earth, sand, or absorbent material which does not react with spilled material. Place used absorbent into suitable, covered, labelled containers for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid generating vapours or mists. Do not breathe in this product. Do not get in eyes, on skin or on clothing. Wear personal protective equipment to avoid direct contact with this chemical. Prevent accidental contact with incompatible chemicals. Keep containers tightly closed when not in use or empty.

Conditions for Safe Storage

Store in an area that is: dry, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in a closed container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Triethanolamine	5 mg/m ³		Not established			
Diethanolamine			3 ppm			

Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Not usually required when working with small quantities. Wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear colourless - yellow liquid.
Odour	Ammonia-like
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	17.0 - 20.5 °C (62.6 - 68.9 °F) (melting); 17.0 - 20.5 °C (62.6 - 68.9 °F) (freezing)
Initial Boiling Point/Range	320.0 - 336.1 °C (608.0 - 637.0 °F)
Flash Point	179 °C (354 °F)
Evaporation Rate	0.01 (n-butyl acetate = 1)
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	< 0.02 mm Hg
Vapour Density (air = 1)	5
Relative Density (water = 1)	1.100 - 1.126 at 20 °C
Solubility	Soluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	-1.9 at 25 °C
Auto-ignition Temperature	324 °C (615 °F)
Decomposition Temperature	Not available
Viscosity	810 - 934 mm ² /s at 20 °C (kinematic); 934 mPa.s at 20 °C (dynamic)
Other Information	
Physical State	Liquid
Other Physical Property 1	Above Vapour Pressure measured at 38 deg C (100 deg F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity

None known.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Excess heat. Water, moisture or humidity.

Incompatible Materials

Strong acids (e.g. hydrochloric acid), strong oxidizing agents (e.g. perchloric acid), metals (e.g. aluminum).

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; very toxic, flammable formaldehyde.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
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Product Identifier: Triethanolamine 99%

Date of Preparation: May 06, 2016

Page 04 of 06

Triethanolamine	~ 0.005 ppm (rat) 6-hr	9000 mg/kg (rat)	> 19870 mg/kg (rabbit)
Diethanolamine	> 0.4 ppm (rat) 6-hr	1730 mg/kg (male rat)	8180 mg/kg (male rabbit)

Skin Corrosion/Irritation

No information was located.

Serious Eye Damage/Irritation

Animal tests show mild irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

No information was located.

Ingestion

No information was located.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

If swallowed: may cause damage to organs May cause harmful effects on the kidneys, harmful effects on the liver. Blood tests may show abnormal results.

Respiratory and/or Skin Sensitization

No information was located.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Triethanolamine	Group 3	Not designated	Not Listed	
Diethanolamine	Group 2B	A3	Not Listed	

Key to Abbreviations

Group 2B = Possibly carcinogenic to humans.

Group 3 = Not classifiable as to its carcinogenicity to humans.

A3 = Animal carcinogen.

Reproductive Toxicity

Development of Offspring

Conclusions cannot be drawn from the limited studies available.

Sexual Function and Fertility

Conclusions cannot be drawn from the limited studies available.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

No information was located.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of contents and container in accordance with local, regional, national and international regulations.

SECTION 14. TRANSPORT INFORMATION

Product Identifier: Triethanolamine 99%

Date of Preparation: May 06, 2016

Not regulated under IATA Regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	UN3077	Environmentally hazardous substances, liquid, n.o.s. (Diethanolamine)	9	III

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

NFPA Rating Health - 1 Flammability - 1 Instability - 0

SDS Prepared By Alphachem Limited

Phone No. (905)-821-2995

Date of Preparation May 06, 2016

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References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).

Disclaimer This document is offered only as a guide in the safe handling of the above product, and has been prepared from the best information currently available. It is not intended to be all-inclusive and the conditions of use may involve other additional considerations. Since Alphachem Limited cannot anticipate or control the conditions under which the product may be used, it will not be liable for any claims, damages or losses which may result from the use or reliance on any information herein.