SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Triethanolamine 99%
CAS number	102-71-6
Synonyms	Trolamine, Tri-beta-hydroxy Ethanolamine

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Carcinogenicity (Category 2)

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word	Warning
Hazard statements	Suspected of causing cancer
Precautionary statements	Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Obtain special instructions before use IF exposed or concerned: Get medical attention/advice Store locked up Dispose of contents/container to an approved waste disposal plant

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Triethanolamine	TEA,Trolamine, Tri-beta-hydroxy Ethanolamine	102-71-6	> 99.0%
Diethanolamine	DEA, Diethylolamine, Bis(2-hydroxyethyl)amine	102-71-6	< 0.05%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Remove to fresh air. Get medical attention immediately if symptoms occur.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
If swallowed	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

4.3 Indication of any immediate medical attention and special treatment needed

Note to Physician: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media — Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable extinguishing media — No information available.

5.2 Specific hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

5.3 Special 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.

5.4 Further information

Flash Point — 190 °C / 374 °F

Autoignition Temperature — 325 °C / 617 °F

Explosion limits

Upper — 8.50%

Lower — 1.30%

Sensitivity to Mechanical Impact — No information available.

Sensitivity to Static Discharge — No information available.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation.

6.2 Environmental precautions

Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep under nitrogen. Store under an inert atmosphere. Protect from moisture.

Incompatibilities
Strong oxidizing agents. Metals.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value
Triethanolamine	N/A	N/A
Diethanolamine	TWA (vacated)	3 ppm 15 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Triethanolamine	TWA	5 mg/m3
Diethanolamine	TWA	1 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Triethanolamine	N/A	N/A
Diethanolamine	TWA	3 ppm 15 mg/m3

Biological occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection
Wear appropriate protective gloves.

Body Protection
Wear appropriate clothing to prevent skin exposure.

Respiratory protection
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.

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless to yellow
Odor	Ammonia-like
Odor Threshold	No information available.
pH	No information available.
Melting Point/Range	21 °C / 69.8 °F
Boiling Point/Range	336.1 °C / 637.0 °F at 1,013.25 hPa
Evaporation Rate	0.01
Flammability (solid)	Not applicable.
Flammability or explosive limit	
Upper	8.50%
Lower	1.30%
Vapor Pressure	< 0.0002 mmHg at 21 °C / 70 °F
Vapor Density	5
Density	1.126 at 20 °C / 68 °F
Solubility	Soluble in water.
Partition coefficient; n-octanol/water	log Pow: -2.3
Autoignition Temp	325 °C / 617 °F

Decomposition Temp	No information available.
Viscosity	934 mPa.s at 20 °C / 68 °F (dynamic)
Molecular Formula	C6H15NO3
Molecular Weight	149.19
VOC Content(%)	No information available.
Oxidizing properties	None.

9.2 Other safety information
No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
None known, based on information available.

10.2 Chemical stability
Hygroscopic. Air sensitive.

10.3 Possibility of hazardous reactions
None under normal processing.

10.4 Conditions to avoid
Incompatible products. Excess heat. Exposure to air. Exposure to light. Exposure to moist air

10.5 Incompatible materials
Strong oxidizing agents, Acids, Metals.

10.6 Hazardous decomposition products
Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen cyanide (hydrocyanic acid), Formaldehyde.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Triethanolamine	4190 mg/kg (rat)	> 16 mL/kg (rat)	Not listed
Diethanolamine	780 mg/kg (rat)	11.9 mL/kg (rabbit)	Not listed

Skin corrosion/irritation
No information available.

Serious eye damage/eye irritation
Irritating to eyes.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Triethanolamine	102-71-6	Not listed	Not listed	Not listed	Not listed	Not listed
Diethanolamine	111-42-2	Group 2B	Not listed	A3	Listed	A3

Specific target organ toxicity - single exposure
None known.

Specific target organ toxicity - repeated exposure
None known.

Reproductive toxicity
No information available.

Chronic effects
No information available.

11.2 Additional Information
The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results	
Triethanolamine	EC50	Desmodesmus subspicatus	169 mg/L	96 h
	EC50	Desmodesmus subspicatus	216 mg/L	72 h
	LC50	Pimephales promelas	10600 - 13000 mg/L flow through	96 h
	LC50	Pimephales promelas	> 1000 mg/L static	96 h
	LC50	Lepomis macrochirus	450 - 1000 mg/L static	96 h
	EC50	Microtox	> 10000 mg/L	30 min
Diethanolamine	EC50	Pseudokirchneriella subcapitata	2.1 - 2.3 mg/L	96 h
	EC50	Desmodesmus subspicatus	7.8 mg/L	72 h
	LC50	Pimephales promelas	140 mg/L	96 h
	EC50	Microtox	73 mg/L	5 min
	EC50	Microtox	> 16 mg/L	16 h
	EC50	Daphnia magna	55 mg/L	48 h

12.2 Persistence and degradability
Persistence is unlikely.

12.3 Bio accumulative potential
No information availale.

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

12.5 Results of PBT and vPvB assessment
No information availale.

12.6 Endocrine disrupting properties
No information availale.

12.7 Other adverse effects
No information availale.

SECTION 13: Disposal considerations

13.1 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.

SECTION 14: Transport information

DOT (US)
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed: Diethanolamine (111-42-2)
RQ: 100 lb

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See section 2 for more information.

SARA 313 (TRI reporting)

Regulated: Diethanolamine (111-42-2)
Weight: <= 0.5%; Threshold values: 1.0%.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Regulated: Diethanolamine (111-42-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed: Triethanolamine (102-71-6) and Diethanolamine (111-42-2)

US. New Jersey Worker and Community Right-to-Know Act

Listed: Triethanolamine (102-71-6) and Diethanolamine (111-42-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Listed: Triethanolamine (102-71-6) and Diethanolamine (111-42-2)

California Proposition 65

Listed: Diethanolamine (111-42-2)

SECTION 16: Other information

Issue date: 12/03/2019
Revision 1: 10/25/2024

SECTION 17: Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.