SAFETY DATA SHEET

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

1.1 Product identifiers

Product name	Triethanolamine 50% Solution
CAS number	N/A
Synonyms	N/A

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

Identified uses	For industrial use only.

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

None required.

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	Tris(2-hydroxyethyl)amine; TEA	102-71-6	49-51%
Water	Aqua; H2O	7732-18-5	49-51%
Diethanolamine	DEA, Diethylolamine, Bis(2-hydroxyethyl)amine	102-71-6	<0.43%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Move person to fresh air; if effects occur, consult a physician.

In case of skin contact Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

In case of eye contact Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

If swallowed No emergency medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed

If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Unsuitable extinguishing media	Do not use direct water stream. May spread fire.

5.2 Specific hazards arising from the substance or mixture

Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide. Carbon oxides. Nitrogen oxides (NOx).

5.3 Special protective equipment and precautions for firefighters

Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with selfcontained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.

5.4 Further information

Flash Point 179 °C (354 °F) Closed Cup (Estimated)

Autoignition Temperature No information available.

Explosion limits

Upper No data available.

Lower No data available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
1	1	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3 Methods and materials for containment and cleaning up

Large spills: Dike area to contain spill. Pump into suitable and properly labeled containers. Small spills: Dilute with water. Recover spilled material if possible. Absorb with materials such as: Non-combustible material. Sand. Remove with shovel. Collect in suitable and properly labeled containers.

6.4 Reference to other sections

See Section 13, Disposal Considerations for additional information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Avoid contact with eyes. Wash thoroughly after handling. Thaw and mix well before using. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

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

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Avoid freezing. Store under an oxygen-free nitrogen atmosphere. Store in a dry place. Do not store in: Copper. Copper alloys. Galvanized containers.
Storage temperature: > 16 °C (> 61 °F)

Incompatibilities
Avoid contact with: Nitrites. Strong acids. Strong oxidizers. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases. Avoid contact with metals such as: Zinc. Galvanized metals. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

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	(Vacated) TWA	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
Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Eye/face protection
Use safety glasses (with side shields).

Skin protection
Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Body Protection
When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

Respiratory protection
Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Control of environmental exposure
No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless to yellow
Odor	Ammoniacal
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-5 °C (23 °F)

Boiling Point/Range	119.1 °C (246.4 °F)
Evaporation Rate	0.9
Flammability (solid)	Not applicable
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	9.7 mmHg at 20 °C (68 °F)
Vapor Density	No information available
Density	1.123 at 20 °C (68 °F)
Solubility	Miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	40 cP at 50 °C (122 °F), dynamic
Molecular Formula	N/A
Molecular Weight	N/A
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information
No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage conditions. See Storage, Section 7.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to avoid
Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

10.5 Incompatible materials
Avoid contact with: Nitrites. Strong acids. Strong oxidizers. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases. Avoid contact with metals such as: Zinc. Galvanized metals. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

10.6 Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Triethanolamine	6,400 mg/kg (Rat)	> 2,000 mg/kg (Rabbit)	-
Diethanolamine	780 mg/kg (rat)	11.9 mL/kg (rabbit)	-

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin. Repeated exposure may cause irritation, even a burn.

Serious eye damage/eye irritation
May cause slight eye irritation. Corneal injury is unlikely.

Respiratory or skin sensitization
Skin contact may cause an allergic skin reaction in a small proportion of individuals. Did not cause allergic skin reactions when tested in guinea pigs.

Germ cell mutagenicity
In vitro genetic toxicity studies were negative.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Triethanolamine	102-71-6	Not listed	Not listed	Not listed	Not listed	Not listed
Diethanolamine	111-42-2	Group 2B	Not listed	A3	X	A3

Specific target organ toxicity - single exposure
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific target organ toxicity - repeated exposure
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Reproductive toxicity
No relevant data found.

Chronic effects
No immediate effects known unless otherwise noted.

11.2 Additional Information
Based on physical properties, not likely to be an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
Triethanolamine	LC50	Pimephales promelas	11,800 mg/l, 96h, flow-through
	EC50	Ceriodaphnia dubia	609.9 mg/l, 48h, static
	ErC50	Algae (Scenedesmus sp.)	512 mg/l, 72h, static
	EC50	Activated sludge	> 1,000 mg/l, 3 hour
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
Material is readily biodegradable.

12.3 Bio accumulative potential
Bioconcentration potential is low.

12.4 Mobility in soil
Potential for mobility in soil is very high (Koc between 0 and 50).

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Endocrine disrupting properties
No information available.

12.7 Other adverse effects
No information available.

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)

UN-no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Technical Name	Diethanolamine

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 applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Diethanolamine (CAS #111-42-2), RQ: 100 lb.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

No SARA Hazards.

SARA 313 (TRI reporting)

Listed, Diethanolamine (CAS #111-42-2).

Other federal regulations

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

Listed, Diethanolamine (CAS #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, Diethanolamine (CAS #111-42-2).
Listed, Triethanolamine (CAS #102-71-6).

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

Listed, Diethanolamine (CAS #111-42-2).
Listed, Triethanolamine (CAS #102-71-6).

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

Listed, Diethanolamine (CAS #111-42-2).
Listed, Triethanolamine (CAS #102-71-6).

California Proposition 65

Listed, Diethanolamine (CAS #111-42-2).

SECTION 16: Other information

Issue date: 12/03/2019
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Revision 2: 07/01/2025

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.