MATERIAL SAFETY DATA SHEET

Triethanolamine

Section 1 - Chemical Product and Company Identification

MSDS Name:	Triethanolamine
Synonyms:	2,2',2''-Nitrilotriethanol; TEA

Company Identification: (INDIA)	Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA
For information in the INDIA, call:	Tel: +91 - 22 - 2275 5555 / 6184 0000, Fax: +91 - 22 - 2275 5556 / 6184 0001

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
102-71-6	Triethanolamine	99%	203-049-8

Hazard Symbols:	XI
	
Risk Phrases:	36

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Irritating to eyes.

Potential Health Effects

Eye:	Causes eye irritation.
Skin:	May cause mild skin irritation. May cause dermatitis. Causes redness and pain.
Ingestion:	May cause irritation of the digestive tract. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause headache.
Inhalation:	May cause respiratory tract irritation. Inhalation of vapors will cause coughing or breathing difficulty.
Chronic:	May cause liver and kidney damage.

Section 4 - First Aid Measures

Eyes:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:	Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Get medical aid. Wash mouth out with water.
Inhalation:	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:	Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media:	Use water spray, dry chemical, carbon dioxide, or chemical foam.

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling:	Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes. Avoid ingestion and inhalation. Use only in a chemical fume hood.
Storage:	Store in a cool, dry place. Store in a tightly closed container. Store under nitrogen.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:	
	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits	CAS# 102-71-6:
	Belgium - TWA: 5 mg/m3 VLE
	Germany: 5 mg/m3 TWA (inhalable fraction)
	Malaysia: 5 mg/m3 TWA
	Netherlands: 5 mg/m3 MAC
	Spain: 5 mg/m3 VLA-ED

Personal Protective Equipment	
Eyes:	Wear chemical splash goggles.
Skin:	Wear appropriate protective gloves to prevent skin exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	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.

Section 9 - Physical and Chemical Properties

Physical State:	Viscous liquid
Color:	colorless to light yellow
Odor:	ammonia-like
pH:	10.5 (15 g/L water)
Vapor Pressure:	<0.01mmHg @20 deg C
Viscosity:	600 mPa.s @25 deg C
Boiling Point:	360 deg C @760mmHg (680.00°F)

Freezing/Melting Point:	21 deg C (69.80°F)
Autoignition Temperature:	325 deg C (617.00 deg F)
Flash Point:	190 deg C (374.00 deg F)
Explosion Limits: Lower:	3.6 Vol %
Explosion Limits: Upper:	7.2 Vol %
Decomposition Temperature:	Not available
Solubility in water:	freely soluble
Specific Gravity/Density:	1.125
Molecular Formula:	C6H15NO3
Molecular Weight:	149.19

Section 10 - Stability and Reactivity

Chemical Stability:	Air sensitive. Hygroscopic: absorbs moisture or water from the air.
Conditions to Avoid:	Incompatible materials, light, ignition sources, exposure to air, exposure to moist air or water, heat.
Incompatibilities with Other Materials	Oxidizing agents, acids, aluminum, copper, copper alloys, zinc.
Hazardous Decomposition Products	Nitrogen oxides, carbon monoxide, carbon dioxide.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#:	CAS# 102-71-6: KL9275000
LD50/LC50:	RTECS: **CAS# 102-71-6:** Draize test, rabbit, eye: 20 mg Severe; Draize test, rabbit, eye: 10 mg Mild; Draize test, rabbit, skin: 560 mg/24H Mild; Oral, mouse: LD50 = 5846 mg/kg; Oral, rabbit: LD50 = 2200 mg/kg; Oral, rat: LD50 = 4920 uL/kg; Skin, rabbit: LD50 = >20 mL/kg; Skin, rat: LD50 = >16 mL/kg; Other:
Carcinogenicity:	Triethanolamine - IARC: Group 3 (not classifiable)
Other:	See actual entry in RTECS for complete information. The toxicological properties have not been fully investigated.

Section 12 - Ecological Information

Ecotoxicity:	Fish: Leuciscus idus: LC50: 10 000 mg/L; 96h; Fish: Bluegill/Sunfish: LC50: 450-1000 mg/L; 96h; Bacteria: Phytobacterium phosphoreum: EC50: 525 mg/L; 30 min.; Daphnia: Daphnia: EC50:1390 mg/L; 24h;
Other:	Avoid entering into waters or underground water. Do not empty into drains. Readily biodegradable. log POW = -2.3

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	AMINES, SOLID, CORROSIVE, N.O.S.*	AMINES, SOLID, CORROSIVE, N.O.S.	AMINES, SOLID, CORROSIVE, N.O.S.
Hazard Class:	8	8	8
UN Number:	3259	3259	3259
Packing Group:	III	III	III

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

Risk Phrases:

- R 36 Irritating to eyes.

Safety Phrases:

- S 26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
- S 39 Wear eye/face protection.

WGK (Water Danger/Protection)

- CAS# 102-71-6: 1

Canada

- CAS# 102-71-6 is listed on Canada's DSL List

US Federal

- TSCA
- CAS# 102-71-6 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:	July 26, 2015
Revision #1 Date	

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