

TRIETHANOLAMINE-85 LOW FREEZE
SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TRIETHANOLAMINE-85 LOW FREEZE
 CAS Number: 102-71-6
 Chemical characterization : Ethanolamines
 Chemical Name : 2,2'2"-nitrilotris-ethanol
 Synonyms : Tri(2-hydroxyethyl)amine; Triethanolamine; TEA 85 Low Freezing Grade

Use of the Substance/Mixture : Use in Cleaning Agents, Use as intermediate, Cosmetics, personal care products, Lubricants

Company : Skyhawk Chemicals. Inc
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 Houston, TX 77024

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 ACCT# CCN721839

SECTION 2. HAZARDS IDENTIFICATION
GHS Classification

Acute toxicity, Oral	Category 4
Skin irritation	Category 2
Serious eye damage	Category 1
Reproductive toxicity	Category 2
Specific target organ systemic toxicity - single exposure, Liver, Kidney	Category 2
Specific target organ systemic toxicity - repeated exposure, Liver, Kidney	Category 2
Acute aquatic toxicity	Category 3

GHS Classification Scale (1= severe hazard; 4= slight hazard)

Label elements

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Hazard symbols :



Signal Word

: Danger

Hazard Statements

: H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H361f Suspected of damaging fertility.
H371 May cause damage to organs (Liver, Kidney).
H373 May cause damage to organs (Liver, Kidney) through prolonged or repeated exposure.
H402 Harmful to aquatic life.

Precautionary Statements

: **Prevention**

P201 Obtain special instructions before use.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P362 Take off contaminated clothing and wash before reuse.

Other hazards

No additional information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients

Component	CAS-No.	Weight %
Triethanolamine	102-71-6	83.0 - 100.0 %
Diethanolamine	111-42-2	8.0 - 11.0 %

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Water

7732-18-5

13.0 - 17.0 %

SECTION 4. FIRST AID MEASURES

First aid procedures

- General advice : Consult a physician/doctor if necessary.
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 2 of this SDS.
Show this material safety data sheet to the doctor in attendance.
- If inhaled : Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. When breathing is difficult, properly trained personnel may assist the affected person by administering oxygen. Keep the affected person warm and at rest. Get medical attention immediately.
- In case of skin contact : Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing, seek medical attention. Thoroughly clean contaminated clothing before reuse; discard contaminated leather goods (gloves, shoes, belts, wallets, etc.).
After contact with skin, wash immediately with plenty of soap and water.
- In case of eye contact : Immediately flush eyes thoroughly with plenty of water and continue flushing for at least 15 minutes.
Remove contact lenses.
Seek immediate medical attention, preferably an ophthalmologist.
- If swallowed : DO NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Obtain emergency room treatment immediately.

Notes to physician

- Hazards : Causes serious eye damage.
Suspected of damaging fertility.
- Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

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Flash point : 280 - 374 °F (138 - 190 °C)
at 1,013 hPa (760 mm Hg)
Method: PMCC

Autoignition temperature : No Data Available.

Lower explosion limit : No Data Available.

Upper explosion limit : No Data Available.

Fire fighting

Suitable extinguishing media : SMALL FIRE: Use dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Use water spray, water fog or regular foam. Do not use straight streams.

Unsuitable extinguishing media : No additional information available.

Protective equipment and precautions for firefighters

Specific hazards during fire fighting : Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Move containers from fire area if it can be done without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Special protective equipment for fire-fighters : Wear a NIOSH approved positive pressure self-contained breathing apparatus (SCBA). Structural firefighter's protective clothing will only provide limited protection.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Methods for containment / Methods for cleaning up : Contain spill with dike to prevent entry into sewers or waterways. For large spills, dike and pump into properly labeled containers for reclamation or disposal. For small spills, soak

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up with absorbent material and place in properly labeled containers for disposal.
All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

Additional advice : See Section 15: Regulatory Information.

SECTION 7. HANDLING AND STORAGE

Handling

Advice on safe handling : Containers, even those that have been emptied, will retain product residue and vapor and should be handled as if they were full. Do not eat, drink or smoke in areas where this material is used.
After handling, always wash hands thoroughly with soap and water.
Do not handle near heat, sparks, or flame. Avoid contact with incompatible agents. Use only with adequate ventilation/personal protection. Avoid contact with eyes, skin and clothing. Do not enter storage area unless adequately ventilated. Metal containers involved in the transfer of this material should be grounded and bonded.

Storage

Requirements for storage areas and containers : Store containers in a cool, dry, ventilated, fire resistant area away from sources of ignition and incompatible materials. Keep container tightly closed and properly labeled.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value	Control parameters	Update	Basis
Triethanolamine	102-71-6	TWA	5 mg/m ³	2012	US (ACGIH)
Diethanolamine	111-42-2	TWA	1 mg/m ³	2012	US (ACGIH)

Engineering measures

Engineering measures : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below

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recommended exposure limits.
Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1)

Personal protective equipment

- Eye protection : Wear safety glasses meeting the specifications of OSHA 29CFR 1910.133 / ANSI Standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specifications of OSHA 29CFR 1910.133 / ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contact with the eyes.
Wear safety glasses. Chemical goggles should be worn if there is risk of exposure.
- Hand protection : Wear chemical resistant gloves such as:
Butyl rubber.
Neoprene.
Nitrile.
Viton(TM).
or
PVC
The break through time depends amongst other things from the material, the thickness and the type of glove and therefore has to be measured for each case.
- Skin and body protection : Appropriate protective clothing should be worn to prevent skin contact.
The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

- Form : liquid
- Color : Colorless to yellow.
- Odor : Ammonia-like.

Safety data

- Flash point : 280 - 374 °F (138 - 190 °C)
at 1,013 hPa (760 mm Hg)

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Method: PMCC

Lower explosion limit	: No Data Available.
Upper explosion limit	: No Data Available.
Oxidizing properties	: No Data Available.
Autoignition temperature	: No Data Available.
Decomposition temperature	: not determined
pH	: Not applicable.
Melting point/freezing point	: 70 °F (21 °C)
Boiling point/boiling range	: 374 °F (190 °C)
Vapor pressure	: < 0.003 hPa (0.002 mm Hg) at 68 °F (20 °C)
Density	: 1.12 g/cm ³ at 68 °F (20 °C) (Water = 1)
Water solubility	: Miscible
Partition coefficient: n-octanol/water	: log Pow: -1 at 77 °F (25 °C)
Viscosity, kinematic	: 134 mm ² /s at 77 °F (25 °C)
Relative vapor density	: 5.14 (Air = 1.0)
Explosive properties	: No Data Available.
Remarks - Other information	: (Above properties based on Triethanolamine)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Will not occur.
Chemical stability	: Stable under recommended storage conditions.

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Conditions to avoid	: Heat, sparks, open flame, other ignition sources, and oxidizing conditions. Avoid processing of material over 300 °C (572 °F).
Materials to avoid	: Do not add nitrites or other nitrosating agents. A nitrosamine, which may cause cancer, may be formed. Aluminum. Copper. Tin. Zinc. Strong oxidizing agents. Strong acids. Strong bases.
Hazardous decomposition products	: Carbon Monoxide and Carbon dioxide. Ammonia and oxides of nitrogen.
Thermal decomposition	: Combustion may produce oxides of carbon, oxides of nitrogen and other toxic gases.
Hazardous reactions	: Not expected to occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Product Summary	: The below given information is based on the assessment of the product including impurities.
Acute toxicity	
Acute oral toxicity	: Classified Harmful if swallowed. : LD50: 1,833 mg/kg Method: Acute toxicity estimate
Acute inhalation toxicity	: Test substance: Triethanolamine Based on acute toxicity values, not classified. : LC50: 0.029 mg/m3 Species: rat
Acute dermal toxicity	: Test substance: Triethanolamine Based on acute toxicity values, not classified. : LD50: > 2,000 mg/kg Species: rabbit
Skin corrosion/irritation	: Classified

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Causes skin irritation.

Serious eye damage/eye irritation : Classified
Causes serious eye damage.

Respiratory or skin sensitization : Respiratory sensitization
Not classified
No adverse effect observed.

: Skin sensitization
Not classified
No adverse effect observed.

Chronic toxicity

Component Name	NTP	IARC	OSHA
Diethanolamine		2B	Present

Carcinogenicity : Not classified
Contains substances that have a positive carcinogenicity study.
The weight of evidence for the carcinogenicity of this substance does not meet the criteria for classification.

Germ cell mutagenicity : Not classified
No adverse effect observed.

Reproductive toxicity

Effects on fertility / Effects on or via lactation : Classified
Suspected of damaging fertility.
Contains Diethanolamine, toxicity to male reproduction may occur.
Testicular effects have been found after repeated exposures.

Effects on Development : Not classified
No adverse effect observed.

Target Organ Systemic Toxicant - Single exposure : Target Organs: Liver, Kidney
Classified, May cause damage to organs.

Target Organ Systemic Toxicant - Repeated exposure : Target Organs: Liver, Kidney
Classified, May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Based on physico-chemical values or lack of human evidence,

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not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicology Assessment

Acute aquatic toxicity : Classified
Harmful to aquatic life.

Chronic aquatic toxicity : Not classified, based on readily biodegradability and low acute toxicity.

Toxicity to fish :
Acute toxicity to fish is very low.

Toxicity to daphnia and other aquatic invertebrates

Diethanolamine : EC50: 55 mg/l
Exposure time: 48 HOURS
Species: Daphnia magna.
Immobilization
Moderately toxic to aquatic invertebrates.

Toxicity to algae

Diethanolamine : EC50: 2.2 mg/l
Exposure time: 96 HOURS
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition
Toxic to algae.

Toxicity to bacteria : Low toxicity to sewage microbes.

Toxicity to fish (Chronic toxicity) : No Data Available.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Diethanolamine : NOEC: 0.78 mg/l
Exposure time: 21 d
Species: Daphnia magna.

Reproduction Test
Harmful to aquatic invertebrates (chronic exposure)

Persistence and degradability

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Biodegradability : $\geq 93\%$
Test substance: Triethanolamine
Rapidly degradable.
(After 28 days in a ready biodegradability test)

Bioaccumulative potential

Bioaccumulation : Species: *Cyprinus carpio* (Carp)
Bioconcentration factor (BCF): < 3.9
Test substance: Triethanolamine
This material is not expected to bioaccumulate.

Mobility in soil

Distribution among environmental compartments : Stability in water
Not expected to hydrolyze readily.

: Stability in soil
no data available

Additional advice : No additional information available.
Environmental fate and pathways

Results of PBT and vPvB assessment

Not applicable.

Other adverse effects

Additional ecological information : No additional information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations. Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. The materials resulting from clean-up operations may be hazardous wastes and therefore, subject to specific regulations.

SECTION 14. TRANSPORT INFORMATION

DOT
UN number : 3082
Description of the goods : Environmentally hazardous substance, liquid, n.o.s.

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Class : (DIETHANOLAMINE)
Packing group : 9
Labels : III
 : 9

SECTION 15. REGULATORY INFORMATION

All components of this product are listed or are exempt from listing on the TSCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

SARA 302/304

<u>Component</u>	<u>TPQ</u>	<u>RQ</u>
Diethanolamine		100 lbs

SARA 311/312

Immediate (Acute) Health Hazard.
Delayed (Chronic) Health Hazard.

SARA 313

<u>Component</u>	<u>Reporting Threshold</u>
Diethanolamine	1.0%

State Reporting

This material contains the following chemical substance which is regulated under California Proposition 65. However, it is the responsibility of the California business owner to develop his or her own regulatory compliance plan.

Substance	CASRN	Type of Toxicity			
		Carcinogen	Developmental	Repro-Male	Repro-Female
Diethanolamine	111-42-2	X			

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

102-71-6 Triethanolamine
111-42-2 Diethanolamine

This product contains the following chemicals regulated by Massachusetts' Right to Know Law:

102-71-6 Triethanolamine
111-42-2 Diethanolamine

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This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

102-71-6 Triethanolamine

111-42-2 Diethanolamine

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant

SECTION 16. OTHER INFORMATION

Further information

HMIS Classification

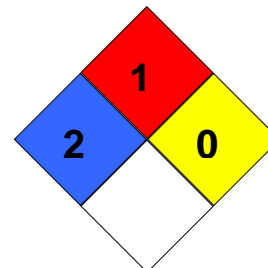
: Health Hazard: 2
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

2*	1	0	
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NFPA Classification : Health Hazard: 2
Fire Hazard: 1
Instability: 0



Other Information

HMIS rating scale (0 = minimal hazard; 4 = severe hazard)
NFPA rating scale (0 = minimal hazard; 4 = severe hazard)

Material safety datasheet sections which have been updated:

Updated format First Edition June 9 2014

Disclaimer

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Information is correct to the best of our knowledge at the date of the SDS publication.

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Language Translations

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