TRIETHANOLAMINE 99%

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SECTION 1. IDENTIFICATION

Product name : TRIETHANOLAMINE 99%

Manufacturer or supplier's details

Supplier : Silver Fern Chemical, Inc.
Address : 2226 Queen Anne Ave. North, Suite C
: Seattle, WA 98109, USA
Phone : 1-866-282-3384
Customer Service Phone : 1-866-282-3384
: info@silverfernchemical.com

Emergency telephone number : **Infotrac 1-800-535-5053 (USA & Canada)**
: Outside USA & Canada 1-352-323-3500

Recommended use of the chemical and restrictions on use

Recommended use : Intermediate
Component of a Polyurethane System.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Triethanolamine	102-71-6	90 - 100

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.

If symptoms persist, call a physician.

In case of eye contact	:	Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	No data is available on the product itself.
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	No data is available on the product itself.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Not applicable for product as supplied.
Methods and materials for containment and cleaning up	:	Neutralize with acid. Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against	:	Normal measures for preventive fire protection.

fire and explosion

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Triethanolamine	102-71-6	TWA	5 mg/m3	ACGIH

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous liquid

Color : light yellow

Odor : ammoniacal

Odor Threshold : No data is available on the product itself.

pH : 11 (20 °C)
Concentration: 20 g/l

Freezing point : 20.5 °C

Melting point 20.5 °C

Boiling point : 335.4 - 360 °C
Decomposition: yes

336.1 °C
(1,013.25 hPa)

		Decomposition: yes
Flash point	:	193 °C Method: ISO 2719, Pensky-Martens closed cup
Evaporation rate	:	< 0.1
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit	:	7.2 %(V)
Lower explosion limit	:	3.6 %(V)
Vapor pressure Relative	:	< 0.0003 hPa (21 °C)
vapor density Relative	:	5.2
density	:	1.125 (20 °C)
Density	:	1.125 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	> 1,000 g/l completely miscible (20 °C)
Solubility in other solvents	:	partly soluble Solvent: Methanol
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	ca.330 °C
Decomposition temperature	:	> 270 °C Method: Other guidelines > 250 °C Method: Isoperibol Lütolf > 120 °C Method: Dewar
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity		
Viscosity, dynamic	:	934 mPa.s (20 °C)
Viscosity, kinematic	:	527 mm2/s (25 °C)
Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	None.

Molecular weight	:	149.19 g/mol
Particle size	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	:	None known.
Incompatible materials	:	Metals Strong acids Strong bases Strong oxidizing agents
Hazardous decomposition products	:	Carbon monoxide Carbon dioxide (CO2) Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Components:

Triethanolamine**:**

Acute oral toxicityComponents : LD50 (Rat, male and female): 6,400 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : No data available

Components:

Triethanolamine**:**

Acute dermal toxicity : LD50 (Rabbit, male and female): > 5,000 mg/kg

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Components:

Triethanolamine**:**
Species: Rabbit
Assessment: No skin irritation
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation

Components:

Triethanolamine**:**
Species: Rabbit
Result: Normally reversible injuries
Assessment: No eye irritation
Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

Triethanolamine**:**
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

Triethanolamine**:**
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Concentration: 0 - 1500 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : No data available

Carcinogenicity

Components:

Triethanolamine**:**
Species: Rat, (male and female)
Application Route: Dermal
Exposure time: 103 weeks
Dose: 250 mg/kg
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 451
Result: negative

Carcinogenicity - Assessment : No data available

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

Triethanolamine**:**

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Components:

Triethanolamine**:**

Effects on foetal development : Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: > 1,000 mg/kg body weight
Method: OECD Test Guideline 421
Result: No teratogenic effects

Species: Rat
Application Route: Dermal
General Toxicity Maternal: No observed adverse effect level: 75 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rabbit
Application Route: Dermal
General Toxicity Maternal: No observed adverse effect level: 10 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

Triethanolamine**:**
Species: Rat, male and female
: 1000 mg/kg, 500 mg/m3
Application Route: Ingestion
Test atmosphere: dust/mist
Exposure time: 672 h
Method: OECD Test Guideline 412

Species: Rat, male and female
: 125 - 500 mg/kg, 420 mg/m3
Application Route: Skin contact
Test atmosphere: dust/mist
Exposure time: 2,160 h
Number of exposures: 6 h
Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Triethanolamine:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 11,800 mg/l Exposure time: 96 h Test Type: flow-through test Test substance: Fresh water

Components:

Triethanolamine:

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Ceriodaphnia dubia (Water flea)): 609.88 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water

Components:

Triethanolamine:

Toxicity to algae	:	ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 512 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: DIN 38412
M-Factor (Acute aquatic toxicity)	:	No data available
Toxicity to fish (Chronic toxicity)	:	No data available

Components:

Triethanolamine:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 16 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water
M-Factor (Chronic aquatic toxicity)	:	No data available

Components:

Triethanolamine:

Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 209
Toxicity to soil dwelling organisms	:	No data available
Plant toxicity	:	No data available
Sediment toxicity	:	No data available
Toxicity to terrestrial organisms	:	No data available

Ecotoxicology Assessment

Acute aquatic toxicity	:	No data available
Chronic aquatic toxicity	:	No data available
Toxicity Data on Soil	:	No data available
Other organisms relevant to the environment	:	No data available

Persistence and degradability

Biodegradability - Product	:	Inoculum: activated sludge Concentration: 5.7 mg/l Result: Readily biodegradable. Biodegradation: ca. 100 % Exposure time: 5 d
Biochemical Oxygen Demand (BOD)	:	No data available

Components:

Triethanolamine:

Chemical Oxygen Demand (COD)	:	1600 mgO2/g
BOD/COD	:	No data available
ThOD	:	No data available
BOD/ThOD	:	No data available
Dissolved organic carbon (DOC)	:	No data available
Physico-chemical removability	:	No data available
Stability in water	:	No data available

Photodegradation	:	No data available
Impact on Sewage Treatment	:	No data available

Bioaccumulative potential

Components:

Triethanolamine:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): < 3.9 Exposure time: 42 d Test substance: Fresh water Method: flow-through test

Components:

Triethanolamine:

Partition coefficient: n-octanol/water	:	log Pow: -2.3 (25 °C) pH: 7.1

Mobility in soil

Mobility	:	No data available

Components:

Triethanolamine:

Distribution among environmental compartments	:	Koc: 18
Stability in soil	:	No data available

Other adverse effects

Environmental fate and pathways	:	No data available
Results of PBT and vPvB assessment	:	No data available
Endocrine disrupting potential	:	No data available
Adsorbed organic bound halogens (AOX)	:	No data available

Hazardous to the ozone layer

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product	:	No data available
Global warming potential (GWP)	:	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA
Not regulated as dangerous goods

IMDG
Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations

DOT Classification
Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
2,2'-iminodiethanol	111-42-2	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards	:	No SARA Hazards
SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

2,2'-iminodiethanol	111-42-2

The components of this product are reported in the following inventories:

CH INV	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

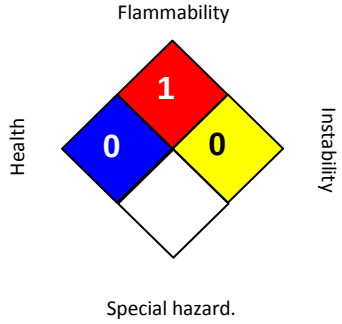
TSCA - 5(a) Significant New Use Rule List of Chemicals
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
No substances are subject to TSCA 12(b) export notification requirements.

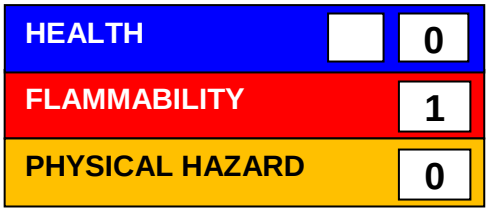
SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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