



Safety Data Sheet

Triethylamine

Revision date : 2023/07/27

Page: 1/13

1. Identification

Product identifier used on the label

Triethylamine

Recommended use of the chemical and restriction on use

Recommended use*: Chemical used in synthesis and/or formulation of industrial products

Recommended use*: Agricultural industry; Textile chemical; Pharmaceutical agent

Unsuitable for use: Not intended for sale to or use by the general public.

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Distributor:

Silver Fern Chemical, Inc.

2226 Queen Anne Avenue North

Seattle WA 98109, USA

Phone: 1-866-282-3384

Info@silverfernchemical.com

Emergency telephone number:

24 Hour Emergency Contact

Infotrac 1-800-535-5053 (USA & Canada)

Outside USA & Canada 1-352-323-3500

Other means of identification

Molecular formula:

C(6)H(15)N

Chemical family:

tertiary, amine, aliphatic

Synonyms:

N,N-DIETHYLETHANAMINE

TRIETHYLAMINE

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

Classification of the

product Flam. Liq.

Flammable
liquids

2

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 2/13

Acute Tox.	3 (Inhalation - vapor)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	3 (dermal)	Acute toxicity
Skin Corr./Irrit.	1A	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Aquatic Acute	2	Hazardous to the aquatic environment - acute

Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.
H311 + H331	Toxic in contact with skin or if inhaled.
H401	Toxic to aquatic life.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing and eye protection or face protection.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/mist/vapours.
P243	Take action to prevent static discharges.
P273	Avoid release to the environment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.
P242	Use non-sparking tools.
P240	Ground and bond container and receiving equipment.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P370 + P378	In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 3/13

Precautionary Statements (Storage):

P233 Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

Hazards not otherwise classified

In the presence of nitrosating agents, it is possible that this substance forms nitrosamines.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

triethylamine

CAS Number: 121-44-8

Content (W/W): >= 99.5 - <= 100.0%

Synonym: N,N-Diethylethanamine

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing. Keep patient calm, remove to fresh air, seek medical attention.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:

Immediately remove contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Consult a doctor if skin irritation persists.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. If irritation develops, seek medical attention.

If swallowed:

Do not induce vomiting. Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause:, respiratory disorders, coughing

Indication of any immediate medical attention and special treatment needed

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 4/13

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote. Pulmonary odema prophylaxis. Medical monitoring for at least 24 hours.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

Unsuitable extinguishing media for safety reasons:
No data available.

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
Substance/product is dangerous when exposed to heat or flames. If product is heated above decomposition temperature, toxic vapours will be released.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

If exposed to fire, keep containers cool by spraying with water.

Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Breathing protection required. Do not breathe vapor/aerosol/spray mists. Keep people away and stay on the upwind side. Avoid contact with the skin, eyes and clothing. Sources of ignition should be kept well clear.

Wind direction should be noted. Extinguish sources of ignition nearby and downwind. Warn all occupants of downwind areas of explosion potential. Ensure adequate ventilation. Personal protection: wear a tightly closed chemical protection suit and a self-contained breathing apparatus.

Environmental precautions

Substance/product is RCRA hazardous due to its properties.

Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 5/13

Containers should be opened carefully in well-ventilated areas to avoid static discharge. Use only in well-ventilated areas. Keep away from sources of ignition - No smoking. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Fire extinguishers should be kept handy.

Ground all transfer equipment properly to prevent electrostatic discharge.

Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances.

Unsuitable materials for containers: Aluminium, Paper/Fibreboard, List does not exclude further unsuitable materials.

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Keep under nitrogen. Avoid all sources of ignition: heat, sparks, open flame. Keep container tightly closed and in a cool place. Keep away from sources of ignition - No smoking. Avoid extreme heat.

Storage stability:

Storage temperature: < 35 °C

Storage duration: 24 Months

From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

triethylamine	ACGIH, US:	TWA value 0.5 ppm ;
	ACGIH, US:	STEL value 1 ppm ;
	OSHA Z1:	PEL 25 ppm 100 mg/m3 ;
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapor respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Hand protection:

Chemical resistant protective gloves, nitrile rubber (Buna N), fluoroelastomer (Viton)

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 6/13

Body protection:

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact. Do not get in eyes, on skin, or on clothing. Remove contaminated clothing immediately and dispose of safely. Personal protective equipment should be decontaminated prior to reuse. When using, do not eat, drink or smoke.

9. Physical and Chemical Properties

Form:	liquid	
Odor:	strong, ammonia-like	
Odor threshold:	Not determined since toxic by inhalation.	
Color:	colourless to yellow	
pH value:	12.7 (100 g/l, 15 °C)	
Melting point:	-114.7 °C Literature data.	(other)
Freezing point:	No data available.	
Boiling point:	89.3 °C (1,013.25 hPa) Literature data.	
Boiling range:	No data available.	
Sublimation point: Flash point:	No applicable information available. -11 °C	(ISO 13736, closed cup)
Flammability:	Highly flammable liquid and vapor.	(derived from flash - and boiling point)
Lower explosion limit:	For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.	
Autoignition:	249 °C Literature data.	
Vapor pressure:	72 hPa (20 °C)	(internal method)
Density:	0.7275 g/cm3 (20 °C, 1,013 hPa) Literature data.	(other)
Relative density:	0.695 g/cm3 (55 °C, approx. 1,013 hPa)	(calculated)
Vapor density:	0.73 (20 °C)	
Partitioning coefficient n-octanol/water (log Pow):	> 1 (20 °C) Heavier than air.	(estimated)
Self-ignition temperature:	1.45 (25 °C) Literature data.	(calculated)
Thermal decomposition:	Based on its structural properties the product is not classified as self-igniting. No decomposition if stored and handled as prescribed/indicated.	

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 7/13

Viscosity, dynamic:	0.363 mPa.s (25 °C) Literature data.
Viscosity, kinematic:	No applicable information available.
Particle size:	The substance / product is marketed or used in a non solid or granular form.
Solubility in water:	112,400 mg/l (20 °C) Literature data.
Solubility (quantitative):	No applicable information available.
Solubility (qualitative):	No applicable information available.
Molar mass:	101.19 g/mol

10. Stability and Reactivity

Reactivity

Corrosion to metals:
Corrosive effects to metal are not anticipated. In the presence of water or moisture metal corrosion cannot be excluded.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.

Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
-------------------------------	----------	--

Chemical stability

The product is chemically stable.

Possibility of hazardous reactions

Reacts with oxidizing agents.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge.

Incompatible materials

mineral acids

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: carbon dioxide, carbon monoxide, Nitric acid, Ammonium hydroxide, nitrogen oxides, nitrosamines

Thermal decomposition:
No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 8/13

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term skin contact. The substance can be absorbed through the skin. Of pronounced toxicity after short-term inhalation. The inhalation of a highly enriched/saturated vapor-air-mixture represents a severe acute hazard.

Oral

Type of value: LD50

Species: rat (male/female)

Value: 730 mg/kg (similar to OECD guideline 401)

Inhalation

Type of value: LC50

Species: rat (male/female)

Value: 7.22 mg/l (OECD Guideline 403)

Exposure time: 4 h

The vapor was tested.

Dermal

Type of value: LD50

Species: rabbit (male)

Value: 580 mg/kg (similar to OECD guideline 402)

Literature data.

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Highly corrosive! Damages skin and eyes.

Skin

Species: rabbit

Result: Corrosive.

Method: -Test

Eye

Species: rabbit

Result: Risk of serious damage to eyes.

Method: similar to OECD guideline 405

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Mouse ear swelling test (MEST)

Species: mouse

Result: Non-sensitizing.

Aspiration Hazard

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 9/13

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation.

Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The substance was not mutagenic in studies with mammals. Literature data.

Carcinogenicity

Assessment of carcinogenicity: No data available concerning carcinogenic effects. Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422). The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) 24 mg/l, *Oryzias latipes* (OECD Guideline 203)

Aquatic invertebrates

LC50 (48 h) 17 mg/l, *Ceriodaphnia dubia* (Daphnia test acute, semistatic)

The statement of the toxic effect relates to the analytically determined concentration.

EC50 (48 h) 34 mg/l, *Daphnia magna* (OECD Guideline 202, part 1)

The statement of the toxic effect relates to the analytically determined concentration.

Aquatic plants

EC50 (72 h) 9.8 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201)

The statement of the toxic effect relates to the analytically determined concentration.

EC10 (72 h) 5.05 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201)

The statement of the toxic effect relates to the analytically determined concentration.

Chronic toxicity to fish

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 10/13

No observed effect concentration (60 d) 3.2 mg/l, *Oncorhynchus mykiss* (OECD Guideline 210, semistatic)

Chronic toxicity to aquatic invertebrates

No observed effect concentration (21 d) 11 mg/l, *Daphnia magna* (OECD Guideline 211)
The statement of the toxic effect relates to the analytically determined concentration.

Assessment of terrestrial toxicity

No data available.
Study not necessary due to exposure considerations.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

DIN 38412 Part 8 aerobic bacterium/EC50 (17 h): 95 mg/l
The product is highly volatile. Tested in a closed test system. The details of the toxic effect relate to the nominal concentration. After neutralization, it is no longer toxic.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Elimination information

80.3 % CO₂ formation relative to the theoretical value (29 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of stability in water

According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis)

According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential

Assessment bioaccumulation potential

Significant accumulation in organisms is not to be expected.

Bioaccumulation potential

Bioconcentration factor: 0.5 (42 d), *Cyprinus carpio* (OECD Guideline 305 C)
Significant accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments

The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 11/13

Adsorbable organically-bound halogen(AOX):
This product contains no organically-bound halogen.

Add. remarks environm. fate & pathway:
Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

13. Disposal considerations

Waste disposal of substance:

Dispose of in a RCRA-licensed facility.

Container disposal:

Empty containers with less than 1 inch of residue may be landfilled at a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

RCRA: D001

14. Transport Information

Land transport

USDOT

Hazard class: 3
Packing group: II
ID number: UN 1296
Hazard label: 3, 8
Proper shipping name: TRIETHYLAMINE

Sea transport

IMDG

Hazard class: 3
Packing group: II
ID number: UN 1296
Hazard label: 3, 8
Marine pollutant: NO
Proper shipping name: TRIETHYLAMINE

Air transport

IATA/ICAO

Hazard class: 3
Packing group: II
ID number: UN 1296
Hazard label: 3, 8
Proper shipping name: TRIETHYLAMINE

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 12/13

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

EPCRA 313:

<u>CAS Number</u>	Chemical name
121-44-8	triethylamine

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
100 LBS	64-17-5; 75-04-7; 109-89-7	Ethanol; ethylamine; diethylamine

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
NJ	121-44-8	triethylamine
	64-17-5	Ethanol
PA	121-44-8	triethylamine

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: This product can expose you to chemicals including ETHANOL IN ALCOHOLIC BEVERAGES, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

NFPA Hazard codes:

Health: 3 Fire: 3 Reactivity: 1 Special:

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Skin Corr./Irrit.	1A	Skin corrosion/irritation
Acute Tox.	3 (dermal)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	3 (Inhalation - vapor)	Acute toxicity
Aquatic Acute	2	Hazardous to the aquatic environment - acute
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Flam. Liq.	2	Flammable liquids
Eye Dam./Irrit.	1	Serious eye damage/eye irritation

16. Other Information

SDS Prepared by:

NA Product Regulations

SDS Prepared on: 2023/07/27

Safety Data Sheet

Triethylamine

Revision date: 2023/07/27

Page: 13/13

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

Approved – TL 2-2-24