Safety Data Sheet
Triethylamine anhydrous

1. Identification

Product identifier used on the label

Triethylamine anhydrous

Recommended use of the chemical and restriction on use

* The “Recommended use” identified for this product is provided solely to comply with a US 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

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula:	C(6)H(15)N
Chemical family:	tertiary, amine, aliphatic
Synonyms:	N,N-DIETHYLETHANAMINE

2. Hazards Identification

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

Classification of the product

Flam. Liq.	2	Flammable liquid
Acute Tox.	3 (Inhalation - vapour)	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 vapour.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.
H401	Toxic to aquatic life.

Precautionary Statements (Prevention):

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

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or doctor/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 + P352	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.

Precautionary Statements (Storage):

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

Precautionary Statements (Disposal):

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

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

DANGER:
CORROSIVE LIQUID.
EXTREMELY FLAMMABLE.
HARMFUL IF SWALLOWED.
HARMFUL IF ABSORBED THROUGH SKIN.
HARMFUL IF INHALED.
Use with local exhaust ventilation.
Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.
Wear full face shield if splashing hazard exists.

3. Composition / Information on Ingredients

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

CAS Number	Content (W/W)	Chemical name
121-44-8	>= 99.5 - <= 100.0 %	triethylamine

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS Number	Content (W/W)	Chemical name
121-44-8	> 99.5 %	triethylamine
75-04-7	<= 0.2 %	ethylamine
64-17-5	<= 0.2 %	Ethanol

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:
Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:
Immediate medical attention required. Flush with copious amounts of water for at least 15 minutes.

If in eyes:
In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:
Do not induce vomiting. Rinse mouth and then drink plenty of water. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause:, difficulty breathing, coughing

Indication of any immediate medical attention and special treatment needed

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

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. Avoid contact with the skin, eyes and clothing.

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

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.

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

Storage stability:
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	OSHA PEL	PEL 25 ppm 100 mg/m3 ;
	ACGIH TLV	TWA value 1 ppm ; STEL value 3 ppm ; Skin Designation ; The substance can be absorbed through the skin.

Advice on system design:
Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:
Wear a NIOSH-certified (or equivalent) organic vapour 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.

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	
Odour:	ammonia-like, amine-like	
Odour threshold:		Not determined since toxic by inhalation.
Colour:	colourless to yellow	
pH value:	12.7	(100 g/l) No data available.
Melting point:	-114.7 °C	(other) Literature data.
Boiling point:	89.3 °C	(other) Literature data.
Flash point:	-11 °C	(other, closed cup)
Flammability:	Highly flammable liquid and vapour.	
Lower explosion limit:		For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:		For liquids not relevant for classification and labelling.
Autoignition:	249 °C	Literature data.
Vapour pressure:	72 hPa	(20 °C) (internal method)
Density:	0.7275 g/cm3	(20 °C, 1,013 hPa) (other) Literature data.
Relative density:	0.73	(20 °C)
Partitioning coefficient n-octanol/water (log Pow):	1.45	(25 °C) (calculated) Literature data.
Self-ignition temperature:		Based on its structural properties the product is not classified as self-igniting.
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Viscosity, dynamic:	0.363 mPa.s	(25 °C) Literature data.
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.
Molar mass:	101.19 g/mol	
Evaporation rate:		Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

Corrosion to metals:
No corrosive effect on metal.

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

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

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

11. Toxicological information

Primary routes of exposure

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 vapour 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: BASF-Test

Eye
Study scientifically not justified. As the product irritates the skin, it can be expected to have a similar effect on the eyes also.

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
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: Repeated inhalative uptake of the substance did not cause substance-related effects.

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.

Symptoms of Exposure

Overexposure may cause:, difficulty breathing, coughing

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) 36 mg/l, Oncorhynchus mykiss (Flow through.)

Aquatic invertebrates
LC50 (48 h) 17 mg/l, Ceriodaphnia dubia (semistatic)
The statement of the toxic effect relates to the analytically determined concentration.

Aquatic plants
Toxic limit concentration (4 d) 1 mg/l, Scenedesmus quadricauda (Growth Inhibition Test, static)
Literature data.

Chronic toxicity to fish
No observed effect concentration (60 d) 3.2 mg/l, Oncorhynchus mykiss (semistatic)

Chronic toxicity to aquatic invertebrates
No observed effect concentration (7 d) 7.1 mg/l, Ceriodaphnia dubia (semistatic)

Assessment of terrestrial toxicity
Study scientifically not justified.

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).

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.

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)

Additional information

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

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

EPCRA 311/312 (Hazard categories): Acute; Chronic; Fire

CERCLA RQ	CAS Number	Chemical name
100 LBS	64-17-5; 75-04-7; 109-89-7	Ethanol; ethylamine; diethylamine
5000 LBS	121-44-8	triethylamine

State regulations

State RTK	CAS Number	Chemical name
MA, NJ, PA	121-44-8	triethylamine
MA, NJ, PA	75-04-7	ethylamine
MA, NJ, PA	64-17-5	Ethanol

NFPA Hazard codes:
Health : 3 Fire: 3 Reactivity: 1 Special:

HMIS III rating
Health: 3¤ Flammability: 3 Physical hazard: 1

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 - vapour)	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 liquid
Eye Dam./Irrit.	1	Serious eye damage/eye irritation

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2014/09/10

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