


1 Identification

- **Product identifier**
- **Trade name:** Triethylamine
- **Article number:** A3845
- **CAS Number:**
121-44-8
- **EC number:**
204-469-4
- **Index number:**
612-004-00-5
- **Application of the substance / the mixture**
Biochemistry
Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
AppliChem GmbH
Ottoweg 4
D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

Tel.: +49 (0)6151 93570
Fax.: +49 (0)6151 935711
msds@applichem.com

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 2 H225 Highly flammable liquid and vapor.
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 3 H311 Toxic in contact with skin.
Acute Tox. 3 H331 Toxic if inhaled.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**

GHS02 GHS05 GHS06 GHS07
- **Signal word** Danger
- **Hazard statements**
H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
- **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

(Contd. on page 2)

Trade name: Triethylamine

(Contd. of page 1)

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
121-44-8 Triethylamine
- **Identification number(s)**
- **EC number:** 204-469-4
- **Index number:** 612-004-00-5

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Involve doctor immediately.
- **After inhalation:** Supply fresh air or oxygen; call for doctor.
- **After skin contact:**
Call a doctor immediately.
Immediately remove any clothing soiled by the product.
Immediately wash with polyethylene glycol 400.
Immediately rinse with water.
- **After eye contact:**
Rinse opened eye for several minutes under running water.
Call a doctor immediately.
- **After swallowing:**
make victim drink water (maximum of 2 drinking glasses)
Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

Trade name: Triethylamine

(Contd. of page 2)

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Combustible.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
CO, CO₂
- **Advice for firefighters**
- **Protective equipment:**
Mouth respiratory protective device.
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Contain escaping vapours with water.

* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources
Avoid substance contact.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Clean up affected area.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
 - **PAC-1:** 1 ppm
 - **PAC-2:** 170 ppm
 - **PAC-3:** 1,000 ppm

* 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

(Contd. on page 4)

Trade name: Triethylamine

(Contd. of page 3)

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Provide alkali-resistant floor.
- **Information about storage in one common storage facility:**
Away from sources of ignition and heat.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Open receptacle only under localized extractor facilities.
Store only outside or in explosion proof rooms.
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** +15 - +25 °C
- **Storage class:** 3
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

121-44-8 Triethylamine

PEL	Long-term value: 100 mg/m ³ , 25 ppm
TLV	Short-term value: 4.14 mg/m ³ , 1 ppm Long-term value: 2.07 mg/m ³ , 0.5 ppm
	Skin

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Short term filter device:
Filter A-(P2)
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 5)

Trade name: Triethylamine

(Contd. of page 4)

- **For the permanent contact gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.4 mm
Value for the permeation: Level ≥ 480 min
- **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 10 min
- **Eye protection:**



Tightly sealed goggles

- **Body protection:**
Use protective suit.
Alkaline resistant protective clothing
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Yellowish
· Odor:	Amine-like
· Odor threshold:	Not determined.

· pH-value: 12.7

· Change in condition

Melting point/Melting range:	-115 °C (-175 °F)
Boiling point/Boiling range:	89 °C (192 °F)

· Flash point: -11 °C (12 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 249 °C (480 °F)

· Decomposition temperature: Not determined.

· Auto igniting: Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapor pressure at 20 °C (68 °F): 72 hPa (54 mm Hg)

· Density at 20 °C (68 °F): 0.73 g/cm³ (6.092 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water at 20 °C (68 °F): 112 g/l

· Partition coefficient (n-octanol/water): 0.16137

(Contd. on page 6)

Trade name: Triethylamine

(Contd. of page 5)

- **Viscosity:**
 - Dynamic at 20 °C (68 °F): 0.363 mPas
 - Kinematic: Not determined.
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No dangerous reactions known.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Warming. A range from approx. 15 Kelvin below the flash point is to be rated as critical.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - acids
 - oxidizing agent
- **Hazardous decomposition products:** In the event of fire: See chapter 5
- **Additional information:**
 - Incompatible with:
 - varous plastics
 - rubber

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

· Components		Type	Value	Species
Oral	LD50		730 mg/kg (rat)	
Dermal	LD50		580 mg/kg (rabbit)	
Inhalative	LC50/4 h		7.22 mg/l (rat)	

- **Primary irritant effect:**
 - **on the skin:** Strong caustic effect on skin and mucous membranes.
 - **on the eye:** Strong caustic effect.
- **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**
 - **IARC (International Agency for Research on Cancer)** Substance is not listed.
 - **NTP (National Toxicology Program)** Substance is not listed.
 - **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.

· Type of test	Effective concentration	Method	Assessment
LC50/48 h	17 mg/l (Aquatic Invertebrata)		
LC50/96 h	36 mg/l (fish)		

- **Persistence and degradability** No further relevant information available.

(Contd. on page 7)

Trade name: Triethylamine



(Contd. of page 6)

- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
Water hazard class 1 (Assessment by list): slightly hazardous for water
Do not allow to enter waters, waste water, or soil.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

- | | |
|-------------------------------------|---|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | UN1296 |
| · UN proper shipping name | |
| · DOT, ADR | Triethylamine |
| · IMDG, IATA | TRIETHYLAMINE |
| · Transport hazard class(es) | |
| · DOT | |
| |  |
| · Class | 3 Flammable liquids |
| · Label | 3, 8 |
| · ADR | |
| |  |
| · Class | 3 (FC) Flammable liquids |

(Contd. on page 8)

Trade name: Triethylamine

(Contd. of page 7)

· Label	3+8
· IMDG	
· Class	3 Flammable liquids
· Label	3/8
· IATA	
· Class	3 Flammable liquids
· Label	3 (8)
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	338
· EMS Number:	F-E,S-C
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1296 TRIETHYLAMINE, 3 (8), II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is listed.
- TSCA (Toxic Substances Control Act): Substance is listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.

(Contd. on page 9)

Trade name: Triethylamine

(Contd. of page 8)

- **Cancerogenity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH) A4**
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** Danger
- **Hazard statements**
H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
- **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Dept. Compliance
- **Contact:** Mr. Th. Stöckle
- **Date of preparation / last revision** 07/15/2017 / 3
- **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- *** Data compared to the previous version altered.**