Triethylamine

Safety Data Sheet

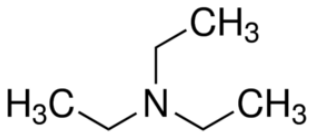
according to Regulation (EU) 2015/830

Date of issue: 01/06/2022

Doc No: SDS-974.031/2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	:	Substance
Substance name	:	Triethylamine
EC Index-No.	:	612-004-00-5
EC-No.	:	204-469-4
CAS-No.	:	121-44-8
Type of product	:	Pure substance
Formula	:	$C_6H_{15}N$
Chemical structure	:	
Synonyms	:	(diethylamino)ethane / AI3-15425 / ethanamine, N,N-diethyl- / N,N-diethylethanamine / TEA (=triethylamine) / TEN / TETN / Triethylamine / triethylamine anhydrous

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Pesticide: component
Solvent
Catalyst
Industrial use
Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB Laborgeräte GmbH
Am Dillhof 2 - 63863 Eschau / GERMANY
Tel: + 49 93 74 / 978 55-0
Fax: +49 93 74 / 978 55-29
prodsafe@isolab.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 30 19240	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 2	H225
Acute Tox. 3 (Inhalation)	H331
Acute Tox. 3 (Dermal)	H311
Acute Tox. 4 (Oral)	H302
Skin Corr. 1A	H314
STOT SE 3	H335

Full text of hazard classes and H-statements : see section 16

Specific concentration limits:
(C >= 1) STOT SE 3, H335

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS02 GHS06 GHS05

Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H311 + H331 - Toxic in contact with skin or if inhaled.
H335 - May cause respiratory irritation

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
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.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 - IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%
Triethylamine	(CAS-No.) 121-44-8 (EC-No.) 204-469-4 (EC Index-No.) 612-004-00-5	100

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Immediately consult a doctor/medical service. Doctor: administration of corticoid spray.

First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	:	Dry/sore throat. Coughing. Irritation of the respiratory tract. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema. Respiratory difficulties. Visual disturbances.
Symptoms/effects after skin contact	:	Caustic burns/corrosion of the skin.
Symptoms/effects after eye contact	:	Corrosion of the eye tissue. Permanent eye damage.
Symptoms/effects after ingestion	:	Risk of aspiration pneumonia. Nausea. Vomiting. Abdominal pain. Burns to the gastric/intestinal mucosa.
Chronic symptoms	:	No effects known.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Preferably: alcohol resistant foam. Water spray. Polyvalent foam. BC powder. Carbon dioxide.
Unsuitable extinguishing media	:	Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	DIRECT FIRE HAZARD. Highly flammable. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD. May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	:	DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

Firefighting instructions	:	Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	:	Gloves. Corrosion-proof suit. Gas-tight suit. See "Material-Handling" to select protective clothing.
Emergency procedures	:	Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	:	Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute combustible/toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.
Methods for cleaning up	:	Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Spill must not return in its original container. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: highly flammable materials. oxidizing agents. (strong) acids. halogens.

Storage area : Store in a cool area. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Keep locked up. Provide for a tub to collect spills. Provide the tank with earthing. Store only in a limited quantity. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. corrosion-proof. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: steel. stainless steel. carbon steel. iron. glass. MATERIAL TO AVOID: lead. aluminium. copper. tin. zinc. nickel. plastics.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Triethylamine (121-44-8)		
EU	Local name	Triethylamine
EU	IOELV TWA (mg/m³)	8.4 mg/m³ (Triethylamine; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	2 ppm (Triethylamine; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m³)	12.6 mg/m³ (Triethylamine; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	3 ppm (Triethylamine; EU; Short time value; Indicative occupational exposure limit value)
EU	Notes	Skin
Austria	Local name	Triethylamin
Austria	MAK (mg/m³)	8.4 mg/m³
Austria	MAK (ppm)	2 ppm
Austria	MAK Short time value (mg/m³)	12.6 mg/m³
Austria	MAK Short time value (ppm)	3 ppm
Austria	Remark (AT)	H
Belgium	Local name	Triéthylamine # Tri-ethylamine
Belgium	Limit value (mg/m³)	4.2 mg/m³ (Triéthylamine; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	1 ppm (Triéthylamine; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m³)	12.6 mg/m³ (Triéthylamine; Belgium; Short time value)
Belgium	Short time value (ppm)	3 ppm (Triéthylamine; Belgium; Short time value)
Belgium	Remark (BE)	D: La mention D signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. # De vermelding D betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.
Bulgaria	Local name	Триетиламин
Bulgaria	OEL TWA (mg/m³)	8.4 mg/m³

Triethylamine (121-44-8)		
Bulgaria	OEL TWA (ppm)	2 ppm
Bulgaria	OEL STEL (mg/m³)	12.6 mg/m³
Bulgaria	OEL STEL (ppm)	3 ppm
Bulgaria	Notes	Кожа (възможна е значителна резорбция чрез кожата); • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Croatia	Local name	Trietilamin
Croatia	GVI (granična vrijednost izloženosti) (mg/m³)	8.4 mg/m³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	2 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m³)	12.6 mg/m³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	3 ppm
Croatia	Naznake (HR)	K (Skin): (naznaka da tvar može štetno djelovati kroz kožu); EU* (naznaka da se radi o tvarima za koje su utvrđene indikativne granične vrijednosti izloženosti prema Direktivi 2000/39/ EC (prva lista)); F (lako zapaljivo); C (nagrizajuće)
Czech Republic	Local name	Triethylamin
Czech Republic	Expoziční limity (PEL) (mg/m³)	8 mg/m³
Czech Republic	Expoziční limity (PEL) (ppm)	1.94 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m³)	12 mg/m³
Czech Republic	Expoziční limity (NPK-P) (ppm)	2.9 ppm
Czech Republic	Remark (CZ)	D
Denmark	Local name	Triethylamin
Denmark	Grænseværdie (langvarig) (mg/m³)	4.1 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	1 ppm
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
Estonia	Local name	Trietüülamiin
Estonia	OEL TWA (mg/m³)	8.4 mg/m³
Estonia	OEL TWA (ppm)	2 ppm
Estonia	OEL STEL (mg/m³)	12.6 mg/m³
Estonia	OEL STEL (ppm)	3 ppm
Finland	Local name	Trietyyliamiini
Finland	HTP-arvo (15 min)	4.2 mg/m³
Finland	HTP-arvo (15 min) (ppm)	1 ppm
Finland	Huomautus (FI)	iho
France	Local name	Triéthylamine
France	VME (mg/m³)	4.2 mg/m³ (Triéthylamine; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	1 ppm (Triéthylamine; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VLE (mg/m³)	12.6 mg/m³ (Triéthylamine; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	3 ppm (Triéthylamine; France; Short time value; VRC: Valeur réglementaire contraignante)
France	Note (FR)	Valeurs règlementaires contraignantes; risque de pénétration percutanée
Germany	Local name	Triethylamin
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	4.2 mg/m³

Triethylamine (121-44-8)		
Germany	TRGS 900 Occupational exposure limit value (ppm)	1 ppm
Germany	Remark (TRGS 900)	DFG,EU,H,6
Gibraltar	Eight hours mg/m3	8.4 mg/m³
Gibraltar	Eight hours ppm	2 ppm
Gibraltar	Short-term mg/m3	12.6 mg/m³
Gibraltar	Short-term ppm	3 ppm
Gibraltar	Name of agent	Triethylamine
Gibraltar	Notation	Skin
Greece	OEL TWA (mg/m³)	40 mg/m³
Greece	OEL TWA (ppm)	10 ppm
Greece	OEL STEL (mg/m³)	60 mg/m³
Greece	OEL STEL (ppm)	15 ppm
Hungary	Local name	TRIETIL-AMIN
Hungary	AK-érték	8.4 mg/m³
Hungary	CK-érték	12.6 mg/m³
Hungary	Megjegyzések (HU)	b, i, m; V.
Ireland	Local name	Triethylamine
Ireland	OEL (8 hours ref) (mg/m³)	8.4 mg/m³
Ireland	OEL (8 hours ref) (ppm)	2 ppm
Ireland	OEL (15 min ref) (mg/m3)	12.6 mg/m³
Ireland	OEL (15 min ref) (ppm)	3 ppm
Ireland	Notes (IE)	Sk, IOELV
Italy	Local name	Trietilammina
Italy	OEL TWA (mg/m³)	8.4 mg/m³
Italy	OEL TWA (ppm)	2 ppm
Italy	OEL STEL (mg/m³)	12.6 mg/m³
Italy	OEL STEL (ppm)	3 ppm
Latvia	Local name	Trietilamīns
Latvia	OEL TWA (mg/m³)	8.4 mg/m³
Latvia	OEL TWA (ppm)	2 ppm
Latvia	OEL STEL (mg/m³)	12.6 mg/m³
Latvia	OEL STEL (ppm)	3 ppm
Lithuania	Local name	Trietilaminas
Lithuania	IPRV (mg/m³)	8.4 mg/m³
Lithuania	IPRV (ppm)	2 ppm
Lithuania	TPRV (mg/m³)	12.6 mg/m³
Lithuania	TPRV (ppm)	3 ppm
Lithuania	Remark (LT)	O (medžiaga į organizmą gali prasiskverbti pro nepažeistą odą)
Luxembourg	Local name	Triéthylamine
Luxembourg	OEL TWA (mg/m³)	8.4 mg/m³
Luxembourg	OEL TWA (ppm)	2 ppm
Luxembourg	OEL STEL (mg/m³)	12.6 mg/m³
Luxembourg	OEL STEL (ppm)	3 ppm
Malta	Local name	Triethylamine
Malta	OEL TWA (mg/m³)	8.4 mg/m³
Malta	OEL TWA (ppm)	2 ppm
Malta	OEL STEL (mg/m³)	12.6 mg/m³
Malta	OEL STEL (ppm)	3 ppm
Netherlands	Local name	Triethylamine

Triethylamine (121-44-8)		
Netherlands	Grenswaarde TGG 8H (mg/m³)	4.2 mg/m³ (Triethylamine; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	1 ppm (Triethylamine; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m³)	12.6 mg/m³ (Triethylamine; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	3 ppm (Triethylamine; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Remark (MAC)	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een Haanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
Poland	Local name	Trietyloamina
Poland	NDS (mg/m³)	3 mg/m³
Poland	NDSCh (mg/m³)	9 mg/m³
Portugal	Local name	Trietilamina
Portugal	OEL TWA (ppm)	1 ppm
Portugal	OEL STEL (ppm)	3 ppm
Romania	Local name	Trietilamina
Romania	OEL TWA (mg/m³)	8.4 mg/m³
Romania	OEL TWA (ppm)	2 ppm
Romania	OEL STEL (mg/m³)	12.6 mg/m³
Romania	OEL STEL (ppm)	3 ppm
Slovakia	Local name	Trietylamín
Slovakia	NPHV (priemerná) (mg/m³)	8.4 mg/m³
Slovakia	NPHV (priemerná) (ppm)	2 ppm
Slovakia	OEL STEL (mg/m³)	12.6 mg/m³
Slovakia	OEL STEL (ppm)	3 ppm
Slovakia	Upozornenie (SK)	K - znamená, že faktor môže byť ľahko absorbovaný kožou
Slovenia	Local name	trietilamin
Slovenia	OEL TWA (mg/m³)	8.4 mg/m³
Slovenia	OEL TWA (ppm)	2 ppm
Slovenia	OEL STEL (mg/m³)	12.6 mg/m³
Slovenia	OEL STEL (ppm)	3 ppm
Spain	Local name	Trietilamina
Spain	VLA-ED (mg/m³)	8.4 mg/m³
Spain	VLA-ED (ppm)	2 ppm
Spain	VLA-EC (mg/m³)	12.6 mg/m³
Spain	VLA-EC (ppm)	3 ppm

Triethylamine (121-44-8)		
Spain	Notes	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 de este documento), f (Reacciona con agentes nitrosantes que pueden dar lugar a la formación de N-Nitrosaminas carcinógenas), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran al menos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembros disponen de un tiempo fijado en dichas directivas para su transposición a los valores límites de cada país miembro. Una vez adoptados, estos valores tienen la misma validez que el resto de los valores adoptados por el país).
Sweden	Local name	Trietylamin
Sweden	nivågränsvärde (NVG) (mg/m³)	4.2 mg/m³
Sweden	nivågränsvärde (NVG) (ppm)	1 ppm
Sweden	kortidsvärde (KTV) (mg/m³)	12.6 mg/m³
Sweden	kortidsvärde (KTV) (ppm)	3 ppm
Sweden	Anmärkning (SE)	H (Ämnet kan lätt upptas genom huden Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
United Kingdom	Local name	Triethylamine
United Kingdom	WEL TWA (mg/m³)	8 mg/m³ Triethylamine; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	2 ppm Triethylamine; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m³)	17 mg/m³ Triethylamine; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	4 ppm Triethylamine; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Iceland	Local name	Tríetýlamín
Iceland	OEL (8 hours ref) (mg/m³)	8.4 mg/m³
Iceland	OEL (8 hours ref) (ppm)	2 ppm
Iceland	OEL (15 min ref) (mg/m3)	12.6 mg/m³
Iceland	OEL (15 min ref) (ppm)	3 ppm
Iceland	Notes (IS)	H
Russian Federation	Local name	N,N-Диэтилэтанамин+
Russian Federation	OEL Ceiling (mg/m³)	10 mg/m³
Russian Federation	Remark (RU)	3 класс опасности - опасное; п (пары и/или газы); + (соединения, при работе с которыми требуется специальная защита кожи и глаз; символ проставлен вслед за наименованием вещества)
Norway	Local name	Trietylamin
Norway	Grenseverdier (AN) (mg/m³)	8 mg/m³
Norway	Grenseverdier (AN) (ppm)	2 ppm

Triethylamine (121-44-8)		
Norway	Merknader (NO)	H (Kjemikalier som kan tas opp gjennom huden); E (EU har en veiledende grenseverdi for stoffet)
Switzerland	Local name	Triethylamin
Switzerland	VME (mg/m³)	4.2 mg/m³
Switzerland	VME (ppm)	1 ppm
Switzerland	VLE (mg/m³)	8.4 mg/m³
Switzerland	VLE (ppm)	2 ppm
Switzerland	Remark (CH)	Cornea[KT HU] - NIOSH, Reaktion mit nitrosierenden Agentien kann zur Bildung des kanzerogenen N-Nitrosodimethylamins führen [s. 1.3.3.2]
Turkey	Local name	Trietilamin
Turkey	OEL TWA (mg/m³)	8.4 mg/m³
Turkey	OEL TWA (ppm)	2 ppm
Turkey	OEL STEL (mg/m³)	12.6 mg/m³
Turkey	OEL STEL (ppm)	3 ppm
Turkey	Comments	Deri
Australia	Local name	Triethylamine
Australia	TWA (mg/m³)	8 mg/m³ Synonym (N,N-Diethylethanamine)
Australia	TWA (ppm)	2 ppm Synonym (N,N-Diethylethanamine)
Australia	STEL (mg/m³)	17 mg/m³ Synonym (N,N-Diethylethanamine)
Australia	STEL (ppm)	4 ppm Synonym (N,N-Diethylethanamine)
USA - ACGIH	Local name	Triethylamine
USA - ACGIH	ACGIH TWA (ppm)	1 ppm (Triethylamine; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA - ACGIH	ACGIH STEL (ppm)	3 ppm (Triethylamine; USA; Short time value; TLV - Adopted Value)
USA - ACGIH	Remark (ACGIH)	URT irr; visual impair; Skin; A4 (Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories)
USA - OSHA	Local name	Triethylamine
USA - OSHA	OSHA PEL (TWA) (mg/m³)	100 mg/m³
USA - OSHA	OSHA PEL (TWA) (ppm)	25 ppm

8.2. Exposure controls

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: nitrile rubber. viton. GIVE GOOD RESISTANCE: No data available. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: butyl rubber. natural rubber. neoprene. PVC

Hand protection:

Gloves

Eye protection:

Safety glasses

Skin and body protection:

Head/neck protection. Corrosion-proof clothing

Respiratory protection:

Gas mask with filter type K at conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Liquid.

Molecular mass	:	101.19 g/mol
Colour	:	Colourless to light yellow.
Odour	:	Strong odour. Ammonia odour. Smell of fish.
Odour threshold	:	0.26 ppm 1.1 mg/m³
pH	:	12.7 (100 g/l, H_2O, 15 °C)
pH solution	:	10 %
Relative evaporation rate (butylacetate=1)	:	5.6
Melting point	:	-115 °C
Freezing point	:	No data available
Boiling point	:	90 °C (1013 hPa)
Flash point	:	-11 °C
Critical temperature	:	259 °C
Auto-ignition temperature	:	215 °C
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	69 hPa at 20 °C
Critical pressure	:	30390 hPa
Relative vapour density at 20 °C	:	3.5
Relative density	:	0.73
Relative density of saturated gas/air mixture	:	1.2
Density	:	730 kg/m³ (20 °C)
Solubility	:	Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in aromatic hydrocarbons. Soluble in aliphatic hydrocarbons. Soluble in chloroform. Soluble in oils/fats. Water: 11.2 g/100ml (20 °C)
Log Pow	:	1.45 (Experimental value; Other)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	0.00036 Pa.s (20 °C)
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	1.2 - 9.3 vol % 50 - 340 g/m³

9.2. Other information

Minimum ignition energy	:	0.75 mJ
Saturation concentration	:	256 g/m³
VOC content	:	100 %
Other properties	:	Gas/vapour heavier than air at 20°C. Clear. Volatile. Substance has basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with (some) metals. This reaction is accelerated on exposure to water (moisture). On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide). Violent to explosive reaction with (some) acids: heat release resulting in increased fire or explosion risk. Reacts violently with (strong) oxidizers: heat release resulting in increased fire or explosion risk. Forms with nitrites carcinogenic nitrosamines. Reacts exothermically with (some) halogens compounds.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation: Toxic if inhaled. Dermal: Toxic in contact with skin. Oral: Harmful if swallowed.

Triethylamine (121-44-8)	
LD50 oral rat	730 mg/kg
LD50 dermal rabbit	416 mg/kg (Rabbit; Experimental value; Equivalent or similar to OECD 402; 580 mg/kg bodyweight; Rabbit)

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: 12.5 (10 %)

Serious eye damage/irritation : Serious eye damage, category 1, implicit
pH: 12.5 (10 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Directive 67/548/EEC. Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5/I.

Ecology - water : Fouling to shoreline. Harmful to fishes. Harmful to invertebrates (Daphnia). Toxic to algae. Harmful to plankton. pH shift. Nitrification of activated sludge is inhibited.

Triethylamine (121-44-8)	
EC50 Daphnia 2	17 mg/l (LC50; ASTM; 48 h; Ceriodaphnia dubia; Semi-static system; Fresh water; Experimental value)

12.2. Persistence and degradability

Triethylamine (121-44-8)	
Persistence and degradability	Readily biodegradable in water. Low potential for adsorption in soil. Photodegradation in the air.
Biochemical oxygen demand (BOD)	< 0.001 g O_2/g substance
Chemical oxygen demand (COD)	1.02 g O_2/g substance

12.3. Bioaccumulative potential

Triethylamine (121-44-8)	
BCF fish 1	< 0.5 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 42 days; Cyprinus carpio; Fresh water)
Log Pow	1.45 (Experimental value; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Triethylamine (121-44-8)	
Surface tension	0.021 N/m (20 °C)
Log Koc	log Koc,Other; 2.56; Calculated value

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Incinerate under surveillance with energy recovery. Do not discharge into surface water. May be discharged to wastewater treatment installation.

Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.

European List of Waste (LoW) code : 07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1296	1296	1296	1296	1296
14.2. UN proper shipping name				
TRIETHYLAMINE	TRIETHYLAMINE	Triethylamine	TRIETHYLAMINE	TRIETHYLAMINE
Transport document description				
UN 1296 TRIETHYLAMINE, 3 (8), II, (D/E)	UN 1296 TRIETHYLAMINE, 3 (8), II (-11°C c.c.)	UN 1296 Triethylamine, 3 (8) (8), II	UN 1296 TRIETHYLAMINE, 3 (8), II	UN 1296 TRIETHYLAMINE, 3 (8), II
14.3. Transport hazard class(es)				
3 (8)	3 (8)	3 (8)	3 (8)	3 (8)
				
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : FC

Limited quantities (ADR) : 1l

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions (ADR) : T7

Portable tank and bulk container special provisions (ADR) : TP1

Tank code (ADR) : L4BH

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 338

Orange plates	:	
Tunnel restriction code (ADR)	:	D/E

- Transport by sea

Transport regulations (IMDG)	:	Subject
Limited quantities (IMDG)	:	1 L
Excepted quantities (IMDG)	:	E2
Packing instructions (IMDG)	:	P001
IBC packing instructions (IMDG)	:	IBC02
Tank instructions (IMDG)	:	T7
Tank special provisions (IMDG)	:	TP1
EmS-No. (Fire)	:	F-E
EmS-No. (Spillage)	:	S-C
Stowage category (IMDG)	:	B
Stowage and handling (IMDG)	:	SW2
Flash point (IMDG)	:	-11°C c.c.
Properties and observations (IMDG)	:	Colourless liquid with a strong ammonia-like odour. Flashpoint: -11°C c.c. Explosive limits: 1.2% to 8% Miscible with water. Harmful by inhalation. Causes burns to skin and eyes. Irritating to mucous membranes.
MFAG-No	:	132

- Air transport

Transport regulations (IATA)	:	Subject to the provisions
PCA Excepted quantities (IATA)	:	E2
PCA Limited quantities (IATA)	:	Y340
PCA limited quantity max net quantity (IATA)	:	0.5L
PCA packing instructions (IATA)	:	352
PCA max net quantity (IATA)	:	1L
CAO packing instructions (IATA)	:	363
CAO max net quantity (IATA)	:	5L
ERG code (IATA)	:	3CH

- Inland waterway transport

Classification code (ADN)	:	FC
Limited quantities (ADN)	:	1 L
Excepted quantities (ADN)	:	E2
Carriage permitted (ADN)	:	T
Equipment required (ADN)	:	PP, EP, EX, A
Ventilation (ADN)	:	VE01
Number of blue cones/lights (ADN)	:	1

- Rail transport

Transport regulations (RID)	:	Subject
Classification code (RID)	:	FC
Limited quantities (RID)	:	1L
Excepted quantities (RID)	:	E2
Packing instructions (RID)	:	P001, IBC02
Mixed packing provisions (RID)	:	MP19
Portable tank and bulk container instructions (RID)	:	T7
Portable tank and bulk container special provisions (RID)	:	TP1
Tank codes for RID tanks (RID)	:	L4BH
Transport category (RID)	:	2
Colis express (express parcels) (RID)	:	CE7

Hazard identification number (RID) : 338

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Triethylamine is not on the REACH Candidate List

Triethylamine is not on the REACH Annex XIV List

VOC content : 100 %

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 556)

WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

Waterbezwaarlijkheid : 7 - Toxic to aquatic organisms

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

Pregnant/breastfeeding women working with the product must not be in direct contact with the product

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic

REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:	
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Flam. Liq. 2	Flammable liquids, Category 2
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H225	Highly flammable liquid and vapour
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H331	Toxic if inhaled
H335	May cause respiratory irritation

SDS ISOLAB

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product