

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 28-Sep-2009

Revision Date 21-Sep-2023

**Revision Number** 14

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

Product Description:	Triethylamine_
Cat No. :	157910000; 157910010; 157910025; 157910050; 157911000
Synonyms	TETN
Index No	612-004-00-5
CAS No	121-44-8
EC No	204-469-4
Molecular Formula	C6 H15 N
REACH registration number	01-2119475467-26

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

Recommended Use Sector of use	Laboratory chemicals. SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

#### 1.3. Details of the supplier of the safety data sheet

Company
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UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

#### EU entity/business name Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### **SECTION 2: HAZARDS IDENTIFICATION**

#### 2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

#### Triethylamine

#### Flammable liquids

#### Health hazards

Acute oral toxicity Acute dermal toxicity Acute Inhalation Toxicity - Vapors Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Specific target organ toxicity - (single exposure)

<u>Environmental hazards</u> Based on available data, the classification criteria are not met

Category 2 (H225)

Category 4 (H302) Category 3 (H311) Category 3 (H331) Category 1 A (H314) Category 1 (H318) Category 3 (H335)

#### Full text of Hazard Statements: see section 16



### 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, hot surfaces, sparks, open flames and other ignition sources. No smoking

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

#### 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### Triethylamine

#### 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Triethylamine	121-44-8	EEC No. 204-469-4	100	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Corr. 1A (H314) Eye Dam. 1 (H318) STOT SE 3 (H335)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Triethylamine	STOT SE 3 :: C>=1%	-	-

REACH registration number	01-2119475467-26

#### Full text of Hazard Statements: see section 16

## **SECTION 4: FIRST AID MEASURES**

#### 4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
4.2. Most important symptoms and	effects, both acute and delayed
	Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
4.3. Indication of any immediate me	edical attention and special treatment needed
Notes to Physician	Treat symptomatically.

## **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

## Extinguishing media which must not be used for safety reasons

No information available.

#### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

#### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NOx).

#### 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

#### 6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

#### 6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

### **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

#### Triethylamine

Corrosives area.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)

Class 3

#### 7.3. Specific end use(s)

Use in laboratories

### **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

#### **Exposure limits**

List source(s): EU - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. IRE - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Triethylamine	STEL: 4 ppm 15 min	TWA: 2 ppm 8 hr	TWA: 2 ppm 8 hr.
	STEL: 17 mg/m <sup>3</sup> 15 min	TWA: 8.4 mg/m <sup>3</sup> 8 hr	TWA: 8.4 mg/m <sup>3</sup> 8 hr.
	TWA: 2 ppm 8 hr	STEL: 3 ppm 15 min	STEL: 3 ppm 15 min
	TWA: 8 mg/m <sup>3</sup> 8 hr	STEL: 12.6 mg/m <sup>3</sup> 15 min	STEL: 12.6 mg/m <sup>3</sup> 15 min
	Skin	Possibility of significant	Skin
		uptake through the skin	

#### **Biological limit values**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL) See table for values

Component	Acute effects local	Acute effects	Chronic effects local	Chronic effects
	(Dermal)	systemic (Dermal)	(Dermal)	systemic (Dermal)
Triethylamine 121-44-8(100)				DNEL = 12.1mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Triethylamine 121-44-8(100)	DNEL = 12.6mg/m <sup>3</sup>	DNEL = 12.6mg/m <sup>3</sup>	DNEL = 8.4mg/m <sup>3</sup>	DNEL = 8.4mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Triethylamine	PNEC = 0.11mg/L	PNEC =	PNEC = 0.08mg/L	PNEC = 100mg/L	PNEC = 0.25mg/kg
121-44-8 (100)		1.575mg/kg		-	soil dw
		sediment dw			

Component	Marine water	Marine water	Marine water	Food chain	Air

#### Triethylamine

		sediment	intermittent	
Triethylamine	PNEC = 0.011mg/L	PNEC =		
121-44-8 (100)	-	0.158mg/kg		
		sediment dw		

#### 8.2. Exposure controls

#### **Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

#### Personal protective equipment

Eye ProtectionGoggles (European standard - EN 166)

Hand Protection		Protectiv	ve gloves		
Glove material		ough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	< 60 ו	minutes	0.38 mm	EN 374 Level 3	Permeation rate ~ 2000 µg/cm2/min As tested under EN374-3 Determination of
					Resistance to Permeation by Chemicals
Skin and body p	otection	Long sle	eved clothing.		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced <b>Recommended Filter type:</b> Ammonia and organic ammonia derivatives filter Type K Green conforming to EN14387
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. <b>Recommended half mask:-</b> Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
Environmental exposure controls	Prevent product from entering drains.

### **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

#### 9.1. Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Fishy
Odor Threshold	No data available

#### Revision Date 21-Sep-2023

	SAFELT DAT
Triethylamine	
Melting Point/Range	-115 °C / -175 °F
Softening Point	No data available
Boiling Point/Range	90 °C / 194 °F
Flammability (liquid)	Highly flammable
Flammability (solid,gas)	Not applicable
Explosion Limits	Lower 1.2 vol%
	Upper 8.8 vol%
Flash Point	-11 °C / 12.2 °F
Autoignition Temperature	215 °C / 419 °F
Decomposition Temperature	No data available
H	12.4
/iscosity	0.36 mPa.s @ 20 °C
Water Solubility	133 g/L (20°C)
Solubility in other solvents	No information available
Partition Coefficient (n-octanol	/water)
Component	log Pow
Triethylamine	1.45
Vapor Pressure	69 mbar @ 20 °C
Density / Specific Gravity	0.728
Bulk Density	Not applicable
Vapor Density	3.5
Particle characteristics	Not applicable (liquid)

On basis of test data Liquid

Method - No information available

(10 %)

Liquid (Air = 1.0)

9.2. Other information

Molecular Formula Molecular Weight Explosive Properties Evaporation Rate C6 H15 N 101.19 Vapors may form explosive mixtures with air 5.6 - (Butyl Acetate = 1.0)

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity	None known, based on information available
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous reacti	ons
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
10.4. Conditions to avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
10.5. Incompatible materials	Strong oxidizing agents. Strong acids. Strong reducing agents.
10.6. Hazardous decomposition pro	ducts_

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NOx).

### **SECTION 11: TOXICOLOGICAL INFORMATION**

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### **Product Information**

(a) acute toxicity; Oral Dermal Inhalation	Category 4 Category 3 Category 3		
Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Triethylamine	460 mg/kg (Rat) 415 mg/kg (Rabbit) 1250 ppm (Rat) 4 h		
(b) skin corrosion/irritation; (c) serious eye damage/irritation;	Category 1 A Category 1		
(d) respiratory or skin sensitization Respiratory Skin	Based on available data, the c	lassification criteria are not me lassification criteria are not me	
(e) germ cell mutagenicity;	Based on available data, the c	lassification criteria are not me	t
(f) carcinogenicity;	Based on available data, the c	lassification criteria are not me	t
	There are no known parainage	nia chomicala in this product	
	There are no known carcinoge	enic chemicais in this product	
(g) reproductive toxicity;	Based on available data, the c	lassification criteria are not me	t
(h) STOT-single exposure;	Category 3		
Results / Target organs	Respiratory system.		
(i) STOT-repeated exposure;	Based on available data, the classification criteria are not met		
Target Organs	None known.		
(j) aspiration hazard;	Based on available data, the classification criteria are not met		
Symptoms / effects,both acute and delayed	<b>d</b> Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.		
11.2. Information on other hazards			
Endocrine Disrupting Properties	Assess endocrine disrupting properties for human health. This product does not contain an known or suspected endocrine disruptors.		

## **SECTION 12: ECOLOGICAL INFORMATION**

#### 12.1. Toxicity Ecotoxicity effects

Do not empty into drains. Contains a substance which is:. Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

		Component	Freshwater Fish	Water Flea	Freshwater Algae
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## Triethylamine

#### Revision Date 21-Sep-2023

Triethylamine	Oryzias latipes: LC50 = 50.7 mg/L/48h	EC50 = 200 mg/L/48h	
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Component	Microtox	M-Factor	
Triethylamine	EC50 = 127  mg/L/2 h		
	EC50 = 95 mg/L/17 h		
12.2. Persistence and degradability Persistence Degradation in sewage treatment plant	<ul> <li>Readily biodegradable</li> <li>Persistence is unlikely.</li> <li>No inhibition of bacteria is expected if properly introduced into a biological treatment facility.</li> <li>Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.</li> </ul>		
12.3. Bioaccumulative potential	Bioaccumulation is unlikely		
Component	log Pow Bioconcentration factor (BCF)		
Triethylamine	1.45	<0.5 dimensionless	
<u>12.4. Mobility in soil</u>	The product is water soluble, and may spread in water systems . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils		
<u>12.5. Results of PBT and vPvB</u> assessment	Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).		
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors		
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or so This product does not contain any known or so		

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized before discharge.

#### Triethylamine

### **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN1296 TRIETHYLAMINE 3 8 II
ADR	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN1296 TRIETHYLAMINE 3 8 II
IATA	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN1296 TRIETHYLAMINE 3 8 II
14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

### **SECTION 15: REGULATORY INFORMATION**

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

#### International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Triethylamine	121-44-8	204-469-4	-	-	Х	Х	Х	Х	Х
Component	CAS No	TSCA	notific	ventory ation - Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Triethylamine	121-44-8	Х	ACT	ΓIVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

#### Authorisation/Restrictions according to EU REACH

ſ	Component	CAS No	REACH (1907/2006) -	REACH (1907/2006) -	REACH Regulation (EC
	-		Annex XIV - Substances	Annex XVII - Restrictions	1907/2006) article 59 -
			Subject to Authorization	on Certain Dangerous	Candidate List of
				Substances	Substances of Very High

#### Triethylamine

				Concern (SVHC)
Triethylamine	121-44-8	-	Use restricted. See item	-
			75.	
			(see link for restriction	
			details)	

#### **REACH links**

https://echa.europa.eu/substances-restricted-under-reach

#### Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) -	Seveso III Directive (2012/18/EC) -	
		Qualifying Quantities for Major Accident	Qualifying Quantities for Safety Report	
		Notification	Requirements	
Triethylamine	121-44-8	Not applicable	Not applicable	

# Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

#### Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

#### National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Triethylamine	WGK 1	Class I : 20 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Triethylamine	Tableaux des maladies professionnelles (TMP) - RG 49,RG 49bis

#### 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

### **SECTION 16: OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed

- H311 Toxic in contact with skin
- H331 Toxic if inhaled

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

#### Triethylamine

H335 - May cause respiratory irritation

### H225 - Highly flammable liquid and vapor

#### Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
<b>EINECS/ELINCS</b> - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances	
PICCS - Philippines Inventory of Chemicals and Chemical Substances	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	AICS - Australian Inventory of Chemical Substances NZIOC - New Zealand Inventory of Chemicals
RECE - Rolean Existing and Evaluated Chemical Substances	NLIOC - New Zealand Inventory of Chemicals
WEL - Workplace Exposure Limit	TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level	Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipment	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration	EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic	vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
<b>IMO/IMDG</b> - International Maritime Organization/International Maritime	MARPOL - International Convention for the Prevention of Pollution from
Dangerous Goods Code	Ships
OECD - Organisation for Economic Co-operation and Development	ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor	VOC - (Volatile Organic Compound)
Key literature references and sources for data	
https://echa.europa.eu/information-on-chemicals	
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, R	RTECS

#### **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Creation Date	28-Sep-2009
Revision Date	21-Sep-2023
Revision Summary	Not applicable.

# This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

## End of Safety Data Sheet