

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

Creation Date 11-Jun-2009 Revision Date 19-Oct-2023 Revision Number 10

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

#### 1.1. Product identifier

Product Description: <u>Ethanolamine</u>

Cat No. : E/0701/17, E/0701/08

**Synonyms** 2-Aminoethanol, monoethanolamine

 Index No
 603-030-00-8

 CAS No
 141-43-5

 EC No
 205-483-3

 Molecular Formula
 C2 H7 N O

REACH registration number 01-2119486455-28

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

Recommended Use Laboratory chemicals.

Sector of use 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

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

Tel: 01509 231166

Chemtrec US: (800) 424-9300 Chemtrec EU: 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

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# **Physical hazards**

Based on available data, the classification criteria are not met

#### **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)

Category 4 (H302)

Category 4 (H332)

Category 4 (H332)

Category 1 B (H314)

Category 1 (H318)

Category 3 (H335)

**Environmental hazards** 

Chronic aquatic toxicity Category 3 (H412)

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H412 - Harmful to aquatic life with long lasting effects

H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled

Combustible liquid

# **Precautionary Statements**

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

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

P310 - Immediately call a POISON CENTER or doctor/physician

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

#### 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

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

#### 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
Ethanolamine	141-43-5	EEC No. 205-483-3	>95	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT 3 (H335) Aquatic Chronic 3 (H412)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Ethanolamine	STOT SE 3 :: C>=5%	=	=

REACH registration number	01-2119486455-28
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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. Keep eye wide open while rinsing.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Remove and wash

contaminated clothing and gloves, including the inside, before re-use. Call a physician

immediately.

**Ingestion** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean

mouth with water. Call a physician immediately.

**Inhalation**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. Remove from exposure, lie down. Call a physician

immediately. If not breathing, give artificial respiration.

**Self-Protection of the First Aider** Use personal protective equipment as required.

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

Difficulty in breathing. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

Notes to Physician Treat symptomatically.

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# **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, 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. Combustible material. Containers may explode when heated.

#### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors.

#### 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. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. 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. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

#### 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.

#### 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

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe mist/vapors/spray. Keep away from open flames, hot surfaces and sources of ignition.

## **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

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

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat, sparks and flame. Store under an inert atmosphere.

Class 8A

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

## 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
Ethanolamine	STEL: 3 ppm 15 min	TWA: 1 ppm 8 hr	TWA: 1 ppm 8 hr.
	STEL: 7.6 mg/m <sup>3</sup> 15 min	TWA: 2.5 mg/m <sup>3</sup> 8 hr	TWA: 2.5 mg/m <sup>3</sup> 8 hr.
	TWA: 1 ppm 8 hr	STEL: 3 ppm 15 min	STEL: 3 ppm 15 min
	TWA: 2.5 mg/m <sup>3</sup> 8 hr	STEL: 7.6 mg/m <sup>3</sup> 15 min	STEL: 7.6 mg/m <sup>3</sup> 15 min
	Skin	Skin	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)

Workers; See table for values

Component	Acute effects local (Oral)	Acute effects systemic (Oral)	Chronic effects local (Oral)	Chronic effects systemic (Oral)
Ethanolamine 141-43-5 ( >95 )				3.75 mg/kg

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Ethanolamine				DNEL = 3mg/kg bw/day
141-43-5 ( >95 )				DNEL = 331mg/kg
				bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Ethanolamine 141-43-5 ( >95 )			$DNEL = 0.51 \text{mg/m}^3$	DNEL = 1mg/m <sup>3</sup> DNEL = 156mg/m <sup>3</sup>

## **Predicted No Effect Concentration (PNEC)**

See values below.

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Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Ethanolamine	PNEC = 0.07mg/L	PNEC =	PNEC = 0.028mg/L	PNEC = 100mg/L	PNEC = 1.29mg/kg
141-43-5 ( >95 )	$PNEC = 57\mu g/L$	0.357mg/kg	PNEC = 100µg/L	PNEC = 5mg/L	soil dw
		sediment dw		_	PNEC =
		PNEC =			0.0731mg/kg soil
		0.533mg/kg			dw
		sediment dw			

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Ethanolamine	PNEC = 0.007mg/L	PNEC =			
141-43-5 (>95)	PNEC = $5.7\mu g/L$	0.0357mg/kg			
		sediment dw			
		PNEC =			
		0.0533mg/kg			
		sediment dw			

#### 8.2. Exposure controls

#### **Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas. 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 Protection** Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection

Wear impervious gloves and/or clothing if needed to prevent contact with the material.

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

**Recommended Filter type:** Ammonia and organic ammonia derivatives filter Type K

Green conforming to EN14387 Particulates filter conforming to EN 143

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.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN

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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 ThresholdNo data availableMelting Point/Range10 °C / 50 °FSoftening PointNo data availablePailing Point/Range170 °C / 232 °F

Boiling Point/Range170 °C / 338 °F@ 760 mmHgFlammability (liquid)Combustible liquidOn basis of test dataFlammability (solid,qas)Not applicableLiquid

Flammability (solid,gas)

Not applicable

Explosion Limits

Not applicable

Lower 5.5 vol%

Upper 17 vol%

Flash Point 92 °C / 197.6 °F Method - No information available

Autoignition Temperature450 °C / 842 °FDecomposition TemperatureNo data available

**pH** 12 @ 20°C 20 g/l aq. sol

Viscosity 24 cP at 20 °C Water Solubility Miscible

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

**Component log Pow** Ethanolamine -1.91

Vapor Pressure 0.48 mmHg @ 20°C

Density / Specific Gravity 1.012

Bulk DensityNot applicableLiquidVapor Density2.1 (Air = 1.0)(Air = 1.0)

Particle characteristics Not applicable (liquid)

## 9.2. Other information

Molecular FormulaC2 H7 N OMolecular Weight61.08

**Explosive Properties** explosive air/vapour mixtures possible

**Evaporation Rate** > 1 (Butyl Acetate = 1.0)

# **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Hygroscopic. Air sensitive.

# 10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

#### 10.4. Conditions to avoid

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Incompatible products. Excess heat. Keep away from open flames, hot surfaces and

sources of ignition. Exposure to air. Exposure to moist air or water.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors.

# **SECTION 11: TOXICOLOGICAL INFORMATION**

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

#### **Product Information**

(a) acute toxicity;

Oral Category 4 **Dermal** Category 4 Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethanolamine	1720 mg/kg (Rat)	1000 mg/kg(Rabbit)	LC50 > 1.3 mg/L (Rat) 6 h
		1 mL/kg ( Rabbit )	

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory Based on available data, the classification criteria are not met Skin

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met (e) germ cell mutagenicity;

(f) carcinogenicity; Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

Based on available data, the classification criteria are not met (g) reproductive toxicity;

Category 3 (h) STOT-single exposure;

Results / Target organs Respiratory system.

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

**Target Organs** None known.

Based on available data, the classification criteria are not met (j) aspiration hazard;

delayed

Symptoms / effects, both acute and Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes

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severe swelling, severe damage to the delicate tissue and danger of perforation.

#### 11.2. Information on other hazards

**Endocrine Disrupting Properties** 

Assess endocrine disrupting properties for human health. This product does not contain any 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. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Ethanolamine	Leusiscus idus: LC50: >200 mg/L/48h Salmo gairdneri: LC50: 150 mg/L/96h	EC50: 65 mg/L/48h	EC50: 15 mg/L/72h

Component	Microtox	M-Factor
Ethanolamine	Pseudomonas putida: EC50: 110 mg/L/17 h	
	Nitrosomonas: EC50: 12200 mg/L/2 h	
	Photobacterium phosphoreum: EC50: 13.7	
	mg/L/30 min	

12.2. Persistence and degradability Readily biodegradable

**Persistence** 

Soluble in water, Persistence is unlikely, based on information available, Miscible with

Degradation in sewage

treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste

water treatment plants.

#### 12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethanolamine	-1.91	No data available

12.4. Mobility in soil 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

12.5. Results of PBT and vPvB

assessment

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

and very bioaccumulative (vPvB).

12.6. Endocrine disrupting

**Endocrine Disruptor Information** 

This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

**Persistent Organic Pollutant Ozone Depletion Potential** 

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

## **SECTION 13: DISPOSAL CONSIDERATIONS**

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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.

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. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized

before discharge. Do not let this chemical enter the environment.

# **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN2491

14.2. UN proper shipping name ETHANOLAMINE

14.3. Transport hazard class(es) 8
14.4. Packing group III

ADR

**14.1. UN number** UN2491

14.2. UN proper shipping name ETHANOLAMINE

14.3. Transport hazard class(es) 8 14.4. Packing group 8

<u>IATA</u>

**14.1. UN number** UN2491

**14.2. UN proper shipping name** ETHANOLAMINE

14.3. Transport hazard class(es) 8
14.4. Packing group III

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)

#### **Ethanolamine**

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Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Ethanolamine	141-43-5	205-483-3	ı	1	X	X	X	X	Х
Component	CAS No	TSCA		ventory ation - Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Ethanolamine	141-43-5	X	ACT	IVE	X	-	X	X	X

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

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ethanolamine	141-43-5	-	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		
Ethanolamine	141-43-5	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
Ethanolamine	WGK 1	Class I: 20 mg/m³ (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)	
Ethanolamine	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

H312 - Harmful in contact with skin

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

H412 - Harmful to aquatic life with long lasting effects

#### Legend

**CAS** - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

Substances List
ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from

Ships

ment ATE - Acute Toxicity Estimate

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, 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 Date11-Jun-2009Revision Date19-Oct-2023Revision SummaryNot applicable.

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

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#### 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**