

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

Creation Date 26-Oct-2010 Revision Date 22-Sep-2023 Revision Number 8

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

#### 1.1. Product identifier

Product Description: <u>Ethyl acrylate, stabilized</u>

Cat No.: 117980000; 117980010; 117980025; 117980250; 117980100

**Synonyms** 2-Propenoic acid, ethyl ester.

 Index No
 607-032-00-X

 CAS No
 140-88-5

 EC No
 205-438-8

 Molecular Formula
 C5 H8 O2

REACH registration number 01-2119459301-46

#### 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

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

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Category 1 (H317)

Category 3 (H335)

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Flammable liquids Category 2 (H225) **Health hazards** Acute oral toxicity Category 4 (H302) Acute dermal toxicity Category 4 (H312) Acute Inhalation Toxicity - Vapors Category 3 (H331) Skin Corrosion/Irritation Category 2 (H315) Serious Eye Damage/Eye Irritation Category 2 (H319)

**Environmental hazards** 

Skin Sensitization

Chronic aquatic toxicity Category 3 (H412)

Full text of Hazard Statements: see section 16

Specific target organ toxicity - (single exposure)

#### 2.2. Label elements



## Signal Word

## Danger

## **Hazard Statements**

H225 - Highly flammable liquid and vapor

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

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H331 - Toxic if inhaled

H335 - May cause respiratory irritation

H412 - Harmful to aquatic life with long lasting effects

#### **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

P302 + P350 - IF ON SKIN: Gently 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

P312 - Call a POISON CENTER or doctor if you feel unwell

## 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB) Lachrymator (substance which increases the flow of tears) Stench

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Toxicity to Soil Dwelling Organisms

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

## **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
Ethyl acrylate	140-88-5	EEC No. 205-438-8	>95	Flam. Liq. 2 (H225)
				Acute Tox. 4 (H302)
				Acute Tox. 4 (H312)
				Acute Tox. 3 (H331)
				Skin Irrit. 2 (H315)
				Eye Irrit. 2 (H319)
				Skin Sens. 1 (H317)
				STOT SE 3 (H335)
				Aquatic Chronic 3 (H412)

Component	Specific concentration limits	M-Factor	Component notes
	(SCL's)		
Ethyl acrylate	Skin Irrit. 2 (H315) :: C>=5%	-	-
	Eye Irrit. 2 (H319) :: C>=5%		
	STOT SE 3 (H335) :: C>=10%		
	STOT SE 3 (H335) :: C>=5%		

REACH registration number	01-2119459301-46
	** = **** **** ***

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. In

the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

**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 not breathing, give artificial respiration. 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

Difficulty in breathing. May cause allergic skin reaction. Inhalation of high vapor

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concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

#### 4.3. Indication of any immediate medical 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 (CO<sub>2</sub>). Dry chemical. Alcohol resistant foam. Chemical 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

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

#### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO2).

#### 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. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

## 6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

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

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

#### 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

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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.

#### **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

Refrigerator/flammables. Keep container tightly closed. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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
Ethyl acrylate	STEL: 10 ppm 15 min	TWA: 5 ppm (8h)	TWA: 5 ppm 8 hr.
	STEL: 42 mg/m <sup>3</sup> 15 min	TWA: 21 mg/m³ (8h)	TWA: 20 mg/m <sup>3</sup> 8 hr.
	TWA: 5 ppm 8 hr	STEL: 10 ppm (15min)	STEL: 10 ppm 15 min
	TWA: 21 mg/m <sup>3</sup> 8 hr	STEL: 42 mg/m³ (15min)	STEL: 41 mg/m <sup>3</sup> 15 min
	_		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 (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Ethyl acrylate 140-88-5 ( >95 )	DNEL = 0.92mg/cm2			

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Ethyl acrylate 140-88-5 ( >95 )			DNEL = 21mg/m <sup>3</sup>	

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**Predicted No Effect Concentration (PNEC)** 

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Ethyl acrylate	PNEC =	PNEC =	PNEC = 0.011mg/L	PNEC = 10mg/L	PNEC = 1mg/kg soil
140-88-5 (>95)	0.00272mg/L	0.0213mg/kg		-	dw
		sediment dw			

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Ethyl acrylate	PNEC =	PNEC =		PNEC = 0.01g/kg	
140-88-5 (>95)	0.00027mg/L	0.0213mg/kg		food	
		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 Protection** Goggles (European standard - EN 166)

Hand Protection Protective gloves

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

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

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: Organic gases and vapours filter Type A Brown 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.

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

141

When RPE is used a face piece Fit Test should be conducted

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**Environmental exposure controls** 

Prevent product from entering drains. Do not allow material to contaminate ground water system.

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

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

**Physical State** Liquid

**Appearance** Colorless Odor Stench

**Odor Threshold** No data available Melting Point/Range -71 °C / -95.8 °F **Softening Point** No data available

99 °C / 210.2 °F **Boiling Point/Range** @ 760 mmHg Flammability (liquid) Highly flammable On basis of test data Liquid

Flammability (solid, gas) Not applicable

**Explosion Limits** Lower 1.8

Upper 13

**Flash Point** 16 °C / 60.8 °F Method - No information available

399 °C / 750.2 °F **Autoignition Temperature Decomposition Temperature** No data available No information available pН 0.58 cP at 20 °C **Viscosity** Water Solubility 1.5% (25°C)

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component log Pow Ethyl acrylate 1.18

**Vapor Pressure** 29.5 mmHg @ 20 °C

**Density / Specific Gravity** 0.920

**Bulk Density** Not applicable Liquid **Vapor Density** (Air = 1.0)

Not applicable (liquid) Particle characteristics

9.2. Other information

**Molecular Formula** C5 H8 O2 **Molecular Weight** 100.12

**Explosive Properties** Vapors may form explosive mixtures with air

Self-accelerating polymerisation

temperature (SAPT)

> 50°C (all packages)

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

10.1. Reactivity Yes

10.2. Chemical stability

Light sensitive.

10.3. Possibility of hazardous reactions

**Hazardous Polymerization** Polymerization can occur. None under normal processing. **Hazardous Reactions** 

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Exposure

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to light. Incompatible products.

10.5. Incompatible materials

Acids. Bases. Peroxides.

## 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2).

## **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 3

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl acrylate	1120 mg/kg (Rat)	3049-5000 mg/kg (Rat)	<9.14 mg/L/4h (Rat) (vapour)
			25.8 mg/L/1h (Rat) (vapour)

(b) skin corrosion/irritation; Category 2

Category 2 (c) serious eye damage/irritation;

(d) respiratory or skin sensitization;

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

Category 1

May cause sensitization by skin contact

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

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

The table below indicates whether each agency has listed any ingredient as a carcinogen

Limited evidence of a carcinogenic effect

Component	EU	UK	Germany	IARC
Ethyl acrylate				Group 2B

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

(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

None known. **Target Organs** 

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

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delayed

Symptoms / effects.both acute and Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Symptoms of allergic reaction may include rash, itching. swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

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** 

The product contains following substances which are hazardous for the environment. Contains a substance which is:. Toxic to aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Ethyl acrylate	LC50: 2.31 - 2.7 mg/L, 96h	EC50: = 7.9 mg/L, 48h (Daphnia	EC50: = 48 mg/L, 72h
	flow-through (Pimephales promelas) LC50: = 4.6 mg/L, 96h (Oncorhynchus mykiss)	magna)	(Desmodesmus subspicatus)

Component	Microtox	M-Factor
Ethyl acrylate	EC50 = 1536 mg/L 17 h	
	EC50 = 46.8 mg/L 24 h	

12.2. Persistence and degradability Readily biodegradable

**Persistence** 

Persistence is unlikely.

water treatment plants.

Degradation in sewage treatment plant

12.3. Bioaccumulative potential

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

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethyl acrylate	1.18	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. 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 let this chemical enter the environment. Do not

empty into drains.

## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN1917

14.2. UN proper shipping name ETHYL ACRYLATE, STABILIZED

14.3. Transport hazard class(es) 3 14.4. Packing group II

ADR

**14.1. UN number** UN1917

14.2. UN proper shipping name ETHYL ACRYLATE, STABILIZED

14.3. Transport hazard class(es) 3 14.4. Packing group II

<u>IATA</u>

**14.1. UN number** UN1917

14.2. UN proper shipping name ETHYL ACRYLATE, STABILIZED

14.3. Transport hazard class(es) 3 14.4. Packing group II

**14.5. Environmental hazards**No hazards identified

14.6. Special precautions for user Inhibitors have been added to stabilize this product. Inhibitor levels should be maintained.

Hazardous polymerization may occur upon depletion of inhibitor.

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**

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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
Ethyl acrylate	140-88-5	205-438-8	-	-	Х	Χ	KE-29507	Χ	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Ethyl acrylate	140-88-5	X	ACTIVE	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)
Ethyl acrylate	140-88-5	-	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/	
-	•		Qualifying Quantities for Major Accident   Qualifying Quantities for Sa	
-			Notification	Requirements
Ī	Ethyl acrylate	140-88-5	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
Ethyl acrylate	WGK2	Class I: 20 mg/m³ (Massenkonzentration)

	Component	France - INRS (Tables of occupational diseases)
Ì	Ethyl acrylate	Tableaux des maladies professionnelles (TMP) - RG 65

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#### 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

H225 - Highly flammable liquid and vapor

H302 - Harmful if swallowed

H312 - Harmful in contact with skin

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H331 - Toxic 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

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

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 Date** 26-Oct-2010 **Revision Date** 22-Sep-2023

SDS sections updated, 7, 9, 14. **Revision Summary** 

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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**