

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

Creation Date 21-Feb-2012 Revision Date 20-Oct-2023 Revision Number 12

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

#### 1.1. Product identifier

Product Description: <u>Propionic acid (low UV absorption)</u>

Cat No. : P/7564/PB08, P/7564/PB17

Synonyms Carboxyethane; Ethanecarboxylic acid; Ethylformic acid

 Index No
 607-089-00-0

 CAS No
 79-09-4

 EC No
 201-176-3

 Molecular Formula
 C3 H6 O2

REACH registration number -

#### 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

#### Propionic acid (low UV absorption)

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**Physical hazards** 

Flammable liquids Category 3 (H226)

Substances/mixtures corrosive to metal Category 1 (H290)

**Health hazards** 

Skin Corrosion/Irritation

Category 1 B (H314)
Serious Eye Damage/Eye Irritation

Category 1 (H318)

Category 2 (H325)

Specific target organ toxicity - (single exposure)

Category 3 (H335)

**Environmental hazards** 

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

**Danger** 

#### **Hazard Statements**

H226 - Flammable liquid and vapor

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

#### **Precautionary Statements**

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

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

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

#### 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**

#### 3.1. Substances

#### Propionic acid (low UV absorption)

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Propionic acid	79-09-4	EEC No. 201-176-3	>95	Flam. Liq. 3 (H226) Met. Corr. 1 (H290) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335)

Component	Specific concentration limits	M-Factor	Component notes
	(SCL's)		
Propionic acid	Eye Irrit. 2 (H319) ::	-	-
	10%<=C<25%		
	Skin Corr. 1B (H314) :: C>=25%		
	Skin Irrit. 2 (H315) ::		
	10%<=C<25%		
	STOT SE 3 (H335) :: C>=10%		

REACH registration number	-
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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.

**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. Clean mouth with water. Never give anything by mouth to an

unconscious person. Call a physician immediately.

**Inhalation** If not breathing, give artificial respiration. Remove from exposure, lie down. 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. Call a physician immediately.

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. 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.

#### 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.

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

#### 6.2. Environmental precautions

Should not be released into the environment.

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

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

#### 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

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. 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.

## 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. Do not store in metal containers.

Propionic acid (low UV absorption)

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
Propionic acid	STEL: 15 ppm 15 min	TWA: 10 ppm (8h)	TWA: 10 ppm 8 hr.
·	STEL: 46 mg/m <sup>3</sup> 15 min	TWA: 31 mg/m <sup>3</sup> (8h)	TWA: 31 mg/m <sup>3</sup> 8 hr.
	TWA: 10 ppm 8 hr	STEL: 20 ppm (15min)	STEL: 20 ppm 15 min
	TWA: 31 mg/m <sup>3</sup> 8 hr	STEL: 62 mg/m <sup>3</sup> (15min)	STEL: 62 mg/m <sup>3</sup> 15 min

#### **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 (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Propionic acid 79-09-4 ( >95 )				DNEL = 20.9mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Propionic acid 79-09-4 ( >95 )	DNEL = 62mg/m <sup>3</sup>		DNEL = 31mg/m <sup>3</sup>	DNEL = 73mg/m <sup>3</sup>

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

See values below.

Component	Fresh water		Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Propionic acid 79-09-4 ( >95 )	PNEC = 0.5mg/L	PNEC = 1.86mg/kg sediment dw	PNEC = 5mg/L	PNEC = 5mg/L	PNEC = 0.1258mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Propionic acid	PNEC = 0.05mg/L	PNEC =			

#### Propionic acid (low UV absorption)

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79-09-4 ( >95 )	0.186mg/kg		
	sediment dw		

#### 8.2. Exposure controls

#### **Engineering Measures**

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. 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 Natural rubber Butyl rubber Nitrile rubber	Breakthrough time See manufacturers recommendations	Glove thickness	EU standard EN 374	Glove comments (minimum requirement)
Neoprene PVC				

Skin and body protection Long sleeved 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

Recommended Filter type: Particulates filter conforming to EN 143 or Acid gases filter

Type E Yellow 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

**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** No information available

**Odor** pungent

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Odor ThresholdNo data availableMelting Point/Range-22 °C / -7.6 °FSoftening PointNo data availableBoiling Point/Range141 °C / 285.8 °F

Boiling Point/Range141 °C / 285.8 °F@ 760 mmHgFlammability (liquid)FlammableOn basis of test dataFlammability (solid,qas)Not applicableLiquid

Flammability (solid,gas)
Explosion Limits

Not applicable
Lower 2.1 Vol%

Upper 12.1 Vol%

Flash Point 51 °C / 123.8 °F Method - No information available

**Autoignition Temperature** 485 °C / 905 °F **Decomposition Temperature** No data available

**pH** 2.5 100 g/l aq. sol

Viscosity 1.02 mPa.s at 25 °C

Water Solubility Miscible

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Componentlog PowPropionic acid0.33

Vapor Pressure 5 mbar @ 20 °C

Density / Specific Gravity 0.990

Bulk DensityNot applicableLiquidVapor Density2.56(Air = 1.0)

Particle characteristics Not applicable (liquid)

9.2. Other information

Molecular Formula C3 H6 O2 Molecular Weight 74.08

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

## **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 reactions

Hazardous Polymerization Hazardous polymerization does not occur.

**Hazardous Reactions** 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

Bases. Strong oxidizing agents. Amines. Halogens. Metals. Reducing Agent.

10.6. Hazardous decomposition products

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

## **SECTION 11: TOXICOLOGICAL INFORMATION**

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

#### Propionic acid (low UV absorption)

#### **Product Information**

(a) acute toxicity;

Based on available data, the classification criteria are not met Oral Dermal Based on available data, the classification criteria are not met Inhalation Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Propionic acid	LD50 = 3455 mg/kg (Rat)	LD50 = 3235 mg/kg ( Rabbit )	LC50 = > 19.7  mg/l  (Rat) 1  h

(b) skin corrosion/irritation; Category 1

Category 1 (c) serious eye damage/irritation;

(d) respiratory or skin sensitization;

Respiratory

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; Based on available data, the classification criteria are not met

Not mutagenic in AMES Test

(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;

(h) STOT-single exposure; Category 3

Results / Target organs Respiratory system.

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

None known. **Target Organs** 

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 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.

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#### Propionic acid (low UV absorption)

Component	Freshwater Fish	Water Flea	Freshwater Algae
Propionic acid	LC50: = 51 mg/L, 96h static (Oncorhynchus mykiss) LC50: 73 - 99.7 mg/L, 96h static (Lepomis macrochirus) LC50: > 1 mg/L, 96h static (Pimephales promelas)		EC50: = 45.8 mg/L, 72h (Desmodesmus subspicatus) EC50: = 43 mg/L, 96h (Desmodesmus subspicatus)

Component	Microtox	M-Factor
Propionic acid	EC50 = 59.6 mg/L 17 h	

12.2. Persistence and degradability Expected to be biodegradable

**Persistence** 

Miscible with water, Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Propionic acid	0.33	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

properties

**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**

## 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.

**FSUP7564** 

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## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN3463

14.2. UN proper shipping name PROPIONIC ACID

14.3. Transport hazard class(es)8Subsidiary Hazard Class314.4. Packing groupII

#### **ADR**

**14.1. UN number** UN3463

14.2. UN proper shipping name PROPIONIC ACID

14.3. Transport hazard class(es)8Subsidiary Hazard Class314.4. Packing groupII

#### IATA

**14.1. UN number** UN3463

14.2. UN proper shipping name PROPIONIC ACID

14.3. Transport hazard class(es) 8
Subsidiary Hazard Class 3
14.4. Packing group 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
Propionic acid	79-09-4	201-176-3	ı	ı	Х	Χ	KE-29352	Χ	Χ
Component	CAS No	TSCA	TSCA In	ventory	DGI	NDSI	VICS	NZIAC	DICCS

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Propionic acid	79-09-4	Х	ACTIVE	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

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

#### Propionic acid (low UV absorption)

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			Substances	Substances of Very High Concern (SVHC)
Propionic acid	79-09-4	-	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)

ſ	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
Ī	Propionic acid	79-09-4	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
Propionic acid	WGK1	

Component		Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure	
	Propionic acid 79-09-4 ( >95 )	Prohibited and Restricted Substances			

## 15.2. Chemical safety assessment

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

CECT	<b>MN 4</b>	2. AT	гиеві		
SECI		3. U I	IREKI	INFUR	MATION

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

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H290 - May be corrosive to metals

H314 - Causes severe skin burns and eve damage

H318 - Causes serious eye damage

H335 - May cause respiratory irritation

#### 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.

21-Feb-2012 **Creation Date Revision Date** 20-Oct-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**