

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

Creation Date 26-Sep-2009 Revision Date 27-Sep-2023 Revision Number 7

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

#### 1.1. Product identifier

Product Description: <u>Thiophosphoryl chloride</u>

Cat No.: 208350000; 208351000; 208352500

Synonyms Phosphorus sulfochloride

CAS No 3982-91-0 EC No 223-622-6 Molecular Formula CI3 S P

REACH registration number 01-2119970303-42

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

#### **Health hazards**

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

Category 4 (H302) Category 1 (H330) Category 1 B (H314) Category 1 (H318) 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**

H302 - Harmful if swallowed

H330 - Fatal if inhaled

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

EUH014 - Reacts violently with water

EUH029 - Contact with water liberates toxic gas

#### **Precautionary Statements**

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

P304 + P340 - IF INHALED: Remove person to fresh air and keep 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

P310 - Immediately call a POISON CENTER or doctor/physician

#### 2.3. Other hazards

Water reactive

Lachrymator (substance which increases the flow of tears)

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

#### Thiophosphoryl chloride

				GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Phosphorus trichloride	7719-12-2	EEC No. 231-749-3	1-3	Acute Tox. 2 (H300) Acute Tox. 2 (H330) Skin Corr. 1A (H314) Eye Dam. 1(H318) STOT RE 2 (H373) (EUH029) (EUH014)
Phosphorus oxychloride	10025-87-3	EEC No. 233-046-7	0.1-1	Acute Tox. 4 (H302) Acute Tox. 2 (H330) Skin Corr. 1A (H314) Eye Dam. 1 (H318) STOT RE 1 (H372) Met. Corr. 1 (H290) EUH014 EUH029
Thiophosphoryl chloride	3982-91-0	EEC No. 223-622-6	>95	Skin Corr. 1B (H314) Eye Dam. 1 (H318) Acute Tox. 4 (H302) Acute Tox. 1 (H330) STOT SE 3 (H335) (EUH029)

REACH registration number	01-2119970303-42
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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. 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** 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. Remove to fresh

air. 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. 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: After inhalation exposure, observe for 24 to 72 hours as

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pulmonary edema may be delayed

#### 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

Dry chemical. Carbon dioxide (CO<sub>2</sub>). CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

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

Foam. Contact with water liberates toxic gas. Water.

#### 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. Contact with water liberates toxic gas. Reacts violently with water.

#### **Hazardous Combustion Products**

Sulfur oxides, Oxides of phosphorus, Sulfides, Hydrogen chloride gas.

#### 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

Ensure adequate ventilation. Use personal protective equipment as required. 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. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

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

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Do not expose spill to water.

#### 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. Do not allow contact with water. Handle under an inert atmosphere.

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#### **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

Protect from moisture. Corrosives area. Keep under nitrogen. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from water or moist air. Store under an inert atmosphere.

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

Class 6.1A

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

Use in laboratories

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

#### 8.1. Control parameters

#### **Exposure limits**

List source(s): **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
Phosphorus trichloride	STEL: 0.5 ppm 15 min		TWA: 0.2 ppm 8 hr.
	STEL: 2.9 mg/m <sup>3</sup> 15 min		TWA: 1.5 mg/m <sup>3</sup> 8 hr.
	TWA: 0.2 ppm 8 hr		STEL: 0.5 ppm 15 min
	TWA: 1.1 mg/m <sup>3</sup> 8 hr		STEL: 3 mg/m <sup>3</sup> 15 min
Phosphorus oxychloride	STEL: 0.6 ppm 15 min		TWA: 0.01 ppm 8 hr.
	STEL: 3.8 mg/m <sup>3</sup> 15 min		TWA: 0.064 mg/m <sup>3</sup> 8 hr.
	TWA: 0.2 ppm 8 hr		STEL: 0.02 ppm 15 min
	TWA: 1.3 mg/m <sup>3</sup> 8 hr		STEL: 0.12 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 (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)	
Phosphorus trichloride 7719-12-2 (1-3)	DNEL = 2.9mg/m <sup>3</sup>		DNEL = 1.1mg/m <sup>3</sup>		

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

See values below.

Component	Fresh water	Fresh water sediment	Microorganisms in sewage treatment	· · ·
Phosphorus trichloride	PNEC = 0.1 mg/L			

# Thiophosphoryl chloride

7719-12-2 ( 1-3 )			

#### 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 only under a chemical fume hood.

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 Face protection shield (European standard - EN 166)

Hand Protection Protective gloves

Glove material Nitrile rubber Neoprene	Breakthrough time See manufacturers recommendations	Glove thickness	EU standard EN 374	Glove comments (minimum requirement)
Natural rubber 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 Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline

respirator in the positive pressure mode with emergency escape provisions.

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

**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

AppearanceLight yellowOdorpungent

Odor Threshold No data available

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Liquid

-35 °C / -31 °F Melting Point/Range **Softening Point** No data available 125 °C / 257 °F **Boiling Point/Range** 

@ 760 mmHg Flammability (liquid) No data available

Flammability (solid,gas) Not applicable

**Explosion Limits** No data available

Flash Point No information available Method - No information available

**Autoignition Temperature** 340 °C / 644 °F 125 °C **Decomposition Temperature** 

Ha No information available No data available Viscosity

Water Solubility Reacts with water Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

16 hPa @ 20 °C **Vapor Pressure** 

**Density / Specific Gravity** 1.668

**Bulk Density** Not applicable Liquid (Air = 1.0)**Vapor Density** 5.8

Particle characteristics Not applicable (liquid)

9.2. Other information

CI3 S P **Molecular Formula Molecular Weight** 169.39

# **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity Yes

10.2. Chemical stability

Reacts violently with water. Contact with water liberates toxic gas.

10.3. Possibility of hazardous reactions

**Hazardous Polymerization** No information available.

**Hazardous Reactions** None under normal processing. Reacts violently with water.

10.4. Conditions to avoid

Excess heat. Incompatible products. Exposure to moist air or water. Exposure to moisture.

10.5. Incompatible materials

Strong oxidizing agents. Alcohols. Metals. Bases. Amines.

10.6. Hazardous decomposition products

Sulfur oxides. Oxides of phosphorus. Sulfides. Hydrogen chloride gas.

#### SECTION 11: TOXICOLOGICAL INFORMATION

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

**Product Information** 

(a) acute toxicity;

Category 4 Oral

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**Dermal** Based on available data, the classification criteria are not met Inhalation Category 1

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phosphorus trichloride	18 mg/kg (Rat)	LD50 250 - 500 mg/kg (Rabbit)	104 ppm/4h (Rat)
Phosphorus oxychloride	LD50 = 380 mg/kg (Rat)	LD50 > 250 mg/kg (Rabbit)	LC50 = 308 mg/m³ (Rat) 4 h
Thiophosphoryl chloride	660 mg/kg (Rat)	-	0.14 mg/L/4h (Rat)

Category 1 B (b) skin corrosion/irritation;

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

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

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

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

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.

(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

Other Adverse Effects The toxicological properties have not been fully investigated.

delayed

Symptoms / effects,both acute and 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. After

inhalation exposure, observe for 24 to 72 hours as pulmonary edema may be delayed.

11.2. Information on other hazards

Assess endocrine disrupting properties for human health. This product does not contain any **Endocrine Disrupting Properties** 

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

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environment. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Phosphorus trichloride	LC50: > 1000 mg/L, 96h static (Danio rerio)		
Thiophosphoryl chloride	LC50: = 99 mg/L, 96h static (Brachydanio rerio)		

12.2. Persistence and degradability

**Persistence** Soluble in water, Persistence is unlikely, based on information available.

**Degradability** Reacts with water.

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

treatment plant water treatment plants. Water reactive.

12.3. Bioaccumulative potential Bioaccumulation is unlikely; Product does not bioaccumulate due to reaction with water

**12.4. Mobility in soil**The product is water soluble, and may spread in water systems Reacts with water Will

likely be mobile in the environment due to its water solubility. Is not likely mobile in the

environment. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

Water reactive.

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.

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. Do not let this chemical enter the environment.

# **SECTION 14: TRANSPORT INFORMATION**

#### Thiophosphoryl chloride

#### IMDG/IMO

**14.1. UN number** UN1837

14.2. UN proper shipping name THIOPHOSPHORYL CHLORIDE

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

# **ADR**

**14.1. UN number** UN1837

14.2. UN proper shipping name THIOPHOSPHORYL CHLORIDE

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

#### **IATA**

**14.1. UN number** UN1837

14.2. UN proper shipping name THIOPHOSPHORYL CHLORIDE

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

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
Phosphorus trichloride	7719-12-2	231-749-3	-	-	Х	X	KE-28723	Χ	X
Phosphorus oxychloride	10025-87-3	233-046-7	-	-	Х	X	KE-28728	Χ	X
Thiophosphoryl chloride	3982-91-0	223-622-6	-	-	X	X	KF-33800	Х	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Phosphorus trichloride	7719-12-2	X	ACTIVE	Х	-	X	X	X
Phosphorus oxychloride	10025-87-3	Х	ACTIVE	Х	-	Х	Х	Х
Thiophosphoryl chloride	3982-91-0	X	ACTIVE	-	X	X	_	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 Regulation (EC
- 1			Annex XIV - Substances	Annex XVII - Restrictions	1907/2006) article 59 -
			Subject to Authorization	on Certain Dangerous	Candidate List of
				Substances	Substances of Very High
					Concern (SVHC)

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Phosphorus trichloride	7719-12-2	-	Use restricted. See item	-
			75.	
			(see link for restriction	
			details)	
Phosphorus oxychloride	10025-87-3	-	Use restricted. See item	-
			75.	
			(see link for restriction	
			details)	
Thiophosphoryl chloride	3982-91-0	-	-	-

#### **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
Phosphorus trichloride	7719-12-2	Not applicable	Not applicable
Phosphorus oxychloride	10025-87-3	Not applicable	Not applicable
Thiophosphoryl chloride	3982-91-0	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 .

## **National Regulations**

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

**WGK Classification** Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class	
Phosphorus trichloride	WGK1		
Phosphorus oxychloride	WGK1		
Thiophosphoryl chloride	WGK2		

#### 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

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H302 - Harmful if swallowed

H330 - Fatal if inhaled

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage H335 - May cause respiratory irritation EUH014 - Reacts violently with water

EUH029 - Contact with water liberates toxic gas

H300 - Fatal if swallowed

#### Legend

Substances List

**CAS** - Chemical Abstracts Service

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

**ENCS** - Japanese Existing and New Chemical Substances

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

TWA - Time Weighted Average IARC - International Agency for Research on Cancer

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

Predicted No Effect Concentration (PNEC)

**ACGIH** - American Conference of Governmental Industrial Hygienists **DNEL** - Derived No Effect Level

WEL - Workplace Exposure Limit

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic

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-Sep-2009 **Revision Date** 27-Sep-2023 Not applicable. **Revision Summary** 

# 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**