

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

Creation Date 03-Nov-2009

Revision Date 06-Oct-2023

**Revision Number** 9

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

1.1. Product identifier	
Product Description: Cat No. :	<u>Formic acid, 88%</u> 410770000; 410770025; 410775000; 410770100
Unique Formula Identifier (UFI)	K7KW-T2YG-UX0S-RYS3
1.2. Relevant identified uses of the	substance or mixture and uses advised against
Recommended Use Sector of use Product category Process categories Environmental release category Uses advised against	Laboratory chemicals. SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites PC21 - Laboratory chemicals PROC15 - Use as a laboratory reagent ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) No Information available
1.3. Details of the supplier of the sa	fety 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 <b>US</b> call: 001-800-227-6701 / <b>Europe</b> call: +32 14 57 52 11 Emergency Number <b>US:</b> 001-201-796-7100 / <b>Europe:</b> +32 14 57 52 99 <b>CHEMTREC</b> Tel. No. <b>US:</b> 001-800-424-9300 / <b>Europe:</b> 001-703-527-3887
Poison Centre - Emergency information services	Ireland : National Poisons Information Centre (NPIC) - 01 809 2166 (8am-10pm, 7 days a week) Malta : +356 2395 2000 Cyprus : +357 2240 5611
	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** 

#### Formic acid, 88%

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#### Flammable liquids

#### Health hazards

Acute oral toxicity Acute Inhalation Toxicity - Vapors Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation

#### Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16



Signal Word

Danger

#### Hazard Statements

H226 - Flammable liquid and vapor H302 - Harmful if swallowed H314 - Causes severe skin burns and eye damage H331 - Toxic if inhaled EUH071 - Corrosive to the respiratory tract

#### **Precautionary Statements**

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

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

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

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

P310 - Immediately call a POISON CENTER or doctor/physician

#### 2.3. Other hazards

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**

#### 3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and
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Category 3 (H226)

Category 4 (H302) Category 3 (H331) Category 1 B (H314) Category 1 (H318)

#### Formic acid, 88%

#### Revision Date 06-Oct-2023

				UK SI 2020/1567
Formic acid	64-18-6	200-579-1	85 - 90	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Skin Corr. 1A (H314) Eye Dam. 1 (H318) Acute Tox. 3 (H331) EUH071
Water	7732-18-5	231-791-2	10 - 15	-

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Formic acid	Skin Corr. 1A :: C>=90% Skin Corr. 1B :: 10%<=C<90% Skin Irrit. 2 :: 2%<=C<10% Eye Irrit. 2 :: 2%<=C<10%	-	-

Components	Reach Registration Number	
Formic acid	01-2119491174-37	

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

## SECTION 4: FIRST AID MEASURES

#### 4.1. Description of first aid measures

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

## SECTION 5: FIREFIGHTING MEASURES

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

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

#### Extinguishing media which must not be used for safety reasons No information available.

ino information available.

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

Flammable. Corrosive material. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

#### Hazardous Combustion Products

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

#### **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. Remove all sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

#### 6.2. Environmental precautions

Avoid release to the environment. See Section 12 for additional Ecological Information.

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

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

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

#### SECTION 7: HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Use spark-proof tools and explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. 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. Keep away from heat, sparks and flame. Flammables area.

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

Class 3

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

Use in laboratories

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

#### 8.1. Control parameters

#### Exposure limits

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

Component	The United Kingdom	European Union	Ireland
Formic acid	STEL: 15 ppm 15 min	TWA: 5 ppm 8 hr	TWA: 5 ppm 8 hr.
	STEL: 28.8 mg/m <sup>3</sup> 15 min	TWA: 9 mg/m <sup>3</sup> 8 hr	TWA: 9 mg/m <sup>3</sup> 8 hr.
	TWA: 5 ppm 8 hr	-	STEL: 15 ppm 15 min
	TWA: 9.6 mg/m <sup>3</sup> 8 hr		STEL: 27 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)
Formic acid 64-18-6(85 - 90)		DNEL = 19 mg/m <sup>3</sup>	DNEL = 9.5mg/m <sup>3</sup>	DNEL = 9.5 mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Formic acid	PNEC = 2mg/L	PNEC = 13.4mg/kg	PNEC = 1mg/L	PNEC = 7.2mg/L	PNEC = 1.5mg/kg
64-18-6 (85 - 90)	-	sediment dw		-	soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Formic acid 64-18-6(85 - 90)	PNEC = 0.2mg/L	PNEC = 1.34mg/kg sediment dw			

#### 8.2. Exposure controls

Engineering Measures

#### Formic acid, 88%

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.

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 Eve Protection

Goggles (European standard - EN 166)

Hand Protection	Protectiv	ve gloves		
Glove material Natural rubber Butyl rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations	Glove thickness	EU standard EN 374	Glove comments (minimum requirement)
Skin and body prot	tection Wear ap	propriate protective of	gloves and clothing to p	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	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced <b>Recommended Filter type:</b> 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. <b>Recommended half mask:-</b> Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains.

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

@ 760 mmHg On basis of test data

Liquid

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

Physical State	Liquid
Appearance	Colorless
Odor	pungent
Odor Threshold	No data available
Melting Point/Range	8 °C / 46.4 °F
Softening Point	No data available
Boiling Point/Range	101 °C / 213.8 °F
Flammability (liquid)	Flammable
Flammability (solid,gas)	Not applicable
Explosion Limits	Lower 18 vol%

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Formic acid, 88%		Revision Date 06-00
Flash Point Autoignition Temperature Decomposition Temperature	<b>Upper</b> 57 vol% 60 °C / 140 °F 520 °C / 968 °F No data available	Method - No information available
pH Viscosity Water Solubility Solubility in other solvents Partition Coefficient (n-octanol/v	2.1 1.47 mPa.s @ 20 °C Miscible No information available vater)	10 g/L aq.sol
Component Formic acid Vapor Pressure Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	log Pow -0.54 44 mbar @ 20 °C 1.220 Not applicable No data available Not applicable (liquid)	Liquid (Air = 1.0)
9.2. Other information Explosive Properties	explosive air/vapour mixtures	possible
	SECTION 10: STABILITY	AND REACTIVITY
10.1. Reactivity	None known, based on informa	ation available
10.2. Chemical stability		ecomposes to water and carbon dioxide.
10.3. Possibility of hazardous re	actions	
Hazardous Polymerization Hazardous Reactions	No information available. None under normal processing	J.
10.4. Conditions to avoid	Incompatible products. Excess sources of ignition. Exposure to	heat. Keep away from open flames, hot surfaces and o moist air or water.
10.5. Incompatible materials	Strong oxidizing agents. Metals	s. Finely powdered metals. Strong bases.
10.6. Hazardous decomposition		on dioxide (CO <sub>2</sub> ). Hydrogen. Thermal decomposition ca id vapors.
S	ECTION 11: TOXICOLOG	ICAL INFORMATION

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

Product Information

Formic acid, 88%

(a) acute toxicity; Oral Dermal Inhalation

Category 4 Based on available data, the classification criteria are not met Category 3 can lead

#### Formic acid, 88%

#### Revision Date 06-Oct-2023

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Formic acid	730 mg/kg (Rat)	-	7.85 mg/l (Rat) 4h OECD 403
Water	-	-	-

(b) skin corrosion/irritation;	Category 1 B
(c) serious eye damage/irritation;	Category 1
(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
(f) carcinogenicity;	Based on available data, the classification criteria are not met
	There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	Based on available data, the classification criteria are not met
(h) STOT-single exposure;	Based on available data, the classification criteria are not met
(i) STOT-repeated exposure;	Based on available data, the classification criteria are not met
Target Organs	None known.
(j) aspiration hazard;	Based on available data, the classification criteria are not met
Symptoms / effects,both acute and delayed	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.
44.0 Information on other bounds	

#### 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

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Formic acid	Leuciscus idus: LC50 = 46-100 ma/L/96h	EC50 = 34 mg/L/48h	EC50 = 25 mg/L/96h
	nig/L/96n		

Component	Microtox	M-Factor
Formic acid	EC50 = 46.7 mg/L/17h	

## 12.2. Persistence and degradability Readily biodegradable

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

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Formic acid	-0.54	0.22 dimensionless

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

No data available for assessment.

12.6. Endocrine disrupting						
properties Endocrine Disruptor Information	This produ	uct does not contain any known or suspec	ted endocrine disruptors			
Component						
Component		EU - Endocrine Disrupters Candidate Eist	Substances			
Formic acid		Applicable				

#### 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.

## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

<u>14.1. UN number</u>	UN1779
14.2. UN proper shipping name	Formic acid
14.3. Transport hazard class(es)	8
Subsidiary Hazard Class	3

#### 14.4. Packing group

<u>ADR</u>

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN1779 Formic acid 8 3 II
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN1779 Formic acid 8 3 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

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## **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
Formic acid	64-18-6	200-579-1	-	-	Х	Х	Х	Х	Х
Water	7732-18-5	231-791-2	-	-	Х	Х	KE-35400	Х	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Formic acid	64-18-6	Х	ACTIVE	Х	-	Х	Х	Х
Water	7732-18-5	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) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Formic acid	64-18-6	-	Use restricted. See item 75. (see link for restriction details)	-
Water	7732-18-5	-	-	-

#### **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) - Qualifying Quantities for Major Accident	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Repor	
		Notification	Requirements	
Formic acid	64-18-6	Not applicable	Not applicable	
Water	7732-18-5	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

Water endangering class = 1 (self classification)

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

	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
Γ	Formic acid	Prohibited and Restricted		
	64-18-6(85 - 90)	Substances		

#### 15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

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

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

H226 - Flammable liquid and vapor

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H302 - Harmful if swallowed

H331 - Toxic if inhaled

EUH071 - Corrosive to the respiratory tract

Formic acid, 88%

#### Legend

CAS - Chemical Abstracts Service EINECS/ELINCS - European Inventory of Existing Commercial Chemical 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	<ul> <li>TSCA - United States Toxic Substances Control Act Section 8(b) Inventory</li> <li>DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List</li> <li>ENCS - Japanese Existing and New Chemical Substances</li> <li>AICS - Australian Inventory of Chemical Substances</li> <li>NZIOC - New Zealand Inventory of Chemicals</li> </ul>
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	<ul> <li>TWA - Time Weighted Average</li> <li>IARC - International Agency for Research on Cancer</li> <li>Predicted No Effect Concentration (PNEC)</li> <li>LD50 - Lethal Dose 50%</li> <li>EC50 - Effective Concentration 50%</li> <li>POW - Partition coefficient Octanol:Water</li> <li>vPvB - very Persistent, very Bioaccumulative</li> </ul>
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 Key literature references and sources for data https://echa.europa.eu/information-on-chemicals Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, R	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)
Classification and procedure used to derive the classificatio	n for mixtures according to Regulation (EC) 1272/2008 [CLP]:

# Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:Physical hazardsOn basis of test dataHealth HazardsOn basis of test dataEnvironmental hazardsOn basis of test data

#### **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	03-Nov-2009
Revision Date	06-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