

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

Creation Date 16-Jun-2009

Revision Date 11-Feb-2024

Revision Number 3

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THECOMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	Acetonitrile
Cat No. :	36423
Synonyms	AN; Methyl cyanide; Ethanenitrile
Index No	608-001-00-3
CAS No	75-05-8
EC No	200-835-2
Molecular Formula	C2 H3 N
REACH registration number	-

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

Recommended Use Sector of use	Laboratory chemicals. 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

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific) Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

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

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Acetonitrile

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Flammable liquids

Health hazards

Acute oral toxicity Acute dermal toxicity Acute Inhalation Toxicity - Vapors 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

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled H319 - Causes serious eye irritation

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 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
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

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB) 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	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
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Category 2 (H225)

Category 4 (H302) Category 4 (H312) Category 4 (H332) Category 2 (H319)

Acetonitrile

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Acetonitrile 75-05-8	200-835-2	<=100	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Eye Irrit. 2 (H319) Acute Tox. 4 (H332)
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Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)				
Acetonitrile	ATE = 617 mg/kg	-	-				
ECHA (RAC) - Committee for Risk Assessment - European CHemicals Agency							

ATE - Acute Toxiciy Estimate; mg/kg bw - milligrams per kilogram of body weight

REACH registration number -

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measur	es_					
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 irregular or stopped, administer 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	Remove all sources of ignition. Use personal protective equipment as required. 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. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting					
4.3. Indication of any immediate me	4.3. Indication of any immediate medical attention and special treatment needed					
Notes to Physician	Treat symptomatically. The effects may be delayed therefore medical observation is essential. Effects may be delayed 7 to 10 hours. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration.					

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Acetonitrile

Suitable Extinguishing Media

Water spray. CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

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

Hydrogen cyanide (hydrocyanic acid), Nitrogen oxides (NOx), 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

Remove all sources of ignition. Take precautionary measures against static discharges. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment as required.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Remove all sources of ignition. Take precautionary measures against static discharges. Provide adequate ventilation. Use spark-proof tools and explosion-proof equipment. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Prevent product from entering drains.

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

Wear personal protective equipment/face protection. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Hygiene Measures

When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

Technical Rules for Hazardous Substances (TRGS) 510Class 3Storage 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
Acetonitrile	STEL: 60 ppm 15 min	TWA: 40 ppm (8hr)	TWA: 40 ppm 8 hr.
	STEL: 102 mg/m ³ 15 min TWA: 40 ppm 8 hr	TWA: 70 mg/m³ (8hr) Skin	TWA: 70 mg/m ³ 8 hr. STEL: 120 ppm 15 min
	TWA: 68 mg/m ³ 8 hr		STEL: 310 mg/m ³ 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)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Acetonitrile 75-05-8 (<=100)				DNEL = 32.2mg/kg bw/day

Comp	onent	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Aceto	nitrile	DNEL = 40.6 ppm	DNEL = 40.6 ppm	DNEL = 40.6 ppm	DNEL = 40.6 ppm
75-05-8	(<=100)	(68 mg/m ³)	(68 mg/m ³)	(68 mg/m ³)	(68 mg/m ³)

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Acetonitrile	PNEC = 10mg/L	PNEC = 7.53mg/kg	PNEC = 10mg/L	PNEC = 32mg/L	PNEC = 2.41mg/kg
75-05-8(<=100)	-	sediment dw	-		soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Acetonitrile 75-05-8 (<=100)	PNEC = 1mg/L				

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	Protectiv	/e gloves			
Glove material Butyl rubber	Breakthrough time > 480 minutes	Glove thickness 0.35 mm	EU standard EN 374 Level 6	Glove comments As tested under EN374-3 Determination of Resistance to Permeation by Chemicals	
Neoprene gloves	< 60 minutes	0.45 mm			
Skin and body protectionWear 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: low boiling organic solvent Type AX Brown conforming to EN371
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

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Colorless aromatic 170 ppm -46 °C / -50.8 °F No data available 81 - 82 °C / 177.8 - 179.6 °F Highly flammable Not applicable Lower 3 vol % Upper 16 vol %	@ 760 mmHg On basis of test data Liquid

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Flash Point	12.8 °C / 55 °F	Method - No information available
Autoignition Temperature	525 °C / 977 °F	
Decomposition Temperature	No data available	
pH	Not applicable	
Viscosity	0.36 cP at 20 °C	
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/w	vater)	
Component	log Pow	
Acetonitrile	-0.34	
Vapor Pressure	97 mbar @ 20 °C	
Density / Specific Gravity	0.781	
Bulk Density	Not applicable	Liquid
Vapor Density	1.42	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	
9.2. Other information		
Molecular Formula	C2 H3 N	
Molecular Weight	41.05	
Explosive Properties	Not explosive Vapors may for	m explosive mixtures with air
Oxidizing Properties	Not oxidising	
Evaporation Rate	5.79 - (Butyl Acetate = 1.0)	

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 react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. No information available.
10.4. Conditions to avoid	Incompatible products. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.
10.5. Incompatible materials	Strong oxidizing agents. Strong acids. Reducing Agent. Bases.

10.6. Hazardous decomposition products

Hydrogen cyanide (hydrocyanic acid). Nitrogen oxides (NOx). 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

Acetonitrile

Dermal	Category 4		
Inhalation	Category 4		
Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetonitrile	>= 450- <= 787 mg/kg (Rat),	>= 2000 mg/kg (Rabbit), OECD	LC50 = 3587 ppm (6.022 mg/l)
Acetonitine	OECD Guideline 401	Guideline 402	(Mouse) 4h, OECD Guideline
			403
		A	
Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)
Acetonitrile	ATE = 617 mg/kg	-	-
ECHA (RAC) - Committee for Risk Assessr ATE - Acute Toxiciy Estimate; mg/kg bw - n			
(b) skin corrosion/irritation;	Based on available data, the c	classification criteria are not me	et
(c) serious eye damage/irritation;	Category 2		
Test method	OECD 405		
Test species	rabbit		
Observation end point	Causes serious eye irritation.		
(d) respiratory or skin sensitization;			
Respiratory		classification criteria are not me	et
Skin		classification criteria are not me	
•••••			
(e) germ cell mutagenicity;	Based on available data, the c	classification criteria are not me	et
(f) carcinogenicity;	Based on available data, the c	classification criteria are not me	et
	There are no known carcinoge	enic chemicals in this product	
(g) reproductive toxicity;	Rased on available data, the c	classification criteria are not me	st
(g) reproductive toxicity,	Dased on available data, the c		51
(h) STOT-single exposure;	Based on available data, the c	classification criteria are not me	ət
(i) STOT-repeated exposure;	Based on available data, the c	classification criteria are not me	et
Target Organs	None known.		
(j) aspiration hazard;	Based on available data, the c	classification criteria are not me	ət
Symptoms / effects,both acute and	Symptoms of overexposure m	ay be headache, dizziness, tir	edness, nausea and vomiting.
delayed	collapse, unconsciousness, ar	ide, which may result in heada nd possible death. Inhalation o adache, dizziness, tiredness, n	f high vapor concentrations
11.2. Information on other hazards			
		non-onting for by the set of the set	in an alway always of the state
Endocrine Disrupting Properties	Assess endocrine disrupting p		is product does not contain any

SECTION 12: ECOLOGICAL INFORMATION

known or suspected endocrine disruptors.

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12.1. Toxicity Ecotoxicity effects

Acetonitrile

Component	Freshwater Fish	Water Flea	Freshwater Algae
Acetonitrile	LC50: = 1850 mg/L, 96h static (Lepomis macrochirus) LC50: = 1000 mg/L, 96h static (Pimephales promelas) LC50: 1600 - 1690 mg/L, 96h flow-through (Pimephales promelas) LC50: = 1650 mg/L, 96h static (Poecilia reticulata)		

Component	Microtox	M-Factor
Acetonitrile	EC50 = 28000 mg/L 48 h	
	EC50 = 73 mg/L 24 h	
	EC50 = 7500 mg/L 15 h	

12.2. Persistence and degradability

Persistence

Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Acetonitrile	-0.34	No data available

12.4. Mobility in soilThe product contains volatile organic compounds (VOC) which will evaporate easily from all
surfaces Will likely be mobile in the environment due to its volatility. Disperses rapidly in
air12.5. Results of PBT and vPvB
assessmentSubstance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent
and very bioaccumulative (vPvB).

<u>12.6. Endocrine disrupting</u>	
properties_	
Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
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12.7. Other adverse effects	
Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	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	Waste codes should be assigned by the user based on the application for which the product

was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN1648
14.2. UN proper shipping name	ACETONITRILE
14.3. Transport hazard class(es)	3
14.4. Packing group	II

<u>ADR</u>

14.1. UN number_	UN1648
14.2. UN proper shipping name	ACETONITRILE
14.3. Transport hazard class(es)	3
14.4. Packing group	II

IATA

14.1. UN number 14.2. UN proper shipping name 14.3. Transport hazard class(es) 14.4. Packing group	UN1648 ACETONITRILE 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

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Not applicable, packaged goods

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
Acetonitrile	75-05-8	200-835-2	-	-	Х	Х	KE-00067	Х	Х
Component	CAS No	TSCA		ation -	DSL	NDSL	AICS	NZIoC	PICCS
			Active-	Inactive					
Acetonitrile	75-05-8	Х	ACT	IVE	Х	-	X	Х	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) - REACH (1907/2006) - REACH Regulation (I
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Acetonitrile

		Annex XIV - Substances Subject to Authorization	0	1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Acetonitrile	75-05-8	-	Use restricted. See entry	-
			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) - Qualifying Quantities for Major Accident	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report
		Notification	Requirements
Acetonitrile	75-05-8	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
Acetonitrile	WGK2	

C	component	France - INRS (Tables of occupational diseases)
A	Acetonitrile	Tableaux des maladies professionnelles (TMP) - RG 84

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

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 H319 - Causes serious eye irritation H332 - Harmful if inhaled

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances	DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances	ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated 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 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)

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts. 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. Chemical incident response training.

Prepared By	Health, Safety and Environmental Department
Creation Date	16-Jun-2009
Revision Date	11-Feb-2024
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