

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

Creation Date 16-Mar-2010

Revision Date 21-Sep-2023

Revision Number 15

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

#### 1.1. Product identifier

Product Description:	Aniline
Cat No. :	158190000; 158190010; 158190025; 158190050; 158191000
Synonyms	Aminobenzene; Phenylamine
Index No	612-008-00-7
CAS No	62-53-3
EC No	200-539-3
Molecular Formula	C6 H7 N
REACH registration number	01-2119451454-41

#### 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
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**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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#### Aniline

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

#### Health hazards

Acute oral toxicity	Category 3 (H301)	
Acute dermal toxicity	Category 3 (H311)	
Acute Inhalation Toxicity - Vapors	Category 3 (H331)	
Serious Eye Damage/Eye Irritation	Category 1 (H318)	
Skin Sensitization	Category 1 (H317)	
Germ Cell Mutagenicity	Category 2 (H341)	
Carcinogenicity	Category 2 (H351)	
Specific target organ toxicity - (repeated exposure)	Category 1 (H372)	
Environmental hazards		
Acute aquatic toxicity	Category 1 (H400)	
Chronic aquatic toxicity	Category 1 (H410)	

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



Signal Word

Danger

#### **Hazard Statements**

- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H341 Suspected of causing genetic defects
- H351 Suspected of causing cancer
- H372 Causes damage to organs through prolonged or repeated exposure
- H410 Very toxic to aquatic life with long lasting effects
- H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled
- Combustible liquid

#### **Precautionary Statements**

- 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

- P310 Immediately call a POISON CENTER or doctor/physician
- P280 Wear protective gloves/protective clothing/eye protection/face protection

#### 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

#### Aniline

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Aniline	62-53-3	EEC No. 200-539-3	>95	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 2 (H351) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Aniline	STOT RE 1 (H372) :: C>=1% STOT RE 2 (H373) :: 0.2%<=C<1%	1	-

REACH registration number	01-2119451454-41

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 thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. 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 not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
4.2. Most important symptoms and	effects, both acute and delayed

Causes severe eye damage. May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and

feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

#### 4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

### **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (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.

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

Combustible material. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors. Combustible material. Do not allow run-off from fire-fighting to enter drains or water courses.

#### Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NOx).

#### 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. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

#### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

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

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition.

#### 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. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from

#### Aniline

open flames, hot surfaces and sources of ignition.

#### **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

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Protect from sunlight.

**Technical Rules for Hazardous Substances (TRGS) 510** Class 6.1C Storage Class (LGK) (Germany)

#### 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
Aniline	STEL: 3 ppm 15 min		TWA: 2 ppm 8 hr.
	STEL: 12 mg/m <sup>3</sup> 15 min		TWA: 7.74 mg/m <sup>3</sup> 8 hr.
	TWA: 1 ppm 8 hr		STEL: 5 ppm 15 min
	TWA: 4 mg/m <sup>3</sup> 8 hr		STEL: 19.35 mg/m <sup>3</sup> 15 min
	Skin		Skin

#### **Biological limit values**

List source(s):

## Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local	Acute effects	Chronic effects local	Chronic effects
	(Dermal)	systemic (Dermal)	(Dermal)	systemic (Dermal)
Aniline 62-53-3(>95)		DNEL = 4mg/kg bw/day		DNEL = 2mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Aniline 62-53-3(>95)		DNEL = 15.4mg/m <sup>3</sup>		DNEL = 7.7mg/m <sup>3</sup>

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

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)

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		sediment	sewage treatment	
Aniline 62-53-3(>95)	PNEC = 0.0012mg/L	PNEC = 0.153mg/kg sediment dw	PNEC = 2mg/L	PNEC = 0.033mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Aniline	PNEC =	PNEC =		PNEC = 2.3g/kg	
62-53-3 (>95)	0.00012mg/L	0.0153mg/kg		food	
		sediment dw			

#### 8.2. Exposure controls

#### **Engineering Measures**

Use only under a chemical fume hood. 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	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	> 480 minutes	0.35 mm	Level 6	As tested under EN374-3 Determination of
Viton (R)	> 480 minutes	0.3 mm	EN 374	Resistance to Permeation by Chemicals
Skin and body pro				

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 <b>Recommended Filter type:</b> Particulates filter conforming to EN 143 or Ammonia and organic ammonia derivatives filter Type K Green 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. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

#### **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	Light yellow aromatic Amine compounds No data available -6.2 °C / 20.8 °F No data available	
Boiling Point/Range	181 - 185 °C / 357.8 - 365 °F	@ 760 mmHg
Flammability (liquid) Flammability (solid,gas)	Combustible liquid Not applicable	On basis of test data Liquid
Explosion Limits	Lower 1.3 vol%	Elquid
	Upper 11 vol%	
Flash Point	76 °C / 168.8 °F	Method - No information available
Autoignition Temperature Decomposition Temperature	540 °C / 1004 °F 190 °C	
рН	8.8	36 g/L aq.sol
Viscosity Water Solubility	4.4 mPa.s at 20 °C 36 g/L (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/wate	er)	
<b>Component</b> Aniline	<b>log Pow</b> 0.91	
Vapor Pressure Density / Specific Gravity	0.5 mmHg @ 20 °C 1.021	
Bulk Density	Not applicable	Liquid
Vapor Density Particle characteristics	3.3 (Air = 1.0) Not applicable (liquid)	(Air = 1.0)
9.2. Other information		

Molecular Formula Molecular Weight Explosive Properties Evaporation Rate C6 H7 N 93.13 explosive air/vapour mixtures possible 1 (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. Light sensitive.
10.3. Possibility of hazardous react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
10.4. Conditions to avoid	Incompatible products. Heat, flames and sparks. Exposure to light. Keep away from open flames, hot surfaces and sources of ignition.
10.5. Incompatible materials	Acids. Alkali metals. Oxidizing agent.

#### 10.6. Hazardous decomposition products

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

## **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 3
Dermal	Category 3
Inhalation	Category 3

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Aniline	LD50 = 440 mg/kg (Rat)	LD50 = 442 mg/kg (Rat)	1 mg/L(Rat)4 h
			1.82 mg/L (Rat) 4 h

(b) skin corrosion/irritation;	Based on available data, the classification criteria are not met
(c) serious eye damage/irritation;	Category 1
(d) respiratory or skin sensitization Respiratory Skin	Based on available data, the classification criteria are not met Category 1
	May cause sensitization by skin contact
(e) germ cell mutagenicity;	Category 2 Category 2
(f) carcinogenicity;	Category 2 Limited evidence of a carcinogenic effect

Component	EU	UK	Germany	IARC		
Aniline				Group 2A		
(g) reproductive toxicity;	Based on availab	Based on available data, the classification criteria are not met				
(h) STOT-single exposure;	<b>TOT-single exposure:</b> Based on available data, the classification criteria are not met					
(,		· · · · · · · · · · · · · · · · · · ·				
(i) STOT-repeated exposure;	Category 1					
Target Organs	Liver, Kidney, sp system, Bladder.		tem (CNS), Blood, Eyes,	Skin, Cardiovascular		
(j) aspiration hazard;	Based on availab	le data, the classification	criteria are not met			
Symptoms / effects,both acute an delayed	Symptoms of alle	ergic reaction may include	ache, dizziness, tiredness, a rash, itching, swelling, tro ledness, chest pain, musc	ouble breathing, tingling		

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

Aniline

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Aniline	Oncorhynchus mykiss: LC50 =	EC50 = 0.16 mg/L 48h	
	10.96 mg/L 96h		

Component	Microtox	M-Factor
Aniline	EC50 = 425 mg/L 5 min	1
	EC50 = 488 mg/L 15 min	

<u>12.2. Persistence and degradability</u> Persistence Degradation in sewage treatment plant	Readily biodegradable Persistence is unlikely. Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.			
12.3. Bioaccumulative potential	Bioaccumulation is unlikely			
Component	log Pow	Bioconcentration factor (BCF)		
Aniline	0.91	No data available		
<u>12.4. Mobility in soil</u>	The product is water soluble, and may spread i environment due to its water solubility. Highly			
12.5. Results of PBT and vPvB assessment	Substance 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 su	spected endocrine disruptors		
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or su This product does not contain any known or su	•		

#### **SECTION 13: DISPOSAL CONSIDERATIONS**

13.1. Waste treatment methods	
Waste from Residues/Unused Products	Should not be released into the environment. 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

Aniline

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. Do not let this chemical enter the environment.

## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN1547 Aniline 6.1 II
ADR	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> 14.3. Transport hazard class(es) 14.4. Packing group	UN1547 Aniline 6.1 II
IATA	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN1547 Aniline 6.1 II
14.5. Environmental hazards	Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO
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
Aniline	62-53-3	200-539-3	-	-	Х	Х	KE-01180	Х	Х
Component	CAS No	TSCA	TSCA In notific Active-I	ation -	DSL	NDSL	AICS	NZIoC	PICCS
Aniline	62-53-3	Х	ACT	IVE	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 Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Aniline	62-53-3	-	Use restricted. See item 75. (see link for restriction details)	-

#### **REACH links**

Aniline

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
Aniline	62-53-3	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

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Aniline	WGK3	Class I : 20 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Aniline	Tableaux des maladies professionnelles (TMP) - RG 13,RG 15,RG 15bis

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
Aniline 62-53-3 ( >95 )	Prohibited and Restricted Substances		

#### 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

- H301 Toxic if swallowed
- H311 Toxic in contact with skin
- H331 Toxic if inhaled
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H341 Suspected of causing genetic defects
- H351 Suspected of causing cancer
- H372 Causes damage to organs through prolonged or repeated exposure
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects

#### Legend

CAS - Chemical Abstracts Service	<b>TSCA</b> - 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	Substances List
<b>PICCS</b> - Philippines Inventory of Chemicals and Chemical Substances	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing 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	<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	ICAO/IATA - International Civil Aviation Organization/International Air

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, RTECS

#### Training Advice

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

Ships

Transport Association

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

MARPOL - International Convention for the Prevention of Pollution from

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts. First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Creation Date	16-Mar-2010
Revision Date	21-Sep-2023
Revision Summary	Not applicable.

## This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

#### Disclaimer

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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**