

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

Creation Date 07-Jun-2011

Revision Date 20-Oct-2023

Revision Number 12

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

#### 1.1. Product identifier

Product Description:	Nitric acid S.G. 1.42 (70%)
Cat No. :	N/2200/PB17
Index No	007-004-00-1
CAS No	7697-37-2
EC No	231-714-2
REACH registration number	01-2119487297-23

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

Recommended Use	Laboratory chemicals.
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

#### 1.3. Details of the supplier of the safety data sheet

#### Company

#### UK entity/business name

Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

#### EU entity/business name

Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium

#### E-mail address

begel.sdsdesk@thermofisher.com

#### 1.4. Emergency telephone number

Tel: 01509 231166 Chemtrec US: (800) 424-9300 Chemtrec EU: 001-703-527-3887

## **SECTION 2: HAZARDS IDENTIFICATION**

#### 2.1. Classification of the substance or mixture

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

Physical hazards

Nitric acid S.G. 1.42 (70%)

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Oxidizing liquids Substances/mixtures corrosive to metal

#### Health hazards

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

#### Environmental hazards

Based on available data, the classification criteria are not met

Category 3 (H272) Category 1 (H290)

Category 3 (H331) Category 1 A (H314) Category 1 (H318)

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

H272 - May intensify fire; oxidizer
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H331 - Toxic if inhaled
EUH071 - Corrosive to the respiratory tract

#### **Precautionary Statements**

P221 - Take any precaution to avoid mixing with combustibles

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

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

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
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### Nitric acid S.G. 1.42 (70%)

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				UK SI 2020/1567
Nitric acid …% [C ≤ 70 %]	7697-37-2	231-714-2	65-70	Ox. Liq. 3 (H272) Met. Corr. 1 (H290) Acute Tox. 3 (H331) Skin Corr. 1A (H314) Eye Dam. 1 (H318) (EUH071)
Water	7732-18-5	231-791-2	30-35	-

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Nitric acid …% [C ≤ 70 %]	Ox. Liq. 2 :: C>=99% Ox. Liq. 3 :: 65%<=C<99% Acute Tox. 1 (inhal) :: C>=70% Acute Tox. 3 (inhal) :: 70%>C>=26.5% Acute Tox. 4 (inhal) :: 26.5%>C>=13.25% Skin Corr. 1A :: C>=20% Skin Corr. 1B :: 5%<=C<20% Met. Corr. 1 :: C>=2% EUH071 :: C>=20%	-	-

Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)				
Nitric acid …% [C ≤ 70 %]	-	-	ATE = 2.65 mg/L (vapours)				
ECHA (RAC) - Committee for Risk Assessment - European CHemicals Agency							
ATE - Acute Toxiciy Estimate							

REACH registration number	01-2119487297-23

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

## **SECTION 4: FIRST AID MEASURES**

#### 4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.		
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.		
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. 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	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.		
4.2. Most important symptoms and effects, both acute and delayed			

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

Notes to Physician

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

## **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

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

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

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

#### Hazardous Combustion Products

Nitrogen oxides (NOx), 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. 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.

Refer to protective measures listed in Sections 7 and 8

#### 6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

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

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

### **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

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

clothing and other combustible materials.

#### **Hygiene Measures**

When using do not eat, drink or smoke. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

#### 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Corrosives area. Do not store in metal containers. Keep in properly labeled containers.

Technical Rules for Hazardous Substances (TRGS) 510Class 5.1BStorage 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): **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
Nitric acid …% [C ≤ 70 %]	STEL: 1 ppm 15 min	STEL: 1 ppm (15min)	STEL: 1 ppm 15 min
	STEL: 2.6 mg/m <sup>3</sup> 15 min	STEL: 2.6 mg/m <sup>3</sup> (15min)	STEL: 2.6 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)

No information available

## Predicted No Effect Concentration (PNEC)

No information available.

#### 8.2. Exposure controls

#### **Engineering Measures**

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

#### Nitric acid S.G. 1.42 (70%)

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 equ	uipment			
Eye Protection	Goggles	(European standard	l - EN 166)	
Hand Protection	Protectiv	e gloves		
Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Neoprene gloves	> 480 minutes	0.45 mm	EN 374	As tested under EN374-3 Determination of
Butyl rubber	> 480 minutes	0.56 mm	Level 6	Resistance to Permeation by Chemicals
Viton (R)	> 480 minutes	0.7 mm		-
Skin and body prote	ection Long sle	eved 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 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**

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

Physical State	Liquid	
Appearance Odor	Clear Colorless Light yellow Strong Acrid	
Odor Threshold Melting Point/Range	No data available -42 °C / -43.6 °F	
Softening Point Boiling Point/Range	No data available 122 °C / 251.6 °F	
Flammability (liquid) Flammability (solid,gas)	No data available Not applicable	Liquid
Explosion Limits	No data available	Liquid
Flash Point Autoignition Temperature Decomposition Temperature	Not applicable No data available No data available	Method

Method - No information available

Nitric acid S.G. 1.42 (70%)

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pH	1.0	(0.1M)
Viscosity	No data available	
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/	water)	
Component	log Pow	
Nitric acid …% [C ≤ 70 %]	-2.3	
Vapor Pressure	No data available	
Density / Specific Gravity	1.42	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	(liquid) Not applicable	( - <u>)</u>

9.2. Other information

Oxidizing Properties Evaporation Rate Oxidizer No information available

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

Yes

10.2. Chemical stability

Oxidizer: Contact with combustible/organic material may cause fire.

#### 10.3. Possibility of hazardous reactions

Hazardous PolymerizationHazardous polymerization does not occur.Hazardous ReactionsNone under normal processing.

10.4. Conditions to avoid

Incompatible products. Combustible material. Excess heat. Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Strong bases. Reducing Agent. Aldehydes. Alcohols. Cyanides. Metals. Finely powdered metals. Organic materials. Ammonia. Combustible material. Strong reducing agents.

#### 10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 11: TOXICOLOGICAL INFORMATION

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

#### **Product Information**

(a) acute toxicity; Oral Dermal Inhalation

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

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid …% [C ≤ 70 %]	-	-	LC50 = 2500 ppm. (Rat) 1h

# Nitric acid S.G. 1.42 (70%)

Water	-	_	-					
Water								
Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)					
Nitric acid% [C ≤ 70 %]	-	-	ATE = 2.65 mg/L (vapours)					
ECHA (RAC) - Committee for Risk Assessn ATE - Acute Toxiciy Estimate	nent - European CHemicals Agenc	У						
(b) skin corrosion/irritation;	Category 1 A							
(c) serious eye damage/irritation;	Category 1							
(d) respiratory or skin sensitization;								
Respiratory Skin	Based on available data, the of Based on available data, the of							
(e) germ cell mutagenicity;	Based on available data, the c	classification criteria are not m	et					
(f) carcinogenicity;	Based on available data, the c	classification criteria are not m	et					
	There are no known carcinoge	enic chemicals in this product						
(g) reproductive toxicity;	Based on available data, the c	classification criteria are not m	et					
(h) STOT-single exposure;	Based on available data, the c	Based on available data, the classification criteria are not met						
(i) STOT-repeated exposure;	Based on available data, the c	classification criteria are not m	et					
Target Organs	None known.							
(j) aspiration hazard;	Based on available data, the c	classification criteria are not m	et					
Symptoms / effects,both acute and delayed	Ingestion causes severe swell perforation.	ing, severe damage to the del	licate tissue and danger of					
11.2. Information on other hazards								
Endocrine Disrupting Properties	Assess endocrine disrupting p known or suspected endocrine		his product does not contain an					
SE	CTION 12: ECOLOGIC	CAL INFORMATION						
<u>12.1. Toxicity</u> Ecotoxicity effects	Do not empty into drains. Larg Contains a substance which is following substances which ar	:. Harmful to aquatic organism	ns. The product contains					

12.2. Persistence and degradability	
Persistence	Soluble in water, Persistence is unlikely, based on information available, Miscible with
Degradation in sewage	water. No inhibition of bacteria is expected if properly introduced into a biological treatment facility.

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#### treatment plant

Neutralization is normally necessary before waste water is discharged into water treatment plants. Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

# **<u>12.3. Bioaccumulative potential</u>** Bioaccumulation is unlikely; Bioaccumulation is unlikely

Component	log Pow Bioconcentration factor (E	
Nitric acid …% [C ≤ 70 %]	-2.3	No data available

 12.4. Mobility in soil
 The product is water soluble, and may spread in water systems . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

 12.5. Results of PBT and vPvB assessment
 Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

 12.6. Endocrine disrupting
 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	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	Do not reuse empty containers. 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	Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with low pH-value must be neutralized before discharge.

# **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

14.1. UN number	UN2031
14.2. UN proper shipping name	NITRIC ACID
14.3. Transport hazard class(es)	8
Subsidiary Hazard Class	5.1
14.4. Packing group	II

<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>	UN2031 NITRIC ACID 8 5.1 II
IATA	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN2031 NITRIC ACID 8 5.1 II
14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

## **SECTION 15: REGULATORY INFORMATION**

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

#### International Inventories

Nitric acid ...% [C ≤ 70 %]

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
Nitric acid …% [C ≤ 70 %]	7697-37-2	231-714-2	-	-	X	Х	KE-25911	Х	Х
Water	7732-18-5	231-791-2	-	-	X	Х	KE-35400	Х	-
Component	CAS No	TSCA	notific	iventory ation - Inactive	DSL	NDSL	AICS	NZIoC	PICCS

ACTIVE

Water	7732-18-5	Х	ACTIVE	Х	-	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Х

7697-37-2

#### 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)
Nitric acid …% [C ≤ 70 %]	7697-37-2	-	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)

**FSUN2200** 

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Nitric acid …% [C ≤ 70 %]	7697-37-2	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

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Nitric acid …% [C ≤ 70 %]	WGK1	

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Nitric acid …% [C ≤ 70 %] 7697-37-2(65-70)	Prohibited and Restricted Substances		

#### 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

H290 - May be corrosive to metals

H331 - Toxic if inhaled

- H314 Causes severe skin burns and eye damage
- H318 Causes serious eye damage
- EUH071 Corrosive to the respiratory tract

H272 - May intensify fire; oxidizer

Legend

#### Nitric acid S.G. 1.42 (70%)

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemica Substances/EU List of Notified Chemical Substances	al DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - 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
<b>KECL</b> - Korean Existing and Evaluated Chemical Substances	NZIOC - New Zealand Inventory of Chemicals
WEL - Workplace Exposure Limit	TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level	Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipment	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%	EC50 - Effective Concentration 50%
<b>NOEC</b> - No Observed Effect Concentration	POW - Partition coefficient Octanol:Water
<b>PBT</b> - Persistent, Bioaccumulative, Toxic	vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
<b>IMO/IMDG</b> - International Maritime Organization/International Maritime Dangerous Goods Code	MARPOL - International Convention for the Prevention of Pollution from Ships
OECD - Organisation for Economic Co-operation and Development	ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor	VOC - (Volatile Organic Compound)
Key literature references and sources for data https://echa.europa.eu/information-on-chemicals	

**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. Chemical incident response training.

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Creation Date	07-Jun-2011
Revision Date	20-Oct-2023
Revision Summary	Not applicable.

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

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

# **End of Safety Data Sheet**