

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

Creation Date 12-Aug-2014

Revision Date 06-Oct-2023

Revision Number 16

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

1.1. Product identifier

Product Description: Cat No. : Synonyms Index No CAS No EC No Molecular Formula	Ammonium dichromate 446920000; 446921000; 446925000 Ammonium dichromate(VI).; Ammonium bichromate 024-003-00-1 7789-09-5 232-143-1 H8 Cr2 N2 O7 substance or mixture and uses advised against
Recommended Use	Laboratory chemicals.
Uses advised against	No Information available
1.3. Details of the supplier of the sa	afety 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,
E weil eddaee	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

Oxidizing solids

Category 2 (H272)

Ammonium dichromate

Health hazards

Acute oral toxicity Acute dermal toxicity Acute Inhalation Toxicity - Dusts and Mists Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Respiratory Sensitization Skin Sensitization Germ Cell Mutagenicity Carcinogenicity Reproductive Toxicity Specific target organ toxicity - (repeated exposure) Environmental hazards	Category 3 (H301) Category 4 (H312) Category 2 (H330) Category 1 B (H314) Category 1 (H318) Category 1 (H334) Category 1 (H317) Category 1B (H340) Category 1B (H350) Category 1B (H360FD) Category 1 (H372)
Acute aquatic toxicity	Category 1 (H400)
Chronic aquatic toxicity	Category 1 (H410)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H272 - May intensify fire; oxidizer

- H301 Toxic if swallowed
- H312 Harmful in contact with skin
- H330 Fatal if inhaled
- H314 Causes severe skin burns and eye damage
- H317 May cause an allergic skin reaction
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H340 May cause genetic defects
- H350 May cause cancer
- H360FD May damage fertility. May damage the unborn child
- H372 Causes damage to organs through prolonged or repeated exposure
- H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements

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

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

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Additional EU labelling

Restricted to professional users

2.3. Other hazards

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 No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Ammonium bichromate	7789-09-5	EEC No. 232-143-1	>95	Ox. Sol. 2 (H272) Acute Tox. 3 (H301) Acute Tox. 4 (H312) Acute Tox. 2 (H330) Skin Corr. 1B (H314) Skin Sens. 1 (H317) Resp. Sens. 1 (H334) Muta. 1B (H340) Carc. 1B (H350) Repr. 1B (H360FD) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Ammonium bichromate	Resp. Sens. 1 (H334) :: C>=0.2%		-
	Skin Sens. 1 (H317) :: C>=0.2% STOT SE 3 (H335) :: C>=5%		

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

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 soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
Inhalation	Remove to fresh air. 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. If not breathing, give artificial respiration.
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. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. 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: 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.

Extinguishing media which must not be used for safety reasons Carbon dioxide (CO₂). Dry chemical. alcohol foam.

5.2. Special hazards arising from the substance or mixture

Oxidizer: Contact with combustible/organic material may cause fire. Risk of explosion if heated under confinement. Dust can form an explosive mixture with air. Very toxic. Corrosive material. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Nitrogen oxides (NOx), Toxic fumes, Chromium oxide.

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

Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Remove all sources of ignition. Do not get in eyes, on skin, or on clothing.

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. Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Wear self-contained breathing apparatus and protective suit. Keep combustibles (wood, paper, oil, etc) away from spilled material. Remove all sources of ignition. Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

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. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials. Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment.

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. Do not store near combustible materials. Containers should be vented periodically in order to overcome pressure buildup. Corrosives area.

Technical Rules for Hazardous Substances (TRGS) 510 Class 5.1B 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.

Component	The United Kingdom	European Union	Ireland
Ammonium bichromate	STEL: 0.03 mg/m ³ 15 min		
	STEL: 0.065 mg/m ³ 15 min		
	TWA: 0.01 mg/m ³ 8 hr		
	TWA: 0.025 mg/m ³ 8 hr		
	Carc. as Cr		
	Resp. Sens.		

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

Personal protective equipment

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

Eye Protection	-	(European standard	I - EN 166)	
Hand Protection	Protectiv	e gloves		
Glove material Natural rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations	Glove thickness -	EU standard EN 374	Glove comments (minimum requirement)
Skin and body prote	ection Wear ap	propriate protective of	ploves 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: Particulates filter conforming to EN 143
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:- Particle filtering: EN149:2001 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	Solid
Appearance	Orange

Odor	Odorless	
Odor Threshold	No data available	
Melting Point/Range	170 °C / 338 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	No information available	Method - No information available
Autoignition Temperature	218 °C / 424.4 °F	
Decomposition Temperature	170 °C	
рН	3-4	10% aq. sol
Viscosity	Not applicable	Solid
Water Solubility	360 g/l (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/wa	ater)	
Vapor Pressure	No data available	
Density / Specific Gravity	2.1500	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	
9.2. Other information		
Molecular Formula	H8 Cr2 N2 O7	
Molecular Weight	252.07	
Oxidizing Properties	Oxidizer	
Evaporation Rate	Not applicable - Solid	

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	Yes
10.2. Chemical stability	Oxidizer: Contact with combustible/organic material may cause fire. Risk of explosion if heated under confinement.
10.3. Possibility of hazardous react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. No information available.
10.4. Conditions to avoid	Do not subject to grinding/shock/friction. Excess heat. Incompatible products. Combustible material. Avoid dust formation.
10.5. Incompatible materials	Acids. Bases. Alcohols. Reducing Agent.
10.6 Hazardous decomposition pro	oducte

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Toxic fumes. Chromium oxide.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Ammonium dichromate

Product Information

(a) acute toxicity;	
Oral	Category 3
Dermal	Category 4
Inhalation	Category 2

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium bichromate	LD50 = 48 mg/kg (Rat)	LD50 = 1860 mg/kg (Rabbit)	LC50 = 0.2 mg/L (Rat)4 h

(b) skin corrosion/irritation;	Category 1 B
	Risk of serious damage to eyes
(c) serious eye damage/irritation;	Category 1
(d) respiratory or skin sensitization; Respiratory Skin	Category 1 Category 1
(e) germ cell mutagenicity;	May cause sensitization by skin contact Category 1B
	Mutagenic; May cause heritable genetic damage
(f) carcinogenicity;	Category 1B

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Ammonium bichromate	Carc Cat. 1B			Group 1

(g) reproductive toxicity; Reproductive Effects Developmental Effects Teratogenicity	Category 1B May impair fertility. May cause harm to the unborn child. Teratogenic effects have occurred in experimental animals.
(h) STOT-single exposure;	No data available
(i) STOT-repeated exposure;	Category 1
Target Organs	Kidney, Nasal Septum, Lungs.
(j) aspiration hazard;	Not applicable Solid
Symptoms / effects,both acute and delayed	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. 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.

11.2. Information on other hazards

Ammonium dichromate

Endocrine Disrupting Properties	ssess endocrine disrupting properties for human health. This product does not contain any nown or suspected endocrine disruptors.			
SE	CTION 12: ECOLOGICAL INFORMATION			
<u>12.1. Toxicity</u> Ecotoxicity effects	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not allow material to contaminate ground water system.			
12.2. Persistence and degradability Persistence Degradability Degradation in sewage treatment plant	Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary May persist, based on information available. Not relevant for inorganic substances. Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.			
12.3. Bioaccumulative potential	May have some potential to bioaccumulate			
<u>12.4. Mobility in soil</u>	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.			
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors			
12.7. Other adverse effects Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or suspected substance This product does not contain any known or suspected substance			

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 application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

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>	UN1439 AMMONIUM DICHROMATE 5.1 II
ADR	
<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>	UN1439 AMMONIUM DICHROMATE 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> <u>14.4. Packing group</u>	UN1439 AMMONIUM DICHROMATE 5.1 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.
<u>14.7. Maritime transport in bulk</u> 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
Ammonium bichromate	7789-09-5	232-143-1	-	-	Х	Х	KE-01653	Х	Х
Component	CAS No	TSCA	notific		DSL	NDSL	AICS	NZIoC	PICCS
			Active-	nactive					
Ammonium bichromate	7789-09-5	Y	ACT		Y	_	Y	Y	Y

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

ſ	Component	CAS No	REACH (1907/2006) -	REACH (1907/2006) -	REACH Regulation (EC
	-		Annex XIV - Substances	Annex XVII - Restrictions	1907/2006) article 59 -
			Subject to Authorization	on Certain Dangerous	Candidate List of
				Substances	Substances of Very High

Ammonium dichromate

Revision Date 06-Oct-2023

				Concern (SVHC)
Ammonium bichromate	7789-09-5	Carcinogenic Category 1B,	Use restricted. See item	SVHC Candidate list -
		Mutagenic Category 1B,	72.	232-143-1 - Carcinogenic,
		Toxic for reproduction	(see link for restriction	Article 57a;Mutagenic,
		Category 1B Article 57	details)	Article 57b;Toxic for
		Application date: March	Use restricted. See item	reproduction, Article 57c
		21, 2016	28.	
		Sunset date: September	(see link for restriction	
		21, 2017	details)	
		Exemption - None	Use restricted. See item	
			30.	
			(see link for restriction	
			details)	
			Use restricted. See item	
			29.	
			(see link for restriction	
			details)	
			Use restricted. See item	
			75.	
			(see link for restriction	
			details)	
			Use restricted. See item	
			47.	
			(see link for restriction	
			details) Use restricted. See	
			item 65.	
			(see link for restriction	
			details)	

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links

https://echa.europa.eu/authorisation-list https://echa.europa.eu/substances-restricted-under-reach https://echa.europa.eu/candidate-list-table

Seveso III Directive (2012/18/EC)

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
		Notification	Requirementa
Ammonium bichromate	7789-09-5	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 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work

Take note of Dir 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations

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
Ammonium bichromate	WGK3	

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
Ammonium bichromate 7789-09-5 (>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

H272 - May intensify fire; oxidizer

H301 - Toxic if swallowed

H312 - Harmful in contact with skin

- H314 Causes severe skin burns and eye damage
- H317 May cause an allergic skin reaction
- H340 May cause genetic defects

H350 - May cause cancer

H360FD - May damage fertility. May damage the unborn child

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

H272 - May intensify fire; oxidizer

H330 - Fatal if inhaled

H334 - May cause allergy or asthma symptoms or breathing difficulties 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 PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	
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	 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

PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships

vPvB - very Persistent, very Bioaccumulative

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

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.

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.

Creation Date	12-Aug-2014
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