

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

Creation Date 26-Sep-2009

Revision Date 16-Mar-2024

Revision Number 4

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

1.1. Product identifier

Product Description: Cat No. : Synonyms Molecular Formula Diethylzinc, nominally 15% w/w in hexanes 89038 Zinc ethide in hexane. C4 H10 Zn

1.2. Relevant identified uses of the 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 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

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567				
Physical hazards				
Flammable liquids Substances/mixtures which, in contact with water, emit flammable gases Pyrophoric liquids	Category 2 (H225) Category 1 (H260) Category 1 (H250)			
Health hazards				
Aspiration Toxicity	Category 1 (H304)			

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Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Reproductive Toxicity Specific target organ toxicity - (single exposure) Specific target organ toxicity - (repeated exposure)

Environmental hazards

Chronic aquatic toxicity

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H225 Highly flammable liquid and vapor
- H250 Catches fire spontaneously if exposed to air
- H260 In contact with water releases flammable gases which may ignite spontaneously
- H304 May be fatal if swallowed and enters airways
- H373 May cause damage to organs through prolonged or repeated exposure
- H314 Causes severe skin burns and eye damage
- H336 May cause drowsiness or dizziness

H411 - Toxic to aquatic life with long lasting effects

H361f - Suspected of damaging fertility

EUH014 - Reacts violently with water

Precautionary Statements

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

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

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

P302 + P335 + P334 - IF ON SKIN: Brush off loose particles from skin. Immerse in cool water

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

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Hydrocarbons, C6, n-alkanes, isoalkanes,	64742-49-0	EEC No. 265-151-9	85	Flam. Liq. 2 (H225)

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Category 1 B (H314) Category 1 (H318) Category 2 (H361f) Category 3 (H336) Category 2 (H373)

Category 2 (H411)

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cyclics, n-hexane rich				Skin Irrit. 2 (H315) STOT SE 3 (H336) STOT RE 2 (H373) Repr. Cat 2 (H361f) Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411)
Diethylzinc	557-20-0	EEC No. 209-161-3	15	Pyr. Liq. 1 (H250) Water-react. 1 (H260) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Components	Reach Registration Number	
Diethylzinc	01-2119474681-33	
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	01-2119474209-33	

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. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.			
Ingestion	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.			
Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. 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. Call a physician immediately. Risk of serious damage to the lungs (by aspiration).			
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 burns by all exposure routes. Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated:			

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of

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

perforation

Notes to Physician	Treat symptomatically. Symptoms may be delayed.
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SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Carbon dioxide (CO₂). Dry chemical. Dry sand. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Water. Carbon dioxide (CO₂).

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. Reacts violently with water. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Zinc, Heavy metal oxides, Ethane.

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. 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. Should not be released into the environment. Do not allow material to contaminate ground water system.

6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Do not expose spill to water. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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. Do not allow contact with water. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

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.

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7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and flame. Flammables area. Keep under nitrogen. Corrosives area. Keep away from water or moist air. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Class 4.2 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

Biological limit values

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

recommendations

See table for values

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich 64742-49-0 (85)	DNEL = 1066.67mg/m ³	DNEL = 1286.4mg/m ³	DNEL = 837.5mg/m ³	

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Measures

Viton (R)

Use explosion-proof electrical/ventilating/lighting equipment. Ensure that evewash 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 equ Eye Protection		(European standard	d - EN 166)	
Hand Protection	Protectiv	ve gloves		
Glove material Nitrile rubber	Breakthrough time See manufacturers	Glove thickness	EU standard EN 374	Glove comments (minimum requirement)

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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 Recommended Filter type: Organic gases and vapours filter Type A Brown 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. Recommended half mask:- 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.

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	Light brown Garlic-like No data available -3928 °C / -38.218.4 °F No data available 118 °C / 244.4 °F Highly flammable Not applicable No data available	On basis of test data Liquid
Flash Point Autoignition Temperature Decomposition Temperature pH Viscosity Water Solubility Solubility in other solvents Partition Coefficient (n-octanol/wat	-40 °C / -40 °F No data available No data available No information available 0.7 mPa.s at 20 °C Reacts with water No information available er)	Method - No information available
Vapor Pressure Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	20 hPa @ 20 °C 0.726 Not applicable No data available (liquid) Not applicable	Liquid (Air = 1.0)
9.2. Other information		

Molecular Formula Molecular Weight C4 H10 Zn 123.5

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Explosive Properties Substances/mixtures which, in contact with water, emit flammable gases Vapors may form explosive mixtures with air Emitted gas ignites spontaneously Gas(es) = Ethane

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

Reacts violently with water, liberating extremely flammable gases. Air sensitive. Pyrophoric: Spontaneously flammable in air.

Hazardous Polymerization Hazardous Reactions	No information available. Reacts violently with water.
10.4. Conditions to avoid	Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Incompatible products. Exposure to moist air or water. Exposure to moisture.
10.5. Incompatible materials	Acids. Bases. Water. Strong oxidizing agents. Alcohols. oxygen.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Zinc. Heavy metal oxides. Ethane.

SECTION 11: TOXICOLOGICAL INFORMATION

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

 Product Information
 No acute toxicity information is available for this product

 (a) acute toxicity;
 Based on available data, the classification criteria are not met

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

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

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	LD50 > 5000 mg/kg (Rat)	LD50 > 3160 mg/kg (Rabbit)	LC50 = 73680 ppm (Rat)4 h

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

- (d) respiratory or skin sensitization;
RespiratoryNo data available
No data availableSkinNo data available
- (e) germ cell mutagenicity; No data available

May cause heritable genetic damage

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(f) carcinogenicity;

No data available

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

Component	EU	UK	Germany	IARC					
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	Carc Cat. 1B								
(g) reproductive toxicity;	Category 2								
(h) STOT-single exposure;	Category 3								
Results / Target organs	Central nervous	Central nervous system (CNS).							
(i) STOT-repeated exposure;	Category 2								
Target Organs	Central nervous system (CNS), Peripheral Nervous System (PNS).								
(j) aspiration hazard;	Category 1								
Other Adverse Effects	The toxicological properties have not been fully investigated. Teratogenic effects have occurred in experimental animals.								
Symptoms / effects,both acute and delayed	d Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.								
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

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system
material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	LC50: = 8.41 mg/L, 96h semi-static, closed (Oncorhynchus mykiss)		

12.2. Persistence and degradability	Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary
Persistence Degradation in sewage	May persist. Contains substances known to be hazardous to the environment or not degradable in waste
treatment plant	water treatment plants.

12.3. Bioaccumulative potential Product has a high potential to bioconcentrate

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12.4. Mobility in soil	No information available					
<u>12.5. Results of PBT and vPvB</u> 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					
<u>12.7. Other adverse effects</u> 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					
SE	ECTION 13: DISPOSAL CONSIDERATIONS					
13.1. Waste treatment methods						
Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.					
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.					
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.					
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the					

Do not flush to sewer. Waste codes should be assigned by the user based on the **Other Information** application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

<u>14.1. UN number</u>	UN3394
<u>14.2. UN proper shipping name</u>	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Technical Shipping Name	(DIETHYLZINC, HEXANE)
<u>14.3. Transport hazard class(es)</u>	4.2
Subsidiary Hazard Class	4.3
<u>14.4. Packing group</u>	I
ADR	
<u>14.1. UN number</u>	UN3394
<u>14.2. UN proper shipping name</u>	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Technical Shipping Name	(DIETHYLZINC, HEXANE)
<u>14.3. Transport hazard class(es)</u>	4.2
Subsidiary Hazard Class	4.3
<u>14.4. Packing group</u>	I
IATA	FORBIDDEN FOR IATA TRANSPORT
<u>14.1. UN number</u>	UN3394
14.2. UN proper shipping name	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE

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Technical Shipping Name <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	FORBIDDEN FOR IATA TRANSPORT (DIETHYLZINC, HEXANE) 4.2 4.3 I
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
Hydrocarbons, C6, n-alkanes,	64742-49-0	265-151-9	-	-	Х	Х	KE-25623	-	-
isoalkanes, cyclics, n-hexane rich									
Diethylzinc	557-20-0	209-161-3	-	-	Х	Х	KE-10531	Х	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	64742-49-0	Х	ACTIVE	Х	-	Х	Х	Х
Diethylzinc	557-20-0	Х	ACTIVE	-	Х	Х	-	Х

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	64742-49-0	-	Use restricted. See item 28. (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)	-
Diethylzinc	557-20-0	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

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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
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	64742-49-0	Not applicable	Not applicable
Diethylzinc	557-20-0	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

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Hydrocarbons, C6, n-alkanes,	WGK2	
isoalkanes, cyclics, n-hexane		
rich		

Component	France - INRS (Tables of occupational diseases)
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane	Tableaux des maladies professionnelles (TMP) - RG 84
rich	

15.2. Chemical safety assessment

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

SECTION 16: OTHER INFORMATION

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

H225 - Highly flammable liquid and vapor

H250 - Catches fire spontaneously if exposed to air

- H260 In contact with water releases flammable gases which may ignite spontaneously
- H304 May be fatal if swallowed and enters airways
- H314 Causes severe skin burns and eye damage
- H315 Causes skin irritation
- H318 Causes serious eye damage
- H336 May cause drowsiness or dizziness
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects
- H411 Toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory al DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of 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, 	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

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.

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

Prepared By	Health, Safety and Environmental Department
Creation Date	26-Sep-2009
Revision Date	16-Mar-2024
Revision Summary	New emergency telephone response service provider.

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