

Creation Date 26-Sep-2009

Revision Date 12-Aug-2026

Revision Number 6

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

1.1. Product identifier

Product Description: Diethylzinc, nominally 15% w/w in hexanes
Cat No. : **44880**
Synonyms Zinc ethide in hexane.
Molecular Formula 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

Poison Centre - Emergency information services **Ireland** : National Poisons Information Centre (NPIC) -
01 809 2166 (8am-10pm, 7 days a week)
Malta : +356 2395 2000
Cyprus : +357 2240 5611

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Physical hazards

Flammable liquids	Category 2 (H225)
Substances/mixtures which, in contact with water, emit flammable gases	Category 1 (H260)
Pyrophoric liquids	Category 1 (H250)

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Health hazards

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

Category 1 (H304)
Category 1 B (H314)
Category 1 (H318)
Category 2 (H361f)
Category 3 (H336)
Category 1 (H372)

Environmental hazards

Chronic aquatic toxicity

Category 2 (H411)

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
H314 - Causes severe skin burns and eye damage
H336 - May cause drowsiness or dizziness
H361f - Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects
EUH014 - Reacts violently with water

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P222 - Do not allow contact with air
P231 + P232 - Handle and store contents under inert gas. Protect from moisture
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
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

Water reactive

This product does not contain any known or suspected endocrine disruptors

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	64742-49-0	EEC No. 265-151-9	85	Flam. Liq. 2 (H225) Skin Irrit. 2 (H315) STOT SE 3 (H336) STOT RE 1 (H372) 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) EUH014

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. 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

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stomach or esophagus should be investigated: 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

Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray, fog or alcohol-resistant foam. 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. 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. 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

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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. Handle under an inert atmosphere. 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.

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. Store under an inert atmosphere. Air sensitive.

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

List source(s):

Biological limit values

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

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

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Use explosion-proof electrical/ventilating/lighting equipment. 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
Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)
Viton (R)	recommendations			

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 compatibility, 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	Light brown	
Odor	Garlic-like	
Odor Threshold	No data available	
Melting Point/Range	-39 - -28 °C / -38.2 - -18.4 °F	
Softening Point	No data available	
Boiling Point/Range	118 °C / 244.4 °F	
Flammability (liquid)	Highly flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	-40 °C / -40 °F	Method - No information available
Autoignition Temperature	No data available	

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Decomposition Temperature	No data available	
pH	No information available	
Viscosity	0.7 mPa.s at 20 °C	
Water Solubility	Reacts with water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Vapor Pressure	20 hPa @ 20 °C	
Density / Specific Gravity	0.726	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	(liquid) Not applicable	

9.2. Other information

Molecular Formula	C4 H10 Zn
Molecular Weight	123.5
Explosive Properties	Vapors may form explosive mixtures with air
Substances/mixtures which, in contact with water, emit flammable gases	Emitted gas ignites spontaneously

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Hazardous Polymerization	No information available.
Hazardous Reactions	None under normal processing.

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;	
Oral	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

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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;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available
May cause heritable genetic damage

(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 system (CNS).

(i) STOT-repeated exposure; Category 1
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 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

12.1. Toxicity

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Ecotoxicity effects

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. Reacts with water so no ecotoxicity data for the substance is available. May cause long-term adverse effects in the environment. Do not allow 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

May persist, based on information available.

Degradability

Reacts with water.

Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants. Water reactive.

12.3. Bioaccumulative potential

Product has a high potential to bioconcentrate; Product does not bioaccumulate due to reaction with water

12.4. Mobility in soil

Reacts with water Is not likely mobile in the environment.

12.5. Results of PBT and vPvB assessment

Water reactive.

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 Ozone Depletion Potential

This product does not contain any known or suspected substance

This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the 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.

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SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number or ID number	UN3394
14.2. UN proper shipping name	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Technical Shipping Name	(DIETHYLZINC, HEXANE)
14.3. Transport hazard class(es)	4.2
Subsidiary Hazard Class	4.3
14.4. Packing group	I

ADR

14.1. UN number or ID number	UN3394
14.2. UN proper shipping name	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Technical Shipping Name	(DIETHYLZINC, HEXANE)
14.3. Transport hazard class(es)	4.2
Subsidiary Hazard Class	4.3
14.4. Packing group	I

IATA

14.1. UN number or ID number	UN3394
14.2. UN proper shipping name	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Technical Shipping Name	FORBIDDEN FOR IATA TRANSPORT
14.3. Transport hazard class(es)	(DIETHYLZINC, HEXANE)
14.3. Transport hazard class(es)	4.2
Subsidiary Hazard Class	4.3
14.4. Packing group	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.
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14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods
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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, isoalkanes, cyclics, n-hexane rich	64742-49-0	265-151-9	-	-	X	X	KE-25623	-	-
Diethylzinc	557-20-0	209-161-3	-	-	X	X	KE-10531	X	X

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

Legend: X - Listed '-' - Not Listed

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

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - 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 entry 28. (see link for restriction details) Use restricted. See entry 29. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-
Diethylzinc	557-20-0	-	Use restricted. See entry 75. (see link for restriction details)	-

REACH links

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

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident 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	2500 tonne	25000 tonne
Diethylzinc	557-20-0	Not applicable	Not applicable

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

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Basel Convention (Hazardous Waste)
Hydrocarbons, C6, n-alkanes, isoalkanes, cyclics, n-hexane rich	64742-49-0	Listed	Not applicable	Not applicable
Diethylzinc	557-20-0	Not applicable	Not applicable	Annex I - Y23

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

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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, isoalkanes, cyclics, n-hexane rich	WGK2	

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

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

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
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness
H361f - Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects
H225 - Highly flammable liquid and vapor
H315 - Causes skin irritation
H400 - Very toxic to aquatic life
H410 - Very 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

DSL/NDL - 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

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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, RTECS

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 12-Aug-2026

Revision Summary SDS sections updated.

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

Disclaimer

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End of Safety Data Sheet