

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

Creation Date 24-Nov-2010 Revision Date 30-Nov-2024 Revision Number 4

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

1.1. Product identifier

Product Description: Boron trichloride, 1M soln. in dichloromethane

Cat No. : H32751
Molecular Formula B CI3

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

Based on available data, the classification criteria are not met

Health hazards

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Boron trichloride, 1M soln. in dichloromethane

Acute oral toxicity

Acute Inhalation Toxicity - Vapors

Category 3 (H301)

Category 3 (H331)

Skin Corrosion/Irritation

Serious Eye Damage/Eye Irritation

Carcinogenicity

Specific target organ toxicity - (single exposure)

Category 3 (H301)
Category 3 (H331)
Category 1 B (H314)
Category 1 (H318)
Category 2 (H351)
Category 3 (H336)

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Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H314 - Causes severe skin burns and eye damage

H336 - May cause drowsiness or dizziness

H351 - Suspected of causing cancer

H301 + H331 - Toxic if swallowed or if inhaled

EUH014 - Reacts violently with water

Precautionary Statements

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

2.3. Other hazards

Reacts violently with water

Reacts with water and forms HCI

Toxic to terrestrial vertebrates

Contains a known or suspected endocrine disruptor

Contains a substance on the National Authorities Endocrine Disruptor Lists

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Г	Component	CAS No	EC No	Weight %	GHS Classification - According to
					GB-CLP Regulations UK SI 2019/720 and
					UK SI 2020/1567

Boron trichloride, 1M soln. in dichloromethane

Methylene chloride	75-09-2	EEC No. 200-838-9	91	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H336) Carc. 2 (H351)
Boron trichloride	10294-34-5	EEC No. 233-658-4	9	Acute Tox. 2 (H300) Acute Tox. 2 (H330) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Press. Gas (H280) 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. In

the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

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 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. 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression

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

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Boron trichloride, 1M soln. in dichloromethane

Extinguishing media which must not be used for safety reasons

Water.

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.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Oxides of boron, Thermal decomposition can lead to release of irritating gases and vapors, Hydrogen chloride gas.

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

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Should not be released into the environment.

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.

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

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. 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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water or moist air. Keep refrigerated. Store under an inert atmosphere.

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

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Boron trichloride, 1M soln. in dichloromethane

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority **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

Component	The United Kingdom	European Union	Ireland
Methylene chloride	STEL: 200 ppm 15 min	TWA: 353 mg/m ³ (8h)	TWA: 100 ppm 8 hr.
	STEL: 706 mg/m ³ 15 min	TWA: 100 ppm (8h)	TWA: 353 mg/m ³ 8 hr.
	TWA: 353 mg/m ³ 8 hr	STEL: 706 mg/m ³ (15min)	STEL: 200 ppm 15 min
	TWA: 100 ppm 8 hr	STEL: 200 ppm (15min)	STEL: 706 mg/m ³ 15 min
	Skin	Skin	Skin

Biological limit values

List source(s): **UK** - Biological Monitoring Guidance Values provided by the UK's Health and Safety Executive (HSE) Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended) and EH40/2005.

Component	United Kingdom	European Union
Methylene chloride	Carbon monoxide: 30 ppm end-tidal breath	
	post shift	

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

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Methylene chloride 75-09-2 (91)				DNEL = 12mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Methylene chloride 75-09-2 (91)		DMEL = 132.14mg/m ³		DNEL = 176mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

	Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
L			sediment		sewage treatment	
Г	Methylene chloride	PNEC = 130µg/L	PNEC = 163µg/kg	PNEC = 0.27mg/L	PNEC = 26mg/L	$PNEC = 173\mu g/kg$
	75-09-2 (91)	PNEC = 0.31mg/L	sediment dw	-	-	soil dw
			PNEC = 2.57mg/kg			PNEC = 0.33mg/kg
			sediment dw			soil dw
Г	Boron trichloride	PNEC = 39µg/L	PNEC = 39µg/kg	PNEC = 48µg/L	PNEC = 39µg/L	PNEC = 11µg/kg
L	10294-34-5 (9)		sediment dw			soil dw

	Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
I	Methylene chloride	PNEC = 130µg/L	PNEC = 163µg/kg	PNEC = 0.027mg/L		

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75-09-2 (91)	PNEC = 0.031mg/L	sediment dw PNEC = 0.26mg/kg sediment dw		
Boron trichloride 10294-34-5 (9)	PNEC = 39µg/L	PNEC = 39µg/kg sediment dw		PNEC = 16mg/m ³

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. 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

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Viton (R)	See manufacturers	-	EN 374	(minimum requirement)
	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 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: low boiling organic solvent Type AX Brown conforming to EN371 or 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 No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance Colorless

Odor No information available Odor Threshold No data available

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Liquid

No data available Melting Point/Range **Softening Point** No data available **Boiling Point/Range** No information available Flammability (liquid) No data available

Flammability (solid,gas) Not applicable

Explosion Limits No data available

No information available Method - No information available **Flash Point**

Autoignition Temperature No data available **Decomposition Temperature** No data available Ha No information available Viscosity No data available

Water Solubility Reacts violently with water Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

log Pow Component Methylene chloride 1.25

Vapor Pressure 9.05 psi @ 20 °C

Density / Specific Gravity 1.33

Bulk Density Not applicable Liquid **Vapor Density** No information available (Air = 1.0)**Particle characteristics** Not applicable (liquid)

9.2. Other information

Molecular Formula B CI3 **Molecular Weight** 117.17

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing. Reacts violently with water.

10.4. Conditions to avoid

Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture.

10.5. Incompatible materials

Water. Strong oxidizing agents. Strong bases. Alcohols.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Oxides of boron. Thermal decomposition can lead to release of irritating gases and vapors. Hydrogen chloride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

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Boron trichloride, 1M soln. in dichloromethane

(a) acute toxicity;

No data available Oral No data available **Dermal** No data available Inhalation

Toxicology data for the components

LD50 Oral	LD50 Dermal	LC50 Inhalation
> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	53 mg/L (Rat) 6 h
		76000 mg/m³ (Rat) 4 h
-	-	LC50 = 2541 ppm (Rat) 1 h
	> 2000 mg/kg (Rat)	> 2000 mg/kg(Rat) > 2000 mg/kg(Rat)

No data available (b) skin corrosion/irritation;

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available Skin No data available

(e) germ cell mutagenicity; No data available

No data available (f) carcinogenicity;

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

Component	EU	UK	Germany	IARC
Methylene chloride				Group 2A

No data available (g) reproductive toxicity;

No data available (h) STOT-single exposure;

Results / Target organs Central nervous system (CNS).

(i) STOT-repeated exposure; No data available

No information available. **Target Organs**

(j) aspiration hazard; No data available

Other Adverse Effects The toxicological properties have not been fully investigated.

delayed

Symptoms / effects,both acute and 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. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness,

nausea and vomiting. Causes central nervous system depression.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health

Contains a substance on the National Authorities Endocrine Disruptor Lists

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is

available.

Component	Freshwater Fish	Water Flea	Freshwater Algae		
Methylene chloride	Pimephales promelas: LC50:193	EC50: 140 mg/L/48h	EC50:>660 mg/L/96h		
	mg/L/96h				

Component	Microtox	M-Factor
Methylene chloride	EC50: 1 mg/L/24 h	
	EC50: 2.88 mg/L/15 min	

12.2. Persistence and degradability No information available

Persistence is unlikely, based on information available. **Persistence**

No information available, Reacts with water. Degradability

Degradation in sewage

treatment plant

No information available. Reacts violently with water.

12.3. Bioaccumulative potential

Product does not bioaccumulate due to reaction with water; Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Methylene chloride	1.25	6.4 - 40 dimensionless

Reacts violently with water . Is not likely mobile in the environment. 12.4. Mobility in soil

12.5. Results of PBT and vPvB

assessment

Reacts violently with water.

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 federal, state and local regulations. 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 in accordance with local regulations. Dispose of

this container to hazardous or special waste collection point.

According to the European Waste Catalog, Waste Codes are not product specific, but **European Waste Catalogue (EWC)**

application specific.

EWC Waste Disposal No **EWC Waste Disposal No**

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Waste codes should be assigned by the user based on the application for which the product Other Information

was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH

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and harm aquatic organisms.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN3094

Corrosive liquid, water-reactive, n.o.s. 14.2. UN proper shipping name **Technical Shipping Name** (boron trichloride, dichloromethane)

14.3. Transport hazard class(es) **Subsidiary Hazard Class** 4.3 14.4. Packing group Π

ADR

14.1. UN number UN3094

14.2. UN proper shipping name Corrosive liquid, water-reactive, n.o.s. (boron trichloride, dichloromethane) **Technical Shipping Name**

14.3. Transport hazard class(es) 8 **Subsidiary Hazard Class** 4.3 14.4. Packing group II

IATA

UN3094 14.1. UN number

Corrosive liquid, water-reactive, n.o.s. 14.2. UN proper shipping name **Technical Shipping Name** (boron trichloride, dichloromethane)

14.3. Transport hazard class(es) **Subsidiary Hazard Class** 4.3 14.4. Packing group II

No hazards identified 14.5. Environmental hazards

14.6. Special precautions for user No special precautions required.

Not applicable, packaged goods 14.7. Maritime transport in bulk according to IMO instruments

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
Methylene chloride	75-09-2	200-838-9	ı	-	X	X	KE-23893	X	Х
Boron trichloride	10294-34-5	233-658-4	-	-	X	X	KE-03539	X	Х

Component	CAS No	TSCA	TSCA Inventory notification -	DSL	NDSL	AICS	NZIoC	PICCS

Boron trichloride, 1M soln. in dichloromethane

			Active-Inactive					
Methylene chloride	75-09-2	Х	ACTIVE	X	-	X	Х	Х
Boron trichloride	10294-34-5	Х	ACTIVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed

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

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (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)
Methylene chloride	75-09-2	-	Use restricted. See entry 59. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-
Boron trichloride	10294-34-5	-	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	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report
		Notification	Requirements
Methylene chloride	75-09-2	Not applicable	Not applicable
Boron trichloride	10294-34-5	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

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Methylene chloride	WGK2	Class I: 20 mg/m³ (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Methylene chloride	Tableaux des maladies professionnelles (TMP) - RG 12

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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
Methylene chloride 75-09-2 (91)	Persistent Organic Pollutants (POPs) Prohibited and Restricted Substances	Group I	

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

H301 - Toxic if swallowed

H331 - Toxic if inhaled

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H336 - May cause drowsiness or dizziness

H351 - Suspected of causing cancer

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

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

EINECS/ELINCS - European Inventory of Existing Commercial Chemical 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

ICAO/IATA - International Civil Aviation Organization/International Air **Transport Association**

MARPOL - International Convention for the Prevention of Pollution from

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

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

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

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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.

Prepared By Health, Safety and Environmental Department

Creation Date24-Nov-2010Revision Date30-Nov-2024Revision SummaryNot 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

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