

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

Creation Date 22-Sep-2009 Revision Date 05-Feb-2024 Revision Number 4

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

## 1.1. Product identifier

Product Description: <u>Bromoform, 97%, stab. with ethanol</u>

Cat No. : A11904

**Synonyms** Methenyl Tribromide.; Tribromomethane

 Index No
 602-007-00-X

 CAS No
 75-25-2

 EC No
 200-854-6

 Molecular Formula
 C H Br3

REACH registration number -

#### 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**

Based on available data, the classification criteria are not met

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**Health hazards** 

Acute oral toxicityCategory 4 (H302)Acute Inhalation Toxicity - VaporsCategory 3 (H331)Skin Corrosion/IrritationCategory 2 (H315)Serious Eye Damage/Eye IrritationCategory 2 (H319)

**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**

H302 - Harmful if swallowed

H331 - Toxic if inhaled

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H411 - 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 person to fresh air and keep comfortable for breathing

P311 - 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**

# 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Bromoform	75-25-2	EEC No. 200-854-6	>95	Acute Tox. 3 (H331) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Chronic 2 (H411)
Ethyl alcohol	64-17-5	200-578-6	3 - 5	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319)

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 Component
 Specific concentration limits (SCL's)
 M-Factor
 Component notes

 Ethyl alcohol
 Eye Irrit. 2 :: C>=50%

REACH registration number	-

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** Remove to fresh air. 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.

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

Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like

headache, dizziness, tiredness, nausea and vomiting

## 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**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Extinguishing media which must not be used for safety reasons

No information available.

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

Thermal decomposition can lead to release of irritating gases and vapors.

# **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen halides.

## 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full

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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. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

## 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

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

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

#### 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.

#### **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 in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store in metal containers. Keep away from oxidizing agents.

**Technical Rules for Hazardous Substances (TRGS) 510** Class 6.1D **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. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Bromoform			TWA: 0.5 ppm 8 hr.
			TWA: 5 mg/m <sup>3</sup> 8 hr.
			STEL: 1.5 ppm 15 min
			STEL: 15 mg/m <sup>3</sup> 15 min

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| Skin | Stell: 1000 ppm TWA; 1920 | STEL: 1000 ppm 15 min | mg/m³ TWA | WEL - STEL: 3000 ppm | STEL; 5760 mg/m³ STEL | STEL: 1000 ppm | STEL; 5760 mg/m³ STEL | STEL: 1000 ppm | STEL; 5760 mg/m³ STEL | STEL: 1000 ppm | STEL; 5760 mg/m³ STEL | STEL: 1000 ppm | STEL; 5760 mg/m³ STEL | STEL: 1000 ppm | STEL: 1000

### **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)

See table for values

Component	Acute effects local (Oral)	Acute effects systemic (Oral)	Chronic effects local (Oral)	Chronic effects systemic (Oral)
Ethyl alcohol 64-17-5 ( 3 - 5 )		DNEL = 87 mg/kg bw/d		

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Bromoform 75-25-2 ( >95 )				DNEL = 0.168mg/kg bw/day
Ethyl alcohol 64-17-5 ( 3 - 5 )				DNEL = 343mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Bromoform 75-25-2 ( >95 )				DNEL = 0.592mg/m <sup>3</sup>
Ethyl alcohol 64-17-5 ( 3 - 5 )	DNEL = 1900mg/m <sup>3</sup>			DNEL = 950mg/m <sup>3</sup>

#### **Predicted No Effect Concentration (PNEC)**

See values below.

	Component	Fresh water	Fresh water sediment		Microorganisms in sewage treatment	Soil (Agriculture)
Ī	Bromoform	PNEC = 13µg/L		PNEC = 0.13mg/L		PNEC = 2.26µg/kg
L	75-25-2 ( >95 )		sediment dw			soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Bromoform 75-25-2 ( >95 )	PNEC = 1.3µg/L	PNEC = 4.95µg/kg sediment dw	PNEC = 13µg/L		

## 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	-		(minimum requirement)

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recommendations EN 374

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.

When workers are facing concentrations above the exposure limit they must use **Respiratory Protection** 

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

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure Small scale/Laboratory use

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN

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

Yellow-orange **Appearance** Odor

**Odor Threshold** No data available **Melting Point/Range** 8 °C / 46.4 °F No data available **Softening Point** 

**Boiling Point/Range** 150 - 151 °C / 302 - 303.8 °F

Flammability (liquid) No data available Not applicable

Flammability (solid,gas) Liquid

**Explosion Limits** No data available

Flash Point No information available Method - No information available

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

Water Solubility Soluble

No information available Solubility in other solvents

Partition Coefficient (n-octanol/water)

Component log Pow Bromoform 2.16 Ethyl alcohol -0.32

6.6 hPa @ 20 °C **Vapor Pressure** 

**Density / Specific Gravity** Calculated 2.8 **Bulk Density** Not applicable Liquid **Vapor Density** 87 (Air = 1.0)

Particle characteristics Not applicable (liquid)

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9.2. Other information

Molecular FormulaC H Br3Molecular Weight252.73

# **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions. Light sensitive.

10.3. Possibility of hazardous reactions

Hazardous PolymerizationNo information available.Hazardous ReactionsNone under normal processing.

10.4. Conditions to avoid

Exposure to light. Incompatible products.

10.5. Incompatible materials

Strong bases. Bases. Strong oxidizing agents. Metals.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Hydrogen halides.

# **SECTION 11: TOXICOLOGICAL INFORMATION**

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

#### **Product Information**

(a) acute toxicity;

OralCategory 4DermalNo data availableInhalationCategory 3

## Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bromoform	LD50 = 933 mg/kg (Rat)	-	-
Ethyl alcohol	LD50 = 10470 mg/kg OECD 401 (Rat) 3450 mg/kg ( Mouse )	-	LC50 = 117-125 mg/l (4h) OECD 403 (rat) 20000 ppm/10H (rat)

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

**Respiratory**Skin
Based on available data, the classification criteria are not met
Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result	
Ethyl alcohol	Mouse Ear Swelling Test (MEST)	mouse	non-sensitising	

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64-17-5 ( 3 - 5 )			
		mouse	non-sensitising
	OECD Test Guideline 429		•
	Local Lymph Node Assay		

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl alcohol	AMES test	in vitro	negative
64-17-5 (3 - 5)	OECD Test Guideline 471	Bacteria	_
	Gene cell mutation		
	OECD Test Guideline 476	in vitro	negative
		Mammalian	_

(f) carcinogenicity;

Based on available data, the classification criteria are not met

Ethanol has been shown to be carcinogenic in long-term studies only when consumed and abused as an alcoholic beverage. The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Bromoform			Cat. 2	

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

Component	Test method	Test species / Duration	Study result		
Ethyl alcohol 64-17-5 ( 3 - 5 )	OECD Test Guideline 416	Oral / mouse 2 Generation	NOAEL = 13.8 g/kg/day		
	OECD Test Guideline 414	Inhalation / Rat	NOAEC = 16000 ppm		

No data available (h) STOT-single exposure;

No data available (i) STOT-repeated exposure;

**Target Organs** No information available.

(j) aspiration hazard; No data available

delayed

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

tiredness, nausea and vomiting.

#### 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

**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.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Ethyl alcohol	Fathead minnow (Pimephales	EC50 = 9268 mg/L/48h	EC50 (72h) = 275 mg/l (Chlorella
	promelas) LC50 = 14200	EC50 = 10800 mg/L/24h	vulgaris)
	mg/l/96h		

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Component	Microtox	M-Factor
Ethyl alcohol	Photobacterium phosphoreum:EC50 = 34634	
	mg/L/30 min	
	Photobacterium phosphoreum:EC50 = 35470	
	mg/L/5 min	

12.2. Persistence and degradability

Persistence Persistence is unlikely

Component		Degradability
Ethyl alcohol		OECD 301E = 94%
	64-17-5 ( 3 - 5 )	

Degradation in sewage treatment plant

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

**12.3. Bioaccumulative potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Bromoform	2.16	No data available
Ethyl alcohol	-0.32	No data available

12.4. Mobility in soil The product is water soluble, and may spread in water systems . Will likely be mobile in the

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

No data available for assessment.

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.

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. Do not let this

chemical enter the environment.

# **SECTION 14: TRANSPORT INFORMATION**

## IMDG/IMO

**14.1. UN number** UN2515

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14.2. UN proper shipping name BROMOFORM

14.3. Transport hazard class(es) 6.1 14.4. Packing group III

ADR

**14.1. UN number** UN2515

14.2. UN proper shipping name BROMOFORM

14.3. Transport hazard class(es) 6.1 14.4. Packing group III

IATA

**14.1. UN number** UN2515

14.2. UN proper shipping name BROMOFORM

**14.3. Transport hazard class(es)** 6.1 **14.4. Packing group** III

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
	Bromoform	75-25-2	200-854-6	ı	-	Х	X	KE-34017	X	Х
Г	Ethyl alcohol	64-17-5	200-578-6	-	-	Х	X	KE-13217	X	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Bromoform	75-25-2	Х	ACTIVE	X	-	X	Х	Х
Ethyl alcohol	64-17-5	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 Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
	Bromoform	75-25-2	-	Use restricted. See item 75. (see link for restriction details)	-
Ī	Ethyl alcohol	64-17-5	-	-	-

## REACH links

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

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## 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
Bromoform	75-25-2	Not applicable	Not applicable
Ethyl alcohol	64-17-5	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 .

## **National Regulations**

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

WGK Classification

Water endangering class = 3 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Bromoform	WGK3	Class I: 20 mg/m³ (Massenkonzentration)
Ethyl alcohol	WGK1	

Component	France - INRS (Tables of occupational diseases)		
Bromoform	Tableaux des maladies professionnelles (TMP) - RG 12		
Ethyl alcohol	Tableaux des maladies professionnelles (TMP) - RG 84		

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
Ethyl alcohol 64-17-5 ( 3 - 5 )		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

H225 - Highly flammable liquid and vapor

H302 - Harmful if swallowed

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H331 - Toxic if inhaled

H411 - Toxic to aquatic life with long lasting effects

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**CAS** - Chemical Abstracts Service

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

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances **KECL** - Korean Existing and Evaluated Chemical Substances **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

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

MARPOL - International Convention for the Prevention of Pollution from

Ships

**BCF** - Bioconcentration factor

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]:

On basis of test data Physical hazards **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

First aid for chemical exposure, including the use of eye wash and safety showers.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

Chemical incident response training.

Prepared Bv Health, Safety and Environmental Department

**Creation Date** 22-Sep-2009 **Revision Date** 05-Feb-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** 

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**