

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

Creation Date 09-Nov-2010 Revision Date 12-Feb-2024 Revision Number 3

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

#### 1.1. Product identifier

Product Description: (+/-)-2-Aminobutane

Cat No. : A13014

 Synonyms
 2-Aminobutane

 Index No
 612-052-00-7

 CAS No
 13952-84-6

 EC No
 237-732-7

 Molecular Formula
 C4 H11 N

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**

Flammable liquids Category 2 (H225)

ALFAAA13014

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#### **Health hazards**

Acute oral toxicity

Acute Inhalation Toxicity - Vapors

Skin Corrosion/Irritation

Serious Eye Damage/Eye Irritation

Category 1 (H318)

Category 1 (H318)

#### **Environmental hazards**

Acute aquatic toxicity Category 1 (H400)

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

H225 - Highly flammable liquid and vapor

H301 - Toxic if swallowed

H332 - Harmful if inhaled

H314 - Causes severe skin burns and eye damage

H400 - Very toxic to aquatic life

#### **Precautionary Statements**

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

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

#### 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

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
sec-Butylamine	13952-84-6	EEC No. 237-732-7	>95	Acute Tox. 4 (H332)
				Acute Tox. 3 (H301)
				Skin Corr. 1A (H314)
				Eye Dam. 1 (H318)

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		Aguatic Acute 1 (H400)
1		
		Flam. Lig. 2 (H225)
1		1 Idili. Elq. 2 (11220)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
sec-Butylamine	-	1	-

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** 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. 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

perforation

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

Notes to Physician Treat symptomatically.

#### **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water mist may be used to cool closed containers. Chemical foam. Water mist may be used to cool closed containers. CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

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

No information available.

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

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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. Do not allow run-off from fire-fighting to enter drains or water courses.

#### **Hazardous Combustion Products**

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2).

#### 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. 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. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

#### 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

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. 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 containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Corrosives area.

Technical Rules for Hazardous Substances (TRGS) 510 Class 3 Storage Class (LGK) (Germany)

#### 7.3. Specific end use(s)

Use in laboratories

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## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

#### **Exposure limits**

List source(s):

#### **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 (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
sec-Butylamine				DNEL = 1.43mg/kg
13952-84-6 (>95)				bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
sec-Butylamine				$DNEL = 10.1 mg/m^3$
13952-84-6 (>95)				

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

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
sec-Butylamine	PNEC = $3.5\mu g/L$	$PNEC = 25.6 \mu g/kg$	PNEC = 35µg/L	PNEC = 31.3mg/L	$PNEC = 3.1 \mu g/kg$
13952-84-6 ( >95 )		sediment dw		_	soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
sec-Butylamine	$PNEC = 0.35 \mu g/L$	$PNEC = 2.6 \mu g/kg$			
13952-84-6 ( >95 )		sediment dw			

#### 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. Use spark-proof tools and explosion-proof equipment. Use explosion-proof electrical/ventilating/lighting equipment.

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

Г	Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
	Nitrile rubber Neoprene Natural rubber	See manufacturers recommendations	-	EN 374	(minimum requirement)
L	PVC				

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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.

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

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits Large scale/emergency use

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

Prevent product from entering drains. Do not allow material to contaminate ground water **Environmental exposure controls** 

system. Local authorities should be advised if significant spillages cannot be contained.

@ 760 mmHg

100 g/L aq.sol

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

## 9.1. Information on basic physical and chemical properties

**Physical State** Liquid

Clear **Appearance** 

Ammonia-like Odor **Odor Threshold** No data available **Melting Point/Range** -104 °C / -155.2 °F **Softening Point** No data available **Boiling Point/Range** 63 °C / 145.4 °F Flammability (liquid) Highly flammable

On basis of test data Flammability (solid,gas) Not applicable Liquid

**Explosion Limits** Lower 1.8

Upper 9

-19 °C / -2.2 °F Method - No information available **Flash Point** 355 °C / 671 °F

**Autoignition Temperature Decomposition Temperature** No data available

13 Hq

**Viscosity** 0.5 mPa.s at 20 °C

Water Solubility Miscible

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component log Pow sec-Butylamine 0.74

**Vapor Pressure** 180 hPa @ 20 °C

**Density / Specific Gravity** 0.720

**Bulk Density** Not applicable Liquid **Vapor Density** (Air = 1.0)2 52

Particle characteristics Not applicable (liquid)

#### 9.2. Other information

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Molecular Formula C4 H11 N Molecular Weight 73.13

**Explosive Properties** Vapors may form explosive mixtures with air

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Air sensitive.

10.3. Possibility of hazardous reactions

**Hazardous Polymerization** Hazardous polymerization does not occur.

**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.

10.5. Incompatible materials

Acids. Strong oxidizing agents. sodium hypochlorite. Acid anhydrides. Acid chlorides.

Metals. Carbon dioxide (CO2).

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## **SECTION 11: TOXICOLOGICAL INFORMATION**

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

#### **Product Information**

(a) acute toxicity;

Oral Category 3

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

Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
sec-Butylamine	LD50 = 152 mg/kg (Rat)	LD50 = 2500 mg/kg (Rabbit)	-

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

**Respiratory**Skin
No data available
No data available

(e) germ cell mutagenicity; No data available

Not mutagenic in AMES Test

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

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No data available (g) reproductive toxicity;

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

No information available. **Target Organs** 

(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. 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

**Ecotoxicity effects** The product contains following substances which are hazardous for the environment. Very

toxic to aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae
sec-Butylamine	LC50: 46-68 mg/L/96h	EC50: 37.9 mg/L/48h	EC50: 0.54 mg/L/72h
·	(Leuciscus idus)	_	_

	Component	Microtox	M-Factor
Ī	sec-Butylamine		1

12.2. Persistence and degradability Readily biodegradable

**Persistence** 

Persistence is unlikely, based on information available.

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)
sec-Butylamine	0.74	No data available

The product contains volatile organic compounds (VOC) which will evaporate easily from all 12.4. Mobility in soil

surfaces Will likely be mobile in the environment due to its volatility. Disperses rapidly in

air

12.5. Results of PBT and vPvB

assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

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**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.

Dispose of this container to hazardous or special waste collection point. Empty containers **Contaminated Packaging** 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. Solutions with high pH-value must be neutralized before

discharge. Do not let this chemical enter the environment.

## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

14.1. UN number LIN2734

14.2. UN proper shipping name AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.

**Technical Shipping Name** sec-Butylamine

14.3. Transport hazard class(es) 8 **Subsidiary Hazard Class** 3 14.4. Packing group Ι

ADR

14.1. UN number UN2734

14.2. UN proper shipping name AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.

**Technical Shipping Name** sec-Butylamine

14.3. Transport hazard class(es) 8 **Subsidiary Hazard Class** 3 14.4. Packing group I

IATA

14.1. UN number UN2734

14.2. UN proper shipping name AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.

**Technical Shipping Name** sec-Butylamine

14.3. Transport hazard class(es) 8 **Subsidiary Hazard Class** 3 I 14.4. Packing group

14.5. Environmental hazards Dangerous for the environment

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Product is a marine pollutant according to the criteria set by IMDG/IMO

14.6. Special precautions for user No special precautions required.

CAS No

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**

Component

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)

EINECS ELINCS NLP

sec-Butylamine	13952-84-6	237-732-7	-	-	Х	Χ	KE-25291	Χ	Χ
Component	CAS No	TSCA	notific	ventory ation - Inactive	DSL	NDSL	AICS	NZIoC	PICCS
sec-Butylamine	13952-84-6	X	ACT	IVE	Х	-	X	X	Х

Legend: X - Listed '-' - Not Listed

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

IECSC TCSI KECL ENCS

ISHL

#### 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)
sec-Butylamine	13952-84-6	-	Use restricted. See item 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) -	Seveso III Directive (2012/18/EC) -		
-			Qualifying Quantities for Major Accident	, ,		
ı			Notification	Requirements		
Ī	sec-Butylamine	13952-84-6	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

Component	ANNEX I - PART 1 List of chemicals subject to export notification procedure (referred to in Article 8)	ANNEX I - PART 2 List of chemicals qualifying for PIC notification (referred to in Article 11)	ANNEX I - PART 3 List of chemicals subject to the PIC procedure (referred to in Articles 13 and 14)
sec-Butylamine 13952-84-6 ( >95 )	p(1) — pesticide in the group of plant protection products b — ban (for the category or categories concerned)	-	-
	p(2) — other pesticide including biocides b — ban (for the category or categories concerned)		

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https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012R0649&gid=1604065742303.

## 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** See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class		
sec-Butylamine	WGK2			

#### 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## **SECTION 16: OTHER INFORMATION**

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

H301 - Toxic if swallowed

H332 - Harmful if inhaled

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H400 - Very toxic to aquatic life

H225 - Highly flammable liquid and vapor

#### Legend

**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 **ENCS** - Japanese Existing and New Chemical Substances

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

**AICS** - Australian Inventory of Chemical Substances NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

TWA - Time Weighted Average ACGIH - American Conference of Governmental Industrial Hygienists IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

**DNEL** - Derived No Effect Level

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic

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

ATE - Acute Toxicity Estimate

LD50 - Lethal Dose 50%

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BCF - Bioconcentration factor 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

#### **Training Advice**

Chemical incident response training.

Prepared By Health, Safety and Environmental Department

**Creation Date** 09-Nov-2010 **Revision Date** 12-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**