

### Classified as hazardous in accordance with the criteria of EPA New Zealand

## **Section 1 - Identification**

**Product Identifier** 

Product Name Lithium bromide, 4M solution in THF

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Product Code 390970000; 390971000; 390978000

Address Thermo Fisher Scientific New Zealand Ltd

244 Bush Road, Albany, Auckland, New Zealand

Emergency Tel. CHEMTREC®

09 980 6780 or +64 9 980 6780

Telephone / Fax Numbers Tel: 09 980 6700

Fax: 09 980 6788

E-mail address ANZinfo@thermofisher.com

# **Section 2 - Hazard(s) Identification**

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

**GHS Classification** 

Physical hazards

Flammable liquids Category 2

**Health hazards** 

Acute Oral ToxicityCategory 4Skin Corrosion/IrritationCategory 2Serious Eye Damage/Eye IrritationCategory 2Skin SensitizationCategory 1CarcinogenicityCategory 2Specific target organ toxicity - (single exposure)Category 3

**Environmental hazards** 

Based on available data, the classification criteria are not met

**Label Elements** 

ACR39097 Version 2 10-Mar-2023 Page 1/11



#### Signal Word

**Danger** 

#### **Hazard Statements**

- H225 Highly flammable liquid and vapor
- H302 Harmful if swallowed
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- H335 May cause respiratory irritation
- H336 May cause drowsiness or dizziness
- H351 Suspected of causing cancer

#### **Precautionary Statements**

#### Prevention

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P233 Keep container tightly closed
- P240 Ground and bond container and receiving equipment
- P242 Use non-sparking tools
- P243 Take action to prevent static discharges
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P264 Wash face, hands and any exposed skin thoroughly after handling
- P270 Do not eat, drink or smoke when using this product
- P271 Use only outdoors or in a well-ventilated area
- P272 Contaminated work clothing should not be allowed out of the workplace
- P280 Wear protective gloves/protective clothing/eye protection/face protection

#### Response

- P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P308 + P313 IF exposed or concerned: Get medical advice/attention
- P330 Rinse mouth
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
- P362 + P364 Take off contaminated clothing and wash it before reuse

#### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

#### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

#### Other hazards which do not result in classification

Toxic to terrestrial vertebrates

May form explosive peroxides

## **Section 3 - Composition and Information on Ingredients**

Component	CAS No	Weight %
Tetrahydrofuran	109-99-9	70
Lithium bromide (LiBr)	7550-35-8	30

ACR39097 Version 2 10-Mar-2023 Page 2 / 11

### **Section 4 - First Aid Measures**

Description of first aid measures

**General Advice** If symptoms persist, call a physician.

New Zealand Emergency Tel. CHEMTREC®

09 980 6780 or +64 9 980 6780

**Inhalation** Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

symptoms occur.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get

medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

call a physician.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

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.

First Aid Facilities Eyewash, safety shower and washroom.

Most important symptoms and

effects

May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Causes central nervous system depression

Notes to Physician Treat symptomatically. Symptoms may be delayed.

# **Section 5 - Fire Fighting Measures**

### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

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

No information available.

### **Specific Hazards Arising from the Chemical**

Flammable. Vapors may form explosive mixtures with air. 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), Hydrogen halides.

#### Special protective equipment and precautions for fire fighters

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

### **Section 6 - Accidental Release Measures**

#### Personal Precautions, Protective Equipment and Emergency Procedures

#### **Emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

ACR39097 Version 2 10-Mar-2023 Page 3 / 11

#### **Environmental Precautions**

Should not be released into the environment.

#### Methods for Containment and Clean 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.

#### Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

#### **Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

## **Section 7 - Handling and Storage**

#### **Precautions for Safe Handling**

#### Advice on safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. If peroxide formation is suspected, do not open or move container. 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.

#### Conditions for Safe Storage, Including any Incompatibilities

#### **Storage Conditions**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area. Keep container tightly closed in a dry and well-ventilated place. Shelf life 12 months. May form explosive peroxides on prolonged storage. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Store under an inert atmosphere. Protect from moisture.

#### **Incompatible Materials**

Strong oxidizing agents.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals AS 1940-2004 - The storage and handling of flammable and combustible liquids

# **Section 8 - Exposure Controls and Personal Protection**

### **Control parameters**

#### **Exposure limits**

**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor **ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)] Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Tetrahydrofuran	TWA: 50 ppm	TWA: 100 ppm	TWA: 50 ppm	STEL: 100 ppm 15 min
	TWA: 150 mg/m <sup>3</sup>	TWA: 295 mg/m <sup>3</sup>	STEL: 100 ppm	STEL: 300 mg/m <sup>3</sup> 15 min
	STEL: 100 ppm		Skin	TWA: 50 ppm 8 hr

ACR39097 Version 2 10-Mar-2023 Page 4/11

STEL: 300 mg/m <sup>3</sup>	TWA: 150 mg/m <sup>3</sup> 8 hr
Skin	Skin

#### **Biological limit values**

**NZ** - Substances assigned Biological Exposure Indices in the New Zealand Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

**ACGIH** - American Conference of Governmental Industrial Hygienists (ACGIH) TLVs® and BEIs®- Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. 2022 Edition

Component	New Zealand	Australia	ACGIH - Biological Exposure Indices	United Kingdom
	2 mg/g creatinine (urine) end of exposure or shift, within 1 hour of end of exposure (THF)		2 mg/L Medium: urine Time: end of shift Determinant: Tetrahydrofuran	

#### Appropriate engineering controls

#### **Engineering Measures**

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

#### Individual protection measures, such as personal protective equipment

Eye Protection Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial

applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Butyl rubber.	See manufacturers	-	AS/NZS 2161	(minimum requirement)
	recommendations			
Neoprene gloves				

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.

Skin and body protection Long sleeved clothing

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or

other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use

and maintenance of repiratory protective devices

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 (or AUS/NZ equivalent)

Recommended half mask:- Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent)

When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## **Section 9 - Physical and Chemical Properties**

Information on basic physical and chemical properties

ACR39097 Version 2 10-Mar-2023 Page 5 / 11

Physical State Liquid

Appearance Light yellow

Odor
Odor No information available
No data available
No information available
No information available
No data available
No data available
No data available

Softening Point/Range

Boiling Point/Range

No data available

No data available

No information available

Flammability (liquid) Highly flammable On basis of test data

Flammability (solid,gas) Not applicable Liquid

**Explosion Limits** No data available

Flash Point -22 °C / -7.6 °F Method - (based on components)

Autoignition TemperatureNo data availableDecomposition TemperatureNo data availableViscosityNo data availableWater SolubilityNo information availableSolubility in other solventsNo information available

Partition Coefficient (n-octanol/water)

Componentlog PowTetrahydrofuran0.45

Vapor Pressure No information available

Density / Specific Gravity 1.180

Bulk DensityNot applicableLiquidVapor DensityNo information available(Air = 1.0)

Particle characteristics Not applicable (liquid)

Other information

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

## **Section 10 - Stability and Reactivity**

Reactivity None known, based on information available

Stability Hygroscopic.

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

**Hazardous Polymerization** No information available.

**Hazardous Reactions** None under normal processing.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition, Incompatible products,

Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO2). Hydrogen halides.

## **Section 11 - Toxicological Information**

**Acute Effects** 

Information on likely routes of exposure

**Product Information** 

ACR39097 Version 2 10-Mar-2023 Page 6/11

**Inhalation** Not an expected route of exposure.

Eyes Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including

blindness. May cause irritation.

**Skin** Avoid contact with skin. Skin Corrosion/Irritation. May cause irritation.

**Ingestion** May be harmful if swallowed.

#### Numerical measures of toxicity

(a) acute toxicity;

Oral Category 4

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

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tetrahydrofuran	1650 mg/kg ( Rat )	> 2000 mg/kg (Rabbit)	180 mg/L (Rat) 1 h
			53.9 mg/L (Rat) 4 h
Lithium bromide (LiBr)	LD50 = 1800 mg/kg (Rat)	LD50 > 2000 mg/kg (Rat)	LC50 > 15.57 mg/L (Rat) 4 h

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

**Respiratory**Skin
No data available Category 1

Component	Test method	Test species	Study result
Tetrahydrofuran	Local Lymph Node Assay OECD	mouse	non-sensitising
109-99-9 ( 70 )	Test Guideline 429		_

**Sensitization** May cause sensitization by skin contact

(e) germ cell mutagenicity; No data available

Component	Test method	Test species	Study result
Tetrahydrofuran	OECD Test Guideline 476	in vivo	negative
109-99-9 ( 70 )	Gene cell mutation	Mammalian	
	OECD Test Guideline 473		
	Chromosomal aberration assay	in vitro	negative
		Mammalian	

(f) carcinogenicity; Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen Limited evidence of a carcinogenic effect

Component	New Zealand	Australia	New South Wales	Western Australia	IARC	EU	UK	Germany
Tetrahydrofuran	Suspected				Group 2B			

(g) reproductive toxicity; No data available

Component	Test method	Test species / Duration	Study result
Tetrahydrofuran	OECD Test Guideline 416	Rat 2 Generation	NOAEL = 3,000 ppm
109-99-9 ( 70 )			

(h) STOT-single exposure; Category 3

ACR39097 Version 2 10-Mar-2023 Page 7/11

Results / Target organs Respiratory system

Central nervous system (CNS)

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

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

#### Symptoms / effects,both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing. Causes central nervous system depression.

# **Section 12 - Ecological Information**

#### **Ecotoxicity**

**Aquatic ecotoxicity** 

Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Tetrahydrofuran	2160 mg/l LC50 = 96 h	EC50 48 h 3485 mg/l		
	Pimephales promelas	EC50: >10000 mg/L/24h		
	Leuciscus idus: LC50:			
	2820 mg/L/48h			
Lithium bromide (LiBr)	LC50: = 438 mg/L, 96h			
	static (Oncorhynchus			
	mykiss)			

**Terrestrial ecotoxicity**There is no data for this product

Persistence and Degradability

**Persistence** Miscible with water, Persistence is unlikely, based on information available.

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Tetrahydrofuran	0.45	No data available

**Mobility** 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

#### Other adverse effects

**Endocrine Disruptor Information** 

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Tetrahydrofuran	Group III Chemical		
	T		

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

ACR39097 Version 2 10-Mar-2023 Page 8 / 11

## **Section 13 - Disposal Considerations**

#### Waste treatment methods

Waste from Residues/Unused

**Products** 

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable 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.

Other Information

Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . 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.

## **Section 14 - Transport Information**

Component	Hazchem Code			
Tetrahydrofuran	2YE			
109-99-9 (70)				

#### NZS 5433:2020

UN-No UN2056

Proper Shipping Name TETRAHYDROFURAN SOLUTION

Hazard Class 3
Packing Group ||

<u>IATA</u>

UN-No UN2056

Proper Shipping Name TETRAHYDROFURAN SOLUTION

Hazard Class 3 Packing Group II

IMDG/IMO

UN-No UN2056

Proper Shipping Name TETRAHYDROFURAN SOLUTION

Hazard Class 3
Packing Group II

Environmental hazards No hazards identified

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable, packaged goods

**Special Precautions** 

No special precautions required. Please refer to the applicable dangerous goods

regulations for additional information.

Additional information None known

## **Section 15 - Regulatory Information**

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

ACR39097 Version 2 10-Mar-2023 Page 9 / 11

#### **National Regulations**

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

#### Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

#### Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

Component	New Zealand
Tetrahydrofuran	Suspected carcinogen

#### International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

# Authorisation/Restrictions according to EU REACH

	Component	REACH (1907/2006) - Annex XIV -	REACH (1907/2006) - Annex XVII -	REACH Regulation (EC
		Substances Subject to	Restrictions on Certain Dangerous	1907/2006) article 59 - Candidate
		Authorization	Substances	List of Substances of Very High
				Concern (SVHC)
Ī	Tetrahydrofuran	-	Use restricted. See item 75.	-
L			(see link for restriction details)	

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

#### **International Inventories**

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	NZIoC	AICS	EINECS	ELINCS	NLP	KECL	IECSC	TCSI
Tetrahydrofuran	109-99-9	Х	Χ	203-726-8	-	-	KE-33454	X	X
Lithium bromide (LiBr)	7550-35-8	Х	Х	231-439-8	-	-	KE-22549	X	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Tetrahydrofuran	109-99-9	X	ACTIVE	Х	-	X	Х	Х
Lithium bromide (LiBr)	7550-35-8	X	ACTIVE	Х	-	X	Х	X

Legend: X - Listed '-' - Not Listed

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

### **Section 16 - Other Information**

This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

ACR39097 Version 2 10-Mar-2023 Page 10 / 11

#### Legend

NZIoC - New Zealand Inventory of Chemicals

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

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**IECSC** - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer NZS 5433:2020 - Transport of Dangerous Goods on Land

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

**MARPOL** - International Convention for the Prevention of Pollution from Ships

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%
WEL - Workplace Exposure Limit
DNEL - Derived No Effect Level

**POW** - Partition coefficient Octanol:Water **vPvB** - very Persistent, very Bioaccumulative

**VOC** - (Volatile Organic Compound)

**AICS** - Australian Inventory of Chemical Substances

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

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

**KECL** - Korean Existing and Evaluated Chemical Substances

CAS - Chemical Abstracts Service

**ACGIH** - American Conference of Governmental Industrial Hygienists

PNEC - Predicted No Effect Concentration

**OECD** - Organisation for Economic Co-operation and Development **IMO/IMDG** - International Maritime Organization/International Maritime

Dangerous Goods Code

LC50 - Lethal Concentration 50% ATE - Acute Toxicity Estimate

RPE - Respiratory Protective Equipment NOEC - No Observed Effect Concentration BCF - Bioconcentration factor

PBT - Persistent, Bioaccumulative, Toxic

#### Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

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

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

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

#### 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.

Revision Date 10-Mar-2023 Revision Summary Not applicable

#### 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**

ACR39097 Version 2 10-Mar-2023 Page 11/11