

Australian statement of hazardous nature: Classified as hazardous according to criteria of Safe Work Australia

# Section 1 - Identification

Product Name 4-Ethylphenylmagnesium bromide, 0.5M solution in THF

Product Code 431890000; 431890500

Address ThermoFisher Scientific Australia Pty Ltd

5 Caribbean Drive, Scoresby VICTORIA 3179, Australia

Emergency Tel. CHEMTREC®

03 9757 4559 or +613 9757 4559

Telephone / Fax Numbers Tel: 1300 735 292

Fax: 1800 067 639

E-mail address ANZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Uses advised against

This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list.

Verify requirements related to using, handling and storing these substances. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice

for Chemicals of Security Concern.

# Section 2 - Hazard(s) Identification

#### Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

Physical hazards

Flammable liquids Category 2

**Health hazards** 

Acute Oral Toxicity

Skin Corrosion/Irritation

Serious Eye Damage/Eye Irritation

Category 1 B

Carcinogenicity

Carcinogenicity

Specific target organ toxicity - (single exposure)

Category 2

Category 3

Environmental hazards

No hazards identified

**Label Elements** 

ACR43189 Version 2 17-Nov-2022 Page 1/11









Flame

Health Hazard

## Signal Word

### **Danger**

**Exclamation Mark** 

#### **Hazard Statements**

H225 - Highly flammable liquid and vapor

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H351 - Suspected of causing cancer

AUH014 - Reacts violently with water

AUH019 - May form explosive peroxides

## **Precautionary Statements**

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

P260 - Do not breathe 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

P280 - Wear protective gloves/protective clothing/eye protection/face protection

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

P310 - Immediately call a POISON CENTER or doctor

P330 - Rinse mouth

P331 - Do NOT induce vomiting

P363 - Wash contaminated clothing before reuse

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

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

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

### Other information

Toxic to terrestrial vertebrates

# Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Tetrahydrofuran	109-99-9	89
4-Ethylphenylmagnesium bromide	22873-28-5	11

ACR43189 Version 2 17-Nov-2022 Page 2 / 11

# Section 4 - First Aid Measures

**Inhalation** If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use

mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

medical device. Call a physician immediately.

**Ingestion** Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an

unconscious person. Call a physician immediately.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Remove and wash

contaminated clothing and gloves, including the inside, before re-use. Call a physician

immediately.

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

Immediate medical attention is required.

**General Advice** Show this safety data sheet to the doctor in attendance. 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.

First Aid Facilities Eyewash, safety shower and washroom.

Most important symptoms and

effects

Causes burns by all exposure routes. Symptoms of overexposure may be 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system

depression

Notes to Physician Treat symptomatically. Symptoms may be delayed.

# Section 5 - Fire Fighting Measures

## Suitable Extinguishing Media

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

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

Water.

### **Hazardous Decomposition Products**

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

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

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. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

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

# Section 6 - Accidental Release Measures

### **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.

ACR43189 Version 2 17-Nov-2022 Page 3/11

**Environmental Precautions** 

Should not be released into the environment.

### Methods for Containment and Clean Up

### Clean-up methods - small spillage

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

#### Clean-up methods - large spillage

Typically only supplied is small quantiites as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

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

Refer to protective measures listed in Sections 8 and 13.

# Section 7 - Handling and Storage

## **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. Do not allow contact with water. 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.

## Conditions for Safe Storage, Including any Incompatibilities

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

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

#### **Exposure limits**

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 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. DE - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Tetrahydrofuran	TWA: 100 ppm	TWA: 50 ppm	TWA: 50 ppm	STEL: 100 ppm 15 min	TWA: 50 ppm (8
	TWA: 295 mg/m <sup>3</sup>	TWA: 150 mg/m <sup>3</sup>	STEL: 100 ppm	STEL: 300 mg/m <sup>3</sup> 15	Stunden). AGW -
		STEL: 100 ppm	Skin	min	exposure factor 2
		STEL: 300 mg/m <sup>3</sup>		TWA: 50 ppm 8 hr	TWA: 150 mg/m <sup>3</sup> (8
		Skin		TWA: 150 mg/m <sup>3</sup> 8 hr	Stunden). AGW -
				Skin	exposure factor 2
					TWA: 50 ppm (8
					Stunden). MAK
					TWA: 150 mg/m <sup>3</sup> (8
					Stunden). MAK

ACR43189 Version 2 17-Nov-2022 Page 4 / 11

	Höhepunkt: 100 ppm Höhepunkt: 300 mg/m³ Haut
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### **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

Component	Australia	New Zealand	European Union	United Kingdom	Germany
Tetrahydrofuran		2 mg/g creatinine (urine)			Tetrahydrofuran: 2 mg/L
		end of exposure or shift,			urine (end of shift)
		within 1 hour of end of			
		exposure (THF)			

### **Exposure Controls**

## **Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

Eye Protection Goggles (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

AppearanceBrownPhysical StateLiquid

ACR43189 Version 2 17-Nov-2022 Page 5/11

Method - No information available

Vapors may form explosive mixtures with air

(Air = 1.0)

No information available Odor **Odor Threshold** No data available No information available

No data available **Melting Point/Range Softening Point** No data available

**Boiling Point/Range** No information available

Flash Point -17 °C / 1.4 °F **Evaporation Rate** No data available

Flammability (solid,gas) Not applicable Liquid **Explosion Limits** No data available

**Vapor Pressure** No data available **Vapor Density** No data available

Specific Gravity / Density 0.95

**Bulk Density** Not applicable Liquid Reacts violently with water Water Solubility

No information available

Solubility in other solvents Partition Coefficient (n-octanol/water)

log Pow Component Tetrahydrofuran 0.45

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

**Explosive Properties** 

**Oxidizing Properties** No information available

Other information

# Section 10 - Stability and Reactivity

Reactivity ; Yes Reacts violently with water

Stability Moisture sensitive. May form explosive peroxides.

**Conditions to Avoid** Incompatible products, Excess heat, Keep away from open flames, hot surfaces and

sources of ignition, Exposure to moist air or water, Exposure to moisture.

**Incompatible Materials** Water, Acids, Acid chlorides, Alcohols, oxygen, Chloroformates, Oxidizing agent.

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

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

# Section 11 - Toxicological Information

#### Information on Toxicological Effects

## **Product Information**

(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

ACR43189 Version 2 17-Nov-2022 Page 6/11

# 4-Ethylphenylmagnesium bromide,

#### 0.5M solution in THF

# **SAFETY DATA SHEET**

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

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory No data available Skin No data available

Component	Test method	Test species	Study result
Tetrahydrofuran	Local Lymph Node Assay OECD	mouse	non-sensitising
109-99-9 ( 89 )	Test Guideline 429		_

(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 ( 89 )	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

- 1	Component	Australia	New Zealand	New South	Western	IARC	EU	UK	Germany
				Wales	Australia				
	Tetrahydrofuran		Suspected			Group 2B			
			carcinogen						
(	g) reproductive toxicity; No data available								
ſ	Component		Test method		Test	Test species / Duration		Study result	
Ī	Tetrahydrofurar	า	OECD Tes	OECD Test Guideline 416		Rat 2 Generation		NOAEL = 3,000 ppm	

Category 3 (h) STOT-single exposure;

109-99-9 (89)

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.

delayed

Symptoms / effects, both acute and Symptoms of overexposure may be 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression

# Section 12 - Ecological Information

ACR43189 Version 2 17-Nov-2022 Page 7/11

•	Do not empty into drai available.	ns. Reacts with water	so no ecotoxicity data	for the substance is
Component	Freehweter Fieh	Weter Flee	Freehweter Alges	Migratov

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			

**Persistence and Degradability** 

No information available **Persistence** 

Degradability

Persistence is unlikely, based on information available. No information available, Reacts with water.

Degradation in sewage treatment plant

No information available. Reacts violently with water.

**Bioaccumulative Potential** Bioaccumulation is unlikely Product does not bioaccumulate due to reaction with water

Component	log Pow	log Pow Bioco		ncentration factor (BCF)	
Tetrahydrofuran	0.45		No data available		
Mobility	Reacts violently with water. : Is not likely mobile in the environment				
<b>Endocrine Disruptor Information</b>					
Component	EU - Endocrine Disrupters	EU - Endocrine Disruptors - Evaluated Substances		Japan - Endocrine Disruptor	
-	Candidate List			Information	
Tetrahydrofuran	Group III Chemical				

**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

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

Chemical wastes should be disposed through a licensed commercial waste collection service. 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.

# Section 14 - Transport Information

## IMDG/IMO

**UN-No** 

Flammable liquid, corrosive, n.o.s. **Proper Shipping Name** 

Tetrahydrofuran, 4-Ethylphenylmagnesium bromide **Technical Shipping Name** 

**Hazard Class Subsidiary Hazard Class** 8 Ш **Packing Group** 

ADG

**UN-No** 

**Proper Shipping Name** Flammable liquid, corrosive, n.o.s.

**Technical Shipping Name** Tetrahydrofuran, 4-Ethylphenylmagnesium bromide

**Hazard Class Subsidiary Hazard Class** 8 **Packing Group** Ш

ACR43189 Version 2 17-Nov-2022 Page 8/11

Component	Hazchem Code		
Tetrahydrofuran	2YE		
109-99-9 ( 89 )			

#### IATA

UN-No UN2924

**Proper Shipping Name** Flammable liquid, corrosive, n.o.s.

**Technical Shipping Name** Tetrahydrofuran, 4-Ethylphenylmagnesium bromide

Hazard Class 3
Subsidiary Hazard Class 8
Packing Group ||

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

# Section 15 - Regulatory Information

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

National Regulations Australia

See section 8 for national exposure control parameters.

### Standard for the Uniform Scheduling of Medicines and Poisons

No poison schedule number allocated.

### **Australian Industrial Chemicals Introduction Scheme (AICIS)**

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Tetrahydrofuran - 109-99-9	Present	-

## Australian - Illicit Drug Precursors/Reagents Substance List

This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances.

## **Chemicals of Security Concern**

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

Component	Australian - Illicit Drug Precursors/Reagents Substance List	Chemicals of Security Concern
Tetrahydrofuran - 109-99-9	Category 3	

### Legend

Category 3 - Chemicals and apparatus that may be used in the illicit production of drugs. Purchases from this list should alert companies or organizations to seek further indicators of any suspicious orders or enquiries. No official reporting is required for items on this list unless considered warranted

National pollutant inventory Not applicable

ACR43189 Version 2 17-Nov-2022 Page 9 / 11

Prohibition or notification/licensing requirements

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

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

Component	Australia	New South Wales	Western Australia	New Zealand
Tetrahydrofuran - 109-99-9				Suspected carcinogen

#### **International Inventories**

	Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	<b>ENCS</b>	ISHL	IECSC	KECL
Γ	Tetrahydrofuran	X	X	203-726-8	-	X	Х	-	Х	Х	Х	X	KE-33454

Legend: X - Listed. '-' - Not Listed. KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

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

Basel convention on the control of transboundary movements of hazardous wastes and their dispoal Not applicable.

Component	CAS No	OECD HPV	Restriction of	Seveso III Directive	Seveso III Directive
			Hazardous	(2012/18/EC) -	(2012/18/EC) -
			Substances (RoHS)	Qualifying Quantities	Qualifying Quantities
				for Major Accident	for Safety Report
				Notification	Requirements
Tetrahydrofuran	109-99-9	Listed	Not applicable	Not applicable	Not applicable
4-Ethylphenylmagnesium bromide	22873-28-5	Not applicable	Not applicable	Not applicable	Not applicable

## Authorisation/Restrictions according to EU REACH

Component		REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	
Tetrahydrofuran	-	Use restricted. See item 75. (see link for restriction details)	-

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

# Section 16 - Other Information

### Legend

AICS - Australian Inventory of Chemical Substances TSCA - United States Toxic Substances Control Act Section 8(b) Inventory NZIOC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical
Substances/EU List of Notified Chemical Substances

ACR43189 Version 2 17-Nov-2022 Page 10 / 11

### 4-Ethylphenylmagnesium bromide, 0.5M solution in THF

## SAFETY DATA SHEET

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

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

MARPOL - International Convention for the Prevention of Pollution from Shins

NZS 5433:2012 - Transport of Dangerous Goods on Land

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)

**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

Predicted No Effect Concentration (PNEC)

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

ADG Australian Code for the Transport of Dangerous Goods by Road and Rail

**OECD** - Organisation for Economic Co-operation and Development

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

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 Calculation method **Environmental hazards** 

#### **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and

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** 17-Nov-2022 **Revision Summary** Not applicable.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

#### 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**

17-Nov-2022 ACR43189 Version 2 Page 11 / 11