

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

## Section 1 - Identification

### Product Identifier

**Product Name** Triethylaluminum 1.3M solution in n-Heptane

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

<b>Product Code</b>	<b>R36073</b>
<b>Address</b>	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
<b>Emergency Tel.</b>	<b>CHEMTREC®</b> <b>09 980 6780 or +64 9 980 6780</b>
<b>Telephone / Fax Numbers</b>	Tel: 09 980 6700 Fax: 09 980 6788
<b>E-mail address</b>	<a href="mailto:ANZinfo@thermofisher.com">ANZinfo@thermofisher.com</a>

## 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
Substances/mixtures which, in contact with water, emit flammable gases	Category 1
Pyrophoric liquids	Category 1

#### Health hazards

Aspiration Toxicity	Category 1
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity - (single exposure)	Category 3

#### Environmental hazards

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

### Label Elements



Signal Word

Danger

#### Hazard Statements

H225 - Highly flammable liquid and vapor  
H250 - Catches fire spontaneously if exposed to air  
H260 - In contact with water releases flammable gases which may ignite spontaneously  
H304 - May be fatal if swallowed and enters airways  
H314 - Causes severe skin burns and eye damage  
H336 - May cause drowsiness or dizziness  
H410 - Very toxic to aquatic life with long lasting effects

#### Precautionary Statements

##### Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P222 - Do not allow contact with air  
P223 - Do not allow contact with water  
P231 + P232 - Handle and store contents under inert gas. Protect from moisture  
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  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P273 - Avoid release to the environment

##### Response

P302 + P334 - IF ON SKIN: Immerse in cool water or wrap in wet bandages  
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  
P391 - Collect spillage

##### Storage

P402 + P404 - Store in a dry place. Store in a closed container  
P422 - Store contents under inert gas

##### Disposal

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

Other hazards which do not result in classification

## Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Triethylaluminum	97-93-8	20.3
n-Heptane	142-82-5	79.7

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

### **Description of first aid measures**

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>New Zealand Emergency Tel.</b>	CHEMTREC® 09 980 6780 or +64 9 980 6780
<b>Inhalation</b>	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. Risk of serious damage to the lungs (by aspiration).
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>Skin Contact</b>	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.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
<b>First Aid Facilities</b>	Eyewash, safety shower and washroom.
<b>Most important symptoms and effects</b>	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
<b>Notes to Physician</b>	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**

No information available.

### **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. 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**

Carbon oxides, Fumes of aluminum or aluminum oxide.

### **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

### Personal Precautions, Protective Equipment and Emergency Procedures

#### **Emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required. 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.

#### **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.

#### **Methods for Containment and Clean Up**

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

### Conditions for Safe Storage, Including any Incompatibilities

#### **Storage Conditions**

Store contents under argon. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

#### **Incompatible Materials**

None known.

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

**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.

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Triethylaluminum		TWA: 2 mg/m <sup>3</sup>		STEL: 6 mg/m <sup>3</sup> 15 min TWA: 2 mg/m <sup>3</sup> 8 hr
n-Heptane	TWA: 400 ppm TWA: 1640 mg/m <sup>3</sup> STEL: 500 ppm STEL: 2050 mg/m <sup>3</sup>	STEL: 500 ppm STEL: 2050 mg/m <sup>3</sup> TWA: 400 ppm TWA: 1640 mg/m <sup>3</sup>	TWA: 400 ppm STEL: 500 ppm	STEL: 1500 ppm 15 min STEL: 6255 mg/m <sup>3</sup> 15 min TWA: 500 ppm 8 hr TWA: 2085 mg/m <sup>3</sup> 8 hr

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Appropriate engineering controls

##### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. 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

#### 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
Viton (R).	See manufacturers recommendations	-	AS/NZS 2161	(minimum requirement)

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 compatibility, 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

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

## Section 9 - Physical and Chemical Properties

#### Information on basic physical and chemical properties

Physical State	Liquid	
Appearance		
Odor	No information available	
Odor Threshold	No data available	
pH	Not applicable	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Highly flammable	Estimated
Flammability (solid,gas)	Not applicable	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	
Viscosity	No data available	
Water Solubility	No information available	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
n-Heptane	4.66	
Vapor Pressure	No data available	
Density / Specific Gravity	0.73	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

#### Other information

**Explosive Properties** Vapors may form explosive mixtures with air  
**Substances/mixtures which, in contact with water, emit flammable gases** Emitted gas ignites spontaneously

## Section 10 - Stability and Reactivity

Reactivity	Yes
Stability	Moisture sensitive. Air sensitive.
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 Materials	None known.
Hazardous Decomposition Products	Carbon oxides. Fumes of aluminum or aluminum oxide.

## Section 11 - Toxicological Information

#### Acute Effects

#### Information on likely routes of exposure

**Product Information**

<b>Inhalation</b>	Avoid breathing vapors or mists.
<b>Eyes</b>	Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. Vapor may cause irritation.
<b>Skin</b>	Avoid contact with skin. Causes burns. Skin Corrosion/Irritation. Prolonged skin contact may defat the skin and produce dermatitis.
<b>Ingestion</b>	May be harmful if swallowed. Harmful if swallowed. Potential for aspiration if swallowed.

**Numerical measures of toxicity****(a) acute toxicity;**

<b>Oral</b>	Based on available data, the classification criteria are not met
<b>Dermal</b>	Based on available data, the classification criteria are not met
<b>Inhalation</b>	Based on available data, the classification criteria are not met

**Toxicology data for the components**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Triethylaluminum			LC50 = 10 g/m <sup>3</sup> ( Rat ) 15 min
n-Heptane	>2000 mg/kg (rat)	LD50 = 3000 mg/kg ( Rabbit )	LC50 > 73.5 mg/L ( Rat ) 4 h

**(b) skin corrosion/irritation;** Category 1 B

**(c) serious eye damage/irritation;** Category 1

**(d) respiratory or skin sensitization;**

<b>Respiratory</b>	No data available
<b>Skin</b>	No data available

**(e) germ cell mutagenicity;** No data available

**(f) carcinogenicity;** No data available  
There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** Category 3  
**Results / Target organs** Central nervous system (CNS)

**(i) STOT-repeated exposure;** No data available  
**Target Organs** None known.

**(j) aspiration hazard;** Category 1

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

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.

## Section 12 - Ecological Information

### Ecotoxicity

#### Aquatic ecotoxicity

Very 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	Microtox
n-Heptane	LC50: = 375.0 mg/L, 96h (Cichlid fish)	EC50: >10 mg/L/24h		

#### Terrestrial ecotoxicity

There is no data for this product

#### Persistence and Degradability

No information available

#### Degradation in sewage treatment plant

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

#### Bioaccumulative Potential

No information available

Component	log Pow	Bioconcentration factor (BCF)
n-Heptane	4.66	No data available

#### Mobility

No information available.

### Other adverse effects

#### Endocrine Disruptor Information Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected endocrine disruptors  
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 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. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

## Section 14 - Transport Information



**NZS 5433:2020**

**UN-No** UN3394  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  
**Technical Shipping Name** Triethylaluminum  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

**IATA** FORBIDDEN FOR IATA TRANSPORT

**UN-No** UN3394  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  
**Technical Shipping Name** FORBIDDEN FOR IATA TRANSPORT  
**Technical Shipping Name** Triethylaluminum  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

**IMDG/IMO**

**UN-No** UN3394  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  
**Technical Shipping Name** Triethylaluminum  
**Hazard Class** 4.2  
**Subsidiary Hazard Class** 4.3  
**Packing Group** I

Component	IMDG Marine Pollutant
n-Heptane 142-82-5 ( 79.7 )	IMDG regulated marine pollutant (UN1206)

**Environmental hazards** Dangerous for the environment  
Product is a marine pollutant according to the criteria set by IMDG/IMO

**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

#### 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 licensing requirements when they apply.

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

Component	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	IMDG Marine Pollutant
n-Heptane			IMDG regulated marine pollutant (UN1206)

**Authorisation/Restrictions according to EU REACH**

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

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

International Inventories

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

Component	CAS No	NZIoC	AICS	EINECS	ELINCS	NLP	KECL	IECSC	TCSI
Triethylaluminum	97-93-8	X	X	-	-	-	KE-34211	X	X
n-Heptane	142-82-5	X	X	205-563-8	-	-	KE-18271	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Triethylaluminum	97-93-8	X	ACTIVE	X	-	X	X	X
n-Heptane	142-82-5	X	ACTIVE	X	-	X	X	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**

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

**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

**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)

**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]:**

<b>Physical hazards</b>	On basis of test data
<b>Health Hazards</b>	Calculation method
<b>Environmental hazards</b>	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.  
Chemical incident response training.  
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

<b>Revision Date</b>	22-Mar-2023
<b>Revision Summary</b>	Initial Release

**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**