

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

## Section 1 - Identification

### Product Identifier

<b>Product Name</b>	<b><u>Nitric acid, for trace metal analysis, 2.5L</u></b>
<b>CAS No</b>	7697-37-2
<b>Synonyms</b>	Azotic acid; Engraver's acid; Aqua fortis
<b>Molecular Formula</b>	HNO <sub>3</sub>
<b>Molecular Weight</b>	63.01
<b>Recommended Use</b>	Laboratory chemicals.
<b>Uses advised against</b>	No Information available

<b>Product Code</b>	<b>U20002</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

Oxidizing liquids	Category 3
Substances/mixtures corrosive to metal	Category 1

#### Health hazards

Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1

#### Environmental hazards

Based on available data, the classification criteria are not met

### Label Elements



Signal Word

Danger

#### Hazard Statements

H272 - May intensify fire; oxidizer  
H290 - May be corrosive to metals  
H314 - Causes severe skin burns and eye damage  
H331 - Toxic if inhaled

#### Precautionary Statements

##### Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P220 - Keep away from clothing and other combustible materials  
P221 - Take any precaution to avoid mixing with combustibles  
P234 - Keep only in original packaging  
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  
P284 - Wear respiratory protection

##### Response

P390 - Absorb spillage to prevent material damage  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
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  
P363 - Wash contaminated clothing before reuse  
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

##### Storage

P402 - Store in a dry place  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P406 - Store in corrosion resistant polypropylene container with a resistant liner  
P405 - Store locked up

##### Disposal

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

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

This product does not contain any known or suspected endocrine disruptors  
Corrosive to the respiratory tract

## Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Nitric acid ...% [C ≤ 70 %]	7697-37-2	65 - 70
Water	7732-18-5	30 - 35

## Section 4 - First Aid Measures

#### Description of first aid measures

<b>General Advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
<b>New Zealand Emergency Tel.</b>	CHEMTREC® 09 980 6780 or +64 9 980 6780
<b>Inhalation</b>	If breathing is difficult, give oxygen. 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 from exposure, lie down. Call a physician immediately.
<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. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.
<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. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated
<b>Notes to Physician</b>	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

## **Section 5 - Fire Fighting Measures**

### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

### **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. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

### **Hazardous Combustion Products**

Nitrogen oxides (NO<sub>x</sub>), Thermal decomposition can lead to release of irritating gases and vapors.

### **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

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment as required.

#### Environmental Precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

#### Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal. Wear self-contained breathing apparatus and protective suit.

#### 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

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe mist/vapors/spray. Keep away from clothing and other combustible materials.

##### Hygiene Measures

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

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

##### Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Do not store in metal containers. Keep in properly labeled containers. Corrosives area.

##### Incompatible Materials

Combustible material. Strong bases. Reducing Agent. Metals. Finely powdered metals. Organic materials. Aldehydes. Alcohols. Cyanides. Ammonia. Strong reducing agents.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## 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.

**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

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

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Nitric acid ...% [C ≤ 70 %]	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup>	STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	STEL: 1 ppm 15 min STEL: 2.6 mg/m <sup>3</sup> 15 min

	STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup>		
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#### 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

Use only under a chemical fume hood. 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
Neoprene gloves, Butyl rubber.	> 480 minutes	0.45 mm	AS/NZS 2161	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Nitrile rubber	> 480 minutes	0.35 mm		
	< 10 minutes	0.38 mm		

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:** Particulates filter conforming to EN 143 or Acid gases filter Type E Yellow 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

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

**Environmental exposure controls** Prevent product from entering drains.

## Section 9 - Physical and Chemical Properties

#### Information on basic physical and chemical properties

**Physical State** Liquid

**Appearance** Clear Colorless, Light yellow

**Odor** Strong Acrid

<b>Odor Threshold</b>	No data available	
<b>pH</b>	< 1.0	(0.1M)
<b>Melting Point/Range</b>	-41 °C / -41.8 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	Not applicable	
<b>Flammability (liquid)</b>	No data available	
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	No data available	
<b>Flash Point</b>	Not applicable	<b>Method -</b> No information available
<b>Autoignition Temperature</b>	No data available	
<b>Decomposition Temperature</b>	No data available	
<b>Viscosity</b>	No data available	
<b>Water Solubility</b>	Miscible	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Nitric acid ...% [C ≤ 70 %]	-2.3	
<b>Vapor Pressure</b>	0.94 kPa (20°C)	
<b>Density / Specific Gravity</b>	1.40	
<b>Bulk Density</b>	Not applicable	Liquid
<b>Vapor Density</b>	No data available	(Air = 1.0)
<b>Particle characteristics</b>	Not applicable (liquid)	
<b><u>Other information</u></b>		
<b>Molecular Formula</b>	HNO3	
<b>Molecular Weight</b>	63.01	
<b>Oxidizing Properties</b>	Oxidizer	

## Section 10 - Stability and Reactivity

<b>Reactivity</b>	Yes
<b>Stability</b>	Oxidizer: Contact with combustible/organic material may cause fire.
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Conditions to Avoid</b>	Incompatible products, Combustible material, Excess heat, Exposure to air or moisture over prolonged periods.
<b>Incompatible Materials</b>	Combustible material, Strong bases, Reducing Agent, Metals, Finely powdered metals, Organic materials, Aldehydes, Alcohols, Cyanides, Ammonia, Strong reducing agents.
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors.

## Section 11 - Toxicological Information

### Acute Effects

### Information on likely routes of exposure

### Product Information

<b>Inhalation</b>	Causes severe burns. May be harmful if inhaled. May cause pulmonary edema. Harmful by inhalation.
<b>Eyes</b>	Causes severe burns. May cause blindness or permanent eye damage. Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes.
<b>Skin Ingestion</b>	Causes severe burns. May be harmful in contact with skin. Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May be harmful if swallowed. Can burn mouth, throat, and stomach. Harmful if swallowed.

#### Numerical measures of toxicity

<b>(a) acute toxicity;</b>	
<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>	Category 3

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid ...% [C ≤ 70 %]			LC50 = 2500 ppm. (Rat) 1h
Water	-	-	-

Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)
Nitric acid ...% [C ≤ 70 %]	-	-	ATE = 2.65 mg/L (vapours)

<b>(b) skin corrosion/irritation;</b>	Category 1 A
<b>(c) serious eye damage/irritation;</b>	Category 1
<b>(d) respiratory or skin sensitization;</b>	
<b>Respiratory</b>	Based on available data, the classification criteria are not met
<b>Skin</b>	Based on available data, the classification criteria are not met
<b>(e) germ cell mutagenicity;</b>	Based on available data, the classification criteria are not met
<b>(f) carcinogenicity;</b>	Based on available data, the classification criteria are not met There are no known carcinogenic chemicals in this product
<b>(g) reproductive toxicity;</b>	Based on available data, the classification criteria are not met
<b>(h) STOT-single exposure;</b>	Based on available data, the classification criteria are not met
<b>(i) STOT-repeated exposure;</b>	Based on available data, the classification criteria are not met
<b>Target Organs</b>	None known.
<b>(j) aspiration hazard;</b>	Based on available data, the classification criteria are not met

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

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

## Section 12 - Ecological Information

**Ecotoxicity**

**Aquatic ecotoxicity** Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

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

**Persistence and Degradability** Readily biodegradable

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

**Bioaccumulative Potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Nitric acid ...% [C ≤ 70 %]	-2.3	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** This product does not contain any known or suspected endocrine disruptors

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

**Ozone Depletion Potential** 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.

**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. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with low pH-value must be neutralized before discharge.

## **Section 14 - Transport Information**

Component	Hazchem Code
Nitric acid ...% [C ≤ 70 %] 7697-37-2 ( 65 - 70 )	2R 2P 2PE

**NZS 5433:2020**

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8



**Subsidiary Hazard Class** 5.1  
**Packing Group** II

#### IATA

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8  
**Subsidiary Hazard Class** 5.1  
**Packing Group** II

#### IMDG/IMO

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8  
**Subsidiary Hazard Class** 5.1  
**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

#### **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

**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)
Nitric acid ...% [C ≤ 70 %]	-	Use restricted. See item 75. (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 (ENCS), 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
Nitric acid ...% [C ≤ 70 %]	7697-37-2	X	X	231-714-2	-	-	KE-25911	X	X
Water	7732-18-5	X	X	231-791-2	-	-	KE-35400	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Nitric acid ...% [C ≤ 70 %]	7697-37-2	X	ACTIVE	X	-	X	X	X
Water	7732-18-5	X	ACTIVE	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

**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

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

**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

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<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.

<b>Revision Date</b>	16-Jan-2024
<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**