SAFETY DATA SHEET

Section 1 - Identification

Product Name **Nickel**

Product Code	**THI842315550021, THI430122821401**
	,
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 contains one or more 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 not hazardous according to criteria of Safe Work Australia.

Physical hazards
No hazards identified

Health hazards
No hazards identified

Environmental hazards
No hazards identified

Label Elements None required

Other information
No information available
This product does not contain any known or suspected endocrine disruptors

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	99.7
Nitric acid …% [C ≤ 70 %]	7697-37-2	0.2
Potassium	7440-09-7	0.001
Phosphorus	7723-14-0	0.001
Nickel	7440-02-0	0.001
Zinc powder - zinc dust (pyrophoric)	7440-66-6	0.0001
Manganese	7439-96-5	0.0001
Magnesium	7439-95-4	0.0001
Copper	7440-50-8	0.0001
Calcium	7440-70-2	0.0001
Barium	7440-39-3	0.0001
Aluminum	7429-90-5	0.0001

Section 4 - First Aid Measures

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

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

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

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

General Advice If symptoms persist, call a physician.

Self-Protection of the First Aider No special precautions required.

First Aid Facilities Eyewash, safety shower and washroom.

Most important symptoms and effects None reasonably foreseeable.

Notes to Physician Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
None reasonably foreseeable.

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

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

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.

Clean-up methods - large spillage
Not applicable, packaged goods.

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. Ensure adequate ventilation. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing.

Conditions for Safe Storage, Including any Incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

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

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
NZ - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Nitric acid …% [C ≤ 70 %]	STEL: 4 ppm STEL: 10 mg/m³ TWA: 2 ppm TWA: 5.2 mg/m³	TWA: 2 ppm TWA: 5.2 mg/m³ STEL: 4 ppm STEL: 10 mg/m³	TWA: 2 ppm STEL: 4 ppm	STEL: 1 ppm 15 min STEL: 2.6 mg/m³ 15 min	TWA: 1 ppm (8 Stunden). AGW - TWA: 2.6 mg/m³ (8 Stunden). AGW -
Phosphorus	TWA: 0.1 mg/m³	TWA: 0.1 mg/m³			TWA: 0.01 mg/m³ (8 Stunden). MAK Höhepunkt: 0.02 mg/m³
Nickel	TWA: 1 mg/m³	TWA: 0.005 mg/m³	TWA: 1.5 mg/m³	STEL: 1.5 mg/m³ 15 min TWA: 0.5 mg/m³ 8 hr Skin	TWA: 0.03 mg/m³ (8 Stunden). AGW - exposure factor 8 TWA: 0.006 mg/m³ (8 Stunden). AGW - exposure factor 8
Zinc powder - zinc dust (pyrophoric)					TWA: 0.1 mg/m³ (8 Stunden). MAK TWA: 2 mg/m³ (8 Stunden). MAK

					Höhepunkt: 0.4 mg/m³ Höhepunkt: 4 mg/m³
Manganese	STEL: 3 mg/m³ TWA: 1 mg/m³	TWA: 0.2 mg/m³ TWA: 0.02 mg/m³	TWA: 0.02 mg/m³ TWA: 0.1 mg/m³	STEL: 0.6 mg/m³ 15 min STEL: 0.15 mg/m³ 15 min TWA: 0.2 mg/m³ 8 hr TWA: 0.05 mg/m³ 8 hr	TWA: 0.2 mg/m³ (8 Stunden). AGW - exposure factor 8 TWA: 0.02 mg/m³ (8 Stunden). AGW - exposure factor 8 TWA: 0.2 mg/m³ (8 Stunden). MAK TWA: 0.02 mg/m³ (8 Stunden). MAK Höhepunkt: 1.6 mg/m³ Höhepunkt: 0.16 mg/m³
Copper	TWA: 1 mg/m³ TWA: 0.2 mg/m³	TWA: 0.01 mg/m³	TWA: 0.2 mg/m³	STEL: 0.6 mg/m³ 15 min STEL: 2 mg/m³ 15 min TWA: 1 mg/m³ 8 hr TWA: 0.2 mg/m³ 8 hr	TWA: 0.01 mg/m³ (8 Stunden). MAK Höhepunkt: 0.02 mg/m³
Barium	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³		
Aluminum	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 10 mg/m³	TWA: 1 mg/m³	STEL: 30 mg/m³ 15 min STEL: 12 mg/m³ 15 min TWA: 10 mg/m³ 8 hr TWA: 4 mg/m³ 8 hr	TWA: 1.25 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 10 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 4 mg/m³ (8 Stunden). MAK TWA: 1.5 mg/m³ (8 Stunden). MAK

Biological limit values

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

Component	Australia	New Zealand	European Union	United Kingdom	Germany
Aluminum					Aluminum: 50 µg/g Creatinine urine (for long-term exposures: at the end of the shift after several shifts)

Exposure Controls

Engineering Measures

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 Wear safety glasses with side shields (or 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
Natural rubber Nitrile rubber Neoprene PVC	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 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:	Particulates filter conforming to EN 143 (or AUS/NZ equivalent)
Recommended half mask:-	Particle filtering: EN149:2001 (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

Appearance	Clear, colorless solution	
Physical State	Liquid	
Odor	No information available	
Odor Threshold	No data available	
pH	Not applicable	
Melting Point/Range	0 °C / 32 °F	
Softening Point	No data available	
Boiling Point/Range	100 °C / 212 °F	
Flash Point	Not applicable	**Method -** No information available
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	(Air = 1.0)
Specific Gravity / Density	No data available	
Bulk Density	Not applicable	Liquid
Water Solubility	No information available	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Nitric acid …% [C ≤ 70 %]	-2.3

Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other information

Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	None known.

Hazardous Decomposition Products None under normal use conditions.

Hazardous Polymerization No information available.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral Based on available data, the classification criteria are not met
Dermal Based on available data, the classification criteria are not met
Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Nitric acid …% [C ≤ 70 %]			LC50 = 2500 ppm. (Rat) 1h
Phosphorus	>15000 mg/kg (Rat Female)		LC50 = 4.3 mg/L (Rat) 1 h
Nickel	LD50 > 9000 mg/kg (Rat)		LC50 > 10.2 mg/L (Rat) 1 h
Zinc powder - zinc dust (pyrophoric)	LD50 > 2000 mg/kg bw (Rat) OECD 401		LC50 > 5.41 g Zn/m³ air (rat) OECD 403 (highest attainable concentration)
Manganese	LD50 = 9 g/kg (Rat)		LC50 > 5.14 mg/L (Rat) 4 h
Magnesium	LD50 = 230 mg/kg (Rat)		
Copper			LC50 > 5.11 mg/L (Rat) 4 h
Barium	LD50 = 132 mg/kg (Rat)		
Aluminum			LC50 > 0.888 mg/L (Rat) 4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	Australia	New Zealand	New South Wales	Western Australia	IARC	EU	UK	Germany
Nickel		Suspected carcinogen			Group 2B			Cat. 1

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects,both acute and delayed No information available

Section 12 - Ecological Information

Ecotoxicity effects Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Phosphorus	LC50: 33.2 mg/L/96h (Danio rerio)	EC50: 10.5 mg/L/48h		
Nickel	LC50: > 100 mg/L, 96h (Brachydanio rerio) LC50: = 1.3 mg/L, 96h semi-static (Cyprinus carpio) LC50: = 10.4 mg/L, 96h static (Cyprinus carpio)	EC50 = 510 µg/L 96h	EC50 = 0.1 mg/L 72h EC50 = 0.18 mg/L 72h	
Zinc powder - zinc dust (pyrophoric)	LC50: = 0.41 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 0.59 mg/L, 96h semi-static (Oncorhynchus mykiss) LC50: 2.16 - 3.05 mg/L, 96h flow-through (Pimephales promelas) LC50: 0.211 - 0.269 mg/L, 96h semi-static (Pimephales promelas) LC50: = 2.66 mg/L, 96h static (Pimephales promelas) LC50: = 30 mg/L, 96h (Cyprinus carpio) LC50: = 0.45 mg/L, 96h semi-static (Cyprinus carpio) LC50: = 7.8 mg/L, 96h static (Cyprinus carpio) LC50: = 0.24 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: = 3.5 mg/L, 96h static (Lepomis macrochirus)	EC50: 0.139 - 0.908 mg/L, 48h Static (Daphnia magna)	EC50: 0.09 - 0.125 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: 0.11 - 0.271 mg/L, 96h static (Pseudokirchneriella subcapitata)	
Manganese	LC50: > 3.6 mg/L, 96h semi-static (Oncorhynchus mykiss)			
Copper	Onchorhynchys mykiss: LC50=0.15 mg/L 96h Cuprinus carpio: LC50=0.8 mg/L 96h	EC50: = 0.03 mg/L, 48h Static (Daphnia magna)	0.0426-0.0535 mg/L EC50 72 h 0.031-0.054 mg/L EC50 96 h	
Barium	LC50: > 500 mg/L/96h (Cyprinodon variegatus)			

Persistence and Degradability No information available

Bioaccumulative Potential No information available

Component	log Pow	Bioconcentration factor (BCF)

Nitric acid …% [C ≤ 70 %]	-2.3	No data available
Phosphorus		<200 dimensionless

Mobility No information available.
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 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 Chemical wastes should be disposed through a licensed commercial waste collection service. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

Section 14 - Transport Information

IMDG/IMO Not regulated

Component	IMDG Marine Pollutant
Copper 7440-50-8 (0.0001)	IMDG regulated marine pollutant (Listed in the index, listed under Copper metal powder)

ADG Not regulated

Component	Hazchem Code
Nitric acid …% [C ≤ 70 %] 7697-37-2 (0.2)	2R 2P 2PE
Potassium 7440-09-7 (0.001)	4W
Phosphorus 7723-14-0 (0.001)	1WE 1Z
Zinc powder - zinc dust (pyrophoric) 7440-66-6 (0.0001)	4Y 4W
Magnesium 7439-95-4 (0.0001)	1Z 4Y 4W
Calcium 7440-70-2 (0.0001)	4W
Barium 7440-39-3 (0.0001)	4W
Aluminum 7429-90-5 (0.0001)	4Y 4W

IATA Not regulated

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
Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

Component	Standard for the Uniform Scheduling of Medicines and Poisons
Nitric acid …% [C ≤ 70 %] - 7697-37-2	Schedule 5 listed - except its salts and derivatives;in preparations except in preparations containing <=0.5% of Nitric acid Schedule 6 listed - except its salts and derivatives;except when included in Schedule 5, or in preparations containing <=0.5% of Nitric acid

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Water - 7732-18-5	Present	-
Nitric acid …% [C ≤ 70 %] - 7697-37-2	Present	-
Potassium - 7440-09-7	Present	-
Phosphorus - 7723-14-0	Present	-
Nickel - 7440-02-0	Present	-
Zinc powder - zinc dust (pyrophoric) - 7440-66-6	Present	-
Manganese - 7439-96-5	Present	-
Magnesium - 7439-95-4	Present	-
Copper - 7440-50-8	Present	-
Calcium - 7440-70-2	Present	-
Barium - 7440-39-3	Present	-
Aluminum - 7429-90-5	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 contains one or more 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
Nitric acid …% [C ≤ 70 %] - 7697-37-2		Listed in Appendix A Precursors to homemade explosives - concentration >=30%
Potassium - 7440-09-7	Category 2	
Phosphorus - 7723-14-0	Category 1	Listed in Appendix A
Magnesium - 7439-95-4	Category 2	
Calcium - 7440-70-2	Category 2	

Legend
Category 1 - Chemicals that require an End User Declaration with each purchase and may only be sold to ‘account customers’ or customers that are prepared to open an account. Supply of these chemicals to End Users or Distributors must be delayed for a period of not less than 24 hours
Category 2 - Chemicals and apparatus that require an End User Declaration when sold to non-account customers

Chemicals of Security Concern - for further information see *http://www.chemicalsecurity.gov.au/securityconcerns*

National pollutant inventory Subject to reporting requirements

Component	National pollutant inventory
Nitric acid …% [C ≤ 70 %] - 7697-37-2	10 tonne/yr. Threshold category 1
Phosphorus - 7723-14-0	3 tonne/yr. Threshold category 3 total
Nickel - 7440-02-0	10 tonne/yr. Threshold category 1 2000 tonne/yr. Threshold category 2b 60000 MWH. Threshold category 2b 20 MW. Threshold category 2b
Zinc powder - zinc dust (pyrophoric) - 7440-66-6	10 tonne/yr. Threshold category 1
Manganese - 7439-96-5	10 tonne/yr. Threshold category 1
Copper - 7440-50-8	10 tonne/yr. Threshold category 1 2000 tonne/yr. Threshold category 2b 60000 MWH. Threshold category 2b 20 MW. Threshold category 2b

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
Nickel - 7440-02-0				Suspected carcinogen

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Water	X	X	231-791-2	-	X	X	-	X	X		X	KE-35400
Nitric acid …% [C ≤ 70 %]	X	X	231-714-2	-	X	X	-	X	X	X	X	KE-25911
Potassium	X	X	231-119-8	-	X	X	-	X	X		X	KE-29068
Phosphorus	X	X	231-768-7	-	X	X	-	X	X		X	KE-28713
Nickel	X	X	231-111-4	-	X	X	-	X	X		X	KE-25818
Zinc powder - zinc dust (pyrophoric)	X	X	231-175-3	-	X	X	-	X	X		X	KE-35518
Manganese	X	X	231-105-1	-	X	X	-	X	X		X	KE-22999
Magnesium	X	X	231-104-6	-	X	X	-	X	X		X	KE-22673
Copper	X	X	231-159-6	-	X	X	-	X	X		X	KE-08896
Calcium	X	X	231-179-5	-	X	X	-	X	X		X	KE-04462
Barium	X	X	231-149-1	-	X	X	-	X	X		X	KE-02022
Aluminum	X	X	231-072-3	-	X	X	-	X	X		X	KE-00881

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

MARPOL - International Convention for the Prevention of Pollution from Ships

Component	IMDG Marine Pollutant
Copper - 7440-50-8	IMDG regulated marine pollutant (Listed in the index, listed under Copper metal powder)

Basel convention on the control of transboundary movements of hazardous wastes and their dispoal
Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Component	Basel Convention (Hazardous Waste)	Australian Hazardous Waste Act - Categories of Wastes to Be Controlled
Nitric acid …% [C ≤ 70 %] - 7697-37-2	Annex I - Y34	Y34 solid or solution

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Nitric acid …% [C ≤ 70 %]	7697-37-2	Listed	Not applicable	Not applicable	Not applicable
Potassium	7440-09-7	Not applicable	Not applicable	Not applicable	Not applicable
Phosphorus	7723-14-0	Listed	Not applicable	Not applicable	Not applicable
Nickel	7440-02-0	Listed	Not applicable	Not applicable	Not applicable
Zinc powder - zinc dust (pyrophoric)	7440-66-6	Listed	Not applicable	Not applicable	Not applicable
Manganese	7439-96-5	Listed	Not applicable	Not applicable	Not applicable
Magnesium	7439-95-4	Listed	Not applicable	Not applicable	Not applicable
Copper	7440-50-8	Listed	Not applicable	Not applicable	Not applicable
Calcium	7440-70-2	Listed	Not applicable	Not applicable	Not applicable
Barium	7440-39-3	Not applicable	Not applicable	Not applicable	Not applicable
Aluminum	7429-90-5	Listed	Not applicable	Not applicable	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)	-
Potassium	-	Use restricted. See item 75. (see link for restriction details)	-
Phosphorus	-	Use restricted. See item 75. (see link for restriction details)	-
Nickel	-	Use restricted. See item 27. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-
Zinc powder - zinc dust (pyrophoric)	-	Use restricted. See item 75. (see link for restriction details)	-
Copper	-	Use restricted. See item 75. (see link for restriction details)	-
Barium	-	Use restricted. See item 75. (see link for restriction details)	-
Aluminum	-	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
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
CAS - Chemical Abstracts Service
TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists
IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
MARPOL - International Convention for the Prevention of Pollution from Ships
ADG - Australian Code for the Transport of Dangerous Goods by Road and Rail
NZS 5433:2020 - Transport of Dangerous Goods on Land
OECD - Organisation for Economic Co-operation and Development
LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%
EC50 - Effective Concentration 50%
ATE - Acute Toxicity Estimate
WEL - Workplace Exposure Limit
RPE - Respiratory Protective Equipment
DNEL - Derived No Effect Level
NOEC - No Observed Effect Concentration
POW - Partition coefficient Octanol:Water
BCF - Bioconcentration factor
vPvB - very Persistent, very Bioaccumulative
PBT - Persistent, Bioaccumulative, Toxic
VOC - (Volatile Organic Compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical 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.

Revision Date	14-Jul-2023
Revision Summary	Update to GHS format.

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