

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

Section 1 - Identification

Product Identifier

Product Name Silver Nitrate Concentrate (1N/Certified)

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Product Code	SS73
Address	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
Emergency Tel.	CHEMTREC® 09 980 6780 or +64 9 980 6780
Telephone / Fax Numbers	Tel: 09 980 6700 Fax: 09 980 6788
E-mail address	<u>ANZinfo@thermofisher.com</u>

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

Based on available data, the classification criteria are not met

Health hazards

Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1

Environmental hazards

Chronic aquatic toxicity	Category 2
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Label Elements



Signal Word

Danger

Hazard Statements

H314 - Causes severe skin burns and eye damage

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

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

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

P391 - Collect spillage

Storage

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

Disposal

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

Other hazards which do not result in classification

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	83
Silver nitrate	7761-88-8	17

Section 4 - First Aid Measures

Description of first aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

New Zealand Emergency Tel.

CHEMTREC®
09 980 6780 or +64 9 980 6780

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.

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
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.
Ingestion	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.
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. 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
Notes to Physician	Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. CO₂, 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.

Hazardous Combustion Products

Nitrogen oxides (NO_x).

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

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

Environmental Precautions

Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

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

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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

Incompatible Materials

Strong oxidizing agents. Strong reducing agents. Metals. Amines.

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

Section 8 - Exposure Controls and Personal Protection

Control parameters

Exposure limits

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

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

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Silver nitrate		TWA: 0.01 mg/m ³	TWA: 0.01 mg/m ³	TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³

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. 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
Natural rubber, Nitrile	See manufacturers	-		(minimum requirement)

rubber, Neoprene, PVC. recommendations	AS/NZS 2161
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
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 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	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	Colorless	
Odor	No information available	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	Not applicable	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	No data available	
Water Solubility	Soluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Silver nitrate	0.19	
Vapor Pressure	14 mmHg @ 20 °C	
Density / Specific Gravity	1.0 - 1.1	
Bulk Density	Not applicable	Liquid
Vapor Density	0.7	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	
Other information		
Evaporation Rate	> 1 (Ether = 1.0)	

Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Light sensitive.
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.
Conditions to Avoid	Incompatible products, Excess heat, Exposure to light.
Incompatible Materials	Strong oxidizing agents, Strong reducing agents, Metals, Amines.
Hazardous Decomposition Products	Nitrogen oxides (NOx).

Section 11 - Toxicological Information

Acute Effects

Information on likely routes of exposure

Product Information	No acute toxicity information is available for this product
Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system.
Eyes	Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness.
Skin	Avoid contact with skin. Causes burns. Skin Corrosion/Irritation.
Ingestion	May be harmful if swallowed.

Numerical measures of toxicity

(a) acute toxicity;	
Oral	Based on available data, the classification criteria are not met
Dermal	No data available
Inhalation	No data available

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Silver nitrate	> 2000 mg/kg (Rat)	LD50 > 2000 mg/kg (Rat)	LC50 > 750 µg/m ³ (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
(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; 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

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**

The product contains following substances which are hazardous for the environment.
Contains a substance which is: Very toxic to aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Silver nitrate	Leuciscus idus: LC50: 0.029 mg/L/96h	EC50: 0.0006 mg/L/48h	-	Photobacterium phosphoreum: EC50: 0.038 mg/L/24h Photobacterium phosphoreum: EC50: 0.395 mg/l/15min Photobacterium phosphoreum: EC50: 0.44 mg/L/30 min as Ag++ Photobacterium phosphoreum: EC50: 0.86 mg/L/15 min as Ag++

Terrestrial ecotoxicity There is no data for this product

Persistence and Degradability

Persistence Soluble in water, Persistence is unlikely, based on 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 Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Silver nitrate	0.19	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**
Persistent Organic Pollutant
Ozone Depletion PotentialThis 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.

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. Do not let this chemical enter the environment.

Section 14 - Transport Information

Component	Hazchem Code
Silver nitrate 7761-88-8 (17)	1Y

NZS 5433:2020**UN-No** UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class 8
Packing Group II**IATA****UN-No** UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class 8
Packing Group II**IMDG/IMO****UN-No** UN3264
Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class 8
Packing Group II**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

**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)
Silver nitrate	-	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/NDL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	NZIoC	AICS	EINECS	ELINCS	NLP	KECL	IECSC	TCSI
Water	7732-18-5	X	X	231-791-2	-	-	KE-35400	X	X
Silver nitrate	7761-88-8	X	X	231-853-9	-	-	KE-31281	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDL	PICCS	ISHL	ENCS
Water	7732-18-5	X	ACTIVE	X	-	X	-	X
Silver nitrate	7761-88-8	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	AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory	EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List	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	PNEC - Predicted No Effect Concentration
NZS 5433:2020 - Transport of Dangerous Goods on Land	OECD - Organisation for Economic Co-operation and Development
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	
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

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).
<https://echa.europa.eu/information-on-chemicals>
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS
EPA Guide to classifying hazardous substances in New Zealand
EPA - Assigning a product to an existing HSNO approval guide

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Revision Date	10-Mar-2023
Revision Summary	Not applicable

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet