

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

Section 1 - Identification

Product Name Silver nitrate

CAS No 7761-88-8

Synonyms Nitric acid, silver salt.

Product Code 197680000; 197680050; 197680250; 197681000; 197685000; 197680025

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 does not contain any substance(s) on the Illicit Drug Precursors/Reagents list. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

Physical hazards

Oxidizing solids	Category 2
Substances/mixtures corrosive to metal	Category 1

Health hazards

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

Environmental hazards

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Label Elements



Flame Over Circle



Health Hazard



Corrosion



Environment

Signal Word**Danger****Hazard Statements**

H272 - May intensify fire; oxidizer
 H290 - May be corrosive to metals
 H314 - Causes severe skin burns and eye damage
 H360 - May damage fertility or the unborn child
 H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
 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
 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
 P390 - Absorb spillage to prevent material damage
 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
 P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

Toxicity to Soil Dwelling Organisms
 Toxic to terrestrial vertebrates
 This product does not contain any known or suspected endocrine disruptors

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Silver nitrate	7761-88-8	<=100

Section 4 - First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison

	control center immediately. 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.
Ingestion	Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. 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. Keep eye wide open while rinsing.
General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	Causes burns by all exposure routes. 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.

Hazardous Decomposition Products

Nitrogen oxides (NO_x), Silver oxides.

Decomposition Temperature

> 444°C

Specific Hazards Arising from the Chemical

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.). Do not allow run-off from fire-fighting to enter drains or water courses.

Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

Section 6 - Accidental Release Measures

Emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

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. Should not be released into the environment.

Methods for Containment and Clean Up**Clean-up methods - small spillage**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

Clean-up methods - large spillage

Typically only supplied in small quantities as packaged goods.

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

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

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

Conditions for Safe Storage, Including any Incompatibilities

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

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

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
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	VME: 0.01 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

Exposure 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

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	See manufacturers	-	AS/NZS 2161	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

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

Appearance	White	
Physical State	Solid	
Odor	Odorless	
Odor Threshold	No data available	
pH	5.4-6.4	10% aq solution
Melting Point/Range	212 °C / 413.6 °F	
Softening Point	No data available	
Boiling Point/Range	444 °C / 831.2 °F	@ 760 mmHg
Flash Point	No information available	Method - No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	219 g/100ml (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Silver nitrate	0.19	
Autoignition Temperature	No data available	
Decomposition Temperature	> 444°C	

Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	Oxidizer	

Other information

Molecular Formula	Ag N O ₃
Molecular Weight	169.87

Section 10 - Stability and Reactivity

Reactivity	Yes
Stability	Oxidizer: Contact with combustible/organic material may cause fire. Light sensitive.
Conditions to Avoid	Avoid dust formation, Incompatible products, Excess heat, Combustible material, Exposure to light.
Incompatible Materials	Strong reducing agents, Combustible material, Metals, Amines.
Hazardous Decomposition Products	Nitrogen oxides (NO _x). Silver oxides.
Hazardous Polymerization	Hazardous polymerization does not occur.

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

Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
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**

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

Category 1B

(h) STOT-single exposure;

Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs None known.

(j) aspiration hazard; Not applicable
Solid

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 effects The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

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++

Persistence and Degradability Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

Persistence May persist, based on information available.

Degradability Not relevant for inorganic substances.

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

Bioaccumulative Potential May have some potential to bioaccumulate

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

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. 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

IMDG/IMO

UN-No UN1493
Proper Shipping Name Silver nitrate
Hazard Class 5.1
Packing Group II

ADG

UN-No UN1493
Proper Shipping Name Silver nitrate
Hazard Class 5.1
Packing Group II

Component	Hazchem Code
Silver nitrate 7761-88-8 (<=100)	1Y

IATA

UN-No UN1493
Proper Shipping Name Silver nitrate
Hazard Class 5.1
Packing Group II

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

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
Silver nitrate - 7761-88-8	Schedule 2 listed Schedule 6 listed - except when included in or expressly excluded from Schedule 2, or in preparations containing <=1% of Silver

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Silver nitrate - 7761-88-8	Present	-

Australian - Illicit Drug Precursors/Reagents Substance List

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

Chemicals of Security Concern

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

National pollutant inventory Not applicable

Prohibition or notification/licensing requirements

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

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

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Silver nitrate	X	X	231-853-9	-	X	X	-	X	X	X	X	KE-31281

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

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

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

Rotterdam Convention (PIC) Not applicable

Basel convention on the control of transboundary movements of hazardous wastes and their disposal

Not applicable.

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
Silver nitrate	7761-88-8	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)
Silver nitrate	-	Use restricted. See entry 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	NZIoC - New Zealand Inventory of Chemicals
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 Predicted No Effect Concentration (PNEC)
IARC - International Agency for Research on Cancer	IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association	ADG - Australian Code for the Transport of Dangerous Goods by Road and Rail
MARPOL - International Convention for the Prevention of Pollution from Ships	OECD - Organisation for Economic Co-operation and Development
NZS 5433:2020 - Transport of Dangerous Goods on Land	LC50 - Lethal Concentration 50%
LD50 - Lethal Dose 50%	ATE - Acute Toxicity Estimate
EC50 - Effective Concentration 50%	RPE - Respiratory Protective Equipment
WEL - Workplace Exposure Limit	NOEC - No Observed Effect Concentration
DNEL - Derived No Effect Level	BCF - Bioconcentration factor
POW - Partition coefficient Octanol:Water	PBT - Persistent, Bioaccumulative, Toxic
vPvB - very Persistent, very Bioaccumulative	
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 incident response training.

Revision Date 04-Jul-2024

Revision Summary SDS sections updated, 2, 3, 11, 16.

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