
Safety Data Sheet

Product Name	Silver nitrate
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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification:**Product Description:** Silver nitrate**Synonyms:** Nitric acid, silver salt**CAS-No:** 7761-88-8**EC-No.:** 231-853-9**Molecular Formula:** AgNO₃

REACH Registration No: A registration number is not available for this substance as the substance or its uses are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

1.2. Relevant identified uses of the substance or mixture and uses advised against:**Recommended Use:****Details of the supplier of the safety data sheet:**

- **Company** **Finar Limited**
184-186/P, Chacharwadi Vasna,
Sarkhej-Bavla Highway,
Ta.: Sanand, Dist.: Ahmedabad-382110, Gujarat, India.
Web: www.finarchemicals.com
- **E-Mail Address** safety.finar@aceto.com; info.finar@aceto.com

1.3. Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717

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SECTION 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture:****Classification according to Regulation (EC) No 1272/2008**

Oxidizing solids (Category 2), H272

Corrosive to Metals (Category 1), H290

Skin corrosion (Sub-category 1B), H314

Serious eye damage (Category 1), H318

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label Elements:**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms

**Signal word: Danger****Hazard statements**

H272 May intensify fire, oxidizer.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe dusts or mists.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

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Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements

None

Reduced Labelling (<= 125 ml)

Hazard Pictograms



Signal word: Danger

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dusts or mists.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other Hazards:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances:** Silver nitrate

3.2. **Mixtures:**

Component	CAS-No	EC-No.	Weight %
Silver nitrate	7761-88-8	231-853-9	>95 %

SECTION 4: FIRST AID MEASURES

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4.1. Description of first aid measures:

- **General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

- **If inhaled**

After inhalation: fresh air. Call in physician.

- **If case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

- **In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

- **If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2. Most important symptoms and effects, both acute and delayed:

Irritation and corrosion, Cough, Dizziness, Vomiting, Diarrhoea, gastric spasms, Shortness of breath, Unconsciousness, death
 Risk of permanent damage due to staining of the cornea.
 Risk of blindness!

4.3. Indication of any immediate medical attention and special treatment needed:

No data available

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media:

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

Unsuitable Extinguishing Media- For this substance/mixture no limitations of extinguishing agents are given.

5.2. Special hazards arising from the substance or mixture:

Nitrogen oxides (NOx)
 Silver/silver oxides

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Container explosion may occur under fire conditions.

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

5.3. Advice for firefighters:

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further Information:

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2. Environmental precautions:

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4. Reference to other sections:

For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling:

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities:

Requirements for storage areas and containers

No metal containers.

Storage conditions

Protected from light.

Tightly closed. Do not store near combustible materials.

7.3. Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Contains no substances with occupational exposure limit values.

8.2. Exposure Controls:

- Appropriate Engineering Controls:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Personal Protective Equipment:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye & Face Protection-

Tightly Fitting safety glasses

Skin Protection-

Full contact-

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact-

Material: Nitrile rubber

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Minimum layer thickness: 0.11 mm

Break through time: 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Body Protection-

Protective Clothing

Respiratory Protection-

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental Exposure Controls-

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

- **Appearance:** White
- **Physical State:** Solid
- **Odor:** Odorless
- **Odor Threshold:** No data available
- **pH:** 6-7
- **Melting Point:** 212 °C
- **Critical Temperature:** No data available

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- **Vapor Pressure:** No data available
- **Density:** 4.35 g/cm³ at 20 °C
- **Viscosity Dynamic:** No data available
- **Viscosity Kinematic:** No data available
- **Lower Explosive Limit:** No data available
- **Upper Explosive Limit:** No data available
- **Decomposition Temperature:** > 444°C
- **Volatility:** No data available
- **Bulk Density:** ca.2.350 kg/m³
- **Water/Oil Dist. Co eff.:** No data available
- **Partition coefficient: n-octanol/water:** log Pow: 5
- **Ionicity (in Water):** No data available
- **Boiling Point/Range:** 444 °C
- **Flash Point:** No data available
- **Specific Gravity:** No data available
- **Ignition Temperature:** No data available
- **Water Solubility:** Easily soluble in water, ether

9.2. Other information:

- **Molecular Weight:** 169.87 g/mol
- **Molecular Formula:** AgNO₃

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Has a corrosive effect

10.2. Chemical stability:

Oxidizer: Contact with combustible/organic material may cause fire. Light sensitive.

10.3. Possibility of hazardous reactions:

Risk of explosion with:

Acetaldehyde, Acetylene, Nitriles, Ammonia, ammonium hydroxide, azides, combustible substances, carbides, ethanol, Fluoroacetylene, Hydrazine hydrate, acetylidene, Sodium hydroxide, Nitromethane, Organic Substances, phosphorus, phosphorus hydrogen, sulfur, Titanium, Zinc, charcoal,

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Activated charcoal

Ammonia, with ethanol

Ammonia, with, Sodium hydroxide solution

powdered magnesium, with, Water

Risk of ignition or formation of inflammable gases or vapours with:

arsenic, oxidisable substances

Exothermic reaction with:

nonmetals, oxidisable substances, iodides, strong reducing agents, halogen-halogen compounds

10.4. Conditions to avoid:

Strong Heating (Decomposition).

Exposure to light.

10.5. Incompatible materials:

Aluminium, Mild steel, Metals.

10.6. Hazardous decomposition products:

In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute toxicity

Acute toxicity estimate Oral - 1.173 mg/kg

(Calculation method)

LD50 Oral - Rat - male and female - 3.804 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 0,075 mg/l

(OECD Test Guideline 403)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Corrosive - 3 - 60 min

(OECD Test Guideline 431)

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(Regulation (EC) No 1272/2008, Annex VI)

Serious Eye damage/eye irritation

Causes serious eye damage. Risk of permanent damage due to staining of the cornea.

Respiratory or Skin sensitization

No data available

Germ cell mutagenicity

Test Type: Micronucleus test

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 487

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: Positive results were obtained in some in vitro tests.

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information:

Repeated dose toxicity - Rat - male and female - Oral - 52 Days - NOAEL

(No observed adverse effect level) - >= 250 mg/kg

RTECS: VW4725000

May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver)., Absorption into the body leads to the formation of methemoglobin which

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in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Toxicity to fish:

Semi-static test LC50 - Pimephales promelas (fathead minnow) – 0.0012 mg/l - 96 h (US-EPA)

Toxicity daphnia and other aquatic invertebrates:

Semi-static test LC50 - Daphnia magna (Water flea) - 0,00022 mg/l - 48 h Remarks: (ECHA)

Toxicity to algae:

No data available

Toxicity to bacteria:

No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

No data available

12.2 Persistence and degradability:

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulate potential:

Bioaccumulation Cyprinus carpio (Carp) - 41 d at 20 °C (Silver nitrate)

Bioconcentration factor (BCF): 70

12.4 Mobility in soil:

No data available

12.5 Results of PBT and vPvB assessment:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects:

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

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Waste material must be disposed of in accordance with the national and local regulations.

Leave chemicals in original containers. No mixing with other waste.

Handle uncleaned containers like the product itself.

SECTION 14: Transport information

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	UN1493		
14.2 Proper shipping name	SILVER NITRATE		
14.3 Class	5.1		
14.4 Packing group	II		
14.5 Environmentally hazardous	Yes	Yes	Yes
14.6 Special precautions for user	Yes Tunnel Restriction Code E	No	Yes EmS F-A S-F
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not Relevant		

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

National Legislation

Storage Class 5.1B

15.2 Chemical safety assessment:

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

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- H272 May intensify fire, oxidizer.
- H290 May be corrosive to metals.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

Training advice: -

Provide adequate information, instruction and training for operators.

References: Not available

Created: 23/08/2021

Disclaimer:

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Finar Limited be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Finar Limited has been advised of the possibility of such damages.