

**SAFETY DATA SHEET**

Creation Date 26-Jun-2009

Revision Date 04-Jul-2024

Revision Number 4

**1. Identification**

**Product Name** Silver nitrate

**Cat No. :** A13854

**CAS No** 7761-88-8  
**Synonyms** Nitric acid, silver salt.

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

**Details of the supplier of the safety data sheet****Company**

Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757

**Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

**2. Hazard(s) identification****Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|  |              |
|--|--------------|
| Oxidizing solids                                 | Category 2   |
| Corrosive to metals                              | Category 1   |
| Skin Corrosion/Irritation                        | Category 1 B |
| Serious Eye Damage/Eye Irritation                | Category 1   |
| Reproductive Toxicity                            | Category 1B  |
| Specific target organ toxicity (single exposure) | Category 3   |
| Target Organs - Respiratory system.              |              |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

May intensify fire; oxidizer

May be corrosive to metals  
Causes severe skin burns and eye damage  
May cause respiratory irritation  
May damage the unborn child



### Precautionary Statements

#### Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep/Store away from clothing/ other combustible materials  
Take any precaution to avoid mixing with combustibles  
Keep only in original container

#### Response

Immediately call a POISON CENTER or doctor/physician

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

#### Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

#### Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### Spills

Absorb spillage to prevent material damage

#### Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed  
Store in corrosive resistant polypropylene container with a resistant liner  
Store in a dry place

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

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

### 4. First-aid measures

|  |  |
|--|--|
| <b>General Advice</b>                      | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.  |
| <b>Eye Contact</b>                         | 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.  |
| <b>Skin Contact</b>                        | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.  |
| <b>Inhalation</b>                          | 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. |
| <b>Ingestion</b>                           | Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.   |
| <b>Most important symptoms and effects</b> | 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  |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

## 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. |
| <b>Unsuitable Extinguishing Media</b>   | Carbon dioxide (CO <sub>2</sub> )   |
| <b>Flash Point</b>                      | No information available  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | No information available  |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | No data available   |
| <b>Lower</b>                            | No data available   |
| <b>Oxidizing Properties</b>             | Oxidizer  |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

### 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.

### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>). Silver oxides.

### Protective Equipment and Precautions for Firefighters

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.

### NFPA

**Health**  
3

**Flammability**  
0

**Instability**  
2

**Physical hazards**  
OX

## 6. Accidental release measures

|                             |  |
|-----------------------------|--|
| <b>Personal Precautions</b> | Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid |
|-----------------------------|--|

**Environmental Precautions** contact with skin, eyes or clothing.  
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** 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.

## 7. Handling and storage

**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.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Corrosives area. Incompatible Materials. Strong reducing agents. Combustible material. Metals. Amines.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component      | ACGIH TLV                   | OSHA PEL                              | NIOSH   | Mexico OEL (TWA)                                       |
|----------------|-----------------------------|---------------------------------------|---|--|
| Silver nitrate | TWA: 0.01 mg/m <sup>3</sup> | (Vacated) TWA: 0.01 mg/m <sup>3</sup> | IDLH: 10 mg/m <sup>3</sup><br>TWA: 0.01 mg/m <sup>3</sup> | TWA: 0.01 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> |

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**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.

### Personal Protective Equipment

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended Filter type:** Particulates filter conforming to EN 143.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|                |                          |
|----------------|--------------------------|
| Physical State | Solid                    |
| Appearance     | White                    |
| Odor           | Odorless                 |
| Odor Threshold | No information available |

|  |                              |
|--|------------------------------|
| pH                                     | 5.4-6.4 10% aq solution      |
| Melting Point/Range                    | 212 °C / 413.6 °F            |
| Boiling Point/Range                    | 444 °C / 831.2 °F @ 760 mmHg |
| Flash Point                            | No information available     |
| Evaporation Rate                       | Not applicable               |
| Flammability (solid,gas)               | No information available     |
| Flammability or explosive limits       |                              |
| Upper                                  | No data available            |
| Lower                                  | No data available            |
| Vapor Pressure                         | No information available     |
| Vapor Density                          | Not applicable               |
| Specific Gravity                       | No information available     |
| Solubility                             | Soluble in water             |
| Partition coefficient; n-octanol/water | No data available            |
| Autoignition Temperature               | No information available     |
| Decomposition Temperature              | > 444°C                      |
| Viscosity                              | Not applicable               |
| Molecular Formula                      | Ag N O3                      |
| Molecular Weight                       | 169.87                       |

## 10. Stability and reactivity

|                                  |  |
|----------------------------------|--|
| Reactive Hazard                  | 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 (NOx), Silver oxides   |
| Hazardous Polymerization         | Hazardous polymerization does not occur.   |
| Hazardous Reactions              | None under normal processing.  |

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component      | LD50 Oral            | LD50 Dermal               | LC50 Inhalation              |
|----------------|----------------------|---------------------------|------------------------------|
| Silver nitrate | > 2000 mg/kg ( Rat ) | LD50 > 2000 mg/kg ( Rat ) | LC50 > 750 µg/m³ ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|                 |  |
|-----------------|--|
| Irritation      | Causes burns by all exposure routes  |
| Sensitization   | No information available   |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component      | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|----------------|-----------|------------|------------|------------|------------|------------|
| Silver nitrate | 7761-88-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

|   |  |
|---|--|
| <b>Mutagenic Effects</b>                          | No information available   |
| <b>Reproductive Effects</b>                       | No information available.  |
| <b>Developmental Effects</b>                      | No information available.  |
| <b>Teratogenicity</b>                             | No information available.  |
| <b>STOT - single exposure</b>                     | Respiratory system   |
| <b>STOT - repeated exposure</b>                   | None known   |
| <b>Aspiration hazard</b>                          | No information available   |
| <b>Symptoms / effects, both acute and delayed</b> | 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 |
| <b>Endocrine Disruptor Information</b>            | No information available   |
| <b>Other Adverse Effects</b>                      | The toxicological properties have not been fully investigated.   |

## 12. Ecological information

### Ecotoxicity

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 Algae | Freshwater Fish                      | Microtox   | Water Flea            |
|----------------|------------------|--------------------------------------|--|-----------------------|
| Silver nitrate | Not listed       | Leuciscus idus: LC50: 0.029 mg/L/96h | Photobacterium phosphoreum: EC50: 0.038 mg/L/24h<br>Photobacterium phosphoreum: EC50: 0.395 mg/L/15min<br>Photobacterium phosphoreum: EC50: 0.44 mg/L/30 min as Ag++<br>Photobacterium phosphoreum: EC50: 0.86 mg/L/15 min as Ag++ | EC50: 0.0006 mg/L/48h |

|                                      |   |
|--------------------------------------|---|
| <b>Persistence and Degradability</b> | May persist based on information available.                           |
| <b>Bioaccumulation/ Accumulation</b> | No information available.   |
| <b>Mobility</b>                      | Will likely be mobile in the environment due to its water solubility. |

| Component      | log Pow |
|----------------|---------|
| Silver nitrate | 0.19    |

## 13. Disposal considerations

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Methods</b> | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
|-------------------------------|---|

## 14. Transport information

### DOT

|                             |                |
|-----------------------------|----------------|
| <b>UN-No</b>                | UN1493         |
| <b>Proper Shipping Name</b> | SILVER NITRATE |
| <b>Hazard Class</b>         | 5.1            |

|                         |                |
|-------------------------|----------------|
| Subsidiary Hazard Class | 8              |
| Packing Group           | II             |
| <b>TDG</b>              |                |
| UN-No                   | UN1493         |
| Proper Shipping Name    | SILVER NITRATE |
| Hazard Class            | 5.1            |
| Packing Group           | II             |
| <b>IATA</b>             |                |
| UN-No                   | UN1493         |
| Proper Shipping Name    | Silver nitrate |
| Hazard Class            | 5.1            |
| Packing Group           | II             |
| <b>IMDG/IMO</b>         |                |
| UN-No                   | UN1493         |
| Proper Shipping Name    | Silver nitrate |
| Hazard Class            | 5.1            |
| Packing Group           | II             |

## 15. Regulatory information

### United States of America Inventory

| Component      | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|----------------|-----------|------|---|-----------------------------|
| Silver nitrate | 7761-88-8 | X    | ACTIVE  | -                           |

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component      | CAS No    | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|----------------|-----------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Silver nitrate | 7761-88-8 | X   | -   | 231-853-9 | X     | X    | X    | X    | X     | KE-31281 |

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### U.S. Federal Regulations

#### SARA 313

| Component      | CAS No    | Weight % | SARA 313 - Threshold Values % | SARA 313 - Reporting thresholds |
|----------------|-----------|----------|-------------------------------|---------------------------------|
| Silver nitrate | 7761-88-8 | <=100    | 1.0 %                         | -                               |

#### SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### CWA (Clean Water Act)

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|-----------|----------------------------|-----------------------------|------------------------|---------------------------|
|-----------|----------------------------|-----------------------------|------------------------|---------------------------|

|                |   |      |   |   |
|----------------|---|------|---|---|
| Silver nitrate | X | 1 lb | X | - |
|----------------|---|------|---|---|

**Clean Air Act** Not applicable

**OSHA** - Occupational Safety and Health Administration Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component      | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|----------------|--------------------------|---|-------------------------------|
| Silver nitrate | 1 lb                     | -   | 1 lb<br>0.454 kg              |

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component      | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------|---------------|------------|--------------|----------|--------------|
| Silver nitrate | X             | X          | X            | X        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component      | CAS No    | 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 | 7761-88-8 | -   | Use restricted. See entry 75.<br>(see link for restriction details)           | -   |

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component      | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|----------------|-----------|----------|------------------------------|---------------------------|--|
| Silver nitrate | 7761-88-8 | Listed   | Not applicable               | Not applicable            | Not applicable                             |



Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

| Component      | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|----------------|-----------|---|--|----------------------------|------------------------------------|
| Silver nitrate | 7761-88-8 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

### 16. Other information

**Prepared By**

Health, Safety and Environmental Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

**Creation Date**

26-Jun-2009

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04-Jul-2024

**Print Date**

04-Jul-2024

**Revision Summary**

New emergency telephone response service provider.

**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 SDS**