



MATERIAL SAFETY DATA SHEET

Silver nitrate

Section 1 - Chemical Product and Company Identification

MSDS Name: Silver nitrate

Catalog Numbers: BP/S140/60, S/1240/46, S/1240/48, S/1240/50, S/1240/53, S/1240/60, S/1240/71, S/1280/46, S/1280/48, S/1280/50, S/1280/53, S/1280/60, S/1280/68

Synonyms: Nitric acid, silver salt.

Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
7761-88-8	Silver nitrate	> 99	231-853-9

Hazard Symbols: O C N



Risk Phrases: 34 50/53 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Causes burns. Contact with combustible material may cause fire. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Eye: Causes eye burns.

Skin: Causes skin burns.

Ingestion: Causes gastrointestinal tract burns. Ingestion of soluble silver salts may cause argyria, characterized by permanent blue-gray pigmentation of the skin, mucous membranes, and eyes.

Inhalation: Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Inhalation of silver metal dust and fume or of soluble silver compounds may eventually cause argyria, an unsightly blue-gray discoloration of the skin and mucous membranes, including gum tissue and conjunctiva of the eyes.

Chronic: May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. Chronic inhalation or ingestion of silver salts may cause argyria characterized by a permanent blue-gray discoloration of the eyes, skin, mucous membranes, and internal organs. This malady results from the accumulation of silver in the body.

Section 4 - First Aid Measures

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.
- Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
- Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

- General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
- Extinguishing Media:** Use flooding quantities of water as spray.

Section 6 - Accidental Release Measures

- General Information:** Use proper personal protective equipment as indicated in Section 8.
- Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

- Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Use with adequate ventilation. Keep from contact with clothing and other combustible materials. Discard contaminated shoes. Do not breathe dust. Inform laundry personnel of contaminant's hazards.
- Storage:** Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light. Avoid storage on wood floors.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

CAS# 7761-88-8:

United Kingdom, WEL - TWA: (silver soluble compounds): 0.01 mg/m³ TWA (as Ag)
United Kingdom, WEL - STEL: (silver soluble compounds): 0.03 mg/m³ STEL (as Ag)

United States OSHA: 0.01 mg/m³ TWA (as Ag) (Silver soluble compounds).

Belgium - TWA: (silver soluble compounds): 0.01 mg/m³ VLE (as Ag)

France - VME: (silver soluble compounds): 0.01 mg/m³ VME (as Ag)

Germany: (silver soluble compounds): 0.01 mg/m³ VME (as Ag)

Japan: (silver compounds): 0.01 mg/m³ OEL (as Ag)
Malaysia: (silver soluble compounds): 0.01 mg/m³ TWA (as Ag)
Netherlands: (silver soluble compounds): 0.01 mg/m³ MAC (as Ag)
Spain: (silver soluble compounds): 0.01 mg/m³ VLA-ED (as Ag)

Personal Protective Equipment

Eyes: 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: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Color: white
Odor: odorless
pH: ~ 6 (aq soln)
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: 433 deg C (811.40°F)
Freezing/Melting Point: 212 deg C (413.60°F)
Autoignition Temperature: Not applicable
Flash Point: Not applicable.
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature:
Solubility in water: Soluble
Specific Gravity/Density: 4.35
Molecular Formula: AgNO₃
Molecular Weight: 169.87

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Becomes gray or grayish-black on exposure to light in the presence of organic matter.

Conditions to Avoid: Heating to decomposition, excess light, contamination.

Incompatibilities with Other Materials Strong reducing agents, strong bases, alcohols, ammonia, hydrogen peroxide, acetylene, organic matter, charcoal.

Hazardous Decomposition Products Nitrogen oxides, oxygen, oxides of silver.

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 7761-88-8: VW4725000

LD50/LC50: RTECS:
CAS# 7761-88-8: Draize test, rabbit, eye: 1 mg Severe;
Draize test, rabbit, eye: 10 mg Moderate;
Oral, mouse: LD50 = 50 mg/kg;
Oral, rat: LD50 = 1173 mg/kg;

Other: Lethal oral dose for humans estimated at 28.6 mg/kg.

Carcinogenicity: Silver nitrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	SILVER NITRATE	SILVER NITRATE	SILVER NITRATE
Hazard Class:	5.1	5.1	5.1
UN Number:	1493	1493	1493
Packing Group:	II	II	II

USA RQ: CAS# 7761-88-8: 1 lb final RQ; 0.454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: O C N

Risk Phrases:

R 34 Causes burns.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 7761-88-8: 3

Canada

CAS# 7761-88-8 is listed on Canada's DSL List

US Federal

TSCA

CAS# 7761-88-8 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 5/17/1999

Revision #8 Date 3/16/2007

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 the company 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 the company has been advised of the possibility of such damages.
