

# Material Safety Data Sheet

## Silver nitrate, ultrapure grade

ACC# 96476

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Silver nitrate, ultrapure grade

**Catalog Numbers:** AC419360000, AC419361000, AC419365000

**Synonyms:** Nitric acid, silver salt.

**Company Identification:**

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7761-88-8	Silver nitrate	100	231-853-9

**Hazard Symbols:** O C N

**Risk Phrases:** 34 8

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: colorless or white solid. **Danger!** Strong oxidizer. Contact with other material may cause a fire. Corrosive. Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Blue-gray permanent discoloration of the skin, conjunctiva, and internal organs, known as argyria or argyrosis, results from chronic exposure to silver or silver salts.

**Target Organs:** Eyes, skin, mucous membranes.

#### Potential Health Effects

**Eye:** Causes eye burns. May cause chemical conjunctivitis and corneal damage.

**Skin:** Causes skin burns. May be absorbed through the skin.

**Ingestion:** Causes gastrointestinal tract burns. May cause systemic effects. Lethal dose for humans is 2 grams.

**Inhalation:** Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause systemic effects.

**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:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Treat symptomatically and supportively.

### 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 combustible materials may cause a fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 1; Special Hazard: OX

## 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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use with adequate ventilation. Do not store near combustible materials. Discard contaminated shoes.

**Storage:** Keep away from sources of ignition. Do not store near combustible materials. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area.

## 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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Silver nitrate	none listed	none listed	none listed

**OSHA Vacated PELs:** Silver nitrate: No OSHA Vacated PELs are listed for this chemical.

### 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 a respirator's use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** colorless or white

**Odor:** odorless

**pH:** ~ 6 (aq soln)

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 433 deg C

**Freezing/Melting Point:** 212 deg C

**Decomposition Temperature:** 440 deg C

**Solubility:** Soluble.

**Specific Gravity/Density:** 4.35

**Molecular Formula:** AgNO<sub>3</sub>

**Molecular Weight:** 169.87

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Heating to decomposition.

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

**Hazardous Decomposition Products:** Nitrogen oxides, oxygen.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

### RTECS#:

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

### LD50/LC50:

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;

**Carcinogenicity:**

CAS# 7761-88-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** No information available.**Teratogenicity:** No information available.**Reproductive Effects:** No information available.**Neurotoxicity:** No information available.**Mutagenicity:** No information available.**Other Studies:** See actual entry in RTECS for complete information.

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
<b>Shipping Name:</b>	SILVER NITRATE				No information available.
<b>Hazard Class:</b>	5.1				
<b>UN Number:</b>	UN1493				
<b>Packing Group:</b>	II				

## Section 15 - Regulatory Information

**US FEDERAL****TSCA**

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

**Health & Safety Reporting List**

None of the chemicals are on the Health &amp; Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**SARA****CERCLA Hazardous Substances and corresponding RQs**

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

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**SARA Codes**

CAS # 7761-88-8: acute, chronic, flammable.

**Section 313**

This material contains Silver nitrate (listed as Silver compounds), 100%, (CAS# 7761-88-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**

CAS# 7761-88-8 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 7761-88-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

O C N

**Risk Phrases:**

R 34 Causes burns.

R 8 Contact with combustible material may cause fire.

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

**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 - DSL/NDSL**

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

**Canada - WHMIS**

This product has a WHMIS classification of C, D1A, E.

**Canadian Ingredient Disclosure List**

CAS# 7761-88-8 is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits**

CAS# 7761-88-8: OEL-ARAB Republic of Egypt:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-AUSTRALIA:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-BELGIUM:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-DENMARK:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-FINLAND:TWA 0.01 mg(Ag)/m<sup>3</sup>;STEL 0.03 mg(Ag)/m<sup>3</sup>;Skin OEL-THE NETHERLANDS:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-THE PHILIPPINES:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-SWITZERLAND:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL-UNITED KINGDOM:TWA 0.01 mg(Ag)/m<sup>3</sup> OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

## Section 16 - Additional Information

**MSDS Creation Date:** 4/05/1997

**Revision #5 Date:** 12/18/2001

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