

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

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## Silver Nitrate, Reagent Grade

### SECTION 1 : Identification of the substance/mixture and of the supplier

**Product name :** Silver Nitrate, Reagent Grade

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number: S25525A**

**Recommended uses of the product and uses restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific  
9 Barnhart Drive, Hanover, PA 17331

**Supplier Details:**

Fisher Science Education  
15 Jet View Drive, Rochester, NY 14624

**Emergency telephone number:**

Fisher Science Education Emergency Telephone No.: 800-535-5053

### SECTION 2 : Hazards identification

**Classification of the substance or mixture:**



**Oxidizing**

Oxidizing solids, category 2



**Corrosive**

Skin corrosion, category 1B  
Corrosive to metals, category 1



**Environmentally Damaging**

Chronic hazards to the aquatic environment, category 1  
Acute hazards to the aquatic environment, category 1

Skin Corrosion 1B  
Aquatic Chronic Toxicity 1  
Corrosive to Metals 1  
Eye Irritation 2  
Aquatic Acute Toxicity 1  
Oxidizing solid 2

**Signal word :**Danger

**Hazard statements:**

May intensify fire; oxidizer  
May be corrosive to metals  
Causes severe skin burns and eye damage  
Very toxic to aquatic life with long lasting effects

**Precautionary statements:**

If medical advice is needed, have product container or label at hand  
Keep out of reach of children  
Read label before use

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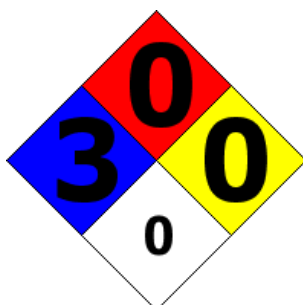
Do not eat, drink or smoke when using this product  
Keep away from heat/sparks/open flames/hot surfaces - No smoking  
Take any precaution to avoid mixing with combustibles  
Keep only in original container  
Do not breathe dust/fume/gas/mist/vapours/spray  
Wash skin thoroughly after handling  
Keep/Store away from clothing/combustible materials  
Wear protective gloves/protective clothing/eye protection/face protection  
Keep away from heat/sparks/open flames/hot surfaces - No smoking  
Keep/Store away from clothing/.../combustible materials  
Take any precaution to avoid mixing with combustibles  
Avoid release to the environment  
Immediately call a POISON CENTER or doctor/physician  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Collect spillage  
Rinse skin with water/shower  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Specific treatment (see supplemental first aid instructions on this label)  
In case of fire: Use agents recommended in section 5 for extinction  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing  
Store locked up  
Store in corrosive resistant stainless steel container with a resistant inner liner  
Dispose of contents and container to an approved waste disposal plant

### Other Non-GHS Classification:

### WHMIS



### NFPA/HMIS



NFPA SCALE (0-4)

Health	3
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

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### SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 7761-88-8	Silver Nitrate, ACS	>99 %
Percentages are by weight		

### SECTION 4 : First aid measures

#### Description of first aid measures

**After inhalation:** Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device

**After skin contact:** Seek medical advice if discomfort or irritation persists. Rinse/flush exposed area gently using water for 15-20 minutes.

**After eye contact:** Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention immediately.

**After swallowing:** Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation, discomfort or vomiting persists. Have exposed individual drink sips of water or milk.

#### Most important symptoms and effects, both acute and delayed:

Skin Irritation. Respiratory Irritation. Causes burns by all exposure routes. Targets eyes, skin, mucous membranes. Nausea, Headache, Shortness of breath. Burning of eyes. Redness, tearing. Eye Irritation; 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.

#### Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Note to physician: Treat symptomatically.

### SECTION 5 : Firefighting measures

#### Extinguishing media

**Suitable extinguishing agents:** If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Use water spray, dry chemical, carbon dioxide, or chemical foam.

**For safety reasons unsuitable extinguishing agents:**

#### Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. Other toxic vapors include zinc and sulfur oxides. 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. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated. This material is an oxidizer; it greatly increases the burning rate of combustible materials.

#### Advice for firefighters:

**Protective equipment:** Use NIOSH-approved respiratory protection/breathing apparatus. Wear protective clothing and equipment.

**Additional information (precautions):** Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Do not allow fire protection water to enter sewer or discharge to open water. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. This material is very toxic to aquatic life with long lasting effects.

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### SECTION 6 : Accidental release measures

#### Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Keep away from combustibles. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Avoid contact with skin and eyes, and clothing. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

#### Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Collect liquids using vacuum or by use of non-combustible absorbents.

#### Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Collect solids in powder form using vacuum with (HEPA filter)

#### Reference to other sections:

### SECTION 7 : Handling and storage

#### Precautions for safe handling:

Prevent formation of aerosols. Protect from freezing and physical damage. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Use spark-proof tools. Remove all sources of ignition. Empty containers retain product residue and can be hazardous. Do not reuse container. Wash hands after handling.

#### Conditions for safe storage, including any incompatibilities:

Store in a cool location. Protect from light. Store locked up. The product has a corrosive effect on steel and aluminum. Protect from freezing and physical damage. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store in cool, dry conditions in well sealed containers. Keep container tightly sealed. Do not store near combustible materials or strong bases.

### SECTION 8 : Exposure controls/personal protection



#### Control Parameters:

7761-88-8, Silver nitrate, ACGIH TLV: (metal): 0.1 mg/m<sup>3</sup>  
7761-88-8, Silver nitrate, OSHA PEL: TWA (as Ag) 0.01 mg/m<sup>3</sup>  
7761-88-8, Silver nitrate, NIOSH REL: TWA (as Ag) 0.01 mg/m<sup>3</sup>  
7761-88-8, Silver nitrate, NIOSH IDLH: 10 mg/m<sup>3</sup> (as Ag)

#### Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

#### Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

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<b>Protection of skin:</b>	The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. Wear protective equipment to prevent contact with skin, eyes, or hair
<b>Eye protection:</b>	Safety glasses with side shields or goggles.
<b>General hygienic measures:</b>	The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin. Launder clothing that has come in contact with the substance before reuse

### SECTION 9 : Physical and chemical properties

<b>Appearance (physical state,color):</b>	White powder	<b>Explosion limit lower: Explosion limit upper:</b>	Not determined Not determined
<b>Odor:</b>	Odorless	<b>Vapor pressure:</b>	Not determined
<b>Odor threshold:</b>	Not determined	<b>Vapor density:</b>	Not determined
<b>pH-value:</b>	~6 (1% soln/water)	<b>Relative density:</b>	Not determined
<b>Melting/Freezing point:</b>	212 C	<b>Solubilities:</b>	Soluble in water
<b>Boiling point/Boiling range:</b>	433 C	<b>Partition coefficient (n-octanol/water):</b>	Not determined
<b>Flash point (closed cup):</b>	Not applicable	<b>Auto/Self-ignition temperature:</b>	Not determined
<b>Evaporation rate:</b>	Not determined	<b>Decomposition temperature:</b>	Not determined
<b>Flammability (solid,gaseous):</b>	Not applicable	<b>Viscosity:</b>	a. Kinematic: Not determined b. Dynamic: Not determined
<b>Density:</b> Not determined <b>Specific Gravity:</b> 4.35			

### SECTION 10 : Stability and reactivity

**Reactivity:** Nonreactive under normal conditions.

**Chemical stability:** No decomposition if used and stored according to specifications. Becomes gray or grayish-black on exposure to light in the presence of organic matter.

**Possible hazardous reactions:** Material can react violently with combustible materials, reducing agents, aqueous ammonia. Hazardous reactions or instability may occur under certain conditions of storage or use, such as contact with combustible materials resulting in causing or intensifying fire. Reacts with alcohol to form explosive fulminate

**Conditions to avoid:** Dust. Excess heat. Incompatible materials. Combustible materials. Ignition sources. Excess light. Contamination. heating to decomposition

**Incompatible materials:** Ammonia. Organic matter. Alcohols. Charcoal. Acetylene. Hydrogen peroxide. Strong bases. Reducing agents

**Hazardous decomposition products:** Nitrogen oxides (NOx). Silver oxides. Oxygen

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### SECTION 11 : Toxicological information

<b>Acute Toxicity:</b>		
<b>Oral:</b>	1173 mg/kg	LD50 orl-rat (Silver nitrate 7761-88-8):
<b>Chronic Toxicity:</b> No additional information.		
<b>Corrosion Irritation:</b>		
<b>Ocular:</b>	Section 2	Classified as eye damage
<b>Dermal:</b>	Section 2	Classified as a skin irritant
<b>Ocular:</b>	Section 2	Classified as an eye irritant
<b>Sensitization:</b>		No additional information.
<b>Single Target Organ (STOT):</b>		No additional information.
<b>Numerical Measures:</b>		No additional information.
<b>Carcinogenicity:</b>		Not listed as a carcinogen (ACGIH, IARC, NTP): Silver Nitrate
<b>Mutagenicity:</b>		No additional information.
<b>Reproductive Toxicity:</b>		No additional information.

### SECTION 12 : Ecological information

#### Ecotoxicity

**Fish: LC50 (96h) P. promelas (aged 1-4 days) (7761-88-8):** 1.2 µg dissolved Ag/L

**Fish: LC50 (96h) P. promelas (aged 41 days) (7761-88-8):** 10.4 µg dissolved Ag/L

**Fish: EC10 (mortality)196 day O. mykiss (7761-88-8) :** 0.17 ug dissolved Ag/L

**Persistence and degradability:**

**Bioaccumulative potential:**

**Mobility in soil:**

**Other adverse effects:** Very toxic to aquatic life with long lasting effects

### SECTION 13 : Disposal considerations

#### Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

### SECTION 14 : Transport information

#### UN-Number

1493

#### UN proper shipping name

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Silver Nitrate

### Transport hazard class(es)



**Class:**

5.1 Oxidizing substances

**Packing group:**II

**Environmental hazard:**

**Transport in bulk:**

**Special precautions for user:**

## SECTION 15 : Regulatory information

### United States (USA)

**SARA Section 311/312 (Specific toxic chemical listings):**

Reactive, Acute, Fire

**SARA Section 313 (Specific toxic chemical listings):**

7761-88-8 Silver compounds (Silver nitrate) [313c]

**RCRA (hazardous waste code):**

None of the ingredients is listed

**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):**

7761-88-8 Silver Nitrate 1 lb

### Proposition 65 (California):

**Chemicals known to cause cancer:**

None of the ingredients is listed

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed

**Chemicals known to cause developmental toxicity:**

None of the ingredients is listed

### Canada

**Canadian Domestic Substances List (DSL):**

All ingredients are listed.

**Canadian NPRI Ingredient Disclosure list (limit 0.1%):**

None of the ingredients is listed

**Canadian NPRI Ingredient Disclosure list (limit 1%):**

7761-88-8 Silver nitrate

## SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to

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provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

#### GHS Full Text Phrases:

#### Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

Effective date : 10.24.2014

Last updated : 03.19.2015