*Phyto*Technology Laboratories®

# SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Silver Nitrate, ACS Reagent

PRODUCT NUMBER: S169

COMPANY INFO: *Phyto*Technology Laboratories®
PO Box 12205, Shawnee, KS 66282-2205
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EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only
1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *Phyto*Technology Laboratories® are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification:

H272 – Oxidizing solids (Category 2)
H302 – Acute toxicity, Oral (Category 4)
H314 – Skin corrosion (Category 1B)
H318 – Serious eye damage (Category 1)
H400 – Acute aquatic toxicity (Category 1)
H410 – Chronic aquatic toxicity (Category 1)

GHS Label elements, including hazard and precautionary statements:

Pictogram: 

Signal Word: Danger

Hazard Statements:

H272 – May intensify fire; oxidizer.
H302 – Harmful if swallowed.
H314 – Causes severe skin burn and eye damage.
H318 – Cause serious eye damage.
H410 – Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P210 – Keep away from heat.
P221 – Take any precaution to avoid mixing with combustibles.
P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Not available

CAS No.: 7761-88-8

Formula: $AgNO_3$

Molecular Weight: 169.89 g/mol

EC No.: 231-853-9

| Ingredient | CAS Number | Percent | Hazardous |
|---|---|---|---|
| Silver Nitrate | 7761-88-8 | >99 % | ACGIH TLV: 0.01 mg (Ag)/$m^3$ |

## 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

| Route of Entry | Symptoms | First Aid Procedures |
|---|---|---|
| Ingestion | May cause irritation if swallowed | If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. **Get medical attention.** |
| Inhalation | May cause irritation to respiratory tract | Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. **Get medical attention.** |
| Eye Contact | Direct contact may cause irritation. May cause redness, tearing, or blurred vision. | Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. **Get medical attention if irritation persists.** |
| Skin Contact | Irritating. May cause reddening, itching or inflammation. | Wash area thoroughly with soap and water. Remove and wash contaminated clothing. **Get medical attention if irritation persists.** |

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

## 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.

Special Protective Equipment and Precaution for Firefighters: In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

Hazardous Combustion Products: May emit toxic fumes under fire conditions. Material is a strong oxidizer.

Toxic Gases Produced: Nitrogen oxides, silver oxides

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup: Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let products enter drains.

## 7. HANDLING AND STORAGE

Precaution for Safe Handling: Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Keep away from heat and sources of ignition. Wash thoroughly after use.

Conditions for Safe Storage: Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Protect from moisture and light. Product is hygroscopic and light-sensitive.

| | |
|---|---|
| Incompatibilities: | Strong oxidizing agent |
| Recommended Storage Temperature: | Room Temperature |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| OSHA's Permissible Exposure Limits (PELs): | 0.01 $mg/m^3$ |
| ACGIH's Threshold Limit Values (TLVs): | 0.01 $mg/m^3$ |
| Engineering Controls: | Handle in accordance to general industrial hygiene and safety practice. |

Personal Protective Equipment (PPE):

| | |
|---|---|
| Eye/Face Protection: | Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur. |
| Skin Protection: | Protective gloves |
| Body Protection: | Lab coat |
| Respiratory Protection: | Wear appropriate dust mask.<br>A NIOSH/MSHA approved air purifying respirator is recommended where airborne concentrations are expected to exceed exposure limits. Protection provided by purifying respirators is limited. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Off-white to beige crystals |
| pH (1.70 g/L): | Under Development (5.0 – 6.5 suspected range) |
| Solubility: | Soluble in Water |
| Melting Point: | 212 °C; Decomposes around 440 °C |
| Vapor Density: | No data available |
| Vapor Pressure: | No data available |
| Odor: | Odorless |
| Odor Threshold: | No data available |
| Viscosity: | No data available |
| Relative Density: | 4.35 $g/cm^3$ |
| Evaporation Rate: | No data available |
| Initial Boiling Point and Boiling Range: | 440 °C (824 °F) - Decomposes on heating. |
| Flammability (solid, gas): | No data available |
| Partition coefficient: n-octanol/water): | log Pow: 5 |
| Auto-ignition Temperature: | No data available |
| Decomposition Temperature: | No data available |
| Flash Point (Closed Cup): | No data available |
| Flammable Limits: | Upper (%) – No data available  Lower (%) – No data available |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| Reactivity: | No data available |
| Chemical Stability: | Stable under normal conditions of use |
| Possibility of Hazard Reactions: | Will not occur |
| Conditions to Avoid: | Moisture, light |
| Incompatibles Materials: | Strong reducing agents, Alcohols, Ammonia, Magnesium, Strong bases |
| Hazardous Decomposition Products: | Carbon monoxide, carbon dioxide |

## 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Toxicity: | $LD_{50}$ (Oral-Rat)(mg/Kg): | 1173 |
| | $LD_{50}$ (IP-Rat)(mg/Kg): | 83 |
| | $LD_{50}$ (Oral-Mouse)(mg/Kg): | 50 |

| | | |
|---|---|---|
| Carcinogenicity: | NTP: | No |
| | IARC: | No |
| | Z List: | No |
| | OSHA Reg: | No |

Reproductive Toxicity: No data available

Symptoms Associated with Overexposure: Irritation, itching, gastrointestinal upset, nausea, vomiting, headache, cyanosis, depression, breathing difficulties, pulmonary edema, liver or kidney impairment, blood effects, cardiac changes, weight loss or gain, possible mutagenic or tumorigenic effects, reproductive effects, convulsions, burns

| | | |
|---|---|---|
| Specific Target Organ Toxicity: | Single Exposure: | No data available |
| | Repeated Exposure: | No data available |

Target Organs: Liver

Medical Conditions Aggravated By Exposure: Pre-existing conditions

Routes of Entry: Ingestion, inhalation, skin and eye contact

NIOSH/RTECS NO: VW4725000

***The toxicological properties of this product have not been thoroughly investigated***

## 12. ECOLOGICAL INFORMATION

Ecotoxicity: Toxicity to fish mortality NOEC - Oncorhynchus mykiss (rainbow trout) - 0.108 mg/l - 96.0 h
mortality LOEC - Oncorhynchus mykiss (rainbow trout) - > 0.007 mg/l - 7.0 d
LC50 - Leuciscus idus (Golden orfe) - 0.029 mg/l - 96.0 h
LC50 - Oncorhynchus mykiss (rainbow trout) - 0.006 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.0006 mg/l - 48 h

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Other Adverse Effects: Very toxic to aquatic life

## 13. DISPOSAL CONSIDERATION

Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: No data available

## 14. TRANSPORT INFORMATION

| | | | |
|---|---|---|---|
| Domestic (D.O.T.): | Proper Shipping Name: | Silver Nitrate | |
| | Hazard Class: | 5.1 | Packaging group: II |
| | UN: | 1493 | |
| | Reportable Quantity (RQ): | 1 lb | |
| | Poison inhalation hazard: | No | |

International:

| | | | | |
|---|---|---|---|---|
| IMDG: | Proper Shipping Name: | Silver Nitrate | | |
| | Hazard Class: | 5.1 | Packaging group: II | EMS-No.: F-A, S-Q |
| | UN: | 1493 | | |
| | Marine pollutant: | Yes | | |
| IATA: | Proper Shipping Name: | Silver Nitrate | | |
| | Hazard Class: | 5.1 | Packaging group: II | |
| | UN: | 1493 | | |

**15. REGULATORY INFORMATION**

| | |
|---|---|
| TSCA: | Yes |
| SARA TITLE III: | |
| Section 302 (EHS) Ingredients: | No |
| Section 313 Ingredients: | No |
| Section 304 (EHS/CERCLA) Ingredients: | No |
| Section 311/312 Hazard: | Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard |
| Massachusetts Right to Know Components: | CAS No.: 7761-88-8 Silver nitrate |
| Pennsylvania Right to Know Components: | CAS No.: 7761-88-8 Silver nitrate |
| New Jersey Right to Know Components: | CAS No.: 7761-88-8 Silver nitrate |
| California Prop. 65 Components: | This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |

**16. OTHER INFORMATION**

| | | | | |
|---|---|---|---|---|
| **HMIS Rating:** | **Health Hazard** | **Chronic Health Hazard** | **Flammability** | **Physical Hazard** |
| | 3 | * | 0 | 2 |
| **NFPA Rating:** | **Health Hazard** | **Fire Hazard** | **Reactivity Hazard** | **Special Hazard** |
| | 3 | 0 | 2 | OX |

*Chronic Hazard: Chronic (long-term) health effects may result from repeated overexposure.

***Phyto*Technology Laboratories® provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. *Phyto*Technology Laboratories® shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

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