

# Safety Data Sheet

## Silver Nitrate, 1% in Acidulated Water, pH 4.0

### Section 1 - Chemical Product and Company Identification

**SDS Name:** Silver Nitrate, 1% in Acidulated Water, pH 4.0

**Catalog Numbers:** A-111-1, A-118-2

**Company Identification:** Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.  
10 ELECTRONICS AVENUE  
DANVERS, MA 01923

**For information, call:** 978-739-4883

**Emergency Number:** 800-424-9300

**For CHEMTREC assistance, call:** 800-424-9300

### Section 2 - Hazards Identification

#### GHS Classifications

H315-Skin corrosion/irritation: 2

H319-Serious eye damage/eye irritation: 2A

H373-Specific target organ toxicity, repeated exposure: 2

H400-Hazardous to the aquatic environment, acute hazard: 1

H410-Hazardous to the aquatic environment, long-term hazard: 1

#### Pictograms or Hazard Symbols and Hazard Statement(s):



Signal Word: Warning

#### Hazard Statements:

H315-Causes skin irritation

H319-Causes serious eye irritation

H373-May cause damage to organs through prolonged or repeated exposure (target organs: kidney and liver)

H400-Very toxic to aquatic life

H410-Very toxic to aquatic life with long lasting effects

## Precautionary Statements:

P260-Do not breathe dust/fume/gas/mist/vapours/spray.

P264-Wash thoroughly after handling.

P273-Avoid release to the environment.

P280-Wear protective gloves/eye protection/face protection.

P302+P352-If on skin: Wash with plenty of soap and water.

P305+P351+P338-If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314-Get medical advice/attention if you feel unwell.

P332+P313-If skin irritation occurs: Get medical advice/attention.

P337+P313-If eye irritation persists: Get medical advice/attention.

P362+P364-Take off contaminated clothing and wash it before reuse.

P391-Collect spillage.

P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

### Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
7761-88-8	Silver Nitrate	1 w/v
5949-29-1	Citric Acid Monohydrate	<0.1 w/v
7732-18-5	Water	Balance

### Section 4 - First Aid Measures

**Eye Exposure:** In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Get immediate medical attention.

**Dermal Exposure:** In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Get immediate medical attention.

**Oral Exposure:** If swallowed, get immediate medical advice. Do NOT induce vomiting. Rinse mouth with water.

**Inhalation Exposure:** If inhaled, remove to fresh air. If breathing becomes difficult, call a 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. During a fire, irritating gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** Use dry chemical, dry sand, water spray, or alcohol-resistant foam.

**Hazardous Combustion Products:** Carbon oxides, nitrogen oxides, silver/silver oxides, irritating and toxic fumes and gases.

**Flash Point:** Not available

**Autoignition Temperature:** Not available

**Explosion Limits, Lower:** Not available

**Upper:** Not available

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

## Section 6 - Accidental Release Measures

### **Procedure(s) of Personal Precaution(s):**

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation.

**Methods for Cleaning up:** Absorb with sand, earth, or vermiculite. Carefully sweep up and containerize for proper disposal. Do not release to the environment. Do not release to drains.

## Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Use only under a chemical fume hood. Avoid contact with eyes, skin, or clothing. Do not breathe (dust, vapors, gas, mist). Keep in a tightly closed and non-metal container. **Store in the refrigerator (4°C). Light sensitive.** Protect from heat. Keep away from incompatible materials.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. 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.

### **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.

**Exposure Limits:**

Chemical Name	ACGIH - TLV	NIOSH - IDLH	OSHA – PEL
Silver Nitrate CAS#7761-88-8	0.01 mg/m3 TWA	0.01 mg/m3 TWA 10 mg/m3 IDLH	0.01 mg/m3 TWA (vacated)
Citric Acid Monohydrate CAS#5949-29-1	Not listed	Not listed	Not listed

Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** Clear, colorless

**Odor:** Odorless

**Vapor Pressure:** Not available

**Odor Threshold:** Not available

**Vapor Density:** Not available

**pH:** 3.9-4.5

**Relative Density:** Not available

**Melting point/freezing point:** Not available

**Solubility:** Soluble in water

**Boiling Point:** Not available

**Flash Point:** Not available

**Evaporation Rate:** Not available

**Flammability (solid, gas):** Not available

**Partition coefficient: n-octanol/water:** Not available

**Autoignition Temperature:** Not available

**Decomposition Temperature:** Not available

**Viscosity:** Not available

**Specific Gravity/Density:** Not available

Section 10 - Stability and Reactivity

**Chemical Stability:** Stable in closed containers under normal storage and handling conditions. **Keep refrigerated (4 °C). Light sensitive.**

**Conditions to Avoid:** Avoid exposure to light. Avoid incompatible materials.

**Incompatible Materials:** Strong oxidizing agents, strong reducing agents, strong bases, hydrocarbons, acids, bases, acetylene, alkalis, halides, metals, amines, aluminum, mild steel metals, plastics, rubber, and coatings.

**Hazardous Decomposition Products:** Carbon oxides, nitrogen oxides, silver/silver oxides, irritating and toxic fumes and gases.

## Section 11 - Toxicological Information

### **CAS#7761-88-8 Silver Nitrate: RTECS#: VW4725000**

LD50 Oral: 1173 mg/kg (rat)

LD50 Dermal: >2000 mg/kg (rat)

LC50 Inhalation: >750 µg/m<sup>3</sup> 4h (rat)

**Carcinogenicity:** Silver Nitrate CAS#7761-88-8 is listed by IARC (Group 2A, Probably Carcinogenic to Humans). Silver Nitrate is not listed by NTP, ACGIH, OSHA, or California Prop. 65.

**Germ cell mutagenicity:** Mouse (lymphocyte), positive results were obtained in some in vitro mammalian cell gene mutation tests.

### **CAS#5949-29-1 Citric Acid Monohydrate: RTECS#: GE7810000**

LD50 Oral: 5.79 g/kg (mouse)

LD50 Dermal: Not available

LC50 Inhalation: Not available

**Carcinogenicity:** Citric Acid Monohydrate CAS#5949-29-1 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

**Information on the likely routes of exposure:** Routes of entry anticipated: oral, dermal, inhalation, and eye.

**Epidemiology:** Not available.

**Teratogenicity:** Not available.

**Reproductive Effects:** Not available.

**Developmental Effects:** Not available.

**Neurotoxicity:** Not available.

**Mutagenicity:** Not available.

**Specific Target Organ Toxicity, Single Exposure:** Not available.

**Specific Target Organ Toxicity, Repeated Exposure:** Kidney and liver.

**Symptoms associated with exposure:** Skin exposure may cause irritation, redness. Eye exposure may cause pain, irritation, watering, redness.

**The toxicological properties of this material have not been thoroughly investigated.**

## Section 12 - Ecological Information

**Ecotoxicity:** Do not release to the environment. Do not release to drains. Very toxic to aquatic life. May cause long-term adverse effects in the aquatic environment.

### **CAS#7761-88-8 Silver Nitrate:**

LC50, freshwater fish: 0.0012 mg/L 96h semi-static (pimephales promelas)(fathead

minnow)

ErC50, freshwater algae: 0.00252 mg/L 72h static (raphidocelis subcapitata)

EC50, water flea: 0.00022 mg/L 48h semi-static (daphnia magna)

**CAS#77-92-9 Citric Acid (anhydrous substance):**

LC50, freshwater fish: 440-760 mg/L 96h (leuciscus idus)(golden orfe)

EC50, water flea: 120 mg/L 72h (daphnia magna)

**Persistence and degradability:** Not available.

**Bio-accumulative potential:** Not available.

**Mobility:** Will likely be mobile in the environment due to its water solubility.

Section 13 - Disposal Considerations

**DISPOSAL:** Dispose of in accordance with all federal, state, and local regulations.

Section 14 - Transport Information

**DOT**

Non-Regulated

Section 15 - Regulatory Information

**Canada Regulatory Information**

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

Section 16 - Additional Information

**SDS Creation Date:** 1-22-04

**Revision #1:** 7-18-14 YM

**Revision #2:** 12-14-18

**Revision #3:** 3-3-22

**Revision #4:** 9-9-24

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