

Safety Data Sheet

Silver Nitrate, 2% in Acidulated Water, pH 4.0

Section 1 - Chemical Product and Company Identification

SDS Name: Silver Nitrate, 2% in Acidulated Water, pH 4.0

Catalog Numbers: A-111-2, A-118-3

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	2 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/m³ 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 no 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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