

## Safety Data Sheet: **L-400 Silver Solution**

### Section 1: Identification

Product Name:	L-400 Silver Solution
Manufacturer's Name:	Peacock Laboratories
Address:	1901 S. 54th Street
City, State, Zip:	Philadelphia, PA, 19143
Phone Number:	(215)-729-4000
Emergency Contact:	(215)-729-4000
Chemtrec:	(800)-424-9300

**Recommended Use:** Concentrated silver solution (to be used in conjunction with other Peacock solutions) with an aim towards plating metallic silver onto glass, epoxy, and certain other non-conductive substrates.

### Section 2: Hazards Identification

#### *2.1 Classification of the Substance or Mixture*

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion (Category 1), H314

Serious eye damage (Category 1), H318

Acute aquatic toxicity (Category 3), H401

Chronic aquatic toxicity (Category 3), H412

For the full text of H-Statements mentioned in this section, see Section 16.

**TSCA Status:** All components that make up this product are on the TSCA inventory.

#### *2.2 Label Elements*

#### **Hazard Pictogram**

**Signal Word: DANGER**



**Hazard Statement(s):**

- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H401 Toxic to aquatic life.
- H412 Harmful to aquatic life with long-lasting effects.

**Precautionary Statement(s)**

**[Prevention]**

- P264 Wash skin thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

**[Response]**

- P301 + P330 + P331 *IF SWALLOWED* , rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 *IF ON SKIN OR HAIR*, take off immediately all contaminated clothing. Rinse skin with water, or shower.
- P304 + P340 + P310 *IF INHALED* , move the person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- 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.
- P363 Wash contaminated clothing before reuse.

**[Storage]**

- P405 Store locked up.

**[Disposal]**

- P501 Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards Not Otherwise Classified (HNOC) or Not Covered by GHS Lachrymator, irritant that causes watering of the eyes.

**Section 3: Composition**

Ingredients	% by Weight	ACGIH TLV	CAS #	Hazardous?
Silver Diamine Complex	15-20%	.01 mg/ m <sup>3</sup>	23606-32-8	Yes

Ammonium Hydroxide	10-15%	35 mg/ m <sup>3</sup>	1336-21-6	Yes
Water	65-75%	-	7732-18-5	No

## Section 4: First Aid Measures

### *4.1 Description of First Aid Measures*

**GENERAL ADVICE:** In all cases of doubt, or when symptoms persist, consult a physician. Show this safety data sheet to the doctor in attendance.

**INHALATION:** If inhaled/breathed in, move the person to fresh air. If breathing has stopped, give artificial respiration. Seek medical attention.

**EYES:** Remove contact lenses if wearing them, and/or flush eyes copiously with clean water for at least 15 minutes, holding the eyelids apart.

**SKIN:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove all contaminated clothing and shoes. Once deposited (at the sight of injury) through breaks in skin, THERE IS NO KNOWN METHOD by which the silver can be eliminated. *The pigment is permanent.* Handle with care.

Wash clothing before reuse.

**INGESTION:** CALL A PHYSICIAN. This product is HIGHLY TOXIC via oral route. If the victim is conscious, give victim saltwater and/or milk to drink. Induce vomiting.

## Section 5: Fire Fighting Procedures

**Special Fire Fighting Procedures:** Mixture will not burn, but ammonia gas escaping can burn in range of 16-25% in air. Water will extinguish the flame.

Wear full protective clothing and a self-contained breathing apparatus in the pressure demand mode. Vapors in the range of 16-25% ammonia in air can explode in a confined space on contact with sources of ignition.

**Unusual Fire and Explosive Hazards:** Can form explosive if mixed with concentrated caustic material. When heated, material will give off ammonia gas, a strong irritant to eyes; exposed to extreme heat may develop pressure. Combustion of released ammonia may form nitrogen oxides.

## Section 6: Accidental Release Measures

**Steps to Take if Material is Released/Spilled:** Soak up solution, place in a plastic bag or bottle. Flush area with water.

**Other Requirements:** Under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, *any* environmental release of this chemical equal to or over the reportable quantity of 100 lbs. must be reported promptly to the National Response Center, Washington, D. C. (1-800-424-8802).

Any consumer product containing 5% or more ammonia requires a POISON label under FS HA (16 CFR 1500.129(1)).

## Section 7: Handling & Storage

**Handling/Storage Precautions:** Store in a dark, dry place. Keep container closed. Store away from incompatible materials, flammables, and combustibles.

**Conditions to Avoid:** Excessive temperatures, light.

**Materials to Avoid/Incompatibility:** Organic compounds, combustible materials, strong reducing agents, strong bases, alkalis, halides, strong acids.

\*\*Chlorine, bromine, mercury, and hypochlorite (bleach) react with the ammonia to form EXPLOSIVE COMPOUNDS. Avoid using metal containing copper or zinc.

## Section 8: Exposure Controls/Personal Protection

### *8.1 Personal Protective Equipment*

**Eye Protection:** Chemical safety splash goggles help prevent eye contact. Contact lenses should NOT be worn.

**Ventilation:** Local exhaust, to meet TLV requirements.

**Respiratory Protection:** Approved NIOSH/MSHA-respirator with an ammonia filter. MUST be used when exposure limits are exceeded.

**Skin/Hand Protection:** Use rubber or neoprene protective gloves.

**Other Protective Clothing/Equipment:** Rubber apron(s) or protective coveralls.

**Hygienic Practice(s):** Wash hands well after handling. Have an eye and/or shower bath available during handling. DO NOT get on clothing.

## Section 9: Physical and Chemical Properties

**Appearance and Odor:** Blue liquid, ammonia odor

**Boiling Point:** Between 83-86°C

**Melting Point:** Not available

**Specific Gravity (water = 1):** 1.185

**Vapor Pressure:** Not available

**Vapor Density (air = 1):** 5.8

**Solubility in Water:** Complete

**Reactivity in Water:** None

\*The above data are approximate or typical values and *should not* be used for precise design purposes.

### *9.1 Fire/Explosion Data*

**Flash Point:** Not available (Method Used: Not flammable)

**Flammable Limits in Air (% by Volume):** LEL 16%, UEL 25%

**Auto-Ignition Temperature:** Not available

**Extinguisher Media:** Water fog for escaping ammonia gas.

## Section 10: Stability and Reactivity Data

**Stability:** Stable under normal conditions.

**Conditions to Avoid:** DO NOT mix concentrated silver solution with concentrated activator solution; it may explode!

**Hazardous Decomposition Products:** Oxides of nitrogen; heating and contacting of vapors with very hot surfaces may form hydrogen. **Hazardous Polymerization:** Will not occur.

## Section 11: Toxicological Information

### *11.1 Medical Conditions Generally Aggravated by Exposure*

**Acute:** Silver/ammonia is a strong base and reacts corrosively with ALL body tissues.

**Chronic:** Inhalation of extremely high concentrations may cause bronchitis and/or pneumonia with some reduction in pulmonary function. Repeated inhalation may cause lung disease.

**Signs & Symptoms of Exposure:**

- Skin darkening and irritation
- Strong ammonia odor

**Toxicity:**

Oral (Mouse) LD50, Silver Nitrate: 50 mg/kg

Intraperitoneal (Mouse) LD50, Silver Nitrate: 22 mg/kg

*11.2 Routes of Entry*

**Inhalation:** The gas can be suffocating and is irritating to the mucus membranes and lung tissues. Repeated or prolonged exposure to concentrations greater than 500 ppm IDLH level for ammonia can cause permanent injury, even death. Less exposure may cause irritation, headache, coughing, severe lung congestion, breathing difficulty, convulsions, and/or shock.

**Eyes:** Severe irritation from liquid and fumes. May cause burns. Eye problems may cause greater susceptibility to effects of exposure. Burns may lead to blindness.

**Skin:** Silver compounds can be absorbed into the circulation through breaks in the skin. Local irritation, burns, and blisters can form from contact.

**Ingestion:** Burning pain in mouth, throat, stomach, thorax, constriction of throat, coughing, followed by vomiting or diarrhea. Portable lethal ingestion dose is 3-4ml (1 ounce).

**Chemical Listed as Carcinogen or Potential Carcinogen:**

National Toxicology Program: No

I.A.R.C. Monographs: No

OSHA: No

**Section 12: Ecological Information**

No data available.

**Section 13: Disposal Considerations**

Dispose of in accordance with local, state, and national regulations. Send to refinery for silver recovery.

**Section 14: Transport Information**

**Hazard Class:** 8, Corrosive Metal

**Proper Shipping Name:** AMMONIA HYDROXIDE (Aqua Ammonia), Corrosive Material UN-2672

**Label:** Corrosive UN-2672

**ID No.:** UN-2672, Corrosive, PG III

**Section 15: Regulatory Information (SARA 302 Components)**

No data available.

**Section 16: Other Information**

Full text of H-Statements referred to under Sections 2 and 3.

Acute Tox., Acute toxicity

Aquatic Acute, Acute aquatic toxicity

Aquatic Chronic, Chronic aquatic toxicity

Eye Dam., Serious eye damage

Skin Corr., Skin corrosion

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long-lasting effects.

HMIS Health Hazard Rating

Chronic Health Hazard: 3

Flammability: 0

Physical Hazard: 0

NFPA Rating

Fire Hazard: 0

Reactivity: 0

Health Hazard: 3

**Date of last revision: 9/25/2019**

*Disclaimer: The information in this SDS was obtained from sources which we believe are reliable and correct, but does not purport to be inclusive and shall be used only as a guide. The information is provided without any representation of warranty expressed or implied regarding the accuracy of correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Peacock Laboratories, Inc. and its employees do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of, or in any way connected with the handling, storage use of disposal of the product.*