

SAFETY DATA SHEET

Ammoniacal Silver Nitrate

Section 1. Identification

1.1 Product identifier

Product name : Ammoniacal Silver Nitrate**Part no.** : AR179, AR182**Validation date** : 12/18/2024

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory use
Container type: Dispenser Pack
AR179 // Ammoniacal Silver Nitrate // Artisan Reticulin-Nuclear Fast Red Stain Kit // 65 mL and 115 mL
AR182 // Ammoniacal Silver Nitrate // Artisan Reticulin-No Counterstain Kit // 115 mL
Reference number: SDS012

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
Tel: +1 800 227 9770

Agilent Technologies Singapore (International) Pte Ltd.
No. 1 Yishun Avenue 7
Singapore, 768923
Tel. (65) 6276 2622

Agilent Technologies Denmark ApS
Produktionsvej 42
2600 Glostrup,
Denmark
Tel. +45 44 85 95 00

www.Agilent.com

e-mail address of person responsible for this SDS : SDS@Agilent.com

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

H290	CORROSIVE TO METALS - Category 1
H314	SKIN CORROSION - Category 1B
H318	SERIOUS EYE DAMAGE - Category 1
H400	AQUATIC HAZARD (ACUTE) - Category 1
H410	AQUATIC HAZARD (LONG-TERM) - Category 1

2.2 GHS label elements

Date of issue : 12/18/2024

1/15

Section 2. Hazards identification

Hazard pictograms



Signal word

: Danger

Hazard statements

: H290 - May be corrosive to metals.
 H314 - Causes severe skin burns and eye damage.
 H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: P280 - Wear protective gloves, protective clothing and eye or face protection.
 P234 - Keep only in original packaging.
 P273 - Avoid release to the environment.

Response

: P391 - Collect spillage.
 P390 - Absorb spillage to prevent material damage.
 P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
 P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
 P363 - Wash contaminated clothing before reuse.
 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.

Storage

: Not applicable.

Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

: Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

2.3 Other hazards

Hazards not otherwise classified

: Causes respiratory tract burns. Causes severe digestive tract burns.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Ingredient name	%	Identifiers
Silver nitrate	≤5	CAS: 7761-88-8
Potassium hydroxide	≤2.9	CAS: 1310-58-3
Ammonia	≤1.4	CAS: 1336-21-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Corrosive to the respiratory system.
- Skin contact** : Causes severe burns.
- Ingestion** : Severely corrosive to the digestive tract. Causes severe burns. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
nitrogen oxides
metal oxide/oxides

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

- : Specific storage conditions: Please consult the label. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Keep away from metals. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

- Recommendations** : Industrial applications, Professional applications.
- Industrial sector specific solutions** : Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Silver nitrate	<p>NIOSH REL (United States, 10/2020) [silver metal dust and soluble compounds] TWA 10 hours: 0.01 mg/m³ (as Ag). Form: METAL DUST AND SOLUBLE.</p> <p>CAL OSHA PEL (United States, 5/2018) [silver, soluble compounds] TWA 8 hours: 0.01 mg/m³ (as Ag).</p> <p>OSHA PEL (United States, 5/2018) [Silver, metal and soluble compounds] TWA 8 hours: 0.01 mg/m³ (as Ag).</p> <p>OSHA PEL 1989 (United States, 3/1989) [Silver, metal and soluble compounds (as Ag)] TWA 8 hours: 0.01 mg/m³ (as Ag).</p> <p>ACGIH TLV (United States, 1/2024) [Silver, soluble compounds]</p>

Section 8. Exposure controls/personal protection

Potassium hydroxide	TWA 8 hours: 0.01 mg/m ³ (as Ag). NIOSH REL (United States, 10/2020) CEIL: 2 mg/m ³ . CAL OSHA PEL (United States, 5/2018) C: 2 mg/m ³ . OSHA PEL 1989 (United States, 3/1989) CEIL: 2 mg/m ³ . ACGIH TLV (United States, 1/2024) C: 2 mg/m ³ .
Ammonia	NIOSH REL (United States, 10/2020) [AMMONIA] TWA 10 hours: 25 ppm. TWA 10 hours: 18 mg/m ³ . STEL 15 minutes: 35 ppm. STEL 15 minutes: 27 mg/m ³ . OSHA PEL (United States, 5/2018) [Ammonia] TWA 8 hours: 50 ppm. TWA 8 hours: 35 mg/m ³ . OSHA PEL 1989 (United States, 3/1989) [Ammonia] STEL 15 minutes: 35 ppm. STEL 15 minutes: 27 mg/m ³ . ACGIH TLV (United States, 1/2024) [Ammonia] TWA 8 hours: 25 ppm. TWA 8 hours: 17 mg/m ³ . STEL 15 minutes: 35 ppm. STEL 15 minutes: 24 mg/m ³ .

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls

- : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid. [Clear.]
- Color** : Colorless.
- Odor** : Ammoniacal.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability** : Not applicable.
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapor pressure** :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Ammonia	360.02925	48	-	-	-	-
water	17.5	2.3	-	92.258	12.3	-

Relative vapor density : Not available.

Relative density : Not available.

Media	Result
water	Soluble

Miscible with water : Yes.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature :

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	°C	°F	Method
Ammonia	651	1203.8	-

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): Not available.

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : Reactive or incompatible with the following materials:
metals

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
Silver nitrate	Rat - Oral - LD50	1173 mg/kg
Potassium hydroxide	Rat - Oral - LD50	273 mg/kg
Ammonia	Rat - Oral - LD50	350 mg/kg

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result	
Potassium hydroxide	Guinea pig - Skin - Severe irritant	Duration of treatment/ exposure: 24 hours
	Rabbit - Skin - Severe irritant	Duration of treatment/ exposure: 24 hours

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Result

Section 11. Toxicological information

Silver nitrate	Rabbit - Eyes - Moderate irritant	-
	Rabbit - Eyes - Severe irritant	-
Potassium hydroxide	Rabbit - Eyes - Moderate irritant	Duration of treatment/ exposure: 24 hours
Ammonia	Rabbit - Eyes - Severe irritant	-
	Rabbit - Eyes - Severe irritant	-
	Rabbit - Eyes - Severe irritant	Duration of treatment/ exposure: 0.5 minutes

Conclusion/Summary : Not available.
[Product]

Respiratory corrosion/irritation

Product/ingredient name

Conclusion/Summary : Not available.
[Product]

Respiratory or skin sensitization

Skin

Conclusion/Summary : Not available.
[Product]

Respiratory

Conclusion/Summary : Not available.
[Product]

Germ cell mutagenicity

Conclusion/Summary : Not available.
[Product]

Carcinogenicity

Not available.

Conclusion/Summary : Not available.
[Product]

Reproductive toxicity

Conclusion/Summary : Not available.
[Product]

Specific target organ toxicity (single exposure)

Product/ingredient name **Result**

Ammonia SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Corrosive to the respiratory system.

Skin contact : Causes severe burns.

Ingestion : Severely corrosive to the digestive tract. Causes severe burns. May cause burns to mouth, throat and stomach.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

- Conclusion/Summary [Product]** : Not available.
- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Ammoniacal Silver Nitrate	7356.6	N/A	N/A	N/A	N/A
Silver nitrate	1173	N/A	N/A	N/A	N/A
Potassium hydroxide	273	N/A	N/A	N/A	N/A
Ammonia	350	N/A	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name

Result

Silver nitrate

Acute - EC50 - Marine water 2 ng/l [48 hours]
 Chronic - NOEC - Fresh water 0.005 µg/l [34.06 days]
 Chronic - IC10 - Fresh water 2 µg/l [4 days]
 Acute - LC50 - Fresh water 0.4 µg/l [96 hours]
 Chronic - NOEC - Fresh water 0.32 µg/l [21 days]
 Acute - EC50 - Fresh water 0.0026 ppm [96 hours]
 Acute - LC50 - Fresh water 80 ppm [96 hours]
 Ammonia Acute - EC50 0.66 mg/l [48 hours]
 Acute - LC50 - Fresh water 37 ppm [96 hours]

Potassium hydroxide

Ammonia

Conclusion/Summary : Not available.

[Product]

12.2 Persistence and degradability

Conclusion/Summary : Not available.

[Product]

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ammonia	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Silver nitrate	-	70	Low

12.4 Mobility in soil

Soil/Water partition coefficient : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.








Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Section 13. Disposal considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3266	UN3266	UN3266	UN3266	UN3266
UN proper shipping name	Corrosive liquid, basic, inorganic, n. o.s. (Potassium hydroxide, Ammonia)	CORROSIVE LIQUID, BASIC, INORGANIC, N.O. S. (Potassium hydroxide, Ammonia)	LÍQUIDO CORROSIVO, BÁSICO, INORGÁNICO, N. E.P. (Potassium hydroxide, Ammonia)	CORROSIVE LIQUID, BASIC, INORGANIC, N.O. S. (Potassium hydroxide, Ammonia)	Corrosive liquid, basic, inorganic, n. o.s. (Potassium hydroxide, Ammonia)
Transport hazard class(es)	8 	8  	8 	8  	8 
Packing group	II	II	II	II	II
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

If shipped as part of a kit "UN3316 (Chemical kit), Class 9, PG II" can be used. Precondition: UN3316 must be allowed for the remaining vials in same kit too.

DOT Classification : **Reportable quantity** 25 lbs / 11.35 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 154. Non-bulk: 202. Bulk: 242.
Quantity limitation Passenger aircraft/rail: 1 L. Cargo aircraft: 30 L.
Special provisions 386, B2, IB2, T11, TP2, TP27

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark).
The marine pollutant mark is not required when transported by road or rail.
Explosive Limit and Limited Quantity Index 1
Passenger Carrying Road or Rail Index 1
Special provisions 16

Mexico Classification : **Special provisions** 274

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-A, S-B
Special provisions 274

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 1 L. Packaging instructions: 851. Cargo Aircraft Only: 30 L. Packaging instructions: 855. Limited Quantities - Passenger Aircraft: 0.5 L. Packaging instructions: Y840.
Special provisions A3, A803

Section 14. Transport information

Special precautions for user : **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : **Clean Water Act (CWA) 307:** Silver nitrate
Clean Water Act (CWA) 311: Silver nitrate; Potassium hydroxide; Ammonia

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : CORROSIVE TO METALS - Category 1
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
HNOC - Corrosive to digestive tract [severe]
HNOC - Corrosive to respiratory tract

Composition/information on ingredients

Name	%	Classification
Silver nitrate	≤5	OXIDIZING SOLIDS - Category 2 CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 HNOC - Corrosive to digestive tract HNOC - Corrosive to respiratory tract
Potassium hydroxide	≤2.9	CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 3 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1 HNOC - Corrosive to digestive tract [severe]
Ammonia	≤1.4	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1B EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Section 15. Regulatory information

HNOC - Corrosive to digestive tract

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Silver nitrate Ammonia	7761-88-8 1336-21-6	≤5 ≤1.4
Supplier notification	Silver nitrate Ammonia	7761-88-8 1336-21-6	≤5 ≤1.4

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: SILVER NITRATE; POTASSIUM HYDROXIDE; AMMONIUM HYDROXIDE
- New York** : The following components are listed: Silver nitrate; Potassium hydroxide; Ammonium hydroxide
- New Jersey** : The following components are listed: SILVER NITRATE; POTASSIUM HYDROXIDE; AMMONIUM HYDROXIDE
- Pennsylvania** : The following components are listed: NITRIC ACID SILVER(1+) SALT; POTASSIUM HYDROXIDE; AMMONIUM HYDROXIDE

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Japan** : **Japan inventory (CSCL)**: All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** : All components are listed or exempted.
- Turkey** : All components are listed or exempted.
- United States** : All components are active or exempted.
- Viet Nam** : All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
CORROSIVE TO METALS - Category 1	Calculation method
SKIN CORROSION - Category 1B	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

History

Date of issue/Date of revision	: 12/18/2024
Date of previous issue	: 08/07/2023
Version	: 8
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations

📌 Indicates information that has changed from previously issued version.

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