

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixtures  
 Product name : Silver Nitrate Spray  
 Product code : A-2674

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Latent fingerprint developer

#### 1.3. Supplier

Arrowhead Forensics  
 11030 Strang Line Road  
 Lenexa, KS 66215  
 T 913-894-8388  
<http://www.arrowheadforensics.com>

#### 1.4. Emergency telephone number

Emergency number : 1.800.424.9300  
 CHEMTREC: 1.800.424.9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

|   |      |                                    |
|---|------|------------------------------------|
| Flammable liquids<br>Category 2                                   | H225 | Highly flammable liquid and vapour |
| Skin corrosion/irritation<br>Category 2                           | H315 | Causes skin irritation             |
| Serious eye damage/eye<br>irritation Category 1                   | H318 | Causes serious eye damage          |
| Specific target organ<br>toxicity (single exposure)<br>Category 3 | H336 | May cause drowsiness or dizziness  |

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapour  
 H315 - Causes skin irritation  
 H318 - Causes serious eye damage  
 H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) :

P233 - Keep container tightly closed.  
 P261 - Avoid breathing vapors, spray.  
 P264 - Wash hands thoroughly after handling.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P302+P352 - If on skin: Wash with plenty of water  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P312 - Call a doctor if you feel unwell  
 P332+P313 - If skin irritation occurs: Get medical advice/attention.  
 P362+P364 - Take off contaminated clothing and wash it before reuse.

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P370+P378 - In case of fire: Use alcohol resistant foam, ABC-powder, carbon dioxide (CO<sub>2</sub>), extinguishing powder to extinguish.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name           | Product identifier  | %  | GHS-US classification  |
|----------------|---------------------|----|--|
| acetone        | (CAS-No.) 67-64-1   | 91 | Flam. Liq. 2, H225<br>Eye Irrit. 2A, H319<br>STOT SE 3, H336   |
| AQUA           | (CAS-No.) 7732-18-5 | 6  | Not classified   |
| silver nitrate | (CAS-No.) 7761-88-8 | 3  | Ox. Sol. 2, H272<br>Acute Tox. 4 (Oral), H302<br>Skin Corr. 1B, H314<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instruction on this label).

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician. Specific treatment (see supplemental first aid instruction on this label).

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapour.

Explosion hazard : May form flammable/explosive vapor-air mixture.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material-damage. No open flames. No smoking. Remove ignition sources.

##### 6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves.

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### AQUA (7732-18-5)

Not applicable

#### 8.2. Appropriate engineering controls

No additional information available

#### 8.3. Individual protection measures/Personal protective equipment

##### Personal protective equipment:

Dust/aerosol mask. Gloves. Safety glasses. Avoid all unnecessary exposure.

##### Hand protection:

Wear protective gloves.

##### Eye protection:

Chemical goggles or safety glasses

##### Skin and body protection:

Wear suitable protective clothing

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### Respiratory protection:

Wear appropriate mask



### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|   |                                |
|---|--------------------------------|
| Physical state                              | : Liquid                       |
| Appearance                                  | : Clear, colorless liquid.     |
| Color                                       | : Colorless Colorless          |
| Odor  | : strong characteristic        |
| Odor threshold                              | : No data available            |
| pH  | : No data available            |
| Melting point                               | : No data available            |
| Freezing point                              | : No data available            |
| Boiling point                               | : 55 °C                        |
| Flash point                                 | : -17 °C                       |
| Relative evaporation rate (butyl acetate=1) | : No data available            |
| Flammability (solid, gas)                   | : Flammable liquid and vapour. |
| Vapor pressure                              | : No data available            |
| Relative vapor density at 20 °C             | : No data available            |
| Relative density                            | : No data available            |
| Solubility                                  | : Soluble in water.            |
| Log Pow                                     | : No data available            |
| Auto-ignition temperature                   | : No data available            |
| Decomposition temperature                   | : No data available            |
| Viscosity, kinematic                        | : No data available            |
| Viscosity, dynamic                          | : No data available            |
| Explosion limits                            | : No data available            |
| Explosive properties                        | : No data available            |
| Oxidizing properties                        | : No data available            |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Not established. Flammable liquid and vapour. May form flammable/explosive vapor-air mixture.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

### 10.5. Incompatible materials

Strong acids. Strong bases.

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### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Silver Nitrate Spray |                             |
|----------------------|-----------------------------|
| LD50 oral rat        | > 9 g/kg                    |
| LD50 dermal rabbit   | 20 g/kg                     |
| ATE US (dermal)      | 20000.000 mg/kg body weight |

| acetone (67-64-1)          |   |
|----------------------------|---|
| LD50 oral rat              | 5800 mg/kg (Equivalent or similar to OECD 401, Rat, Female, Experimental value)   |
| LD50 dermal rabbit         | 20000 mg/kg (Equivalent or similar to OECD 402, Rabbit, Male, Experimental value) |
| LC50 inhalation rat (mg/l) | 76 mg/l (Other, 4 h, Rat, Female, Experimental value)                             |
| ATE US (oral)              | 5800.000 mg/kg body weight  |
| ATE US (dermal)            | 20000.000 mg/kg body weight   |
| ATE US (vapors)            | 76.000 mg/l/4h  |
| ATE US (dust, mist)        | 76.000 mg/l/4h  |

| silver nitrate (7761-88-8) |                            |
|----------------------------|----------------------------|
| LD50 oral rat              | 1173 mg/kg (Rat)           |
| ATE US (oral)              | 1173.000 mg/kg body weight |

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Causes serious eye damage.  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Based on available data, the classification criteria are not met  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
Based on available data, the classification criteria are not met  
Specific target organ toxicity – single exposure : May cause drowsiness or dizziness.  
Specific target organ toxicity – repeated exposure : Not classified  
Aspiration hazard : Not classified  
Potential Adverse human health effects and symptoms : Toxic if swallowed.  
Symptoms/effects after skin contact : Causes skin irritation.  
Symptoms/effects after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

| acetone (67-64-1) |  |
|-------------------|--|
| LC50 fish 1       | 5540 mg/l (EU Method C.1, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value) |

| silver nitrate (7761-88-8) |   |
|----------------------------|---|
| LC50 fish 1                | 0.006 mg/l (96 h, Salmo gairdneri, Flow-through system) |
| EC50 Daphnia 1             | 0.0006 mg/l (48 h, Daphnia magna)                       |

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### 12.2. Persistence and degradability

| Silver Nitrate Spray            |  |
|---------------------------------|--|
| Persistence and degradability   | Not established.   |
| acetone (67-64-1)               |  |
| Persistence and degradability   | Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water. |
| Biochemical oxygen demand (BOD) | 1.43 g O <sub>2</sub> /g substance   |
| Chemical oxygen demand (COD)    | 1.92 g O <sub>2</sub> /g substance   |
| ThOD                            | 2.2 g O <sub>2</sub> /g substance  |
| BOD (% of ThOD)                 | 0.872 (20 day(s), Literature study)  |
| silver nitrate (7761-88-8)      |  |
| Persistence and degradability   | Biodegradability: not applicable.  |
| Biochemical oxygen demand (BOD) | Not applicable   |
| Chemical oxygen demand (COD)    | Not applicable   |
| ThOD                            | Not applicable   |
| BOD (% of ThOD)                 | Not applicable   |

### 12.3. Bioaccumulative potential

| Silver Nitrate Spray          |  |
|-------------------------------|--|
| Bioaccumulative potential     | Not established.                               |
| acetone (67-64-1)             |  |
| BCF fish 1                    | 0.69 (Pisces)                                  |
| BCF other aquatic organisms 1 | 3 (BCFWIN, Calculated value)                   |
| Log Pow                       | -0.24 (Test data)                              |
| Bioaccumulative potential     | Not bioaccumulative.                           |
| silver nitrate (7761-88-8)    |  |
| BCF fish 1                    | 11 - 19 (Micropterus salmoides, Chronic)       |
| BCF fish 2                    | 15 - 150 (Lepomis macrochirus, Chronic)        |
| Log Pow                       | 0.19 (Estimated value)                         |
| Bioaccumulative potential     | Low potential for bioaccumulation (BCF < 500). |

### 12.4. Mobility in soil

| acetone (67-64-1) |   |
|-------------------|---|
| Surface tension   | 0.0237 N/m  |
| Ecology - soil    | No (test)data on mobility of the substance available. |

### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.  
GWPmix comment : No known effects from this product.  
Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.  
Additional information : Handle empty containers with care because residual vapors are flammable.  
Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

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### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

|                                |   |
|--------------------------------|---|
| Transport document description | : UN1090 Acetone, 3, II   |
| UN-No.(DOT)                    | : UN1090  |
| Proper Shipping Name (DOT)     | : Acetone   |
| Class (DOT)                    | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120 |
| Packing group (DOT)            | : II - Medium Danger  |
| Hazard labels (DOT)            | : 3 - Flammable liquid  |



|  |  |
|--|--|
| DOT Packaging Non Bulk (49 CFR 173.xxx)                          | : 202  |
| DOT Packaging Bulk (49 CFR 173.xxx)                              | : 242  |
| DOT Special Provisions (49 CFR 172.102)                          | : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.<br>T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)<br>TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. |
| DOT Packaging Exceptions (49 CFR 173.xxx)                        | : 150  |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 5 L  |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)     | : 60 L   |
| DOT Vessel Stowage Location                                      | : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.  |
| Emergency Response Guide (ERG) Number                            | : 127  |
| Other information  | : No supplementary information available.  |

#### Transportation of Dangerous Goods

##### Transport by sea

|                                       |   |
|---------------------------------------|---|
| Transport document description (IMDG) | : UN 1090 ACETONE, 3, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS (-20°C c.c.) |
| UN-No. (IMDG)                         | : 1090  |
| Proper Shipping Name (IMDG)           | : ACETONE   |
| Class (IMDG)                          | : 3 - Flammable liquids   |
| Packing group (IMDG)                  | : II - substances presenting medium danger  |
| Limited quantities (IMDG)             | : 1 L   |

##### Air transport

|                                       |   |
|---------------------------------------|---|
| Transport document description (IATA) | : UN 1090 Acetone, 3, II, ENVIRONMENTALLY HAZARDOUS |
| UN-No. (IATA)                         | : 1090  |
| Proper Shipping Name (IATA)           | : Acetone   |
| Class (IATA)                          | : 3 - Flammable Liquids                             |
| Packing group (IATA)                  | : II - Medium Danger                                |

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Silver Nitrate Spray

Subject to reporting requirements of United States SARA Section 313  
Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

No additional information available

##### EU-Regulations

No additional information available

##### National regulations

No additional information available

#### 15.3. US State regulations

No additional information available

### SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information : None.

Full text of H-phrases:

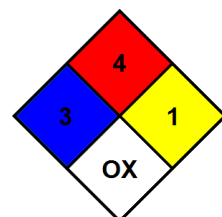
|      |  |
|------|--|
| H225 | Highly flammable liquid and vapour                   |
| H272 | May intensify fire; oxidizer                         |
| H302 | Harmful if swallowed                                 |
| H314 | Causes severe skin burns and eye damage              |
| H315 | Causes skin irritation                               |
| H318 | Causes serious eye damage                            |
| H319 | Causes serious eye irritation                        |
| H336 | May cause drowsiness or dizziness                    |
| H400 | Very toxic to aquatic life                           |
| H410 | Very toxic to aquatic life with long lasting effects |

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

NFPA specific hazard : OX - Materials that possess oxidizing properties.





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### Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

### Personal protection

: G

G - Safety glasses, Gloves, Vapor respirator

SDS US (GHS HazCom 2012)

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.*