



# SAFETY DATA SHEET

According to 29 CFR 1910.1200 Hazard Communication Standard 2012 (HazCom 2012)

## SECTION 1: Identification

|                                         |                                                                                                                                |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Product identifier</b>               |                                                                                                                                |
| Product name                            | Silver Nitrate Reagent                                                                                                         |
| Product number                          | R-0718                                                                                                                         |
| <b>Recommended use and restrictions</b> | To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.                      |
| <b>Manufacturer</b>                     | Taylor Technologies, Inc.<br>31 Loveton Circle<br>Sparks, MD 21152<br>Phone: (410) 472-4340<br>Emergency phone: (800) 837-8548 |

## SECTION 2: Hazard(s) identification

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Physical hazards</b>          | Corrosive to metals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Category 1  |
| <b>Health hazards</b>            | Eye damage/irritation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Category 1  |
|                                  | Skin corrosion/irritation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Category 1B |
|                                  | Specific target organ toxicity (repeated exposure)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Category 1  |
| <b>Environmental hazards</b>     | Not currently regulated by OSHA. For additional information, refer to section 12 of the SDS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |
| <b>Label elements</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |
| Hazard pictograms                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |
| Signal word                      | Danger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |
| Hazard statements                | May be corrosive to metals. Causes severe skin burns and serious eye damage. Causes damage to organs through prolonged or repeated exposure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |
| Precautionary statements         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |
| Prevention                       | Do not breathe dust/fumes/gas/mists/vapors/spray. Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Do not eat, drink, or smoke when using this product. Keep only in original container.                                                                                                                                                                                                                                                                                                                                                   |             |
| Response                         | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a physician or poison control center. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (OR HAIR): Immediately take off all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. IF EXPOSED OR CONCERNED: Get medical advice/attention if you feel unwell. Absorb spillage to prevent material damage. |             |
| Storage                          | Store locked up. Store in corrosive-resistant container with corrosive-resistant inner liner. Keep tightly capped. Store out of direct sunlight between 36°F–85°F.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |
| Disposal                         | Dispose of contents/container in accordance with local/regional/national/international regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |
| Hazards not otherwise classified | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |

## SECTION 3: Composition/information on ingredients

### Mixture

| Chemical name  | Common name and synonyms   | CAS number | % w/w  |
|----------------|----------------------------|------------|--------|
| Water          | Dihydrogen oxide           | 7732-18-5  | 80-100 |
| Silver nitrate | Nitric acid silver(I) salt | 7761-88-8  | 10-30  |

## SECTION 4: First-aid measures

### If inhaled

Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops. Give oxygen or artificial respiration if needed.

### In case of skin contact

Immediately flush skin with plenty of water for at least 20 minutes. If clothing comes in contact with the product, the clothing should be removed and laundered before reuse. Seek medical attention if irritation develops.

### In case of eye contact

Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. If symptoms persist or in all cases of concern, seek medical advice.

### If swallowed

Immediately call a physician or poison control center. Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

### Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

### Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

### General information

Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## SECTION 5: Firefighting measures

### Extinguishing media

|                                |                                                                                |
|--------------------------------|--------------------------------------------------------------------------------|
| Suitable extinguishing media   | Use extinguishing media appropriate for surrounding fire.                      |
| Unsuitable extinguishing media | Do not use a heavy water stream. Use of heavy stream of water may spread fire. |

### Specific hazards arising from the substance or mixture

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Fire hazard                   | Not flammable                                      |
| Explosion hazard              | Not explosive                                      |
| Reactivity                    | May be corrosive to metals                         |
| Hazardous combustion products | Nitrogen oxides. Other irritating fumes and smoke. |

### Advice for firefighters

|                                     |                                                                                               |
|-------------------------------------|-----------------------------------------------------------------------------------------------|
| Precautionary measures              | Exercise caution when fighting any chemical fire; hazardous fumes will be present.            |
| Firefighting equipment/instructions | Use water spray or fog for cooling exposed containers.                                        |
| Protection during firefighting      | Do not enter fire area without proper protective equipment, including respiratory protection. |
| Other information                   | Refer to section 9 of the SDS for flammability properties.                                    |

## SECTION 6: Accidental release measures

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

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during cleanup. Do not breathe dust/fumes/gas/mists/vapors/spray. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protective equipment, refer to section 8 of the SDS.

### Environmental precautions

Avoid discharge into drains, watercourses, or onto the ground.

### Methods and material for containment and cleaning up

Ventilate the area. Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recovery, flush area with water to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

### Reference to other sections

For exposure controls and personal protection, refer to section 8 of the SDS. For waste disposal, refer to section 13 of the SDS.

## SECTION 7: Handling and storage

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

Do not handle until all safety precautions have been read and understood. Do not breathe dust/fumes/gas/mists/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protective equipment, refer to section 8 of the SDS. Keep away from

incompatibles. Observe good industrial hygiene practices. Label containers appropriately.

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

Keep tightly capped. Store out of direct sunlight between 36°F-85°F. Store locked up. Store in corrosive-resistant container with corrosive-resistant inner liner. Store away from incompatible materials (refer to section 10 of the SDS).

## SECTION 8: Exposure controls/personal protection

### Occupational exposure limits

#### US ACGIH Threshold Limit Values

| Components                           | Type | Value                  |
|--------------------------------------|------|------------------------|
| Silver nitrate (CAS 7761-88-8) as Ag | TWA  | 0.01 mg/m <sup>3</sup> |

#### US NIOSH: Pocket Guide to Chemical Hazards

| Components                           | Type | Value                  |
|--------------------------------------|------|------------------------|
| Silver nitrate (CAS 7761-88-8) as Ag | TWA  | 0.01 mg/m <sup>3</sup> |
| Silver nitrate (CAS 7761-88-8) as Ag | IDLH | 10 mg/m <sup>3</sup>   |

#### US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                           | Type | Value                  |
|--------------------------------------|------|------------------------|
| Silver nitrate (CAS 7761-88-8) as Ag | TWA  | 0.01 mg/m <sup>3</sup> |

### Biological limit values

#### ACGIH Biological Exposure Indices

No biological exposure limits noted for the ingredient(s).

### Exposure controls

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eyewash facilities and emergency shower must be available when handling this product.

#### Personal protective equipment

|                        |                                                                                                                                                                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye/face protection    | Wear appropriate chemical safety goggles if contact is likely to occur.                                                                                                                                                                                             |
| Skin protection        | Wear appropriate chemical-resistant gloves and clothing if contact is likely to occur.                                                                                                                                                                              |
| Body protection        | Wear appropriate protective clothing if contact is likely to occur.                                                                                                                                                                                                 |
| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fumes at levels exceeding the exposure limits. Advice should be sought from respiratory protection suppliers. |

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

|                                       |                   |
|---------------------------------------|-------------------|
| Physical state                        | Liquid            |
| Form                                  | Liquid            |
| Color                                 | Clear, colorless  |
| Odor                                  | Odorless          |
| Odor threshold                        | No data available |
| pH                                    | 3.8               |
| Evaporation rate                      | No data available |
| Melting point                         | No data available |
| Freezing point                        | No data available |
| Initial boiling point (boiling range) | 212°F (100°C)     |
| Flash point                           | No data available |
| Specific gravity                      | No data available |
| Auto-ignition temperature             | No data available |
| Decomposition temperature             | No data available |
| Flammability (solid, gas)             | No data available |
| Upper Flammability Limit              | No data available |

|                                            |                            |
|--------------------------------------------|----------------------------|
| Lower Flammability Limit                   | No data available          |
| Vapor pressure                             | No data available          |
| Vapor density                              | No data available          |
| Relative density                           | No data available          |
| Solubility                                 | Soluble in all proportions |
| Partition coefficient<br>(n-octanol/water) | No data available          |
| Viscosity                                  | No data available          |
| Explosive properties                       | No data available          |
| Oxidizing properties                       | No data available          |

## SECTION 10: Stability and reactivity

|                                           |                                                                                                                                                             |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | Hazardous reactions will not occur under normal conditions.                                                                                                 |
| <b>Chemical stability</b>                 | Stable under recommended handling and storage conditions (refer to section 7 of the SDS).                                                                   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                                                                                 |
| <b>Conditions to avoid</b>                | Contact with incompatible materials. Do not use in areas without adequate ventilation.                                                                      |
| <b>Incompatible materials</b>             | Acetylene, alcohols, ammonia, azides, calcium carbide, fluorides, organic compounds, peroxides, powdered metals, strong acids, and strong oxidizing agents. |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products under normal conditions.                                                                                                |

## SECTION 11: Toxicological information

### Information on toxicological effects

Likely routes of exposure are skin/eye contact and ingestion.

#### Most important symptoms/effects, acute and delayed

Direct skin contact may cause corrosive skin burns, deep ulcerations, and possibly permanent scarring.

Direct contact with concentrated solutions may be corrosive to the eyes and may cause severe damage, including blindness. Symptoms may include stinging, tearing, redness, swelling, and scarring.

Inhalation of mists can cause severe respiratory irritation. Symptoms may include coughing, choking, and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus, and possibly the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations, and bleeding.

#### Acute toxicity

This product is not classified as an acute toxicity hazard. See below for product and individual ingredient acute toxicity data.

| Product                              | Species | Acute Toxicity Estimate (ATE) |
|--------------------------------------|---------|-------------------------------|
| Silver Nitrate Reagent (CAS Mixture) |         |                               |
| <b>Acute</b>                         |         |                               |
| <i>Dermal</i>                        |         |                               |
| LD <sub>50</sub>                     | Rat     | No data available             |
| <i>Inhalation</i>                    |         |                               |
| LC <sub>50</sub>                     | Rat     | No data available             |
| <i>Oral</i>                          |         |                               |
| LD <sub>50</sub>                     | Rat     | >2000 mg/kg                   |
| Components                           | Species | Acute Toxicity Data           |
| Silver nitrate (7761-88-8)           |         |                               |
| <b>Acute</b>                         |         |                               |
| <i>Dermal</i>                        |         |                               |
| LD <sub>50</sub>                     | Rat     | No data available             |
| <i>Inhalation</i>                    |         |                               |
| LC <sub>50</sub>                     | Rat     | No data available             |
| <i>Oral</i>                          |         |                               |
| LD <sub>50</sub>                     | Rat     | 1173 mg/kg                    |

|                                          |                           |
|------------------------------------------|---------------------------|
| <b>Skin corrosion/irritation</b>         | Causes severe skin burns  |
| <b>Serious eye damage/eye irritation</b> | Causes serious eye damage |
| <b>Respiratory sensitization</b>         | No data available         |
| <b>Skin sensitization</b>                | No data available         |
| <b>Germ cell mutagenicity</b>            | No data available         |

#### **Carcinogenicity**

##### **IARC Monographs. Overall Evaluation of Carcinogenicity**

Not regulated

##### **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)**

Not regulated

##### **US National Toxicology Program (NTP) Report on Carcinogens**

Not regulated

|                                                           |                                                                 |
|-----------------------------------------------------------|-----------------------------------------------------------------|
| <b>Reproductive toxicity</b>                              | No data available                                               |
| <b>Specific target organ toxicity (single exposure)</b>   | No data available                                               |
| <b>Specific target organ toxicity (repeated exposure)</b> | Causes damage to organs through prolonged or repeated exposure. |
| <b>Aspiration hazard</b>                                  | No data available                                               |

## **SECTION 12: Ecological information**

|                                      |                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------|
| <b>Ecotoxicity</b>                   | This product is not classified as environmentally hazardous.                       |
| <b>Persistence and degradability</b> | No data available                                                                  |
| <b>Bioaccumulative potential</b>     | No data available                                                                  |
| <b>Mobility in soil</b>              | No data available                                                                  |
| <b>Other adverse effects</b>         | Large or frequent spills can have a harmful or damaging effect on the environment. |

## **SECTION 13: Disposal considerations**

Collect and reclaim or dispose of in sealed containers at a licensed waste disposal site. Since emptied containers may retain product residue, follow label warnings even after container is emptied. This material and its container must be disposed of in a safe manner. Dispose of contents/container in accordance with local/regional/national/international regulations.

## **SECTION 14: Transport information**

### **DOT**

|                                |                                                                       |
|--------------------------------|-----------------------------------------------------------------------|
| <b>UN number</b>               | 3264                                                                  |
| <b>UN Proper shipping name</b> | Corrosive liquid, acidic, inorganic, N.O.S. (Silver nitrate solution) |
| <b>Reportable Quantity</b>     | 1lb, Silver nitrate                                                   |
| <b>Class (Subsidiary risk)</b> | 8                                                                     |
| <b>Label(s)</b>                | 8                                                                     |
| <b>Packing group</b>           | II                                                                    |
| <b>Special provisions</b>      | 386, B2, IB2, T11, TP2, TP27                                          |
| <b>Packaging exceptions</b>    | 154                                                                   |
| <b>Packaging, non-bulk</b>     | 202                                                                   |

### **IATA**

|                                |                                                                       |
|--------------------------------|-----------------------------------------------------------------------|
| <b>UN number</b>               | 3264                                                                  |
| <b>UN Proper shipping name</b> | Corrosive liquid, acidic, inorganic, N.O.S. (Silver nitrate solution) |
| <b>Class (Subsidiary risk)</b> | 8                                                                     |
| <b>Packing group</b>           | II                                                                    |
| <b>Special provisions</b>      | A803                                                                  |

### **IMDG**

|                                |                                                                       |
|--------------------------------|-----------------------------------------------------------------------|
| <b>UN number</b>               | 3264                                                                  |
| <b>UN Proper shipping name</b> | Corrosive liquid, acidic, inorganic, N.O.S. (Silver nitrate solution) |
| <b>Class (Subsidiary risk)</b> | 8                                                                     |
| <b>Packing group</b>           | II                                                                    |

**Environmental hazards**

**Marine pollutant** No

**Special provisions** 274

**EmS** F-A, S-B

**Special precautions for user** Read safety instructions, SDS, and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This substance/mixture is not intended to be transported in bulk.

**DOT hazard pictograms**



**IATA; IMDG hazard pictograms**



## SECTION 15: Regulatory information

### US federal regulations

#### CERCLA Hazardous Substance (40 CFR 302.4)

| <u>Chemical name</u> | <u>CAS number</u> | <u>Reportable Quantity</u> |
|----------------------|-------------------|----------------------------|
| Silver nitrate       | 7761-88-8         | 1 lb                       |

#### SARA 302 Extremely Hazardous Substance (40 CFR 355 Appendices A / B)

Not regulated

#### SARA 304 Emergency Release Notification

Not regulated

#### SARA 311/312 Hazardous Chemical

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

#### SARA 313 (TRI reporting)

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

#### TSCA Section 8(b) Chemical Inventory

All components are on the U.S. EPA TSCA Inventory list.

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs)

Not regulated

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated

#### Clean Water Act, Toxic and Priority Pollutants (40 CFR 401.15 and CFR 423, Appendix A)

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

#### Safe Drinking Water Act (SDWA)

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

### US state regulations

#### California Safe Drinking Water and Toxic Enforcement Act of 1986 (California Proposition 65)

Not regulated

**Massachusetts Right-to-Know Act**

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

**New Jersey Worker and Community Right-to-Know Act**

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

**Pennsylvania Worker and Community Right-to-Know Act**

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

**Rhode Island Right-to-Know Act**

| <u>Chemical name</u> | <u>CAS number</u> |
|----------------------|-------------------|
| Silver nitrate       | 7761-88-8         |

**SECTION 16: Other information****NFPA Rating**

|               |     |
|---------------|-----|
| Health hazard | 2   |
| Fire hazard   | 0   |
| Reactivity    | 2   |
| Specific      | N/A |

**Disclaimer**

The information in the Safety Data Sheet is offered for your consideration and guidance for safe handling, use, storage, transportation, disposal, and release of this product and is not considered a warranty or quality specification. Taylor Technologies, Inc., disclaims all expressed or implied warranties and assumes no responsibility for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

License granted to make unlimited paper copies for internal use only. This Safety Data Sheet may not be altered in any way without the expressed knowledge and permission of Taylor Technologies, Inc. The information contained in this sheet is based on lab experience and the most current data available.

**Issue date:**

May 2015

**Last revisions**

April 2018