

## 1. Identification

<b>Product identifier</b>	<b>Silver Nitrate Reagent</b>
<b>Product code</b>	R-0718
<b>Recommended use</b>	Use as directed by manufacturer for purposes directly related to water testing.
<b>Recommended restrictions</b>	None known

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

<b>Company name</b>	Taylor Technologies, Inc.	
<b>Address</b>	31 Loveton Circle Sparks, MD 21152 United States	
<b>Telephone</b>	(410) 472-4340	Monday–Friday, 8:00 a.m.–4:30 p.m.
<b>Website</b>	www.taylortechnologies.com	
<b>E-mail</b>	Not available	
<b>Emergency phone number</b>	(800) 837-8548	

## 2. Hazard(s) identification

<b>Physical hazards</b>	Oxidizing liquids	Category 2
<b>Health hazards</b>	Eye damage/irritation	Category 2A
	Skin corrosion/irritation	Category 2
<b>Environmental hazards</b>	Not currently regulated by OSHA; refer to section 12 of the SDS for additional information.	

### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	May intensify fire; oxidizer. Causes serious eye irritation. Causes skin irritation.
<b>Precautionary statement</b>	

<b>Prevention</b>	Keep away from heat. Keep/store away from clothing, organics, and combustible material. Take any precautions to avoid mixing with combustibles and organics. Wear protective gloves/eye protection/face protection. Wash skin thoroughly after handling.
<b>Response</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. IF SKIN IRRITATION OCCURS: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. IF EYE IRRITATION PERSISTS: Get medical advice/attention. IN CASE OF FIRE: Use carbon dioxide, dry chemical powder, foam, water fog, or water spray to extinguish.
<b>Storage</b>	None required
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified** None

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Deionized water	Dihydrogen oxide	7732-18-5	75–85
Silver nitrate	Nitric acid, silver (I) salt	7761-88-8	15–25

### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Give oxygen or artificial respiration if needed. Get medical attention immediately.
<b>Skin contact</b>	Immediately flush skin with running water for at least 20 minutes. Immediately take off all contaminated clothing. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. 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.
<b>Most important symptoms/effects, acute and delayed</b>	Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically.
<b>General information</b>	Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

### 5. Firefighting measures

<b>Suitable extinguishing media</b>	Carbon dioxide. Dry chemical powder. Foam. Water fog. Water spray.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Firefighting equipment/instructions</b>	Firefighters should wear full protective gear. Evacuate the area promptly. Fight fire from upwind to avoid exposure to combustion products. Cool containers/tanks with water spray. Do not get water inside container. Move containers from fire area if it can be done without risk. Prevent fire-extinguishing water from contaminating surface water or the ground water system.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	May intensify fire; oxidizer
<b>Hazardous combustion products</b>	Nitrogen oxides. Oxygen. Silver metallics. Silver oxides. Other irritating fumes and smoke.

### 6. Accidental release measures

<b>Personal precautions, protective equipment, and emergency procedures</b>	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 mist or vapor. 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.
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**Methods and materials for containment and cleaning up**

Large Spills: Ventilate the contaminated 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, sewer, basements, or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb spillage with noncombustible, absorbent material. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for reuse. For waste disposal, refer to section 13 of the SDS. 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.

**Environmental precautions**

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

**7. Handling and storage**

**Precautions for safe handling**

Do not breathe mist or vapor. 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**

Store locked up. Keep away from heat. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (refer to section 10 of the SDS).

**8. Exposure controls/personal protection**

**Occupational exposure limits**

**U.S. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.100)**

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

**U.S. ACGIH Threshold Limit Values**

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

**U.S. NIOSH: Pocket Guide to Chemical Hazards**

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

**Biological limit values**

No biological exposure limits noted for the ingredient(s)

**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.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear safety glasses with side shields (or goggles) and a face shield. Provide an emergency eyewash fountain and quick-drench shower in the immediate work area.

**Skin protection**

**Hand protection**

Wear appropriate chemical-resistant gloves. Advice should be sought from glove suppliers.

**Other**

Wear appropriate chemical-resistant clothing.

**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.

**Thermal hazards**

When necessary, wear appropriate thermal protective clothing.

**General hygiene considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contamination.

## 9. Physical and chemical properties

### Appearance

Physical state	Liquid
Form	Liquid
Color	Clear, colorless

Odor Odorless

Odor threshold Not available

pH 3.8

Melting point/freezing point Not available

Initial boiling point and boiling range 212°F (100°C)

Flash point Not applicable (does not burn)

Evaporation rate Not available

Flammability (solid, gas) Not applicable

### Upper/lower flammability or explosive limits

Flammability limit, lower (%) Not applicable

Flammability limit, upper (%) Not applicable

Explosive limit, lower (%) Not applicable

Explosive limit, upper (%) Not applicable

Vapor pressure 17 mm Hg

Vapor density 0.6

Relative density 1.00 g/cm<sup>3</sup>

### Solubility(ies)

Solubility (water) Soluble in all proportions

Partition coefficient (n-octanol/water) Not available

Auto-ignition temperature Not applicable

Decomposition temperature Not available

Viscosity Not available

### Other information

Explosive properties Not applicable

Oxidizing properties Not applicable

Percent volatile 85%

Specific gravity 1.00

## 10. Stability and reactivity

Reactivity This product is stable and nonreactive under normal conditions of use, storage, transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use

Conditions to avoid Contact with incompatible materials. Do not use in areas without adequate ventilation. Avoid high temperatures. Keep away from direct sunlight.

Incompatible materials Combustible material. Organics.

Hazardous decomposition products None known. For hazardous combustion products, refer to section 5 of the SDS.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	May cause irritation to the respiratory system
<b>Skin contact</b>	May cause slight or mild transient irritation
<b>Eye contact</b>	May cause severe irritation
<b>Ingestion</b>	May cause irritation, nausea, vomiting, and diarrhea

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

Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.

Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.

Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

### Acute toxicity

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

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Silver nitrate (CAS 7761-88-8)		
<b>Acute</b>		
<i>Dermal</i>		
LD <sub>50</sub>	Rabbit	Not available
<i>Inhalation</i>		
LC <sub>50</sub>	Rat	Not available
<i>Oral</i>		
LD <sub>50</sub>	Rat	1173 mg/kg
Deionized water (CAS 7732-18-5)		
<b>Acute</b>		
<i>Dermal</i>		
LD <sub>50</sub>	Rabbit	Not available
<i>Inhalation</i>		
LC <sub>50</sub>	Rat	Not available
<i>Oral</i>		
LD <sub>50</sub>	Rat	>89840 mg/kg
<b>Skin corrosion/irritation</b>	Causes skin irritation	
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation	
<b>Respiratory sensitization</b>	Not expected to be a respiratory sensitizer	
<b>Skin sensitization</b>	Not expected to be a skin sensitizer	
<b>Germ cell mutagenicity</b>	Not expected to be mutagenic	
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, NTP, OSHA, or U.S. ACGIH.	
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity, single exposure</b>	Not classified as a specific target organ toxicity – single exposure	
<b>Specific target organ toxicity, repeated exposure</b>	Not classified as a specific target organ toxicity – repeated exposure	
<b>Aspiration toxicity</b>	Not expected to be an aspiration hazard	
<b>Chronic effects</b>	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Prolonged or repeated exposure may affect the kidneys.	

## 12. Ecological information

Ecotoxicity Very toxic to aquatic life

Components	Species	Test Results
Silver nitrate (CAS 7761-88-8) – Aquatic		
<b>Acute</b>		
<i>Algae</i>		
EC <sub>50</sub>	Green algae ( <i>Pseudokirchneriella subcapitata</i> )	0.19 mg/L, 96 hours
<i>Crustacea</i>		
EC <sub>50</sub>	Water flea ( <i>Daphnia magna</i> )	0.0002 mg/L, 48 hours
<i>Fish</i>		
LC <sub>50</sub>	Fathead minnow ( <i>Pimephales promelas</i> )	0.0067 mg/L, 96 hours
<b>Chronic</b>		
<i>Crustacea</i>		
NOEC	Water flea ( <i>Daphnia magna</i> )	0.0026 mg/L, 21 days
<i>Fish</i>		
NOEC	Fathead minnow ( <i>Pimephales promelas</i> )	0.0004 mg/L, 21 days
<b>Persistence and degradability</b>	Not available	
<b>Bioaccumulative potential</b>	Not available	
<b>Mobility in soil</b>	Not available	
<b>Other adverse effects</b>	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose of in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose of in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion with the user, the producer, and the waste disposal company.
<b>Waste from residues/unused products</b>	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (refer to Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste-handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transportation information

### DOT

<b>UN number</b>	UN3139
<b>UN proper shipping name</b>	Oxidizing Liquid, N.O.S. (Silver Nitrate)
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	Not listed
<b>Label(s)</b>	5.1
<b>Packing group</b>	II
<b>Special precautions for user</b>	Read safety instructions, SDS, and emergency procedures before handling.
<b>Special provisions</b>	62, 127, A2, IB2
<b>Packaging exceptions</b>	152
<b>Packaging, non-bulk</b>	202
<b>Packaging, bulk</b>	242

### IATA

<b>UN number</b>	UN3139
<b>UN proper shipping name</b>	Oxidizing Liquid, N.O.S. (Silver Nitrate)
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	Not listed
<b>Packing group</b>	II
<b>Environmental hazards</b>	No

**ERG code** 5L  
**Special precautions for user** Read safety instructions, SDS, and emergency procedures before handling.  
**Other information**  
**Passenger and cargo aircraft** Allowed  
**Cargo aircraft only** Allowed

**IMDG**

**UN number** UN3139  
**UN proper shipping name** Oxidizing Liquid, N.O.S. (Silver Nitrate)  
**Transport hazard class(es)**  
**Class** 5.1  
**Subsidiary risk** Not listed  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** No  
**EmS** F-A, S-Q  
**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**



**IATA; IMDG**



**15. Regulatory information**

**U.S. federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory list.

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

Not regulated

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

Silver nitrate (CAS 7761-88-8)

**SARA 304 Emergency Release Notification**

Not regulated

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

Not regulated

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate hazard – yes  
Delayed hazard – yes  
Fire hazard – yes  
Pressure hazard – no  
Reactivity hazard – no

**SARA 302 Extremely Hazardous Substance**

Not regulated

**SARA 311/312 Hazardous Chemical**

Not regulated

**SARA 313 (TRI reporting)**

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

**U.S. state regulations****California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not regulated

**Massachusetts Right-to-Know Act**

Silver nitrate (CAS 7761-88-8)

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

Silver nitrate (CAS 7761-88-8)

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

Silver nitrate (CAS 7761-88-8)

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

Silver nitrate (CAS 7761-88-8)

**California Proposition 65**

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International inventories**

Country(ies) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	yes
Canada	Domestic Substances List (DSL)	yes
Canada	Non-Domestic Substances List (NDSL)	no
China	Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)	yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	yes
Europe	European List of Notified Chemical Substances (ELINCS)	no
Japan	Existing and New Chemical Substances (ENCS)	yes
Korea	Existing Chemicals List (ECL)	yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA)	yes

\*A "yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(ies).

A "no" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(ies).

**16. Other information, including date of preparation or last revision****List of abbreviations**

ACGIH: American Conference of Governmental Industrial Hygienists  
 AICS: Australian Inventory of Chemical Substances  
 CAA: Clean Air Act  
 CAS: Chemical Abstract Services  
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act  
 CFR: Code of Federal Regulations  
 CSA: Canadian Standards Association  
 DEA: Drug Enforcement Agency  
 DOT: Department of Transportation  
 DSL: Domestic Substances List  
 EC: effective concentration  
 ECL: Existing Chemicals List  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 ENCS: Existing and New Chemical Substances

EPA: Environmental Protection Agency  
HAP: hazardous air pollutants  
HMIS: Hazardous Materials Identification System  
HNOC: hazards not otherwise classified  
HPA: Hazardous Products Act  
HSDB: Hazardous Substances Data Bank  
IARC: International Agency for Research on Cancer  
IATA: International Air Transport Association  
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk  
ICAO: International Civil Aviation Organization  
IECSC: Inventory of Existing Chemical Substances Produced or Imported in China  
IMDG: International Maritime Dangerous Goods  
IUCRID: International Uniform Chemical Information Database  
LC: lethal concentration  
LD: lethal dose  
MARPOL: marine pollution  
MSHA: Mine Safety and Health Administration  
NDSL: Non-Domestic Substances List  
NFPA: National Fire Protection Association  
NIOSH: National Institute of Occupational Safety and Health  
NOEC: no observable effect concentration  
NTP: National Toxicology Program  
NZIoC: New Zealand Inventory of Chemicals  
OECD: Organisation for Economic Co-operation and Development  
OEL: occupational exposure limits  
OSHA: Occupational Safety and Health Administration  
PEL: permissible exposure limits  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
PPE: personal protective equipment  
RCRA: Resource Conservation and Recovery Act  
Act RQ: reportable quantity  
RTECS: Registry of Toxic Effects of Chemical Substances  
RTK: right to know  
SARA: Superfund Amendments and Reauthorization Act  
SDS: Safety Data Sheet  
SDWA: Safe Drinking Water Act  
STEL: short-term exposure limit  
TLV: threshold limit values  
TSCA: Toxic Substances Control Act  
TWA: time-weighted average  
VOC: volatile organic compounds  
WEL: workplace exposure limit

**Disclaimer**

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**Last revision**

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