



Issuing Date 11/1/2011

Revision Number 0

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name** CHLORIDE REAGENT #2

**Product Code(s)** 4505

**Recommended Use** Test kit reagent. Laboratory chemicals. Industrial (not for food or food contact use).

**Company** LaMotte Company, Inc.  
802 Washington Avenue  
P.O. Box 329  
Chestertown, MD 21620  
USA

**Emergency Telephone Number** 24 Hour Emergency Number (CHEM-TEL):  
USA, Canada, Puerto Rico 1-800-255-3924  
Outside North American Continent (Call collect) 813-248-0585

## 2. HAZARDS IDENTIFICATION

### WARNING!

#### Emergency Overview

Severe eye irritation  
Harmful if swallowed or inhaled  
Irritating to skin  
Irritating to respiratory system  
May be harmful if absorbed through skin

**Appearance** Clear, colorless

**Physical State** Liquid

**Odor** None

### Potential Health Effects

**Principle Routes of Exposure** Eye contact, Skin contact, Ingestion.

### Acute Toxicity

#### Eyes

Severely irritating to eyes. May cause redness, itching, and pain. May cause burns.

#### Skin

Irritating to skin. May be harmful in contact with skin. Effects are expected to be less severe than for exposures to higher concentrations which symptoms include severe burns, pain, redness.

#### Inhalation

May cause irritation of respiratory tract. Effects are expected to be less severe than for exposure to higher concentrations which symptoms can include coughing, nausea, vomiting.

#### Ingestion

Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Effects are expected to be less severe than for exposure to higher concentrations, which symptoms include pain and burning in mouth, blackening of the mucous membranes, throat and abdomen, and diarrhea.

### Chronic Effects

Repeated inhalation or ingestion of silver compounds may cause Argyria characterized by permanent bluish discoloration of the skin, eyes, mucous membrane, and internal organs

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula  $\text{AgNO}_3$  in water

Chemical Name	CAS-No	Weight %
Silver nitrate	7761-88-8	1-2
Water	7732-18-5	to 100%

## 4. FIRST AID MEASURES

<b>General Advice</b>	Do not get in eyes, on skin, or on clothing.
<b>Eye Contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Call a physician immediately.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Remove and wash contaminated clothing before re-use. Consult a physician.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel.
<b>Ingestion</b>	Induce vomiting, but only if victim is fully conscious. Drink 1 or 2 glasses of water. Consult a physician.
<b>Protection of First-aiders</b>	Use personal protective equipment. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

## 5. FIRE-FIGHTING MEASURES

<b>Flammable Properties</b>	Not flammable.			
<b>Flash Point</b>	Not applicable			
<b>Suitable Extinguishing Media</b>	Dry chemical, $\text{CO}_2$ , alcohol-resistant foam or water spray.			
<b>Explosion Data</b>				
<b>NFPA</b>	<b>Health Hazard 1</b>	<b>Flammability 0</b>	<b>Stability 1</b>	<b>Physical and Chemical Hazards -</b>
<b>HMIS</b>	<b>Health Hazard 2</b>	<b>Flammability 0</b>	<b>Stability 1</b>	

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Ensure adequate ventilation. Wear protective gloves/clothing and eye/face protection. Refer to Section 8. Avoid contact with skin, eyes and inhalation of vapors. Silver nitrate leaves dark discolorations on skin and clothing that is difficult to remove and can be permanent.
<b>Methods for Containment</b>	Do not flush to sewer. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).
<b>Methods for Cleaning Up</b>	Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

**Handling** Handle in accordance with good industrial hygiene and safety practice. Prevent contact with skin, eyes, and clothing. Do not ingest. Do not eat, drink, or smoke when using this product.

**Storage** Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from direct sunlight. Keep away from heat, moisture, and incompatibles. Store at room temperature.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Silver nitrate 7761-88-8	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> TWA: 0.01 mg/m <sup>3</sup>
Water 7732-18-5	None Known	None Known	None Known

NIOSH IDLH: Immediately Dangerous to Life or Health

**Engineering Measures** Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

#### Eye/Face Protection

Safety glasses with side-shields.

#### Skin and Body Protection

Wear protective gloves/clothing. Nitrile rubber. Gloves & Lab Coat.

#### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear, colorless	<b>Odor</b>	None
<b>Physical State</b>	Liquid	<b>pH</b>	5
<b>Flash Point</b>	Not applicable	<b>Boiling Point/Range</b>	No information available

<b>Vapor Pressure</b>	No information available	<b>Vapor Density</b>	No information available
<b>Density</b>	~1.000g/cm <sup>3</sup>		

## 10. STABILITY AND REACTIVITY

**Stability** Stable under normal conditions of use and storage. Light sensitive.

**Incompatible Products** Strong reducing agents. Strong bases. Ammonia.

**Conditions to Avoid** Direct sunlight. Excessive heat. Incompatible products.

**Hazardous Decomposition Products** Nitrogen oxides (NOx). Silver/Silver Oxides.

**Hazardous Polymerization** Hazardous polymerization does not occur.

## 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Silver nitrate	1173 mg/kg ( Rat )	None Known	None Known
Water	90 mL/kg ( Rat )	None Known	None Known

**Chronic Toxicity****Chronic Toxicity**

Repeated inhalation or ingestion of silver compounds may cause Argyria characterized by permanent bluish discoloration of the skin, eyes, mucous membrane, and internal organs.

Chemical Name	ACGIH	IARC	NTP	OSHA
Silver nitrate	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

**Endocrine Disruptor Information**

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Silver nitrate	None Known	None Known	None Known
Water	None Known	None Known	None Known

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Silver nitrate	None Known	LC50= 0.0056 mg/L Pimephales promelas 96 h LC50= 0.006 mg/L Oncorhynchus mykiss 96 h LC50= 0.0064 mg/L Pimephales promelas 96 h LC50= 0.00644 mg/L Poecilia reticulata 96 h LC50= 0.007 mg/L Lepomis macrochirus 96 h LC50= 0.0085 mg/L Poecilia reticulata 96 h LC50= 0.0094 mg/L Pimephales promelas 96 h	EC50 = 0.038 mg/L 24 h EC50 = 0.395 mg/l 15 min EC50 = 0.44 mg/L 30 min EC50 = 0.86 mg/L 15 min	EC50 = 0.0006 mg/L 48 h EC50 = 0.9 µg/L 48 h LC50 = 5 µg/L 96 h
Water	None Known	None Known	None Known	None Known

Chemical Name	Log Pow
Silver nitrate	None Known
Water	None Known

**13. DISPOSAL CONSIDERATIONS****Waste Disposal Method**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Dispose of contents/container in accordance with local regulation.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Silver nitrate - 7761-88-8	None Known	None Known	None Known	None Known
Water - 7732-18-5	None Known	None Known	None Known	None Known

**14. TRANSPORT INFORMATION****DOT**

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard Class** 9  
**UN-No** 3082  
**Packing Group** III

**IATA**

**UN-No** 3082  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S  
**Hazard Class** 9  
**Packing Group** III

**IMDG/IMO**

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S  
**Hazard Class** 9  
**UN-No** 3082  
**Packing Group** III

## 15. REGULATORY INFORMATION

**International Inventories**

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Silver nitrate 7761-88-8 ( 1-2 )	Present	X	X	1-8	X	KE-31281	X	X
Water 7732-18-5 ( to 100% )	Present	X	X	ENCS	X	KE-35400	X	X

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Silver nitrate	7761-88-8	1-2	1.0
Water	7732-18-5	to 100%	None Known

**SARA 311/312 Hazard Categories**

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Silver nitrate 7761-88-8 ( 1-2 )	1 lb	X	None Known	X
Water 7732-18-5 ( to 100% )	None Known	None Known	None Known	None Known

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain any HAPs.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Silver nitrate	7761-88-8	1-2	None Known	None Known	None Known	None Known
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known

**CERCLA**

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Silver nitrate	1 lb	None Known
Water	None Known	None Known

**U.S. State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals

Chemical Name	CAS-No	California Prop. 65
Silver nitrate	7761-88-8	None Known
Water	7732-18-5	None Known

**U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Silver nitrate	X	X	X	None Known	X
Water	None Known	None Known	None Known	None Known	None Known

**International Regulations****Mexico - Grade**

Chemical Name	Carcinogen Status	Exposure Limits
Silver nitrate	None Known	Mexico: TWA= 0.01 mg/m <sup>3</sup>
Water	None Known	None Known

**Canada**



This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Component	WHMIS Hazard Class
Silver nitrate 7761-88-8 ( 1-2 )	1 % C E
Water 7732-18-5 ( to 100% )	Uncontrolled product according to WHMIS classification criteria



Chemical Name	NPRI
Silver nitrate	X

**16. OTHER INFORMATION**

NFPA	HMIS	PPE	Transport Symbol						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>0</td></tr><tr><td>Reactivity</td><td>1</td></tr></table>	Health Hazard	2	Fire Hazard	0	Reactivity	1		
Health Hazard	2								
Fire Hazard	0								
Reactivity	1								

Prepared By

Regulatory Affairs Department

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**Revision Note**  
Update to Format

**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**