

# Material Safety Data Sheet

Silver Nitrate 0.1000N



## Section 1. Product and Company Identification

**Product name** : Silver Nitrate 0.1000N  
**Product code** : SX0206A  
**Synonym** : None.  
**Material uses** : Industrial applications: Laboratory Reagent  
**Manufacturer** : EMD Chemicals Inc.  
P.O. Box 70  
480 Democrat Road  
Gibbstown, NJ 08027  
856-423-6300 Technical Service  
Monday - Friday: 8:00 - 5:00 PM  
**Validation date** : **1/2/2008.**  
**Print date** : 1/2/2008.  
**In case of emergency** : 800-424-9300 CHEMTREC (USA)  
613-996-6666 CANUTEC (Canada)  
24 Hours/Day: 7 Days/Week

## Section 2. Hazards Identification

**Physical state** : Liquid.  
**Odor** : Odorless.  
**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Emergency overview** : WARNING!  
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.  
MAY BE HARMFUL IF SWALLOWED..  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:  
MUCOUS MEMBRANES, SKIN, EYE, LENS OR CORNEA, NOSE, SINUSES  
Do not ingest. Avoid contact with skin and clothing. Avoid breathing vapor or mist.  
Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.  
**Potential acute health effects**  
**Eyes** : Irritating to eyes.  
**Skin** : Irritating to skin.  
**Inhalation** : Irritating to respiratory system.  
**Ingestion** : Harmful if swallowed.  
**Carcinogenic effects** : No known significant effects or critical hazards.  
**Mutagenic effects** : No known significant effects or critical hazards.  
**Teratogenicity / Reproductive toxicity** : No known significant effects or critical hazards.  
**Medical conditions aggravated by over-exposure** : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

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## Section 3. Composition/Information on Ingredients

### United States

<u>Name</u>	<u>CAS number</u>	<u>% by Weight</u>
Silver Nitrate	7761-88-8	1 - 2
Water	7732-18-5	97 - 99

## Section 4. First Aid Measures

- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

## Section 5. Fire Fighting Measures

**Flammability of the product** : No specific hazard.

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Not available.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on explosion hazards** : Contact with strong oxidizers may create a fire and explosion hazard. Contact with combustible material may cause fire. (Silver Nitrate)

## Section 6. Accidental Release Measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

## Section 7. Handling and Storage

- Handling** : Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

## Section 8. Exposure Controls/Personal Protection

### Product name

### Exposure limits

#### United States

Silver Nitrate

#### **ACGIH TLV (United States, 2000).**

TWA: 0.01 mg/m<sup>3</sup> 8 hour/hours. Form:

#### **OSHA Final Rule (United States, 1989).**

TWA: 0.01 mg/m<sup>3</sup> 8 hour/hours.

#### **ACGIH TLV (United States, 1/2005).**

TWA: 0.01 mg/m<sup>3</sup> 8 hour/hours. Form: Soluble

#### **NIOSH REL (United States, 12/2001).**

TWA: 0.01 mg/m<sup>3</sup> 10 hour/hours. Form: All forms

#### **OSHA PEL (United States, 8/1997).**

TWA: 0.01 mg/m<sup>3</sup> 8 hour/hours. Form: All forms

#### **OSHA PEL 1989 (United States, 3/1989).**

TWA: 0.01 mg/m<sup>3</sup> 8 hour/hours. Form: All forms

### **Consult local authorities for acceptable exposure limits.**

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

### Personal protection

#### **Eyes**

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.  
Recommended: safety glasses with side-shields

#### **Skin**

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.  
Body: Recommended: lab coat gloves

#### **Respiratory**

- : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

#### **Hands**

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### **Hygiene measures**

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

## Section 9. Physical and Chemical Properties

- Physical state** : Liquid.
- Color** : Clear. Colorless.
- Odor** : Odorless.
- Boiling/condensation point** : The lowest known value is 99.9°C (211.8°F) (Water).
- Melting/freezing point** : May start to solidify at -0.1°C (31.8°F) based on data for: Water.
- Relative density** : The only known value is 4.35 (Water = 1) (Silver Nitrate).

## Section 9. Physical and Chemical Properties

Evaporation rate : 0.36 (Water) compared with(n-Butyl Acetate =1)

## Section 10. Stability and Reactivity

**Stability and reactivity** : The product is stable.

**Conditions of instability** : Sensitive to light.

**Incompatibility with various substances** : Highly reactive or incompatible with the following materials: reducing materials.  
Reactive or incompatible with the following materials: combustible materials and alkalis.  
Incompatible with ammonia, antimony salts, oils, arsenities, bromides, carbonates, chlorides, iodides, thiocyanates, ferrous salts, phosphates, tannic acid and tartrates.

**Hazardous decomposition products** : NOx

**Hazardous polymerization** : Will not occur.

**Conditions of reactivity** : Explosive in the presence of the following materials or conditions: oxidizing materials, combustible materials and organic materials.

## Section 11. Toxicological Information

### Toxicity data

#### United States

#### Product/ingredient name

Silver Nitrate

#### Test

LD50

LD50

LD50

LDLo

LDLo

#### Result

1173 mg/kg

50 mg/kg

473 mg/kg

800 mg/kg

20 mg/kg

#### Route

Oral

Oral

Oral

Oral

Oral

#### Species

Rat

Mouse

Guinea pig

Rabbit

Dog

**Chronic effects on humans** : Contains material which causes damage to the following organs: mucous membranes, skin, eye, lens or cornea, nose/sinuses.

**Other toxic effects on humans** : Very hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant).  
Hazardous in case of ingestion.  
Slightly hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung sensitizer, lung corrosive).

**Special remarks on other toxic effects on humans** : May Cause Skin Irritation and Irreversible Skin Pigmentation. (Silver Nitrate)

#### Specific effects

**Carcinogenic effects** : No known significant effects or critical hazards.

**Mutagenic effects** : No known significant effects or critical hazards.

**Teratogenicity / Reproductive toxicity** : No known significant effects or critical hazards.

#### Sensitization

**Ingestion** : No known significant effects or critical hazards.

**Inhalation** : Irritating to respiratory system.

**Eyes** : Irritating to eyes.

**Skin** : Irritating to skin.

## Section 12. Ecological Information

### Ecotoxicity data

#### United States

#### Product/ingredient name

#### Species

#### Period

#### Result

## Section 12. Ecological Information

Silver Nitrate	Daphnia magna (EC50)	48 hour/hours	0.0009 mg/l
	Daphnia magna (EC50)	48 hour/hours	0.00103 mg/l
	Daphnia magna (EC50)	48 hour/hours	0.0011 mg/l
	Daphnia magna (LC50)	96 hour/hours	0.00106 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.00148 mg/l
	Pimephales promelas (LC50)	96 hour/hours	0.00197 mg/l

**Environmental precautions** : Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**Products of degradation** : These products are nitrogen oxides (NO, NO<sub>2</sub> etc.). Some metallic oxides.

**Toxicity of the products of biodegradation** : The products of degradation are less toxic than the product itself.

## Section 13. Disposal Considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

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

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

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

## Section 14. Transport Information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	-	CHEMICALS, N.O.S.	-	-		-

PG\* : Packing group

## Section 15. Regulatory Information

### United States

**HCS Classification** : Irritating material  
Target organ effects

**U.S. Federal regulations** : TSCA 8(b) inventory: Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Silver Nitrate

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Silver Nitrate: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: Silver Nitrate

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## Section 15. Regulatory Information

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

### SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	: Silver Nitrate	7761-88-8	1 - 2
Supplier notification	: Silver Nitrate	7761-88-8	1 - 2

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

**State regulations** : Pennsylvania RTK: Silver Nitrate: (environmental hazard, generic environmental hazard)  
Massachusetts RTK: Silver Nitrate  
New Jersey: Silver Nitrate 0.1000N

### Canada

**WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).

**CEPA DSL/CEPA NDSL** : CEPA DSL: Silver Nitrate; Water

**This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.**

### EU regulations

**Risk phrases** : R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

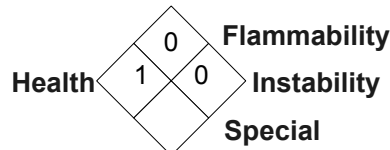
### International regulations

**International lists** : Australia (NICNAS): Silver Nitrate; Water  
  
Germany water class: Silver Nitrate  
  
Japan (METI): Silver Nitrate; Water  
  
Korea (TCCL): Silver Nitrate; Water  
  
Philippines (RA6969): Silver Nitrate; Water

## Section 16. Other Information

**Label requirements** : WARNING!  
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.  
MAY BE HARMFUL IF SWALLOWED..  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:  
MUCOUS MEMBRANES, SKIN, EYE, LENS OR CORNEA, NOSE, SINUSES

**National Fire Protection Association (U.S.A.)** :



### Notice to reader

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