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Material Safety Data Sheet

EMERGENCY NUMBERS:

(USA) CHEMTREC : 1(800) 424-9300 (24hrs)
 (CAN) CANUTEC : 1(613) 996-6666 (24hrs)

WHMIS	Protective Clothing	TDG Road/Rail
WHMIS CLASS: D-2B		Not controlled under TDG (Canada). PIN: Not applicable. PG: Not applicable.
		

Section I. Product Identification and Uses

Product name	SILVER NITRATE, 0.1-1% SOLUTION		
Chemical formula	Not applicable.	CI#	Not available.
Synonyms	SN005	CAS#	Not applicable.
		Code	SN005
		Formula weight	Not applicable.
		Supersedes	
Material uses	For laboratory use only.		

Section II. Ingredients

Name	CAS #	%	TLV
1) SILVER NITRATE	7761-88-8	0.1-<1	Exposure limits: ACGIH (Soluble silver compounds (as Ag)) TWA 0.01 mg(Ag)/m3 Not established by ACGIH
2) WATER	7732-18-5	Balance	

Toxicity values of the hazardous ingredients	<p>SILVER NITRATE: ORAL (LD50): Acute: 50 mg/kg (Mouse). 1173 mg/kg (Rat). 473 mg/kg (Guinea pig). UNREPORTED (LD50): Acute: 29 mg/kg (Man). INTRAPERITONEAL (LD50): Acute: 17 mg/kg (Mouse).</p>
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Section III. Physical Data

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Physical state and appearance / Odor	Colorless liquid. Odorless.
pH (1% soln/water)	Not available.
Odor threshold	Not available.
Percent volatile	100% (w/w). (Water).
Freezing point	Not available.
Boiling point	Not available.
Specific gravity	Not available.
Vapor density	Not available.
Vapor pressure	Not available.
Water/oil dist. coeff.	Not available.
Evaporation rate	Not available.
Solubility	Miscible in water.

Section IV. Fire and Explosion Data

Flash point	Not applicable.
Flammable limits	Not applicable.
Auto-ignition temperature	Not available.
Fire degradation products	Oxides of nitrogen. Silver.
Fire extinguishing procedures	Use flooding quantities of water. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode.
Fire and Explosion Hazards	Dried product residue can act as an oxidizer. Drying on clothing or other materials may cause fire. Contact with other material may cause fire and/or explosion. The sensitivity to static discharge is not available. The sensitivity to impact is not available. Emits toxic fumes under fire conditions.

Section V. Toxicological Properties

Routes of entry	Inhalation and ingestion. Eye contact. Skin contact.
Effects of Acute Exposure	Harmful by inhalation, in contact with skin and if swallowed. Irritant. May cause argyria (blue-gray coloration of the skin, eyes, and mucous membranes). 10 mg/m ³ (SILVER) is immediately dangerous to life or health.
Eye	Causes severe irritation. Eye contact can result in corneal damage or blindness. IRRITATION: EYE-RABBIT 1 mg (SILVER NITRATE) SEVERE.
Skin	Causes skin irritation. Prolonged contact can cause severe irritation or even burns. May be absorbed through the skin.
Inhalation	Material is irritating to tissue of the mucous membranes and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, laryngitis, dyspnea, headache, nausea, and vomiting.
Ingestion	Causes gastrointestinal irritation. May cause abdominal pain, gastroenteritis, vomiting, diarrhea, collapse, shock and death.

Section V. Toxicological Properties

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Effects of Chronic Overexposure	Kidney damage. May cause argyria (blue-gray coloration of the skin, eyes, and mucous membranes). Laboratory experiments have shown mutagenic effects. Carcinogenic effects: Not available. Teratogenic effects: Not available. Toxicity of the product to the reproductive system: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.
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Section VI. First Aid Measures

Eye contact	Immediate first aid is needed to prevent eye damage. Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention. Immediate first aid is needed to prevent eye damage.
Skin contact	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Discard contaminated clothing and shoes.
Inhalation	Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Seek immediate medical attention.
Ingestion	If conscious, wash out mouth with water. DO NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

Section VII. Reactivity Data

Stability	Unstable. Sensitive to light. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.
Hazardous decomp. products	Not available.
Incompatibility	Silver nitrate: Organic materials, ammonia, ammonium hydroxide, acetylene, acetylides, creosote, charcoal, alcohols, chlorides, carbonates, bromides, iodides, arsenites, morphine salts, tannic acid, tartrates, antimony salts, ferrous salts, chlorosulfonic acid, arsenic powder, chlorine trifluoride, phosphonium iodide, magnesium, sulfur, phosphine, metals, alkalis, plastics, boron phosphide, cyanides, esters, phospham, phosphorus, sodium cyanide, hypophosphites, stannous chloride, thiocyanates, isothiocyanates, reducing agents, combustible materials, easily oxidizable materials, citric acid, nitrites, phosphinates, aluminum, carbides, phosphorus isocyanate, nitromethane, hydrogen peroxide, acrylonitrile, non-metals, 1,3-butadiyne, phosphates, buten-3-yne, acetaldehyde, alkenes. Water may react with water reactive materials (sodium, potassium, etc...).
Reaction Products	Contact with ammonia may form shock sensitive mixtures. Contact with other material may cause fire and/or explosion. May decompose on exposure to light. Hazardous polymerization will not occur.

Section VIII. Preventive Measures

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Protective Clothing in case of spill and leak Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Spill and leak Evacuate the area. Absorb on sand or vermiculite and place in a closed container for disposal. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch spilled material. Avoid contact with a combustible material (wood, paper, oil, clothing...). Spills of silver nitrate must be promptly removed.

Waste disposal Material in the elemental state should be recovered and either reused or recycled. According to all applicable regulations. Harmful to aquatic life at very low concentrations. Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.

Storage and Handling Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe gas/fumes/vapor/spray. In case of insufficient ventilation, wear suitable respiratory equipment. Keep away from direct sunlight or strong incandescent light. Keep container tightly closed and dry. Manipulate under an adequate fume hood. Empty containers may contain a hazardous residue. Handle and open container with care. Take off immediately all contaminated clothing. Avoid contact with a combustible material (wood, paper, oil, clothing...). This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling. In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible.). Do not store on wood floors.

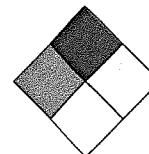
Section IX. Protective Measures

Protective clothing Splash goggles. Impervious rubber gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. A OSHA/MSHA jointly approved respirator is advised in the absence of proper environmental controls. If more than TLV, do not breathe vapor. Wear self-contained breathing apparatus. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

Engineering controls Use in a chemical fume hood to keep airborne levels below recommended exposure limits. Do not use in unventilated spaces.

Section X. Other Information

Special Precautions or comments Irritant! Risk of damage to eyes. Possible risks of irreversible effects. Do not breathe vapor. Avoid all contact with the product. Avoid prolonged or repeated exposure. Use in a chemical fume hood. Keep away from heat, sparks and flame. Light sensitive. Dried product residue can act as an oxidizer. Drying on clothing or other materials may cause fire. Handle and open container with care. Container should be opened only by a technically qualified person.
Synergistic materials: Not available.
RTECS NO: VW4725000 (Silver nitrate).



NFPA

Prepared by MSDS Department/Département de F.S..

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While the company believes the data set forth herein are accurate as of the date hereof, the company makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.