

MATERIAL SAFETY DATA SHEET

Product Identity:

ARZOL SILVER NITRATE APPLICATORS**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****PRODUCT:** ARZOL SILVER NITRATE APPLICATORS**GENERAL USE:** Cauterization of wounds and ulcers**MANUFACTURER:**

ARZOL CHEMICAL COMPANY
 12 NORWAY AVENUE #2
 KEENE, NH 03431
 603-352-5242 · FAX 603-352-1528

EMERGENCY PHONE: 603-352-5242
(Normal business hours)**INFORMATION PHONE:** 603-352-5242
(Normal business hours)**CHEMTREC:** 800-424-9300 (D.C. 202-483-7616)**DATE OF APPROVAL:** 3/8/2011**2. COMPOSITION/INFORMATION ON INGREDIENTS**

INGREDIENT	CAS NUMBER	PERCENTAGE BY WEIGHT	OSHA PEL ¹	ACGIH TLV
Silver nitrate	7761-88-8	75	0.01mg/m ³ , as Ag metal and soluble compounds	0.1 mg/m ³ , as Ag metal 0.01mg/m ³ as Ag soluble compounds
Potassium nitrate	7757-79-1	25	N/A	N/A

Note: The chemicals above are impregnated into the tip of a wooden applicator. The weight percentages indicated above represent the relative proportions of the active ingredients and do not take into account the weight of the applicator.

1) All exposure limits are 8-hour TWAs unless otherwise specified.

3. HAZARDS IDENTIFICATION

GENERAL HAZARD STATEMENT: Solid products are generally classified as “articles” and do not constitute a hazardous material in solid form under the terms of the OSHA Hazard Communication Standard. However, some elements contained in these products have been determined to be toxic and are subject to regulatory controls.

EMERGENCY OVERVIEW: Silver nitrate/potassium nitrate solid impregnated on tip of wooden applicator is a strong irritant to skin and tissue. Toxic if ingested.

PRIMARY ROUTE OF ENTRY: (for product): Skin

Acute Effects of Overexposure:

Note: Since the product has not been tested as a whole, the health effects below are based on the health effects of individual ingredients which are in significant concentrations in product. When appropriate, health effects of the individual ingredients are given in order to provide adequate warning to persons using the silver nitrate applicators. Silver nitrate applicators, in their final form for use, are not believed to pose high risk to the user, due to the small amount of active ingredients on the tip of the applicator, and the highly remote likelihood of inadvertent or accidental exposures to toxic concentrations.

INHALATION:

- Inhalation of airborne silver nitrate particles may cause irritation of the respiratory tract and mucous membranes.

EYE:

- Contact with silver nitrate/potassium nitrate solid impregnated on tip of wooden applicator may cause irritation, the degree of which depends on the concentration and period of contact. Symptoms may include burning, tearing, and redness.

SKIN:

- Contact with silver nitrate/potassium nitrate solid impregnated on tip of wooden applicator may cause irritation, the degree of which depends on the concentration and period of contact. Symptoms may include redness and burning.

INGESTION:

- Poisonous. If swallowed, can cause severe gastroenteritis and can be fatal. Due to its corrosive property, large doses of ingested silver nitrate may cause a burning sensation in the throat, violent abdominal pain, vomiting, collapse, and death.

Chronic Effects of Overexposure:

- It is reported in the literature that chronic introduction of significant amounts of silver compounds into the blood stream and subsequent deposition of the reduced silver in various tissues of the body may result in the production of a generalized permanent grayish pigmentation of the skin and mucous membranes – a condition known as argyria with no constitutional symptoms and no physical disability.
- The introduction of fine particles of silver through breaks in the skin produces a local pigmentation at the site of the injury. Localized argyria of the skin is rare. It has been concluded that on the average, 3.8 grams of orally administered silver nitrate causes argyria.
- The inhalation of silver powder over long periods has been concluded to cause pulmonary changes.
- Chronic exposure to potassium nitrate can cause:
 - anemia
 - nephritis
 - methemoglobinemia

CARCINOGENICITY:

- No component within this solid product is associated with carcinogenicity by NTP and IARC.
- No component within this solid product is regulated by OSHA within 29 CFR 1910 Subpart Z as a carcinogen.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE (to silver nitrate): Preexisting diseases of the lung, skin, eyes, and other mucous membranes.

4. FIRST AID MEASURES

INHALATION: This is not a probable route of exposure due to the product form. If acute overexposure to product occurs, immediately remove victim from the adverse environment to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek medical attention immediately.

EYE: Wash out eye with lukewarm water for at least fifteen (15) minutes. Seek prompt medical attention.

SKIN: Wash skin area thoroughly with soap and water. Remove contaminated clothing. Seek medical attention.

INGESTION: Give one (1) glass of milk or water. Seek immediate medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

FLASH POINT (Method Used): N/A
AUTO IGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS: N/A

GENERAL HAZARD: The impregnated solid is an oxidizer. May release toxic or irritating vapors under fire conditions.

EXTINGUISHING METHOD: As appropriate for surrounding fire. It is not believed that the product would be a significant hindrance to extinguishing methods used for the surrounding fire, due to the small amount of impregnated chemical solid and product form.

FIRE FIGHTING EQUIPMENT: Fire fighters and others who may be exposed to combustion products during fire should wear full protective clothing, including self-contained breathing apparatus (SCBA). Wear SCBA with a full face-piece, operated in the positive pressure mode when fighting fires.

HAZARDOUS COMBUSTION PRODUCTS: Acrid/irritating smoke, oxides of nitrogen, potassium oxide, and oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Not applicable for product in final form (solid silver nitrate/potassium nitrate impregnated on tip of wooden applicator). Dispose of spent applicators in accordance with applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

HANDLING: Store product in a dark, dry location, away from organic or other readily oxidizable materials. Keep container closed when not in use. Do not use in eyes. Keep away from children.

STORAGE: Ambient temperature and pressure are adequate.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local and/or general ventilation, as needed, to reduce employee exposure to below applicable OSHA PELs and ACGIH TLVs (see SECTION 2.0, COMPOSITION INFORMATION ON INGREDIENTS, for PELs and TLVs). Due to final product use, it is not believed that PELs or TLVs will be exceeded.

RESPIRATORY: Use an appropriate NIOSH-approved respirator if airborne contaminant concentrations exceed applicable OSHA PEL or ACGIH TLV (see SECTION 2.0 COMPOSITION INFORMATION ON INGREDIENTS, FOR PELs and TLVs), or other industry standards or guidelines on exposure. If respiratory protection is required, all appropriate requirements as set forth in 29 CFR 1910.134 must be met. A competent health professional should be consulted for respirator selection. Due to final product form and use, it is not believed that PELs or TLVs will be exceeded.

Gloves: Latex, vinyl or rubber examination gloves in order to prevent unnecessary or accidental skin contact.

EYES: Safety glasses to prevent accidental contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No special clothing necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: Decomposes, for silver nitrate
Vapor Pressure (mm Hg, @ 68°F): N/A
Vapor Density (AIR=1): N/A
Melting Point: 414°F (212°C), for silver nitrate
Freezing Point: N/A
Appearance, Odor and Physical State:
Grayish solid impregnated on tip of wooden applicator

Specific Gravity (H²O=1): >1, for silver nitrate
Evaporation Rate: N/A
Solubility in water: Soluble, for silver nitrate
pH: N/A
Coeff. Water/oil Dist.: N/A
Odor Threshold: N/A

10. STABILITY AND REACTIVITY

STABILITY: Product is stable at ambient temperature and pressure under normal conditions of use and transportation. Exposure of product to light may cause oxidation and discoloration of the impregnated applicator.

CONDITIONS TO AVOID: Contact of product with easily oxidizable materials and other incompatible materials. Heat or high temperature may cause solid in tip of product to decompose, possibly releasing small amounts of toxic or irritating vapors.

INCOMPATIBLE MATERIALS: Easily oxidizable materials.

Silver nitrate is incompatible with alkalis, antimony salts, arsenites, bromides, carbonates, chlorides, iodides, thiocyanates, ferrous salts, hypophosphites, morphine salts, oils, creosol, phosphates, tannic acid, tartrates, vegetable decoctions and extracts; acetylene, acetylene+ammonium hydroxide, acetylides, ammonium hydroxide, arsenic, chlorine trifluoride, chlorosulfuric acid, ethanol, (magnesium powder+water), phosphorous, sulfur, charcoal, cuprous acetylide, magnesium, phosphine, phosphonium iodide, phosphorous isocyanate, and plastics.

Potassium nitrate is incompatible with antimony, antimony trisulfide, arsenic, arsenic disulfide, barium sulfide, boron, boron phosphide, calcium sulfide, charcoal, copper phosphide, fluorine, germanium, germanium sulfide, sodium acetate, sodium hypophosphite, sodium peroxide+dextrose, sulfur+arsenic trisulfide, titanium, titanium disulfide, trichloroethylene, zinc, zirconium.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to decomposition, will emit small amounts of toxic NO_x fumes and potassium oxide.

REACTIVITY/HAZARDOUS POLYMERIZATION: Will Not Occur

11. TOXICOLOGICAL INFORMATION

For silver nitrate:

LD50 oral mouse – 50 mg/kg
LDLo unknown route, man - 29 mg/kg
Eye rabbit – 1 mg, severe irritation

For potassium nitrate:

LD50 oral rabbit – 3015 mg/kg

12. ECOLOGICAL INFORMATION

N/A for solid product in its as shipped form. NIF on specific product to establish its effect if released into the environment in finely divided form. Particulate discharged to a POTW may pass-through or contaminate sewage sludge, may interfere with the treatment systems process, and may be non-compliant with a POTW permit or other regulations.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in accordance with applicable federal, state, and local regulations. Consult an expert on the disposal of spent or recovered material. A solid waste determination should be performed by a qualified professional. Recovery and recycle of silver should be implemented if economically feasible.

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed
RCRA U-Series: None listed

14. TRANSPORT INFORMATION

DOT hazard classification not determined.

15. REGULATORY INFORMATION

Selected U.S. Federal and State Regulations (not all-inclusive):

EPA SARA Title III Hazard Categorization: Based on the components of the tip of the silver nitrate applicators, the product is categorized as an immediate (acute) health hazard and delayed (chronic) health hazard.

EPA SARA Title III Section 302 Extremely Hazardous Substance (EHSs): No ingredients in this product are listed as an EHS under Section 302 of SARA Title III.

EPA SARA Title III Section 313 Reportable Substances: Silver nitrate (silver compounds) is subject to reporting requirements.

16. OTHER INFORMATION

NFPA RATING (for solid formed product): Health: 1 Flammability: 1 Reactivity: 0 Special: OX (oxidizer)

Product: ARZOL SILVER NITRATE APPLICATORS

Approval Date: 3-8-2011

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ABBREVIATIONS/ACRONYMS:

ACGIH -American Conference of Governmental Industrial Hygienists
CAS -Chemical Abstracts Service
CFR -Code of Federal Regulations
CPR -Cardiopulmonary Resuscitation
EST -Eastern Standard Time
HMIS -Hazardous Materials Identification System
IARC -International Agency for Research on Cancer
MSDS -Material Safety Data Sheet
MSHA -Mine Safety and Health Administration
NFPA -National Fire Protection Agency
N/A -Not Applicable
NIA -No Information Available
NIF -No Information Found

NIOSH -National Institute for Occupational Safety and Health
NTP -National Toxicology Program
OSHA -Occupational Safety and Health Administration
PEL -Permissible Exposure Limit
PNOR -Particulate Not Otherwise Regulated
PNOC -Particulate Not Otherwise Classified
POTW -Publicly Owned Treatment Works
PPE -Personal Protective Equipment
SCBA -Self-contained Breathing Apparatus
STEL -Short-term Exposure Limit
TLV -Threshold Limit Value
TWA -Time-weighted Average

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PREPARED BY: Comprehensive Safety Corporation, Inc. (acting Consultant) David R. Williams, CIH Comprehensive Safety Compliance, Inc. (CSC) (412) 826-5480 x237 Occupation Health and Safety Consultant	REVISION NO: 4	DATE: 3/8/2011
MSDS CONTACT: Heather Hollister (VP of Regulatory Affairs) ARZOL Chemical Co. 12 Norway Avenue #2 Keene, NH 03431 (603) 352-5242	SUPERSEDES MSDS DATED: February 23, 2006	

