MATERIAL SAFETY DATA SHEET

1.0 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: Grafco® SILVER NITRATE APPLICATORS

General Use: Cauterization of wounds and ulcers.

Manufacturers Name: GF Health Products, Inc.

Emergency Telephone Number: 800-347-5678 (Normal business hours)

Address: 2935 Northeast Parkway
Atlanta, GA30360

Telephone Number for Information: 800-347-5678 (Normal business hours)

Date Issued: 08/13/03

Date Revised: 08/13/03

CHEMTREC CHEMICAL TRANSPORTATION 24- HOUR EMERGENCY TELEPHONE
DOMESTIC/NORTH AMERICA 800-424-9300
INTERNATIONAL 703-527-3887 (CALL COLLECT)

2.0 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	% Weight	OSHA Airborne Particulate Permissible Exposure Limit (PEL, TWA[1])	ACGIH Airborne Particulate Threshold Limit Value (TLV_1 TWA[1])
Silver Nitrate[2]	7761-88-8	75	0.01 mg/m^3	0.1 mg/m^3, as Ag metal
Potassium Nitrate	7757-79-1	25	not established[3]	not established[3]

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]

[1]TWA – Values[2] given are 8-hour time-weighted averages, unless otherwise specified.
[2]Denoted ingredient is a SARA Title III, Section 313 listed toxic chemical (silver compounds).
[3]Not established – Substance not assigned a specific PEL or TLV. Substance regulated by OSHA as particulates not otherwise regulated (PNOR,PELs – 15 mg/m^3 total dust. 5 mg/m^3 respirable fraction) and by ACGIH as particulates not otherwise classified (PNOC, TLV – 10 mg/m^3, total dust containing no asbestos and less than 1% crystalline silica) and is considered nuisance dust.

3.0 HEALTH HAZARDS IDENTIFICATION

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(s) of Entry (for product): Inhalation:No Skin:Yes Ingestion:No Other:No

POTENTIAL HEALTH EFFECTS:
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.

Acute Effects of Overexposure:
Eye contact: 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: 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.

Inhalation: Inhalation of airborne silver nitrate particles may cause irritation of the respiratory tract.

Ingestion: Poisonous. If swallowed, can cause severe gastroenteritis and can be fatal. Due to its causticity, 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 t 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 and methemoglobinemia.
Carcinogenicity: NTP:No IARC Monographs:No OSHA:No
Medical Conditions Generally Aggravated by Exposure (to silver nitrate): Preexisting diseases of the lungs, skin, eyes, and other mucous membranes.

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

Skin Contact: Immediately flush with copious amounts of water, then with a salt solution. Call a physician or local Poison Control Center.

Ingestion: Give Copious amounts of salt water and follow with an emetic. Then administer a dose of Epsom salts and follow with milk. Call a physician or the local Poison Control Center.

5.0 FIRE FIGHTING MEASURES

Flash Point (Method Used): For product, not applicable.

Flammable limits: Not applicable for product **LEL:** Not applicable **UEL:** Not applicable

Autoignition Temperature: Not applicable for product

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

Fire Fighting Instructions: As appropriate for surrounding fire. It is not believed that the product would be a significant hinderance 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 positive pressure self-contained breathing apparatus (SCBA). Wear SCBA with a full face-piece, operated in the positive pressure mode when fighting fires.

Hazardous Combustion Product: Acrid/irritating smoke, oxides of nitrogen, potassium oxide, and oxides of carbon.
NFPA Rating: Health: 1 Flammability:1 Reactivity:0 Special: OX (oxidizer)

6.0 ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released of 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.

7.0 HANDLING AND STORAGE

Storage Temperature and Pressure: Ambient temperature and pressure are adequate.

General: 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.

8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local and/or general ventilation, as needed, to reduce employee exposures to below applicable OSHA PELs and ACGIH TLVs (see SECTION 2.0 COMPOSITION INFORMATION ON INGREDIENTTS, 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.

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

Eye Protection: Safety glasses to prevent accidental contact.

Other Protective Clothing or Equipment: No special clothing necessary.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Decomposes @444°C, for silver nitrate
Vapor Pressure (mm Hg): Not applicable
Vapor Density (AIR = 1): Not applicable
Melting Point: 414°F (212°C), for silver nitrate
663°F (334°C), for Potassium Nitrate
Freezing Point: Not applicable
Specific Gravity (H_20 = 1): >1, for silver nitrate
Evaporation Rate: Not applicable
Solubility in water: Soluble, for sliver nitrate
Appearance and Odor: Grayish solid impregnated on tip of wooden applicator, practically odorless

10.0 STABILITY AND REACTIVITY

Stability: Product is stable at ambient temperature and pressure. 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 amount of toxic or irritating vapors.

Incompatible Materials: Easily oxidizable materials.

Silver nitrate is incompatible with alkalies, antimony salts, arsenites, bromides, carbonates, chlorides, iodides, vegetable decoctions and extracts; acetylene, acetylene + ammonium hydroxide, acetylides, ammonium hydroxide, arsenic, chloride 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, chargoal, copper phosphide, fluorine, germanium, germanium sulfide, sodium acetate, sodium hypophospite, sodium peroxide + dextrose, sulfur + arsenic trisulfide, titanium, titanium disulfide, trichloroethylene, zinc, zirconium.

Hazardous Decomposition: When heated to decomposition, will emit small amounts of toxic NO_x fumes and potassium oxide.

Hazardous Polymerization: Will Not Occur.

11.0 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 – 1901 mg/kg

Other toxicity data exists in the literature.

12.0 ECOLOGICAL INFORMATION

No data was available.

13.0 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 qualified professional should perform a solid waste determination.

14.0 TRANSPORT INFORMATION

DOT hazard classification: OXIDIZER
POTASSIUM Nitrate: UN1486 Silver Nitrate: UN1493
Regulatory Reference: 49CFR 172.101; 173.182

IATA: Nitrates, inorganic, n.o.s. UN# 1477

15.0 REGULATORY INFORMATION

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.

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

16.0 OTHER INFORMATION

All information, recommendations, and suggestions appearing herein concerning the product is based upon data believed to be reliable. It is the user's responsibility to determine the safety, toxicity, and suitability for their own use of the product described herein, and to comply with all applicable regulations. Since the actual use by others is beyond the MSDS developer's control, no guarantee, expressed or implied is made by GF Health Products Inc., as to the effects of such use, the results to be obtained or the safety and toxicity of the product nor does GF Health Products Inc. assume any liability arising out of use by others of the product referred to herein. This MSDS is not intended as a license to operate under, or recommendation to infringe on, any patents. Appropriate warnings and safe handling procedures should be provided handlers and users.
Note: CHEMTREC and NATIONAL RESPONSE CENTER emergency telephone numbers are to be used only in the event of CHEMICAL EMERGENCIES involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to GF Health Products Inc. for assistance.

PREPARED BY: GF Health Products, Inc.
Revision No.: A Date: 08/13/03
SUPERSEDES MSDS DATED: N/A