

MSDS Number: S2282 * * * * * Effective Date: 02/23/06 * * * * * Supersedes: 08/10/04

MSDS**Material Safety Data Sheet**From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865Mallinckrodt
CHEMICALS24 Hour Emergency Telephone: 800-850-2151
CHEMTREC: 1-800-424-9300National Response in Canada
CANUTEC: 613-996-6666Outside U.S. and Canada
Chemtrec: 703-527-3887**NOTE:** CHEMTREC, CANUTEC and National Response Center emergency numbers 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 Customer Service (1-800-552-2537) for assistance.

SILVER NITRATE**1. Product Identification****Synonyms:** Lunar caustic; silver nitrate toughened; Nitric Acid, Silver (I) Salt
CAS No.: 7761-88-8**Molecular Weight:** 169.87**Chemical Formula:** AgNO₃**Product Codes:**

J.T. Baker: 3426, 3429

Mallinckrodt: 2160, 2169, 7992

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Silver Nitrate	7761-88-8	99 - 100%	Yes

3. Hazards Identification**Emergency Overview**

POISON! DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Oxidizer)
Contact Rating: 3 - Severe (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD;
PROPER GLOVES
Storage Color Code: Yellow (Reactive)

Potential Health Effects

Inhalation:

Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. May be absorbed into the body following inhalation with symptoms paralleling those from ingestion exposure. Dust deposits in the lungs may resemble a form of pneumoconiosis.

Ingestion:

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea. Poison. Symptoms include pain and burning in the mouth, blackening of the skin and mucous membranes, throat, and abdomen, salivation, vomiting of black material, diarrhea, collapse, shock, coma and death.

Skin Contact:

Corrosive. Symptoms of redness, pain, and severe burn can occur.

Eye Contact:

Corrosive. Can cause blurred vision, redness, pain, severe tissue burns and eye damage.

Chronic Exposure:

Repeated application or ingestion causes a permanent bluish discoloration of the skin, conjunctiva, and mucous membranes. Repeated inhalation may cause lung disease.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give

anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

This oxidizing material can increase the flammability of adjacent combustible materials.

Explosion:

Many reactions may cause explosion. Reacts with ammonia to form compounds that are sensitive to mechanical shock.

Fire Extinguishing Media:

Use flooding amounts of water. Do not use dry chemical, carbon dioxide or Halon. Do not allow water runoff to enter sewers or waterways.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Protect from light. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

0.01 mg/m³ (TWA) for silver metal dust and fume as Ag

-ACGIH Threshold Limit Value (TLV):

0.01 mg /m³ (TWA) for soluble silver compounds as Ag

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Transparent, colorless crystals.

Odor:

Odorless.

Solubility:

219g/100g water @ 20C (68F).

Specific Gravity:

4.352

pH:

ca. 6 (neutral to litmus)

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

444C (831F) Decomposes.

Melting Point:

212C (414F)

Vapor Density (Air=1):

4.4

Vapor Pressure (mm Hg):

Very low.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable at room temperature in sealed containers. Discolors on exposure to light.

Hazardous Decomposition Products:

Oxides of nitrogen.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Ammonia, alkalis, antimony salts, arsenites, bromides, carbonates, chlorides, iodides, thiocyanates, ferrous salts, phosphates, tannic acid and tartrates.

Conditions to Avoid:

Heat, flame, sources of ignition, light and incompatibles.

11. Toxicological Information

Oral rat LD50: 1173 mg/kg. Irritation data, rabbit, std Draize: eye= 1 mg, severe.
Investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Silver Nitrate (7761-88-8)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: RQ, SILVER NITRATE
Hazard Class: 5.1
UN/NA: UN1493
Packing Group: II
Information reported for product/size: 80OZ

International (Water, I.M.O.)

Proper Shipping Name: SILVER NITRATE
Hazard Class: 5.1
UN/NA: UN1493
Packing Group: II
Information reported for product/size: 80OZ

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Silver Nitrate (7761-88-8)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Silver Nitrate (7761-88-8)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302- RQ	TPQ	-SARA 313- List	Chemical Catg.
Silver Nitrate (7761-88-8)	No	No	No	Sliver cmpd/

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)

Silver Nitrate (7761-88-8)

1

No

No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: Yes (Pure / Solid)

Australian Hazchem Code: 2X**Poison Schedule: S6****WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 4 Flammability: 0 Reactivity: 0 Other: **Oxidizer**

Label Hazard Warning:

POISON! DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

Label Precautions:

Keep from contact with clothing and other combustible materials.

Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Store in a tightly closed container.

Do not store near combustible materials.

Label First Aid:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:

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