



Material Safety Data Sheet
Silver nitrate-nitric acid (APHA 5220 B, C, D)

Section 1 - Chemical Product and Company Identification

MSDS Name:

Silver nitrate-nitric acid (APHA 5220 B, C, D)

Catalog Numbers:

LC22750

Synonyms:**Company Identification:**

LabChem, Inc.
200 William Pitt Way
Pittsburgh, PA 15238

Company Phone Number:

(412) 826-5230

Emergency Phone Number:

(800) 424-9300

CHEMTREC Phone Number:

(800) 424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
7732-18-5	Water	balance
7697-37-2	Nitric acid	<0.1
7761-88-8	Silver nitrate	1.7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless

Caution! May cause eye and skin irritation.

Target Organs: none known.

Potential Health Effects**Eye:**

Damage to cornea and conjunctiva may occur with stronger solutions that may be permanent.

Skin:

May cause skin irritation.



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Ingestion:

May cause sore throat, dyspnea, argyria (blue-grey coloration), irritation, methemoglobinemia (including use as antiseptic solution for skin, eyes.) Ingestion may cause mild to severe gastroenteritis that can be fatal. Symptoms include pain and burning of mouth, throat, abdomen with salivation, vomiting, diarrhea, anuria, shock, collapse, vertigo, coma, convulsions and death. Degenerative gyria, renal and vascular hypotension.

Inhalation:

May cause respiratory tract irritation.

Chronic:

Argyria of the nose, throat, skin; bronchitis, pneumoconiosis, methemoglobinemia (from absorption of nitrates). Discoloration of the eye may occur without irritation or injury. Repeated or prolonged ingestion may result in argyria, renal and vascular hypertension.

Section 4 - First Aid Measures

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once. Cover burns with loose sterile non-medicated bandages.

Skin:

Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes. Cover burns with a dry sterile bandage (loose, not tight).

Ingestion:

Get medical aid at once. Give conscious victim 1% salt water (sodium chloride, 10g/L) to dilute chemical and precipitate out silver chloride. Medical personnel may follow with catharsis using 30-60ml Fleet's phospho-soda diluted 1:4 in water containing 5g sodium chloride (to precipitate and remove silver from the ingestion). Treat methemoglobinemia. (Dreisbach, Handbook of Poisoning, 11th Ed.).

Inhalation:

Give artificial respiration if necessary. Get medical aid. Keep victim warm, at rest. Move victim to fresh air.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:

Negligible fire and explosion hazard when exposed to heat or flame. No acute hazards. Move container if possible, avoid breathing vapors or dust. Dry silver nitrate forms explosive compounds with many substances.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:

No information found.

Flash Point:

No information found.

NFPA Rating:

CAS# 7732-18-5: Not published.

CAS# 7697-37-2: Not published.

CAS# 7761-88-8: Not published.



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Explosion Limits:

Lower: Upper:

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in plastic bags for later disposal.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing.

Storage:

Store capped at room temperature. Keep away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Provide local exhaust or general dilution ventilation.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
Water	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Nitric acid	2 ppm TWA;4 ppm STEL	2 ppm TWA; 5 mg/m3 TWA	2 ppm TWA; 5 mg/m3 TWA;
Silver nitrate	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.

OSHA Vacated PELs

Nitric acid: 2 ppm TWA; 5 mg/m3 TWA

Nitric acid: 2 ppm TWA; 5 mg/m3 TWA

Personal Protective Equipment

Eyes:

Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Not required for normal use.



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Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Color: colorless
Odor: odorless
pH: slightly acidic
Vapor Pressure: 14 mm Hg @20C
Vapor Density: 0.7 (water)
Evaporation Rate: >1 (ether =1)
Viscosity: No information found.
Boiling Point: No information found.
Freezing/Melting Point: No information found.
Decomposition Temperature: No information found.
Solubility in water: No information found.
Specific Gravity/Density: >1
Molecular Formula: No information found.
Molecular Weight: No information found.

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials.

Incompatibilities with Other Materials

Ammonium hydroxide, aziridine, 1-bromo-2-propyne, calcium carbide, acetylene, ethyl alcohol, ethanol/nitric acid, ethyleneimine, ethylene oxide, ethyl hydroperoxide, oxalic acid, peroxymonosulfuric acid, phosphorus, phosphorus isocyanate, sulfur, tartaric acid, plastics, cuprous acetylide.

Hazardous Decomposition Products

Oxides of nitrogen, nitrogen, oxygen, metallic silver.

Hazardous Polymerization

Has not been reported

Section 11 - Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000.

CAS# 7697-37-2: QU5775000; QU5900000.

CAS# 7761-88-8: VW4725000.



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LD50/LC50:

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg.

CAS# 7697-37-2:

Inhalation, rat: LC50 =67 ppm(NO2)/4H.

CAS# 7761-88-8:

Oral, mouse: LD50 = 50 mg/kg.

Carcinogenicity:

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 7697-37-2: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 7761-88-8: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:

Silver nitrate is a severe skin, eye, mucous membrane irritant; causes skin pigmentation, methemoglobin formation.

Teratogenicity:

Reproductive:

Mutagenicity

Neurotoxicity

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 7697-37-2 is listed on the TSCA Inventory.

CAS# 7761-88-8 is listed on the TSCA Inventory.



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SARA Reportable Quantities (RQ)

CAS# 7697-37-2: final RQ = 1000 pounds (454 kg)

CAS# 7761-88-8: final RQ = 1 pound (0.454 kg)

CERCLA/SARA Section 313

Nitric acid is not at a high enough concentration to be reportable under Section 313.

OSHA - Highly Hazardous

CAS# 7697-37-2 is considered highly hazardous by OSHA.

US State

State Right to Know

Nitric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

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California Regulations

European/International Regulations

Canadian DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 7697-37-2 is listed on Canada's DSL List.

CAS# 7761-88-8 is listed on Canada's DSL List.

Canada Ingredient Disclosure List

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7697-37-2 is listed on Canada's Ingredient Disclosure List.

CAS# 7761-88-8 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: November 26, 1998

Revision Date: September 10, 2004

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