

MATERIAL SAFETY DATA SHEET



Conforms to 93/112/EC and ISO 11014-1

1. Chemical Product and Company Identification

Product Name: STERLING Rapid Silver Stain Fixative **Product Number:** EC-720Fix

Chemical Names/

Description:

Aqueous solution of strong, mineral acid and iodine salt.

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30336

Telephone Numbers

(800) 526-3867
(404) 699-2121

Emergency Numbers

Chemtrec

(800) 424-9300 (U.S. & Canada)
01-703-527-3887 (outside U.S. & Canada)

2. Composition/Information on Ingredients

| Component | % Comp. | CAS # | EINECS # | TLV (Units) |
|-------------------------|---------|-------|----------|------------------|
| Nitric Acid | 5-10 | | | 2 ppm (TWA) |
| Proprietary Iodine Salt | 1-3 | | | none established |

EEC LABEL SYMBOL AND CLASSIFICATION



CORROSIVE

R: R 34

Causes burns

S: S (1/2-) 23-26-

Keep locked up and out of the reach of children. Do not breathe fumes. In case of contact with eyese, rinse immediately with plenty of water and seek medical advice. Wear suitable clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

3. Hazards Identification

Appearance and Odor

Clear, colorless liquid with no odor.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD

Nitric Acid

POISON! DANGER! CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

Proprietary Iodine Salt

DANGER! CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE HARMFUL IF SWALLOWED. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING:

Nitric Acid

LONG-TERM EXPOSURE TO CONCENTRATED VAPORS MAY CAUSE EROSION OF TEETH AND LUNG DAMAGE.

Proprietary Iodine Salt

REPEATED INGESTIONS MAY CAUSE KIDNEY DYSFUNCTION OR FAILURE AND BLOOD CONDITIONS SUCH AS HEMOLYSIS. CENTRAL NERVOUS SYSTEM MAY BE AFFECTED.

Potential Health Effects

Inhalation

Nitric Acid:

Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal.

Proprietary Iodine Salt:

May irritate the respiratory tract.

Ingestion

Nitric Acid:

Swallowing can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Proprietary Iodine Salt:

May cause gastrointestinal upset. Animal experiments suggest a potential for kidney and blood cell damage, similar to that of the bromates and chlorates.

Skin

Nitric Acid:

Can cause deep ulcers and stain skin a yellow or yellow-brown color.

Proprietary Iodine Salt:

Irritating to skin.

Eyes

Nitric Acid:

Vapors are irritating and may cause damage to the eyes.

Proprietary Iodine Salt:

May cause irritation to the eyes.

Signs and Symptoms of Overexposure

Inhalation

Nitric Acid:

Coughing, choking, and irritation to the nose, throat, and respiratory tract.

Proprietary Iodine Salt:

Coughing and possible shortness of breath.

Ingestion

Nitric Acid:

Pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Proprietary Iodine Salt:

Abdominal pain, vomiting, and diarrhea.

Skin

Nitric Acid:

Redness, pain, and severe skin burns.

Proprietary Iodine Salt:

Irritation or reddening of skin.

Eyes

Nitric Acid:

Severe burns and permanent eye damage.

Proprietary Iodine Salt:

Irritation, redness, and pain.

Carcinogenicity

Nitric Acid:

Not listed as a known or anticipated carcinogen by NTP or IARC.

Proprietary Iodine Salt:

Not listed as a known or anticipated carcinogen by NTP or IARC.

Mutagenicity

Nitric Acid:

No information found.

Proprietary Iodine Salt:

No information found.

Reproductive Toxicity

Nitric Acid:

No information found.

Proprietary Iodine Salt:

No information found.

Teratogenic Effects

Nitric Acid:

No information found.

Proprietary Iodine Salt:

No information found.

Routes of Entry

Nitric Acid:

Ingestion, inhalation.

Proprietary Iodine Salt:

Ingestion, inhalation.

Target Organ Statement

Nitric Acid:

Persons with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

Proprietary Iodine Salt:

Persons with impaired liver or kidney function may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

DO NOT INDUCE VOMITING. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

Skin

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

Eyes

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

5. Fire Fighting Measures

| | | | |
|--------------------|------|--------------------------|------|
| Flash Point | N.A. | Flammable Limits | N.A. |
| Flash Point Method | N.A. | Autoignition temperature | N.A. |

Extinguishing media

Water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

Protective Equipment

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.

Hazardous Combustion Products

Emits toxic nitrogen oxides fumes and hydrogen nitrate. Oxides of alkali metal and halogen, possibly also free, or ionic halogen.

Unusual Fire and Explosion Hazards

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas.

NFPA Codes: Health 3 Flammability 0 Reactivity 3

6. Accidental Release Measures

Steps to be taken in case material is released or spilled

Ventilate area. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust.

Waste Disposal Method

Disposal must be made in accordance with applicable federal, state, and local regulations.

Personal Precautions

Wear appropriate protective equipment as specified in section 8.

7. Handling and Storage

Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

Storage

Keep in a tightly closed container, stored in a cooled, dry, ventilated area. Protect from physical damage. Isolate from incompatible materials (section 10).

Storage Temperature

Room Temperature

Disposal

Observe all national, state, and local regulations regarding disposal.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

Component: Nitric Acid

ACGIH Threshold Limit Value (TLV): 2 ppm (TWA)

OSHA Permissible Exposure Limit
(PEL):

Component: Proprietary Iodine Salt

ACGIH Threshold Limit Value (TLV): none established

OSHA Permissible Exposure Limit
(PEL):

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborn Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.

Eye Protection

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

Skin Protection

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

Other Control Measures

This material should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.

9. Physical Properties

Boiling point 100 C

Evaporation Rate 1.0 (H₂O = 1)

Melting point N.A.

Solubility in water Miscible

Vapor pressure (mmHg) N.A.

pH Strong Acid

Vapor density (Air = 1) N.A.
% volatile by volume 97

Specific gravity (H2O = 1) 1.1

10. Stability and Reactivity

Stability

Stable under ordinary conditions of use and storage. Strong oxidizing characteristics.

Conditions to Avoid

Heat, flame, ignition sources, shock, friction, incompatibles.

Hazardous Decomposition Products

Emits toxic nitrogen oxides fumes and hydrogen nitrate. Oxides of alkali metal and halogen, possibly also free, or ionic halogen.

Hazardous Polymerization

Will not occur

Incompatibles

Nitric Acid:

Incompatible with most substances, especially strong bases, metallic powders, carbides, hydrogen sulfide, turpentine, and combustible organics.

Proprietary Iodine Salt:

Substance may react violently with some organic compounds or reducing agents, finely-divided aluminum or magnesium metal, hydrides, strong reducing agents, ammonium perchlorate.

11. Toxicological Information

Product LD50 Values

| | | |
|--------------------------------------|-----------------------------|---------|
| STERLING Rapid Silver Stain Fixative | Oral Rat LD50 (mg/kg): | No data |
| STERLING Rapid Silver Stain Fixative | Dermal Rabbit LD50 (mg/kg): | No data |

Component Cancer List Status

| | NTP Carcinogen | | IARC Category |
|-------------------------|----------------|-------------|---------------|
| | Known | Anticipated | |
| Nitric Acid | No | No | None |
| Proprietary Iodine Salt | No | No | None |

12. Ecological Information

Nitric Acid

No information found.

Proprietary Iodine Salt

No information found.

13. Disposal Considerations

Observe all national, state, and local regulations regarding disposal.

14. Transport Information

D.O.T.

Proper Shipping Name: Corrosive Liquid, Acidic, inorganic, N.O.S.

Hazard Class: 8

UN Number: 3264

Packing Group: III

I.A.T.A.

Proper Shipping Name: Corrosive Liquid, Acidic, inorganic, N.O.S.

Hazard Class: 8

UN Number: 3264

Packing Group: III

I.M.O.

Proper Shipping Name: Corrosive Liquid, Acidic, inorganic, N.O.S.

Hazard Class: 8

UN Number: 3264

Packing Group: III

15. Regulatory Information

United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

| Component | Fire | Pressure | Reactivity | Acute | Chronic |
|-------------------------|------|----------|------------|-------|---------|
| Nitric Acid | No | No | Yes | Yes | Yes |
| Proprietary Iodine Salt | No | No | Yes | Yes | Yes |

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

EEC LABEL SYMBOL AND CLASSIFICATION



CORROSIVE

R: R 34

Causes burns

S: S (1/2-) 23-26-

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16. Other Information

NFPA Codes: Health 3 Flammability 0 Reactivity 3

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