



95 Horse Block Road, Unit 1  
Yaphank, NY 11980-9710

Updated: September 24, 2007

Attn: SAFETY DIRECTOR

## MATERIAL SAFETY DATA SHEET

CATALOG NUMBERS: 2013  
PRODUCT NAME: **LI SILVER ENHANCEMENT REAGENT**

Please note that the disposal instructions and information in this sheet refer to the LI Silver reagent as used after the components have been mixed, and not to the components individually. The formulation is proprietary but appropriate instructions and cautions for handling and disposal are given below.

### SECTION 1: IDENTIFICATION

LI Silver is a proprietary formulation containing a number of compounds.

### SECTION 2: COMPOSITION

LI Silver contains a silver salt and an organic reducing agent. The concentration of each of these components in the reagent mixture is as follows:

Silver as Ag <sup>+</sup> ions:	0.065 %	(0.13 % of solution A)
Organics:	0.25 %	(0.50 % of solution B)

This solution also contains acetonitrile as shown below:

Acetonitrile:	0.5 %	(1.0 % of solution A)
---------------	-------	-----------------------

Please refer to the materials safety data sheet for acetonitrile.

This solution also contains the following compounds in low concentrations (less than 0.1 % in components):

Butylated hydroxyanisole (BHA)  
n-propyl p-hydroxybenzoate (propyl paraben)  
p-methoxy-benzoate methyl ester (methyl paraben)

Other compounds present include commonly used buffer salts giving sodium, citrate, acetate and EDTA (ethylenediaminetetraacetic acid) in solution. Please refer to the materials safety data sheets for these compounds.

**SECTION 3: HAZARDS IDENTIFICATION**

Harmful

Irritating to eyes, respiratory system and skin.

May cause sensitization by inhalation and skin contact.

Possible risk of irreversible effects.

Possible carcinogen (us)

Severe skin irritant.

Target organ(s):

Kidneys

Eyes

Wear suitable protective clothing, gloves and eye/face protection.

Avoid exposure - obtain special instructions before use.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Do not breathe dust.

Sensitive to light

Store under nitrogen.

CAUTION: substance not fully tested.

**SECTION 4 FIRST AID MEASURES**

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

In case of contact, immediately wash skin with soap and copious amounts of water. Remove contaminated clothing and shoes. Call a physician.

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

If swallowed, wash out mouth with water provided person is conscious.

Wash contaminated clothing before reuse.

**SECTION 5 FIRE FIGHTING MEASURES**

Extinguishing media:

Water spray, carbon dioxide, dry powder or appropriate foam.

Special firefighting procedures:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosions hazards:

Emits toxic fumes under fire conditions.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Evacuate area

Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Absorb onto combustible material, place in a bag and hold for waste disposal.

Avoid raising dust.

Evacuate area.

Ventilate area and wash spill site after material pickup is complete.

SECTION 7 HANDLING AND STORAGE

Refer to section 8.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

NIOSH/MSHA-approved respirator.  
Safety shower and eye bath.  
Mechanical exhaust required.  
Chemical safety goggles.  
Compatible chemical-resistant gloves.  
Do not breathe dust.  
Avoid contact with eyes, skin and clothing.  
Avoid prolonged or repeated exposure.  
Wash thoroughly after handling.  
Irritant.  
Keep tightly closed.  
Light sensitive.  
Store in refrigerator.  
Light sensitive

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:  
Solution A - Enhancer: Colorless liquid  
Solution B - Initiator: Colorless to pale brown liquid.  
Stability:  
Stable.  
Incompatibilities:  
Strong oxidizing agents.  
Light sensitive.  
Air sensitive.  
Strong bases.  
Hazardous combustion or decomposition products:  
Toxic fumes of:  
Carbon monoxide, carbon dioxide  
Nitrogen oxides  
Sulfur oxides  
Hazardous polymerization:  
Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute effects:  
Harmful if swallowed  
May be harmful if inhaled  
May be harmful if absorbed through the skin.  
Causes eye and severe skin irritation.  
Material is irritating to mucous membranes and upper respiratory tract.

May cause allergic reaction.

Prolonged exposure can cause:

Damage to the eyes

Chronic effects

Target organ(s):

Kidneys

Eyes

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP or EPA classification.

May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver).

To the best of our knowledge, the chemical physical and toxicological properties have not been thoroughly investigated.

Additional information:

Inhalation of dust can cause respiratory problems with symptoms such as asthma, cough, wheezing, watery eyes and nose. Angiodema, eczema and hives can result from inhalation or ingestion.

## SECTION 12 ECOLOGICAL INFORMATION

Data not available.

## SECTION 13 DISPOSAL CONSIDERATIONS

Absorb the material on an inert combustible material, or dissolve or mix with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber.

Observe all Federal, State and Local environmental regulations.

Catalysts and expensive metals should be recovered for reuse or recycling.

## SECTION 14 TRANSPORT INFORMATION

Contact Nanoprobes, Incorporated for transportation information.

---

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Nanoprobes, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

Copyright 2000, 2007 Nanoprobes, Incorporated.

License granted to make unlimited paper copies for internal use only.