

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: Silver Stain Silver Reagent Concentrate

Catalog No.: 161-0443

Chemical Identity, Common names: Silver nitrate, lunar caustic, nitric acid silver salt.

Formula: AgNO_3

M.W.: 169.89

MANUFACTURER'S NAME:
BIO-RAD LABORATORIES
2000 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547

EMERGENCY PHONE No:
510/232-7000

DATE PREPARED OR REVISED: March 31, 1993

NAME OF PREPARER: Roy Wood

II. HAZARDOUS INGREDIENTS

This product contains the following toxic chemical subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CHEMICAL NAMES	CAS NUMBERS	PERCENT	EXPOSURE LIMITS IN AIR		
			ACGIH TLV	OSHA PEL	OTHER
Silver Nitrate	07761-88-8	<2% w/v	0.01*mg/m ³ as Ag (TWA)	0.01 mg/m ³ as Ag (TWA)	

TWA=8-hour Time Weighted Average

* Listed as "soluble silver compounds".

III. PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: N/A

SPECIFIC GRAVITY($\text{H}_2\text{O} = 1$): 4.35

VAPOR PRESSURE: N/A

VAPOR DENSITY(AIR = 1): N/A

SOLUBILITY IN WATER: 122 g/100 g water at 0° C

MELTING POINT: 212° C (414° F)

EVAPORATION RATE (BUTYL ACETATE = 1): N/A

APPEARANCE AND COLOR: Solid crystals, colorless to grayish black as solid. No odor. In kit, silver nitrate is in solution.

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A (not flammable)

FLAMMABLE LIMITS: N/A

(METHOD USED): N/A

EXTINGUISHING MEDIA: Water spray

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear full protective clothing and self-contained breathing apparatus with full facepiece. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Strong oxidizer. Increases flammability of combustible, organic, or other readily oxidizable materials.

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE (for each potential route of exposure):

INHALED: Excessive inhalation of dust or mist is irritating and may be severely damaging to respiratory passage and/or lungs.

CONTACT WITH SKIN OR EYES: Contact with eyes may cause severe irritation or burns.

ABSORBED THROUGH SKIN: Contact with skin may cause severe irritation or burns. May cause darkening of skin.

SWALLOWED: Ingestion may be fatal.

HEALTH EFFECTS OR RISKS FROM EXPOSURE

ACUTE: Irritates the eyes, skin, nose, throat, mucous membranes, and respiratory tract. Contact with crystals can burn the eyes and skin. Swallowing the solids can cause severe gastroenteritis that may be fatal.

CHRONIC: Repeated or long term exposure through inhalation can result in generalized argyria, recognized by widespread

pigmentation of the skin. Prolonged or repeated skin contact can result in localized argyria, where grey-blue patches of pigmentation appear.

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: Flush eyes with large amounts of water for at least 15 minutes, lifting upper and lower eyelids. Get medical attention.

SKIN CONTACT: Flush skin with large amounts of water for at least 15 minutes, while removing contaminated clothing and shoes. Wash clothes before reuse. Get medical attention.

INHALED: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

SWALLOWED: DO NOT induce vomiting. If conscious, give large quantities of water. Never give anything by mouth to an unconscious or convulsing person. Get medical attention immediately.

SUSPECTED CANCER AGENT

 X NO: THIS PRODUCT'S INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW.

YES: FEDERAL OSHA NTP IARC

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None known

VI. REACTIVITY DATA

STABLE X

UNSTABLE

CONDITIONS TO AVOID: Heat and contamination of any kind

INCOMPATIBILITY(Materials to avoid): Combustible materials, strong reducing agents, other strong oxidizing agents, organic materials, alkalis, alcohols, antimony salts, arsenites, bromides, carbonates, chlorides, iodides, thiocyanates, ferrous salts, hypophosphites, morphine salts, oils, creosote, phosphates, tannic acid, tartrates, vegetable decoctions and extracts, acetylene, acetylides, plastics, phosphorous, sulfur, carbon, chlorosulphuric acid, phosphonium iodide.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of nitrogen

HAZARDOUS POLYMERIZATION MAY OCCUR **WILL NOT OCCUR** X

CONDITIONS TO AVOID: N/A

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES: Dike and cover with absorbent material. Wear self-contained breathing apparatus and full protective clothing. Keep combustibles away from spilled material.

PREPARING WASTES FOR DISPOSAL: Comply with all applicable federal, state, and local environmental regulations on spill reporting, waste handling, and waste disposal.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Use general or local exhaust ventilation to maintain levels below exposure limits.

RESPIRATORY CONTROLS: If dust is a problem use a NIOSH-approved respirator appropriate for airborne concentration at point of use. Appropriate respirators may be a supplied-air respirator or a self-contained breathing apparatus.

EYE PROTECTION: Safety goggles.

GLOVES: Butyl rubber gloves.

OTHER CLOTHING AND EQUIPMENT: Lab coat and/or apron.

WORK PRACTICES, HYGIENIC PRACTICES: Use good laboratory practices. Wash hands after using and before eating. Do not eat, drink, or smoke in the work area.

OTHER HANDLING AND STORAGE REQUIREMENTS: Keep container tightly closed. Store separately away from flammable and combustible materials. Keep container out of sun and away from heat. Store in cool, dry, well-ventilated place away from incompatible materials. An eye wash and safety shower should be nearby and ready for use.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Wear safety goggles, apron, butyl rubber gloves, and appropriate respiratory protection. Do not cut, grind, weld, or drill on or near container.

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and conditions of use of the product are not within the control of Bio-Rad, it is the user's responsibility to handle the product under conditions of safe use.