

EMS CATALOG NO: 12630
DATE: 06/15/2006
EMS PRODUCTS: Colloidal Silver
PAGE NUMBER: One of 4

MATERIAL SAFETY DATA SHEET

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Electron Microscopy Sciences assumes no responsibility for personal injury or property damage to vendees, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of the material.

ELECTRON MICROSCOPY SCIENCES
321 MORRIS ROAD
P.O. BOX 251
FORT WASHINGTON, PA 19034
(215) 646-1566

24 HOUR EMERGENCY PHONE NUMBER
CHEMTREC: (800) 424-9300

FOR PRODUCT AND SALES INFORMATION

CONTACT ELECTRON MICROSCOPY SCIENCES OFFICE ABOVE.

PRODUCT IDENTIFICATION

PRODUCT NAME: Colloidal Silver
CAS NUMBER: N/A (product is a mixture)

COMPONENT HAZARD DATA

HAZARDOUS COMPONENT:	%:	CAS NO:	EXPOSURE LIMITS
Silver	59-61	7440-22-4	0.01 mg/m3 OSHA (1)
Isopropyl Alcohol	20-35	67-63-0	400 ppm ACGIH
Methyl Ethyl Ketone	10-15	78-93-3	200 ppm ACGOH
Ethyl Acetate	2-10	141-78-6	400 ppm ACGIH

(1) TLV very unlikely to be reached since material is in paste form; hence no airborne particles. Provide adequate ventilation in firing room to remove any evolved fumes.

* * * EMS CATALOG NO: 12630 * * * (Page 2 of 4)

* Per 29 CFR 1910 the mixture has NOT been tested as a whole. All

hazardous components which comprise $\geq 1\%$ of the mixture (0.1% if carcinogenic) are listed. Percentages of individual components are not listed as this information is considered a trade secret; it is not required that it be disclosed.

PHYSICAL DATA

MELTING POINT: N/A
INITIAL BOILING POINT: 171oF (of organic mixture)
VAPOR PRESSURE : 83 mm Hg (Est. for mixture, 20oC)
VAPOR DENSITY (Air=1): >1
SOLUBILITY IN WATER: Partly
SPECIFIC GRAVITY: >1
EVAPORATION RATE : 6.0 (Est. for mix, n-butyl acetate=1)
APPEARANCE/ ODOR:
PHYSICAL STATE: Liquid
COLOR: Gray
ODOR: Strong

FIRE AND EXPLOSION DATA

FLASH POINT (Most flammable solvent): 24oF
AUTOIGNITION TEMPERATURE (Most flammable solvent): Unknown
FLAMMABLE LIMITS IN AIR LOWER: 1.8
(Most flammable solvent): UPPER 11.4
EXTINGUISHING MEDIA: Water fog, alcohol foam, dry chemical.
SPECIAL FIRE FIGHTING PROCEDURES:

Cool exposed containers with water. When fighting use NIOSH approved self-contained breathing apparatus with full facepiece operated in positive pressure mode, as evolved fumes are toxic and cause respiratory irritation.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Store below flash point, away from open flame or sparks.

HEALTH HAZARDS OF COMPONENTS

OSHA PERMISSIBLE EXPOSURE LIMIT: Not established for mixture.
COMPONENTS LISTED AS CARCINOGENIC BY NTP, IARC, or OSHA: None.
* * * EMS CATALOG NO: 12630 * * * (Page 3 of 4)

PRIMARY ROUTES OF ENTRY:
ORGANIC COMPONENTS: Inhalation, skin absorption.
INORGANIC COMPONENTS: Ingestion.

ROUTE OF EXPOSURE: ACUTE & CHRONIC SYMPTOMS: MED CONDITIONS AGGRAV.

INHALATION IRRITANT UNKNOWN

EMERGENCY FIRST AID
(for INHALATION): Remove to fresh air. If breathing is difficult, give oxygen. If breathing stopped, start artificial respiration.

SKIN CONTACT IRRITANT UNKNOWN

EMERGENCY FIRST AID
(for SKIN CONTACT): Remove contaminated clothing and launder before reuse. Wash thoroughly with soap and water.

EYE CONTACT MODERATE UNKNOWN

EMERGENCY FIRST AID
(for EYE CONTACT): Flush with running water for 15 minutes, lifting upper and lower lids.

INGESTION IRRITATION OF THE GI SYSTEM UNKNOWN

EMERGENCY FIRST AID
(for INGESTION): Drink large quantity of water.

Synergistic or additive effects of the above chemicals are unknown, as are the effects of exposure to these chemicals in addition to others present in the workplace.

In all cases, keep individuals warm and quiet and seek medical attention.

REACTIVITY

STABILITY: Stable.

INCOMPATIBILITY: Will not react with water. Avoid mixing with strong oxidizing agents, acids and caustics.

HAZARDOUS DECOMPOSITION

PRODUCTS: Combustion produces carbon monoxide, carbon dioxide and various hydrocarbons.

HAZARDOUS

POLYMERIZATION: Will not occur.

CONDITIONS TO

AVOID: Heat, open flames, sparks, ignition sources.

* * * EMS CATALOG NO: 12630 * * * (Page 4 of 4)

PERSONAL PROTECTION AND CONTROLS

PERSONAL PROTECTION: Avoid prolonged skin contact.

RESPIRATORY:

Not required, if local exhaust is satisfactory. If overexposure occurs, use NIOSH-OSHA approved air supply respirator suitable for organic vapors. Administrative or engineering controls should be implemented to reduce exposure.

EYE: Chemical splash goggles or OSHA approved glasses.

SKIN: Solvent resistant gloves.

ENGINEERING CONTROLS:

Recommended ventilation, provide sufficient mechanical (general or local exhaust) ventilation to maintain concentrations below TLV.

HYGIENIC PRACTICES:

Prevent eye contact with glasses or goggles, minimize skin contact, use with adequate ventilation to minimize inhalation of vapor. Do not smoke or eat in work areas. Wash hands thoroughly prior to smoking or eating.

STORAGE/SPILL/DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Clean spill with disposable paper towels (wear rubber gloves) and wash area with soap and water.

WASTE DISPOSABLE METHOD:

Dispose of in accordance with all Local, State and Federal regulations.

SPECIAL STORAGE CONDITIONS:

Keep containers closed and sealed when not in use.

•