

Material Safety Data Sheet:

Colloidal Silver Shaft Coating
Issue Date July 31, 2009

Product Number: CS015

Section 01 Identification

Product Name: Colloidal Silver Shaft Coating

Product Number: CS015

Manufactured for: Electro Static Technology-ITW, 31 Winterbrook Road, Mechanic Falls, ME 04256 Ph: 207-998-5140 Fx: 207-998-5143 www.est-aegis.com


Emergencies

Chemtrec Emergency Number

Worldwide Ph: 1-703-527-3887

Worldwide Fx: 1-703-741-6090

USA Toll Free Ph: 1-800-424-9300 24 hrs a day.

Hazardous Material Information System USA	Health	2	National Fire Protection Association USA	
	Fire Hazard	3		
	Reactivity	1		
	Personal Protection	B		

Section 02 Composition

CAS #	Chemical Name	V.P. mm Hg@20C	LEL	Weight%
7440-22-4	Silver (metallic)	n/a	n/a	35-65
108-65-6	1-methoxy-2-propanol acetate	3.7	1.5	10-30
123-86-4	Butyl acetate	1.0	1.7	10-30
65859-05-4	Acrylic resin	n/a	n/a	5-10%
Chemical Formula - Proprietary mixture				

Section 03 Hazard Identification

Emergency overview:

Appearance: Gray Paste

Flash Point: 76 °F (TCC), Butyl Acetate – Lowest Flashing component

Warning!

Flammable; Eye or Skin Irritant

Target Organs: Liver, Kidneys, Central Nervous System

Potential Health Effects

Eye: Irritating to the eyes. May cause tearing, redness, swelling or temporary corneal damage.

Skin: Irritating to the skin. Prolonged contact may cause dermatitis.

Ingestion: May cause headache, drowsiness and unconsciousness.

Inhalation: May cause irritation to the respiratory tract and to other mucous membranes.

Silver metallic

Human effects of higher level acute, repeated or chronic overexposure may include argyria.

1-methoxy-2-propanol acetate

Toxic effects described in animals include: By skin or eye contact: Mild skin irritation; eye irritation.

Toxic effects of repeated or prolonged animal exposures include, by skin or eye contact:

Skin effects; by inhalation.

Respiratory effects: Degeneration of the olfactory epithelium; renal effects; non-specific effects, e.g. weight loss and irritation; liver effects. Additional animal tests have shown: No genetic damage in bacterial or mammalian cell cultures; no developmental toxicity. Human health effects of over exposure may include: By skin or eye contact; Skin irritation with discomfort or rash Eye irritation with discomfort, tearing or blurring of vision By inhalation: Nonspecific discomfort, e. g. nausea, headache, or weakness Human effects of higher level acute, repeated, or chronic overexposure may include:

By inhalation: Irritation to the upper respiratory passages with coughing and discomfort. In addition, animal tests indicate commercial grade 1- methoxy-2-propanol acetone does not cause developmental toxicity. However, the tests of pure 2-methoxy-1-propanol acetate in rabbits and rats by inhalation have shown developmental toxicity. 2-methoxy-propanol acetate did not show developmental toxicity by skin contact. 2-methoxy-1-propanol acetate did not show developmental toxicity by skin contact. 2-methoxy-1-propanol acetate is present in commercial grade 1-methoxy-2-propanol acetate in low concentrations.

Butyl acetate

Toxic effects described in animals include: By skin or eye contact: Skin Irritation; eye irritation By inhalation: Eye irritation, narcosis; upper respiratory irritation By ingestion: Narcosis Toxic effects of repeated or prolonged animal exposures include: By inhalation: Eye irritation; lower weight gain By ingestion: Liver effects Toxic effects of chronic animal tests include: By inhalation: Liver effects Additional animal tests have shows: Developmental toxicity at dosage levels showing maternal toxicity ; no genetic damage in animals, bacterial, or mammalian cell cultures. Human health effects of overexposure may include: By skin or eye contact: Skin irritation with discomfort, tearing, or blurring of vision By inhalation: Irritation of the upper respiratory passages with coughing and discomfort; nonspecific discomfort, e. g. nausea, headache or weakness. Human effects of higher level acute repeated or chronic overexposure may include: Temporary nervous system depression with anaesthetic effect, e. g. dizziness, headache, confusion, loss of coordination, loss of consciousness. Abnormal liver function as detected by laboratory tests. In addition: By skin or eye contact: Significant skin permeation appears unlikely; there are inconclusive or unverified reports of human sensitization.

Acrylic resin

Toxic effects described in animals include: Slight skin irritation Human health effects of overexposure may include: Allergic skin rashes Eye irritation with discomfort, tearing, or blurring of vision Nonspecific discomfort, e. g. nausea, headache, weakness Irritation of the upper respiratory passages, dizziness

Section 04 First Aid Measures

Eyes: Immediately flush with copious amounts of water for at least 15 minutes. Seek medical attention if discomfort persists.

Skin: Remove contaminated clothing and wash skin with soap and water. If irritation persists, seek medical attention.

Ingestion: Give two or more glasses of water immediately. Do NOT induce vomiting. Seek immediate medical attention.

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen and seek immediate medical attention.

Section 05 Fire Fighting Measures

Flash Point 76°F
Explosive Limits (%V in air):
LEL: 1.5
UEL: 10.0

Fire Extinguishing Media:

Dry Chemical, CO₂, water foam, "alcohol" foam, water spray to cool fire-exposed containers and disperse vapor.

Firefighting Procedure:

Toxic decomposition products may form under fire conditions. Wear full protective clothing and a full face piece, positive pressure, self contained breathing apparatus (SCBA).

Fire and explosion hazards:

Easily ignited material which burns with intense heat. Keep away from sparks and open flames. Do not smoke in area with open product. The solvent vapors are heavier than air and may travel along the floor to a source of ignition and flashback. Use the product in areas and equipment with appropriate National Electrical Code (NEC) classification. Consider the need for spark proof

tools. If the product could be heated above its flashpoint during processing or use, remove all sources of ignition, such as sparks, flames, or static discharge to prevent vapor ignition. Be sure also to decontaminate contaminated clothing and equipment with soap and water. Dispose of residues per federal, state, and local regulations. Closed containers may explode from increased vapor pressure when exposed to extreme heat. Cool overheated closed containers with water spray, but do not spread the fire with cooling water.

Section 06 Accidental Release Measures

Spill Response: Evacuate the area of all unnecessary personnel.

Action to take for spills:

For small spills: Absorb on to rags, sand, or other absorbent material.

For large spills: Get workers out of the affected area. If flammable liquids or vapors may be present, turn off electrical devices or other sources of sparks or flames. Wear protective equipment. Use supplied-air respiratory protection if vapor concentrations are not known. Contain spill at source by diking or absorbing with sand. Do not allow spill to spread to or intentionally flush to sewer or ground. Wash area thoroughly. Adequately ventilate area. Spill residue, cleaning rags, and absorbent may be refined to recover the precious metal content.

Disposal considerations:

Components of this product may be considered hazardous, waste product may be refined to recover previous metal content.

Section 07 Handling and Storage

Handling:

Adequate local ventilation should be used to keep exposures below applicable limits. Other engineering controls such as totally enclosed handling systems are also preferred; respiratory protection will be needed if exposures can not be kept below applicable limits by other means.

Respiratory protection:

Selection of a suitable respirator will depend on the properties of the contaminant (s) and their actual or expected air concentration vs. applicable limits. Consult ANSI Standard Z988.2 for decision logic to select appropriate NIOSH/MESA approved respirators. If respirators are needed to meet applicable limits, a respiratory protection program up to the level of OSHA Standard 29 CFR 1910.134 is mandatory. This includes air monitoring, selection, medical approval, training, fit testing, inspection, maintenance, cleaning, storage, etc.

Gloves:

Should be used when the possibility of skin contact exists. Impervious gloves (rubber or neoprene) should be used to avoid direct skin contact.

Eye Protection:

Chemical splash goggles.

Protective Clothing:

Protective clothing suitable to prevent skin contact should be used.

Smoking and eating:

Do not smoke, consume or store food or drinks in areas where the product is handled or stored. After handling the product, wash hands thoroughly before leaving the work area. Additional engineering controls, work practices and training may be required depending on exposure levels. These are discussed in the OSHA respiratory protection standard (29 CFR 1910.134) and OSHA Hazard Communications Standard(29 CFR 1910.120).

Contaminated items:

Empty product containers, contaminated clothing and cleaning materials, etc. should be considered hazardous until decontaminated or properly disposed according to federal, state and local laws and regulations.

Section 08 Exposure Controls and Personal Protection

Engineering Controls:

An eyewash station and emergency shower must be available to the work station.

Exposure Limits:

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Silver(metallic)	0.1 mg/m3	0.01 mg/m3 TWA 10 mg/m3 IDHL	0.01 mg/m3 TWA
Propylene Glycol Methyl Ethyl Acetate	N/A	N/A	N/A
Butyl Acetate	150 ppm 200 ppm STEL	150 ppm TWA 170 mg/m3 TWA 1700 ppm IDHL	150 ppm TWA 710 mg/m3 TWA
OSHA Vacated PELs: n-Butyl Acetate		150 ppm TWA	710 mg/m3 TWA

Personal Protective Equipment

Eyes: Chemical splash goggles

Skin: Impervious gloves (rubber, neoprene) to prevent skin contact

Clothing: Protective clothing suitable to prevent skin contact.

Respirators:

Selection of a suitable respirator will depend on the properties of the contaminant (s) and their actual or expected air concentration vs. applicable limits. Consult ANSI Standard Z988.2 for decision logic to select appropriate NIOSH/MESA approved respirators. If respirators are needed to meet applicable limits, a respiratory protection program up to the level of OSHA Standard 29 CFR 1910.134 is mandatory. This includes air monitoring, selection, medical approval, training, fit testing, inspection, maintenance, cleaning, storage, etc.

Section 09 Physical and Chemical Properties

Boiling Point	259-284 ° F
Formula Weight	Not available
Coeff. of Water/Oil Dist	Not available
pH (Liquids Only)	Not available
% Volatile By Volume	30-40%
Melting Point	Not available
Vapor Pressure	6mm @ 20 ° C
Vapor Density/Air is 1	Heavier than air
Solubility In Water	Appreciable >10%
Appearance and Color	Gray paste
Specific Gravity (H2O = 1)	1.8 – 2.0
Evaporation Rate (n-butyl acetate = 1):	Slower
Odor	Mild "fruity" smell
Flash Point:	76° F
Explosive Limits: (TAG)	
Lower:	1.5
Upper:	10.0

Section 10 Stability and Reactivity

Stable: Yes Hazardous Polymerization:

This product does not normally polymerize significantly.

Hazardous Decomposition Products:

At high temperature may include COx (carbon dioxide / carbon monoxide), water, nitrogen oxides, ethyl methacrylate, methyl acrylate

Conditions to avoid:

Heat, Contact with ignition source Materials to avoid: Oxidizing agents, acids, potassium tert-butoxide, reducing agents

Instability:

This product is normally stable.

Section 11: Toxicological Information

1-methoxy-2-propanol acetate

Toxic effects described in animals include:

By skin or eye contact:

Mild skin irritation; eye irritation. Toxic effects of repeated or prolonged animal exposures include, by skin or eye contact: Skin effects;

By inhalation.

Respiratory effects: Degeneration of the olfactory epithelium; renal effects; non-specific effects, e.g. weight loss and irritation; liver effects.

Additional animal tests have shown: No genetic damage in bacterial or mammalian cell cultures; no developmental toxicity.

Human health effects of overexposure may include: By skin or eye contact: Skin irritation with discomfort or rash Eye irritation with discomfort, tearing or blurring of vision

By inhalation: Nonspecific discomfort, e. g. nausea, headache, or weakness Human effects of higher level acute, repeated, or chronic overexposure may include: Irritation to the upper respiratory passages with coughing and discomfort. In addition, animal tests indicate commercial grade 1- methoxy-2-propanol acetone does not cause developmental toxicity. However, the tests of pure 2-methoxy-1-propanol acetate in rabbits and rats by inhalation have shown developmental toxicity. 2-methoxy-propanol acetate did not show developmental toxicity by skin contact. 2-methoxy-1-propanol acetate did not show developmental toxicity by skin contact. 2-methoxy-1-propanol acetate is present in commercial grade 1-methoxy-2-propanol acetate in low concentrations.

Butyl acetate

Toxic effects described in animals include: By skin or eye contact: Skin Irritation; eye irritation By inhalation: Eye irritation, narcosis; upper respiratory irritation By ingestion: Narcosis Toxic effects of repeated or prolonged animal exposures include: By inhalation: Eye irritation; lower weight gain By ingestion: Liver effects Toxic effects of chronic animal tests include: By inhalation: Liver effects Additional animal tests have shows: Developmental toxicity at dosage levels showing maternal toxicity ; no genetic damage in animals, bacterial, or mammalian cell cultures. Human health effects of overexposure may include: By skin or eye contact: Skin irritation with discomfort, tearing, or blurring of vision By inhalation: Irritation of the upper respiratory passages with coughing and discomfort; nonspecific discomfort, e. g. nausea, headache or weakness. Human effects of higher level acute repeated or chronic overexposure may include: Temporary nervous system depression with anaesthetic effect, e. g. dizziness, headache, confusion, loss of coordination, loss of consciousness. Abnormal liver function as detected by laboratory tests. In addition: By skin or eye contact: Significant skin permeation appears unlikely; there are inconclusive or unverified reports of human sensitization.

Silver metallic:

Human effects of higher level acute, repeated or chronic overexposure my include argyria.

Acrylic resin:

Toxic effects described in animals include: Slight skin irritation

Human health effects of overexposure my include: Allergic skin rashes Eye irritation with discomfort, tearing, or blurring of vision

Nonspecific discomfort, e. g. nausea, headache, weakness.

Section 12: Ecological Information

Exotoxicity: No information found in our selected sources

Environmental Fate: No information found in our selected references.

Bioaccumulation: Not expected to occur.

Section 13: Disposal Considerations

Use only licensed transporters and permitted disposal facilities and conform to all laws.

Recycle to process, if possible. Silver is a non-renewable resource.

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused materials, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

RCRA P-Series: None listed

RCRA U-Series: None listed

Section 14: Transport Information

Shipping information:

Shipping name: Paint Related Material
Hazard Class: 3
UN/NA Class: UN1263
Label: Flammable liquid
Packing Group III

Section 15: Regulatory Information

United States:

This MSDS has been prepared to be in compliance with OSHA regulations and with the Pennsylvania Right-to-know regulations.

Section 2 lists the chemical name and CAS# for each:

Specially hazardous ingredient	>0.01% (OSHA is .0.1%)
Hazardous ingredient	>1.0 % (OSHA is the same)
Non-hazardous ingredient	>3.0% (OSHA does not regulate)

RTECS:

CAS# 1440-22-4: VW3500000
CAS# 108-65-6: AI8925000
CAS# 123-86-4: AF7350000

TSCA

All ingredients in this product appear on the TSCA Inventory.

Health & Safety Reporting List

Chemical Test Rules:

CAS# 123-86-4: CFR 799.5000

Section 12b: None listed

TSCA Significant New Use Rule:

CERCLA Section 103:

CAS# 123-86-4 >5000 lbs RQ

SARA:

Hazard Classification: Fire Hazard

SARA Codes:

CAS# 123-86-4: acute, flammable

Section 313:

CAS# 7440-22-4: Wt% 35-65%

Clean Air Act: None listed

Clean Water Act: None listed

OSHA:

State (Individual states in the USA)

CAS# 123-86-4 is found on the following state Right-to-Know lists: California, Massachusetts, Minnesota, New Jersey, Pennsylvania

California No Significant Risk Level:

California Prop. 65: None listed

European/International Regulations:
European Labeling in Accordance with EC Directives

Hazard Symbols: Xi

Risk Phrases:

- R10 Flammable
- R33 Danger of cumulative effects
- R36 Irritating to eyes
- R66 Repeated exposure may cause skin dryness or cracking
- R67 Vapors may cause drowsiness and dizziness

Safety Phrases:

- S28A After contact with skin, wash immediately with plenty of water
- S25 Avoid contact with eyes
- S37 Wear suitable gloves
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible)

WGK (Water Danger/Protection):

- CAS# 7440-22-4: 0
- CAS# 108-65-6: 1
- CAS# 123-86-4: 1

Canada

DSL/NDL:

- CAS# 7440-22-4 is listed on the DSL List.
- CAS# 108-65-6 is listed on the DSL List
- CAS# 123-86-4 is listed on the DSL List

This product has a WHMIS classification of B2, D2B

Section 16: Other Information

If product is going to be formulated into some other product, so that it becomes a component of a product, read the MSDS sheets for the other components before blending as the resulting mixture may have the hazards of all of its parts.

Disclaimer of Liability:

Electro Static Technology-ITW makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.