



SPI Supplies Division

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Manufacturer's CAGE: 1P573

Material Safety Data Sheet

[SPI #05070-AB Silver Sheets, Double Sided Adhesive](#)

Section 1: Identification

Date Effective... June 7, 2010
(most recent revision)

Chemical Name/Synonyms:

Silver filled acrylic adhesive
attached to a release paper, both sides

Product Use:

Adhesive for holding samples for microscopy and
surface analysis; ESD shielding applications

Chemical family: Silver double sided adhesive sheets

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s.....

Worldwide phone: 1-(703)-527-3887

Worldwide FAX: 1-(703)-741-6090

Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name.... Silver Sheets, Double Sided Adhesive

CAS #..... 7440-22-4 (for silver only)

Chemical Formula..... Silver filled acrylic adhesive



Section 2 Composition / Information on Ingredients

INGREDIENT NAME	CAS NUMBER	WEIGHT %	EINECS/ELINCS
Acrylic adhesive	Not known	< 95%	Not known
Silver	7440-22-4	< 10%	231-131-3

Trace impurities and additional material names not listed above may also appear in Section 15 near the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons. However, we have never found any evidence for trace contaminants in these adhesive materials.

Section 3: Hazard Identification

Emergency overview:

A silver filled adhesive layer. Not considered hazardous under normal usage. Can release irritating and/or toxic vapors at elevated processing temperatures or if involved in a fire. Caution should be exercised about not permitting the film to come in contact with a hot plate that is going to take the acrylic beyond the point where vapors are released from the film.

Potential Health Hazards:

Skin: Not considered hazardous but constant contact with this product could lead to some skin irritation.

Eyes: Not considered hazardous but if eye contact should occur, wash with fresh water for 15 minutes.

Inhalation: Not a route of exposure under normal usage. Elevated processing temperatures may release irritating vapors, and large amounts of cutting could generate irritating particulates, but mainly coming from the release papers, not from the "silver-filled" adhesive.

Ingestion: Not a route of exposure. Ingestion of silver may cause irritation of the digestive tract; effects may be cumulative, causing abdominal pain, rigidity, convulsions and shock.

Chronic effect: Chronic inhalation or ingestion of silver salts may cause argyria, with permanent blue-gray discoloration of eyes, skin, mucous membranes, and internal organs.

Target Organs [2440-22-4]: Kidneys

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NONE

Section 4: First Aid Measures

Take proper precautions to ensure your own health and safety before attempting to rescue and providing first aid. For specific information refer to the Emergency Overview in Section of this MSDS.

Skin: If molten material contacts the skin, immediately flush the skin with large amounts of water to cool the affected tissue and polymer. Do not attempt to peel polymer from skin. Get medical attention immediately.

Eyes: None needed under normal usage. If material comes into contact with the eye, flush eyes with water while holding eyelids apart to ensure complete irrigation.

Inhalation: None needed under normal usage. If exposed to vapors at elevated processing temperatures, remove to fresh air.

Ingestion: None needed under normal usage.

Advice to physician: Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

Flammable Properties

Flash Point: Not applicable.
Flash Point Method: Not applicable.
Autoignition Temperature: Not determined.

Upper flame limit (volume % in air): Not applicable. Non-volatile solid.
Lower flame limit (volume % in air): Not applicable. Non-volatile solid.

Flame propagation rate (solids): Not determined.

OSHA Flammability class: Not determined.

Extinguishing Media: Carbon dioxide, dry chemical foam, water or other agents as appropriate for materials in surrounding fire.

Unusual Fire and Explosion Hazards: Gaseous products may be evolved if the film is heated to very high temperatures and they should be regarded as hazardous. This could also include organo-silver compounds.

Special Fire Fighting Precautions/Instructions:

Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

Section 6: Accidental Release Measures

In Case of Spill or Other Release:

(Always wear recommended personal protective equipment.)

Collect and place in a solid waste container.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

Section 7: Handling and Storage

Normal Handling: Always wear recommended personal protective equipment such as laboratory safety glasses. Use normal personal hygiene and good housekeeping.

Storage Recommendations: Store in a cool, dry area, preferably refrigerated, away from direct heat or sunlight.

Section 8: Exposure Controls and Personal Protection

Engineering Controls: General room ventilation is adequate for normal cutting and shaping of the film.

Personal Protective Equipment

Skin Protection: Not normally required. Use heat resistant gloves if handling melted material.

Eye Protection: As a general practice in manufacturing areas, safety glasses that conform to ANSI Z87.1 should be worn.

Respiratory Protection:

Under normal usage, not normally required. A NIOSH/MSHA approved respirator should be worn in areas where the PEL/TLV is exceeded.

Additional Recommendations: None.

Exposure Guidelines

INGREDIENT NAME/CAS#	ACGIH TLV	NIOSH	OSHA Final PELs
Silver 7440-22-4	0.0 mg/m ³ TWA	0.01 mg/m ³ TWA (dust) 10 mg/m ³ IDHL (dust)	0.01 mg/m ³ TWA

Other Exposure Limits for Potential Decomposition of Products

Section 9: Physical and Chemical Properties

Appearance: Silver-filled adhesive layer

Physical state: Solid, sticky adhesive layer.

Odor: None.

Specific Gravity (water = 1.0): Not known

Solubility in Water (weight%): Negligible.

pH: Not applicable.

Boiling Point: Not applicable.

Melting Point: Not known

Vapor Pressure: Negligible at room temperature.

Vapor Density (air = 1.0): Not determined.

Evaporation Rate: Not determined.

% Volatiles: Negligible.

Flash Point: Not applicable.

Flash point method and additional flammability data are found in Section 5.

Section 10: Stability and Reactivity

Normally Stable? (Conditions to Avoid)

Normally stable. Avoid exposure to open flame or temperatures exceeding recommended processing temperatures. The maximum temperature to which the film can be exposed will vary with exposure (dwell) time. Any such heating should be done under exhaust fume hood conditions and the breathing of vapors should be avoided.

Incompatibilities:

Alkali metal complexes and organic amines. Highly chlorinated-fluorinated solvents, nitrogen tetroxide and chlorine gas tend to plasticize the film. Silicones tend to induce stress cracking.

Hazardous Decomposition Products:

Thermal decomposition products may include silver vapors, organo-silver compounds, hydrogen chloride, hydrogen fluoride, carbon monoxide, carbon dioxide and combustion by-products (oxidized and non-oxidized hydrocarbons).

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

RTECS# [7440-22-4]: VW3500000

LD50/LC50: Not available

Immediate (Acute) Effects: Not determined.

Delayed (Subchronic and Chronic) Effects: Chronic inhalation or ingestion of silver salts may cause argyria, with a permanent blue-gray discoloration of the eyes, skin, mucous membranes and internal organs.

Other Data: None.

Section 12: Ecological Information

Exotoxicity: Exotoxicity is expected to be low based on the near zero water solubility of the polymer and also, metallic silver. Material is considered inert and not expected to be biodegradable or toxic.

Bioaccumulation: Not expected to occur.

Section 13: Disposal Considerations

RCRA

Is the unused product a RCRA hazardous waste if discarded? No.

Other Disposal Considerations:

Dispose of in compliance with Federal, state and local government regulations. Usually considered an inert packaging material that can be recycled or landfilled. Incineration is not a preferred disposal method because of the possible formation of hydrogen chloride and hydrogen fluoride.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

Section 14: Transport Information

US DOT Hazard Class: Not regulated.

US DOT ID Number: Not applicable, none assigned.

Section 15: Regulatory Information

Toxic Substances Control Act (TSCA)

TSCA Inventory Status: Listed on the TSCA Inventory.

Other TSCA Issues: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

INGREDIENT NAME

CERCLA RQ (lb): CAS# [7440-22-4] 1000 lb final RQ

SARA EHS TPQ (lb): No ingredients listed in this section.

Spills resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee. We do not anticipate any circumstances where by there could ever be a spill of this type with this type of material.

SECTION 313 HAZARD CLASS:

Silver, CAS# [7440-22-4] is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR part 373. CAS numbers and weight percents are found in Section 2.

CLEAN WATER ACT

CAS# [7440-22-4] is listed as a Priority Pollutant under the Clean Water Act.

CAS# [7440-22-4] is listed as a Toxic Pollutant under the Clean Water Act.

State Right-To-Know

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

CAS# [7440-22-4] can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Mennesota, Massachusetts.

EUROPEAN/INTERNATIONAL REGULATIONS

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases: R33 Danger of cumulative effects

Safety Phrases: S37 Wear suitable gloves. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S28A After contact with skin, wash immediately with plenty of water.

WGK (Water Danger/Protection) CAS# [7440-22-4]: 0

Canada DSL/NDSL: CAS# [7440-22-4] is listed on the Canadian Ingredient Disclosure List

Exposure Limets for CAS# [7440-22-4]:

OEL-AUSTRALIA; OEL-BELGIUM; OEL-FINLAND; OEL-FRANCE; OEL-UNITED KINGDOM; =0.1mg/m3.

OEL-DENMARK; OEL-GERMANY; OEL-SWITZERLAND = 0.01mg/m3. OEL-RUSSIA=1mg/m3.

WHMIS Classification (CANADA):

Not a controlled substance. (Considered to be a manufactured article.)

Foreign Inventory Status:

The base monomers are listed on the EINECS Inventory.

California Prop. 65:

Proposition 65 requires manufacturers or distributors of consumer

products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity, it will be listed below:

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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