

Alfa Aesar®

Alfa®

Johnson Matthey

**MATERIAL SAFETY DATA SHEET**

Alfa Aesar  
A Johnson Matthey Company  
30 Bond Street  
Ward Hill, MA 01835-0747  
Emergency Phone-(508) 521-6300  
CHEMTREC-(800) 424-9300

**SECTION 1-IDENTIFICATION**

Product Code: 12942 Revision Date: 4/12/91  
Product Name: Two Part Conductive Adhesive  
Synonyms: Mattheylec A-500  
Chemical Family: Silver adhesive  
CASH: Not known  
Molecular Formula: Mixture

**SECTION 2-INGREDIENTS**Resin

Chemical: Silver			
CASH	%	PEL	TLV
7440-22-4	Proprietary	0.01 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>

Chemical: Resins			
CASH	%	PEL	TLV
Proprietary	Proprietary	Not established	Not established

Hardener

Chemical: Silver			
CASH	%	PEL	TLV
7440-22-4	Proprietary	0.01 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Chemical: Boron trifluoride-amine complex			
CASH	%	PEL	TLV
Proprietary	Proprietary	Not established	Not established

**SECTION 3- PHYSICAL DATA**

Boiling Point: No data  
% Volatiles: No data  
Solubility in Water: Insoluble  
Specific Gravity (H<sub>2</sub>O=1): No data  
Freezing/Melting Point: No data  
Evaporation Rate (butyl acetate=1): No data  
Vapor Density (air=1): No data  
Vapor Pressure: No data  
Appearance and Odor: Resin: Silver colored paste.  
Hardener: Silver colored paste

Alfa® AES, IR

Johnson Matthey



Other: No data

#### SECTION 4-FIRE AND EXPLOSION HAZARD DATA

Flash Point:(°F) No data

Flammable Limits in Air, % by volume: Lower No data  
Upper No data

Autoignition Temperature: No data

Extinguishing Media: Flammable. Use water, carbon dioxide, dry chemical extinguishing agents, dry sand, or dry ground dolomite.

Special Fire Fighting Procedures: No special firefighting procedures needed, use normal procedures which include wearing NIOSH/MSHA approved self-contained breathing apparatus, flame and chemical resistant clothing, hats boots and gloves. If without risk remove material from fire area.

#### SECTION 5-HEALTH DATA

OSHA (PEL): See section 2

ACGIH (TLV): See section 2

##### A. ANIMAL TOXICITY

LD50: No data

LC50: No data

Other: No data

##### B.EFFECTS OF EXPOSURE

###### ACUTE EFFECTS

Ingestion: May be harmful, effects not known.

Skin Contact: May cause irritation.

Eye Contact: May cause irritation.

Inhalation: May cause irritation.

Medical Conditions, if any, Aggravated by the Chemical: None known

Other Health Hazards: None known

Most Likely Routes of Entry: Ingestion

###### CHRONIC EFFECTS

Ingestion: See other chronic effects

Skin Contact: May cause dermatitis. See other chronic effects

Eye Contact: None known

Inhalation: See other chronic effects.

Other: Absorption of silver over a long period may cause "argyria", a permanent blue-grey discoloration of the eyes, skin and mucous membranes.

##### C. EMERGENCY AND FIRST AID PROCEDURES

Ingestion: No data available but one should obtain medical attention.

Skin Contact: Remove contaminated clothing, flood skin with large amounts of water. If irritation persists seek medical attention.



Alfa® ES, IR

Johnson Matthey



**Eye Contact:** Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.  
**Inhalation:** No specific information available, one should obtain medical attention.

#### SECTION 6-REACTIVITY

**Incompatibility:** No data  
**Hazardous Decomposition Products:** CO, CO<sub>2</sub>  
**Conditions to Avoid:** Heat, sparks, open flames  
**Stability:** Stable  
**Hazardous Polymerization:** Will not occur  
**Other:** No data

#### SECTION 7-ENVIRONMENTAL INFORMATION

**RCRA Code:** D001, D011  
**TSCA Registered:** Yes, as separate components  
**Spill and Leak Procedures:** Eliminate all sources of ignition. Wearing full protective equipment, cover spill with dry sand or vermiculite. Mix well and carefully transfer to a container.  
**Waste Disposal:** Consult state, local or federal EPA regulations for proper disposal.

#### SECTION 8-PROTECTION INFORMATION

**Ventilation Requirements:** Laboratory fume hood  
**Respiratory Protection:** NIOSH/MSHA approved high efficiency particulate respirator for ordinary use and self-contained breathing apparatus for emergency use.  
**Protective Gloves:** Rubber  
**Eye/Face Protection:** ANSI approved safety goggles


#### SECTION 9-SPECIAL PRECAUTIONS

**Handling and Storage:** Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash thoroughly after use.  
**Other Precautions:** Lab coat and apron, flame and chemical resistant coveralls, eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing.

#### SECTION 10-TRANSPORTATION INFORMATION-U.S. D.O.T.

Per 49CFR 172.101  
**Proper Shipping Name:** Adhesive  
**Hazard Classification:** Flammable Liquid  
**UN #:** 1133

**Alfa® ES, 1R**

 **Johnson Matthey**

**SECTION 11-COMMENTS**

Danger: Flammable, may cause argyria.

This product contains silver and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40CFR 372.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.



**Instructions for use**

**Stock number 12942: Silver two-part conductive adhesive  
(Mattheylec A-500)**

**Features:**

This is a general two-part conductive adhesive. It will bond to many plastics as well as ceramics, metals, glass and graphite. The two compounds, which are thick and putty-like, are easy to mix together before application. The mixed cement has a useful pot life enabling it to be used for several hours in a production environment before it cures at room temperature. Once cured, Mattheylec A-500 is extremely hard and resistant to water and organic solvents.

**Instructions:**

Mix equal quantities by weight with a palette knife and apply evenly to both materials to be bonded. The coated surfaces should be pressed together gently and, if necessary, lightly clamped in position during curing. Material will cure at room temperature in one day. For quicker results or improved properties, this material will cure in 30 minutes at 100 degrees C. The addition of solvents is not recommended. The maximum cure temperature is 150 degrees C.

**General comments:**

Ensure all surfaces to be bonded are dry, clean and grease-free. It is advisable to roughen very smooth surfaces to increase bond strength.

Like most adhesives, this material has a limited shelf life. You will get the best possible results by using your material as soon as possible. Maximum storage life can be safeguarded by keeping your conductive adhesive in sealed containers in a normal refrigerator. If this is not possible, ensure material is not in direct sunlight or exposed to heat sources. If stored in a refrigerator, it is necessary to allow the material to reach ambient temperature before using. This may take several hours, so it is advisable to remove the adhesive from the refrigerator the day prior to use.

The conductive adhesive is safe to use but contact with the skin should be avoided.

The two components should be well mixed (for 3-5 minutes preferably with a palette knife). This should be done on a flat non-porous surface such as a tile.

Very large joints may need to be supported until fully cured. The curing process can be speeded up by heating the joint. In fact, this will also improve the final electrical and mechanical properties. If a controlled oven is not available, then alternative heat sources may be used (for example IR lamps, hair dryer, direct sunlight, radiators, etc.). Do not use excessively hot heat sources such as blow torches.

**Alfa® ES, IR**

**Johnson Matthey**

