**AI TECHNOLOGY INC**

70 Washington Road  
Princeton Jct., NJ 08550  
(609) 799-9388 fax (609) 799-9308  
E-Mail: [ait@aitechnology.com](mailto:ait@aitechnology.com)  
Internet: <http://www.aitechnology.com>

**SAFETY DATA SHEET****EMERGENCY PHONE: 1-800-424-9300****1) PRODUCT IDENTIFICATION****Product:** EG8020 (PART A)**Product Type:** Epoxy paste adhesive**Product Description:** Silver filled two component epoxy system.**Recommendation On Use:**

Die attach and Substrate Attach.

**General Use:**

Die Attach and Substrate Attach.

**Restriction On Use:**

Intended for designated use only

**2) HAZARD IDENTIFICATION****WHMIS Classification:****GHS Classification:** Skin irritation (Category 1) Serious Eye Damage (Category 1)**Signal Word:** Warning**GHS Label elements:****Precautionary Statement:**

For industrial use only

**Physical Appearance:**

Paste (silver color)

**Immediate Concerns:**

Avoid contact with skin and eyes.

**Primary Route Entry:**

Eye and skin

**Medical Conditions Aggravated:**

Skin contact may aggravate an existing dermatitis (skin condition).

**Potential Health Effects:****Eyes:**

Slight Irritant

**Skin:**

Skin absorption hazard

**Ingestion:**

Not a route of exposure under normal use

**Inhalation:**

No known significant effects or critical hazards

**Signs and Symptoms of Overexposure:****Eyes:**

Adverse symptoms may include irritation, watering and redness

**Skin:**

Irritant

**Ingestion:**

None under normal use

**Inhalation:**

None under normal use

**Acute Toxicity:**

None under normal use

**Chronic Exposure:**

Seek medical attention if any symptoms occur.

**Carcinogenicity:**

Not classifiable as a carcinogen

**Mutagenicity:**

Not considered to be mutagenic

**Reproductive Effects:**

Not known to cause any reproductive effects

**Teratogenic Effects:**

None under normal use

**Target Organ Statement:**

Skin and eyes

**Sensitization:****3) COMPOSITION / INFORMATION ON INGREDIENTS****MATERIAL:**

Silver

Epoxy Admixture

**CAS NO**

7440-22-4

Proprietary

**%**

75-85

25-15

NOTE: \* For powders only; in adhesive product, powders are bound in adhesive and values are not applicable.

**4) FIRST AID MEASURES****First Aid Eye:**

Immediately wash with water for 15 minutes.

**First Aid Skin:**

Wash with soap and water. If symptoms develop, seek medical attention.

**First Aid Inhale:**

Remove from source

**First Aid Ingest:**

None under normal use

**Physician Note:****Acute Symptoms:**

Seek medical treatment

**Delayed Symptoms:**

Seek medical treatment

**5) FIRE FIGHTING MEASURES****Flammable Class:** 1**Flame Propagation or Burning Rate of Solids:** Not Determined.**General Hazard:** No specific fire or explosion hazard.**Extinguish Media:** Carbon dioxide, foam, or dry chemical. Water spray**Hazardous Combustion Products:** Decomposition and combustion products may be toxic**Fire Fighting Procedures:**

Use self-contained breathing apparatus; decomposition and combustion products may be toxic.

**Unsuitable Firefighting Equipment:**

Not determined

**Suitable Firefighting Equipment:**

Self-contained breathing apparatus and full protective clothing should be worn. Avoid inhalation of material or combustion by-products.

Sensitive to Static Discharge No

Sensitive to Impact: no

## 6) ACCIDENTAL RELEASE MEASURES

**Small Spill:** Cover with sand and place in waste containers for proper disposal

**Large Spill:** Contain spill and place in waste containers for proper disposal

**Water Spill:** Contain spill and use correct equipment to remove from water

**Land Spill:** Contain spill and place in waste containers for proper disposal

### General Procedures:

Use the necessary tools and protective equipment for the situation.

### Release Notes:

Wear protective gears to prevent contact with skin and eyes. Use non-sparking tools.

## 7) HANDLING AND STORAGE

### Handling:

Use latex gloves and safety glasses

### Storage:

-40°C

## 8) EXPOSURE CONTROLS / PERSONAL PROTECTION

**PPE Eye and Face:** Use latex gloves and goggles

**PPE Skin:** Protective clothing such as coveralls or lab coats must be worn. Launder or dry-clean when soiled. Gloves resistant to chemicals and petroleum distillates required. When handling large quantities, impervious suits, gloves and rubber boots must be worn.

### Engineering Controls:

**PPE Respiratory:** Not normally required.

**PPE Ventilation:** Use well ventilated hood.

**PPE Other:** Personal protective equipment should be worn based on the task being performed

### OSHA PEL

0.01mg/m<sup>3</sup> \*

### ACGIH TLV

0.1mg/m<sup>3</sup> \*

### EINECS

None Established

None Established

**Work Hygienic Practices:** Use well ventilated hood.

## 9) PHYSICAL AND CHEMICAL PROPERTIES

**Flashpoint and Method:** Not Determined

**Upper Flammable Limits:** Not Determined

**Autoignition Temperature:** Not Determined

**Color:** Silver

**Vapor Pressure:** Not Applicable

**Vapor Density:** Not Applicable

**Boiling Point:** Not Applicable

**Melting Point:** Not Determined

**Evaporation Rate:** None

**Specific Gravity:** 3.3

**Molecular Weight:** Not Determined.

**Appearance:** Silver epoxy adhesive

## 10) STABILITY AND REACTIVITY

**Hazardous Polymerization:** Stable under normal conditions of storage and use

**Chemical Stability:** Stable at normal temperatures and pressure.

**Polymerization:** May occur

**Freezing Point:** Not Determined

**Solubility in Water:** None

**Density:** 3.5

**Viscosity:** 150,000 cp

**Coeff. Oil/Water:** Not tested

**Lower Flammable Limits:** Not Determined

**Physical State:** Paste

**Odor:** Slight chemical odor

**Odor Threshold:** Not Determined

**pH:** Not tested

**Freezing Point:** Not Determined

**Solubility in Water:** None

**Density:** 3.5

**Viscosity:** 150,000 cp

**Coeff. Oil/Water:** Not tested

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame

### Hazardous Decomposition Products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced

### Incompatibility Materials:

There is no danger when product is cured.

## 11) TOXICOLOGICAL INFORMATION

### Acute:

**Eyes:** **Dermal LD50:** Not Determined **Oral LD50:** Not Determined **Inhalation LC50:** Not Determined

**Eye Effects:** May cause irritation to the eyes

**Skin Effects:** Minor irritation

### Carcinogenicity:

**IARC:** No ingredients listed as human carcinogens. **NTP:** No ingredients listed as human carcinogens. **OSHA:** Consistent with (29 CFR 1910.1200).

**Sensitization:** May cause sensitization by skin contact

**Reproductive Effects:** No known effects

**TARGET ORGANS:**

**Eyes:** Slight Irritant    **Skin:** Slight Irritant    **Gastrointestinal:** Not Determined    **Respiratory System:** Not Determined  
**Teratogenic Effects:** May cause sensitization by skin contact  
**Mutagenicity:** None

**12) ECOLOGICAL INFORMATION**

**Ecotoxicity:** Do not discharge into sewer or waterways

**Mobility in Soil:** Unknown

**Persistence and Degradability:** Avoid runoff into storm sewers and ditches that lead to waterways. Water runoff can cause environmental damage.

**Bioaccumulative Potential:** Not Determined

**13) DISPOSAL CONSIDERATIONS**

**Disposal Method:** Cure at 150C for 2 hrs and dispose of according to the environmental rules and regulations at the location.

**For Large Spills:** Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Flush with water to remove any trace residue.

**Product Disposal:** Dispose in accordance with federal, state and local regulations.

**Empty Container:** Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

**14) TRANSPORT INFORMATION****Road and Rail (ADR/RID)**

**Transport Information:**

Not Regulated

**Kemler Number:**

Not Regulated

**Hazard Class:**

Not Hazardous by D.O.T. Regulations

**Air (CIAO/IATA)**

**Shipping Name:** Not Regulated

**Technical Name:** Not regulated

**UN Number:** N/A

**Primary Hazard Class:** No known hazards

**Packing Group:** N/A

**Label:** N/A

**Vessel (IMO/IMDG)**

**Shipping Name:** Not Regulated

**Technical Name:** Not regulated

**UN Shipping Name:** N/A

**Primary Hazard Class:** No known hazards

**Packing Group:** N/A

**Label:** N/A

**15) REGULATORY INFORMATION**

**TCSA:** Not Determined

**Skin:** Not determined

**Gastrointestinal:** Not Determined

**Respiratory System:** Not Determined

**16) OTHER INFORMATION**

**HMIS Health Rating (1-4):** 1

**HMIS Flammability Rating (1-4):** 1

**HMIS Physical Hazard Rating (1-4):** 0

**Long Term Health Effects (Y/N):** N

**Note:** All ingredients in this product are on the Toxic Substances Control Act (TSCA) inventory or are not required to be listed.

No ingredient in this product is known to be carcinogenic.

Ingredients listed on the New Jersey "RIGHT TO KNOW" substance list: Silver CAS#7440-22-4 Substance#1669

This product is compliant to RoHS & REACH and does not contain any Substances of Very High Concern

**Section X:**

**Version:** 1/6/2023

**AI TECHNOLOGY INC**

70 Washington Road  
Princeton Jct., NJ 08550  
(609) 799-9388 fax (609) 799-9308  
E-Mail: [ait@aitechnology.com](mailto:ait@aitechnology.com)  
Internet: <http://www.aitechnology.com>

**SAFETY DATA SHEET****EMERGENCY PHONE: 1-800-424-9300****1) PRODUCT IDENTIFICATION**

**Product:** EG8020 (Part B) **Product Type:** Epoxy Paste Adhesive  
**Product Description:** Silver filled two component epoxy system--Part B.  
**Recommendation On Use:** Die Attach and Substrate Attach **General Use:** Die Attach and Substrate Attach **Restriction On Use:** Intended for designated use only

**2) HAZARD IDENTIFICATION****WHMIS Classification:****GHS Classification:** Skin irritation (Category 1) Serious Eye Damage (Category 1)**Signal Word:** Warning**GHS Label elements:****Precautionary Statement:**

For industrial use only

**Physical Appearance:**

Silver Paste

**Immediate Concerns:**

Corrosive- causes eye and skin burns.

**Primary Route Entry:**

Inhalation, eye and skin contact.

**Medical Conditions Aggravated:**

Pre-existing skin and eye disorders may be aggravated by exposure to this product. Pre-existing skin or lung allergies may increase the chance of developing increased allergy symptoms from exposure to this product.

**Potential Health Effects:**

**Eyes:** Can cause eye burns and damage  
**Skin:** Adverse symptoms may include irritation, burns and redness  
**Ingestion:** Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness and spasms.  
**Inhalation:** Low inhalation toxicity. May cause symptoms similar to those from ingestion.

**Signs and Symptoms of Overexposure:**

**Eyes:** Irritation, watering and redness can result in burns which can lead to blindness  
**Skin:** Burns on the skin  
**Ingestion:** Causes burning of mouth, throat and stomach with abdominal and chest pain, nausea, vomiting.  
**Inhalation:** Respiratory tract irritation which can cause damage

**Acute Toxicity:**

Can cause vomiting and irritation of the throat and stomach

**Chronic Exposure:**

Repeated skin contact may cause a persistent irritation or dermatitis. Repeated inhalation may cause lung damage

**Carcinogenicity:**

Not considered to be carcinogenic

**Mutagenicity:**

Not considered to be mutagenic

**Reproductive Effects:**

No information with effecting the reproductive system

**Teratogenic Effects:**

Not Determined.

**Target Organ Statement:**

No known effects.

**Sensitization:**

May cause sensitization

**3) COMPOSITION / INFORMATION ON INGREDIENTS****MATERIAL:**

	CAS NO	%
Silver	7440-22-4	70-85
Amine Admixture	9046-10-0	30-15

NOTE: \* For powders only; in adhesive product, powders are bound in adhesive and values are not applicable.

**4) FIRST AID MEASURES****First Aid Eye:**

Immediately flush eyes with eyewash solution or clean water holding the eyelids apart for 15 minutes. If symptoms develop, seek medical attention.

**First Aid Skin:**

Wash with soap and water. If symptoms develop, seek medical attention.

**First Aid Inhale:**

Move to fresh air and keep at rest. Seek medical attention if symptoms develop

**First Aid Ingest:**

If swallowed, do not induce vomiting. Keep person resting and seek medical attention.

**Physician Note:**

No specific treatment. Treat symptomatically.

**Acute Symptoms:****Delayed Symptoms:** Seek medical treatment**5) FIRE FIGHTING MEASURES****Flammable Class:** 1 **Flame Propagation or Burning Rate of Solids:** Not Determined.**General Hazard:** No specific fire or explosion hazard.**Extinguish Media:** Sodium Bicarbonate and water**Hazardous Combustion Products:** Carbon monoxide, oxides of nitrogen, formaldehyde, cyanide

**Fire Fighting Procedures:**

Use self-contained breathing apparatus; decomposition and combustion products may be toxic.

**Unsuitable Firefighting Equipment:**

**Suitable Firefighting Equipment:** Self-contained breathing apparatus should be available for fire fighters.

**Sensitive to Static Discharge** no

**Sensitive to Impact:** no

**6) ACCIDENTAL RELEASE MEASURES**

**Small Spill:** Cover with sand and place in waste containers for disposal

**Large Spill:** Contain spill and place in waste containers for disposal

**Water Spill:** Keep from going into water systems

**Land Spill:** Contain spill and place in waste containers for disposal

**General Procedures:**

Use the necessary tools and protective equipment for the situation.

**Release Notes:**

Unknown

**7) HANDLING AND STORAGE****Handling:**

Minimum feasible handling temperatures should be maintained. Eye wash and safety shower should be available nearby when this product is handled or used.

**Storage:**

Periods of exposure to high temperatures should be minimized. Water contamination should be avoided. If stored above 100 DEG F, a nitrogen atmosphere is recommended.

**8) EXPOSURE CONTROLS / PERSONAL PROTECTION**

**PPE Eye and Face:** Avoid eye contact. Chemical type goggles with face shield must be worn. Do not wear contact lenses.

**PPE Skin:** Protective clothing such as coveralls or lab coats must be worn. Launder or dry-clean when soiled. Gloves resistant to chemicals and petroleum distillates required. When handling large quantities, impervious suits, gloves and rubber boots must be worn.

**Engineering Controls:** Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

**OSHA PEL**

**ACGIH TLV**

**EINECS**

**PPE Respiratory:** Not normally required. Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

0.01mg/m<sup>3</sup> \*

0.1mg/m<sup>3</sup> \*

**PPE Ventilation:** Local exhaust ventilation is recommended if generating vapor, dust or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

None Established

None Established

**PPE Other:** Personal protective equipment should be worn based on the task being performed

**Work Hygienic Practices:** Local exhaust ventilation is recommended if generating vapor, dust or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

**9) PHYSICAL AND CHEMICAL PROPERTIES**

**Flashpoint and Method:** N/A

**Upper Flammable Limits:** Not Determined

**Autoignition Temperature:** Not Determined

**Color:** Silver

**Vapor Pressure:** Not Determined.

**Vapor Density:** > 1

**Boiling Point:** Not Determined

**Melting Point:** > 400C

**Evaporation Rate:** Not Determined.

**Specific Gravity:** 4.0

**Molecular Weight:** Not Determined.

**Appearance:** Silver paste

**Lower Flammable Limits:** Unknown

**Physical State:** Paste

**Odor:** Ammonia like odor

**Odor Threshold:**

**pH:** Not Determined

**Freezing Point:** Not Determined

**Solubility in Water:** None

**Density:** 4.0

**Viscosity:** 240,000 cp

**Coeff. Oil/Water:** Not Determined.



## 10) STABILITY AND REACTIVITY

**Hazardous Polymerization:** May occur.

**Chemical Stability:** Stable under normal handling and storage condition

**Polymerization:** No

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame

### Hazardous Decomposition Products:

Thermal degradation could produce carbon monoxide, carbon dioxide and unidentified organic compounds.

### Incompatibility Materials:

Acid base chemicals

## 11) TOXICOLOGICAL INFORMATION

### Acute:

**Eyes:** This material reacts violently with acids. **Dermal LD50:** Not tested **Oral LD50:** .98 g/kg (rabbit) moderately toxic. **Inhalation LC50:** Not Determined

**Eye Effects:** May cause burning and watery eyes

**Skin Effects:** None

### Carcinogenicity:

**IARC:** None **NTP:** None **OSHA:** None

**Sensitization:** (Buehler) negative - skin (guinea pig)

**Reproductive Effects:** No known effects

### TARGET ORGANS:

**Eyes:** Irriting **Skin:** Irriting, may cause rash **Gastrointestinal:** Not Determined **Respiratory System:** Not Determined

**Teratogenic Effects:** (Buehler) negative - skin (guinea pig)

**Mutagenicity:** Not Determined

## 12) ECOLOGICAL INFORMATION

**Ecotoxicity:** No known significant effects or critical hazards

**Mobility in Soil:** No known significant effects or critical hazards

**Persistence and Degradability:** No known significant effects or critical hazards

**Bioaccumulative Potential:** Not Determined

## 13) DISPOSAL CONSIDERATIONS

**Disposal Method:** This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchase form. Under RCRA, it is the responsibility of the user of the product to determine at time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

**For Large Spills:** Contain spill and use proper container and protective equipment to clean up spill

**Product Disposal:** Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

**Empty Container:** Disposal of empty container should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements

## 14) TRANSPORT INFORMATION

### Road and Rail (ADR/RID)

**Transport Information:**

Not Regulated

**Kemler Number:**

Not Regulated

**Hazard Class:**

Not Regulated

### Air (CIAO/IATA)

**Shipping Name:** Not Regulated

**Technical Name:** Not Regulated

**UN Number:** N/A

**Primary Hazard Class:** N/A

**Packing Group:** N/A

**Label:** N/A

### Vessel (IMO/IMDG)

**Shipping Name:** Not Regulated

**Technical Name:** Not Regulated

**UN Shipping Name:** N/A

**Primary Hazard Class:** N/A

**Packing Group:** N/A

**Label:** N/A.

## 15) REGULATORY INFORMATION

**TCSA:** This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory. **Skin:** Not Determined

**Gastrointestinal:** Not Determined

**Respiratory System:** Not Determined

## 16) OTHER INFORMATION

**HMIS Health Rating (1-4):** 1

**HMIS Flammability Rating (1-4):** 1

**HMIS Physical Hazard Rating (1-4):** 0

**Long Term Health Effects (Y/N):** N

**Note:** All ingredients in this product are on the Toxic Substances Control Act (TSCA) inventory or are not required to be listed and are compliant with EC regulation 1907-2006 Art. 31 Annex II.

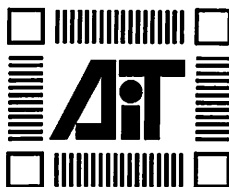
No ingredient in this product is known to be carcinogenic.

Ingredients listed on the New Jersey "RIGHT TO KNOW" substance list: Silver CAS#7440-22-4 Substance#1669

This product is compliant to RoHS & REACH and does not contain any Substances of Very High Concern

### Section X:

**Version:** 1/6/2023



**AI TECHNOLOGY INC**  
70 Washington Road  
Princeton Jct., NJ 08550  
(609) 799-9388 fax (609) 799-9308  
E-Mail: [ait@aitechnology.com](mailto:ait@aitechnology.com)  
Internet: <http://www.aitechnology.com>

**High Strength Ambient Curable  
Two Components or Pre-mixed Frozen  
Electrically Conductive  
Epoxy Paste Adhesive**

**IDEAL FOR:**

Die Attach  
Substrate Attach (Matched CTE's)  
Ambient Curing

**DESCRIPTION:**

EG8020 is a two-part, silver filled, room temperature curable adhesive upon mixing. This paste has good bond strength and is both electrically and thermally conductive.

The easy mix ratio of 1:1 by weight or volume and ambient curable with long pot-life enable the adhesive to be used for small volume field and larger volume production applications.

**AVAILABILITY:**

EG8020 is available in syringes for automatic needle dispense applications or in jars. Both viscosity and thixotropic index can be modified to your specific needs. It can be premixed and frozen.

**APPLICATION PROCEDURES:**

- ( 1 ) Mix adhesive in 1:1 weight ratio. (Note: In kit form, Part A viscosity > Part B viscosity).
- ( 2 ) Dispense adhesive onto clean substrate.
- ( 3 ) Cure according to one of the recommended schedules.

**CAUTION:** This product may cause skin irritation. Avoid skin contact. If contact does occur, wash immediately with soap and water. Please refer SDS for more details.

The information contained herein is believed to be reliable. All recommendations or suggestions are made without guarantee inasmuch as conditions and methods of commercial use are beyond our control. Properties given are typical values and not intended for use in preparing specifications. The user is advised to evaluate the product in the manner the product is to be used in manufacturing and in the final product. Under no circumstance shall AI Technology be liable for accidental, consequential or other damages arising from the use or handling of this product.

While AI Technology owns all proprietary rights of material formulations of its products, specific usage in the manufacturing of certain products may involve patent rights of other companies.

**PRODUCT DATA SHEET**

**PRIMA-BOND  
EG8020**

**TYPICAL PROPERTIES\***

Electrical Resistivity ( 150 °C/ 60 minutes )	<4x10 <sup>-4</sup> ohm-cm
Dielectric Strength (Volts/mil)	N/A
Glass Transition Temp.(°C)	50 ±10%
Current Carrying Capabilities	> 40 Amp/mm <sup>2</sup>
Lap-Shear Strength	>900 psi >6.2 N/mm <sup>2</sup>
Device Push-off Strength	>1800 psi >12.4 N/mm <sup>2</sup>
Cured Density (gm/cc)	3.5 ±10%
Thermal Conductivity	40 Btu-in/hr-ft <sup>2</sup> -°F ±10% 5.7 W/m-°C ±10%
Linear Thermal Expansion Coeff. (ppm/°C)	40
Maximum Continuous Operation Temp. (°C)	<150
Avg. Viscosity(0.5 rpm, 25°C) (Brookfield DV-1, spindle CP51)	150,000 cp ±20%

\* Properties given are typical values and not intended for use in preparing specifications. The user is advised to evaluate the product in the manner the product is intended to be used in manufacturing and in the final product.

**CURE SCHEDULES:**

<u>Temperature</u>	<u>Time</u>
25°C	168 hr
60°C	32 hr
80°C	16 hr
100°C	5 hr
125°C	3 hr

If premixed and frozen version is used, thaw for 30 minutes and cure according to one of the recommended schedules.

\*\*Shelf life is for unmixed components. If premixed: -40°C for 6 months. Pot life is 4 hours at 25°C, after mixing.

**SHELF LIFE:**

<u>Storage temperature</u>	<u>Shelf Life</u>
**25°C	1 yr

**Ver 2.0 4/2/2018**