

# TECHNICAL BULLETIN

## EPOXIBOND-470 THERMALLY CONDUCTIVE ADHESIVE

**EB-470** is a two component, thermally conductive, electrically insulating epoxy designed for chip bonding in microelectronic and optoelectronics applications.

### Features & Applications

- Heat-sinking adhesive recommended for thermal management applications where good heat dissipation is necessary.
- Outstanding handling characteristics and long pot life at room temperature. No solvents added
- This product can be screen printed, machine dispensed, stamped, or hand applied.
- Die-attach adhesive designed to be used in the 300°C range to resist TC wire bonding operations.
- Excellent adhesion to ferrous and non-ferrous metals, lead-frame die paddle, glass, ceramic, kovar, and PCB.
- Can be cured very rapidly; excellent material to use for making fast circuit repairs; can be snap-cured for in-line semiconductor die-bonding.

### TYPICAL HANDLING PROPERTIES:

Adhesive	PART-A
Hardener	PART-B
Mix ratio by weight, (Adhesive/Hardener)	1:1
Mixed viscosity at 25°C, cp	5000-8000
Pot life at 25°C (100 gram), hours	>48

### **Recommended Cure: (Bond line curing temperature)**

**<5 minutes @ 175°C**  
**5-10 minutes @ 150°C**  
**15-30 minutes 120°C**  
**2 hrs @ 80-90°C**

### TYPICAL CURED PROPERTIES:

Color	Grey
Specific Gravity	1.9
Hardness, Shore D	86
Lap shear strength to aluminum, psi	2000
Water Absorption (24 hr at RT), %	0.007
Thermal Conductivity, W/m <sup>2</sup> K	1.0
Service Temperature:	
Continuous	-55°C to 250°C
Intermittent	-55°C to 350°C
Glass Transition Temperature, °C	98
Coefficient of Thermal Expansion, 10 <sup>-6</sup> /°C	
Below Tg	28
Above Tg	126
Flexural Strength, psi	13,300
Flexural Modulus, psi	2x10 <sup>6</sup>
Dielectric Constant at 1 kHz	4.5
Dissipation Factor at 1 kHz	0.05
Volume Resistivity, ohm-cm	1x10 <sup>14</sup>

### INSTRUCTIONS FOR USE:

1. Weigh 100 grams of Resin (PART-A) to 100 grams of Hardener (PART-B).
2. Mix until uniform. Scrape the sides and bottom of container repeatedly during mixing.
3. Apply to clean bonding surfaces and cure as recommended to achieve the desired properties.
4. Typical cured properties were determined using recommended cure schedule. Some difference in properties may occur with the alternate or other cure schedules.

### FROZEN ADHESIVE:

Thaw premixed frozen adhesive at room temperature for 5-10 minutes. Dispense adhesive and cure at recommended schedules.

### AVAILABILITY:

**2 parts Kit** - Packaged in Pint, Quart, and Gallon size.  
**Premixed and frozen** - Packaged in 3cc, 5cc, 10cc and 30cc disposable syringes and ship in dry ice at -80°C.

### FOR INDUSTRIAL USE ONLY:

Practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

### WARNING!

Adequate ventilation of work place and ovens is essential. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. In case of skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 10 minutes and seek medical attention.