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**Die-Attach Film Adhesive**  
**ESP8680-HF**

**High Flow  
 Electrically Conductive  
 Epoxy Film Adhesive  
 Low Temperature Curable**

**IDEAL FOR:**

- Precision Die Attach
- Stack-Memory Die-Attach
- Wafer-Prelamination Die-Attach
- Lid Sealing

**DESCRIPTION:**

ESP8680-HF is a high flow, low temperature curable epoxy film version of ESP8680. It is a silver-filled high bond strength epoxy film adhesive specifically designed for bonding die, component, and substrate. Low temperature curing reduces internal stresses. ESP8680-HF has excellent thermal conductivity. Because of its high bond strength and low stress induced with low temperature curing, ESP8680-HF is recommended for both small and larger dies.

Preforms of ESP8680-HF may be tacked onto substrate or dies with nominal pressure at 80-100°C in less than a second. Curing at 100-120°C without pressure is complete in less than 30 minutes. Higher temperatures may be used for shorter duration of curing.

**AVAILABILITY:**

ESP8680-HF is available in custom preforms in waffle-packs or customer wafer(ESP8680-WL) sheet. Standard thicknesses are 0.003"and 0.006" . Special thicknesses are available.

**APPLICATION PROCEDURE**

- ( 1 ) Keep product at room temperature for 15 minutes before using.
- ( 2 ) Before using, remove protective liner from film.
- ( 3 ) Cut to desired size.
- ( 4 ) Tack onto substrate or die at 80-120°C. Cure according to one of the recommended schedules.

**TYPICAL PROPERTIES\***

Electrical Resistivity ( 150 °C/ 5 minutes )	<5x10 <sup>-4</sup> ohm-cm
Dielectric Strength (Volts/mil)	Not Applicable
Glass Transition Temp.(°C)	80
Current Carrying Capabilities	Not Available
Lap-Shear Strength	
Device Push-off Strength	>3300 psi >22.8 N/mm <sup>2</sup>
Hardness (Type)	88 (A)
Cured Density (gm/cc)	3.8
Thermal Conductivity	>45Btu-in/hr-ft <sup>2</sup> -°F >6.4 W/m-°C
Linear Thermal Expansion Coeff. (ppm/°C)	40
Maximum Continuous Operation Temp. (°C)	150

\* 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>	<u>Pressure</u>
80°C	2 hr	5-10 psi
100°C	1 hr	5-10 psi
125°C	30 min	5-10 psi

Wafer lamination may be perform adhesive reaching 80-120°C @ 5 psi for few seconds. Wafer may be diced with standard wafer dicing tape with dies storable for more than one year before bonding.

**SHELF LIFE:**

<u>Storage temperature</u>	<u>Shelf Life</u>
0-5°C	1 yr in sealed package

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