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**Flexible "Stress-Free"
 Tacky-Free Epoxy Film
 Electrical Conductive Adhesive
 Moisture-Temperature Resistant
 -60°C/50 Dual Tg**

IDEAL FOR:

- Large Area Die Attach
- Mismatched CTE Substrate Attach
- Electrical & Thermal Ground Plane Bonding

DESCRIPTION:

ESP8450-HF is a high melt-flow version of standard ESP8450. It is a solvent resistant, silver-filled, flexible epoxy film adhesive designed for bonding die, component and substrate to a mismatched substrate or carrier. This novel, B-staged electrically conductive adhesive offers excellent flexibility from -55-150°C. The dry, tack-free handling of the film makes it ideal for an automated pick and place assembly.

ESP8450-HF has excellent thermal conductivity and its low Tg adhesive imposes minimum thermal stress on bonded parts during thermal cycling or shock testing.

AVAILABILITY:

ESP8450-HF is available in sheet sizes or as custom preforms. Standard thicknesses are 0.001" and 0.003". Special thicknesses are available.

APPLICATION PROCEDURES:

- (1) Let product stay at room temperature for 15 minutes before.
- (2) Remove release liners from film adhesive.
- (3) Cut to desired size.
- (4) Place on substrate and cure according to one of the recommended cure 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.

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PRODUCT DATA SHEET

**EPOXY FILM
 ESP8450-HF**

TYPICAL PROPERTIES*

Electrical Resistivity (150 °C/ 60 minutes)	<3x10 ⁻⁴ ohm-cm
Dielectric Strength (Volts/mil)	N/A
Glass Transition Temp.(°C)	-60/50
Current Carrying Capabilities	Not Available
Lap-Shear Strength	N/A
Device Push-off Strength	>1500 psi >10.3 N/mm ²
Hardness (Type)	82 (A)
Cured Density (gm/cc)	3.5
Thermal Conductivity	45 Btu-in/hr-ft ² -°F 6.4 W/m-°C
Linear Thermal Expansion Coeff. (ppm/°C)	110
Maximum Continuous Operation Temp. (°C)	150

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CURE SCHEDULES:

<u>Temperature</u>	<u>Time</u>	<u>Pressure</u>
100°C	4 hr	5-10 psi
125°C	2 hr	5-10 psi
150°C	1 hr	5-10 psi

The die or component can also be tacked on the substrate at 100°C or higher with 5-10 psi pressure. When a fillet around the edge of the die or component is observed, the pressure can be released for the rest of the bonding cycle.

ESP8450-HF has dual glass transition temperature with dominate Tg being at around -60°C to provide ability to bond larger parts having large CTE mismatches.

SHELF LIFE:

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