



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

FLEXIBLE DIE-ATTACH FILM
ESP8450-WL

Tackv-Free Enoxv Film
Electrical Conductive Adhesive
Moisture-Temperature Resistant
-60 Tg : Flexible "Stress-Free"
IDEAL FOR:

- Large Area Die Attach**
- Mismatched CTE Substrate Attach**
- Electrical & Thermal Ground Plane Bonding**
- Wafer Lamination and Stack-chip Bonding**

DESCRIPTION:

ESP8450-WL is a high melt-flow version of standard ESP8450 designed for large area bonding and wafer-level lamination for stack-chip applications. 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°C to 150°C. The dry, tack-free handling of the film makes it ideal for an automated pick and place assembly and is reworkable from 80°C to 150°C.

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

AVAILABILITY:

ESP8450-WL is available in sheet sizes or as custom preforms. Standard thicknesses are 0.003" and 0.006". Special thicknesses are available.

APPLICATION PROCEDURE

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

TYPICAL PROPERTIES*

Electrical Resistivity (150 °C/ 10 minutes)	<4x10 ⁻⁴ ohm-cm
Dielectric Strength (Volts/mil)	Not Applicable
Glass Transition Temp.(°C)	-60
Current Carrying Capabilities	Not Available
Lap-Shear Strength	Not Applicable
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

* 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>
100°C	4 hr	8-10 psi
125°C	2 hr	8-10 psi
150°C	1 hr	8-10 psi

The die or component can also be tacked on the substrate at 100°C or higher with nominal placement 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.

SHELF LIFE:

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

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 A.I. 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.

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 A.I. 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.