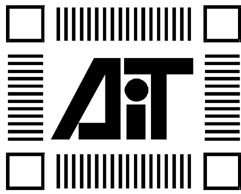

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FLEXIBLE DIE-ATTACH FILM

ESP8450-W

Tacky-Free Epoxy 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-W 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 -55ºC to 150ºC. The dry, tack-free handling of the film makes it ideal for an automated pick and place assembly and is reworkable from 80ºC to 150ºC.

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

AVAILABILITY:

ESP8450-W is available in sheet sizes or as custom preforms. Standard thicknesses are 0.002" 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) Laminate onto wafer with UV release tape. Dice and remove chips. Place on substrate and cure according to one of the recommended schedules.

TYPICAL PROPERTIES*

Property	Value
Electrical Resistivity (150 ºC/ 10 minutes)	$<4x10^{-4}$ ohm-cm
Dielectric Strength (Volts/mil)	Not Applicable
Glass Transition Temp.(ºC)	-60
Current Carrying Capabilities	Not Available
Lap-Shear Strength	Not Applicable
Device Push-off Strength	>1500 psi >10.3 N/mm²
Hardness (Type)	82 (A)
Cured Density (gm/cc)	3.5
Thermal Conductivity	45 Btu-in/hr-ft²-ºF 6.4 W/m-ºC
Linear Thermal Expansion Coeff. (ppm/ºC)	110
Maximum Continuous Operation Temp. (ºC)	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.

Tack & Cure Process

Temperature	Time	Pressure
TACKING	Pressure)	
125-175ºC	1 sec	>10 psi
CURING	Pressure)	
125ºC	60 min	
150ºC	30 min	
175ºC	5 min	

The die or component can also be tacked on the substrate at 125ºC 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:

Storage temperature	Shelf Life
25ºC	1 yr

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.

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