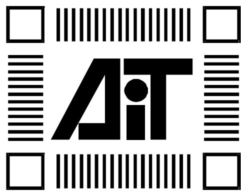

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Dicing Die Attach Film
ESP8660-HK-DAF

High Moisture Resistance
Electrically Conductive
Epoxy Film Adhesive

IDEAL FOR:

- **High Volume, Automated Assemblies**
- **Substrate Attach**
- **Wafer Level Die-Attach**

DESCRIPTION:

ESP8660-HK-DAF is a silver filled high-bond strength epoxy film adhesive before laminated onto a UV release substrate to consitute ESP8660-HK-DDAF. This new generation tape incorporates wafer dicing tape and adhesive into one, DAF (Die Attach Film). This DAF is mounted onto the back of the wafer, which is then diced into predetermined sizes.

It is designed for bonding component and substrate to substrate and carrier with matched thermal coefficients of expansion. ESP8660-HK-DAF has good thermal stability. The dry, tack-free handling of the film makes it suitable for an automated assembly.

AVAILABILITY:

ESP8660-HK-DAF is available in sheet sizes or rolls. Standard thickness of ESP8660-HK-DAF is 20 microns and 30 microns. Special thicknesses are available.

APPLICATION PROCEDURES:

(1) Keep product in aluminum polylaminate protective bag when not in use.

(2) Before using, remove protective release liner from film. Place wafer onto adhesive side DDAF

(3) Laminate (low heat) wafer onto adhesive until good wetting is achieved. Dice wafer as usual.

(4) Once dicing is complete, pass wafer under UV light so that die can be released for pick and place operation. Cure according to one of the recommended cure schedules.

TYPICAL PROPERTIES*

Property	Value
Electrical Resistivity (150 ºC/ 60 minutes)	<5x10 $^{-4}$ ohm-cm
Dielectric Strength (Volts/mil)	N/A
Glass Transition Temp.(ºC)	175 ±10%
Current Carrying Capabilities	N/A
Lap-Shear Strength	N/A
Device Push-off Strength	>2500 psi >17.1 N/mm² ±10%
Hardness (Type)	85 (D) ±10%
Cured Density (gm/cc)	4.0 ±10%
Thermal Conductivity	>56 Btu-in/hr-ft²-ºF ±10% >8.0 W/m-ºc
Linear Thermal Expansion Coeff. (ppm/ºC)	40 ±15%
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.

CURE SCHEDULES:

Temperature	Time	Pressure
125ºC	90 min	8-15 psi
150ºC	30 min	8-15 psi

For tack-and-cure: Tack the die with DAF with heated collet and heated stage holding the header, leadframe, module or substrate at 100-150ºC. Post curing at the same temperature.

The die or component can also be tacked on the substrate at 80ºC or higher with 10 psi. 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.

Besides major transition of Tg at around 175ºC, additional molecular relaxation occurs at 50-120ºC.

SHELF LIFE:

Storage temperature	Shelf Life
0 - 5ºC	1 yr in sealed package

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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