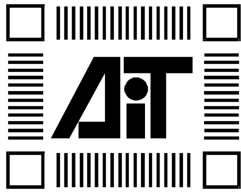

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Die Attach Film
ESP7666-FOW

High Flow DAF Adhesive
Electrically Insulating
High Moisture Resistance
Thermally Conductive

IDEAL FOR:

- Flow-Over-Wire Die Attach
- High Volume, Automated Assemblies
- Outstanding Dielectric Layer
- Low Dielectric Constant (~3.6) and Loss (<0.003)

DESCRIPTION:

ESP7666-FOW is the modified boron nitride filled thermally conductive version of the high flow DAF of ESP7660-FOW. It is a high-bond strength epoxy film adhesive for high flow when melted to easily flow over wire-bond in stack chip die attach application. This new generation wafer level die-attach film is flexible before curing. This ESP7660-FOW is mounted onto the back of the wafer at 80-100ºC, which is then diced into predetermined sizes using standard dicing tape.

Depending on the different dicing tape used and with suitable releasing action such as UV or heat, the diced chip is picked and placed directly onto a leadframe or substrate. It is designed for bonding component and substrate to substrate and carrier with matched thermal coefficients of expansion. ESP7660-FOW has good thermal stability. The dry, tack-free handling of the film makes it suitable for an automated assembly.

AVAILABILITY:

ESP7666-FOW is available in sheet sizes or rolls. Standard thicknesses of ESP7660-FOW are 25 and 50 micron. Special thicknesses are available.

APPLICATION PROCEDURES:

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

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

(3) Laminate (low heat of 80-100ºC) wafer onto adhesive until good wetting is achieved. Dice wafer as usual.

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

TYPICAL PROPERTIES*

Property	Value
Electrical Resistivity (150 ºC/ 60 minutes)	>1x10 ^{14} ohm-cm
Dielectric Strength (Volts/mil)	> 750
Glass Transition Temp.(ºC)	175
Current Carrying Capabilities	N/A
Lap-Shear Strength	N/A
Device Push-off Strength	>5000 psi >34.2 N/mm²
Hardness (Type)	85 (D)
Cured Density (gm/cc)	2.1
Thermal Conductivity	25.2 Btu-in/hr-ft²-ºf 3.6 W/m-ºc
Linear Thermal Expansion Coeff. (ppm/ºC)	55
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	3 hr	3-5 psi
150ºC	60 min	3-5 psi

The die or component can also be tacked on the substrate at 120-150ºC with 3 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
25C	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.

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