



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

Die Attach Film
ESP7660-HK

Tack-and-Cure without Pressure
High Moisture Resistance
Electrically Insulating
Epoxy Film Adhesive

IDEAL FOR:

- High Volume, Automated Assemblies
- Die Attach
- Low Dielectric Constant (3.0)
- Low Dielectric Loss (<0.002)

DESCRIPTION:

ESP7660-HK is a high-bond strength epoxy film adhesive for die-attach application. This die attach film (DAF) can be laminated onto the back of the wafer at 70 °C and then mounted onto a standard dicing tape on a supporting frame. The wafer and the DAF can then be diced into predetermined sizes. This new generation wafer level die-attach film (DAF) is flexible for easy pick-and-place application before the final curing step.

After dicing, the chip can be picked and placed directly onto a leadframe or a substrate. The adhesive can then be cured according to one of the cure schedules. The dry, tack-free handling of the film makes it suitable for an automated assembly.

AVAILABILITY:

ESP7660-HK is available in sheet sizes or rolls. Standard thickness of ESP7660-HK is 20 micron thick. Special thicknesses are available upon request.

APPLICATION PROCEDURES:

- (1) Keep product in aluminum poly laminate protective bag when not in use.
- (2) Before using, remove protective liner from film. Place wafer onto adhesive film side.
- (3) Laminate (low heat of 60-80 °C) wafer onto adhesive until good wetting is achieved. Dice wafer as usual.
- (4) Once dicing is complete, the die can be picked and placed onto a leadframe or substrate. Cure according to one of the recommended schedules.

TYPICAL PROPERTIES*

Electrical Resistivity (150 °C/ 60 minutes)	>1 x 10 ¹⁴ ohm-cm
Dielectric Strength (Volts/mil)	> 750
Glass Transition Temp.(°C)	175 ±10%
Current Carrying Capabilities	N/A
Lap-Shear Strength	N/A
Device Push-off Strength	>2500 psi >17.1 N/mm ²
Hardness (Type)	85 (D) ±10%
Cured Density (gm/cc)	1.6 ±10%
Thermal Conductivity	2 Btu-in/hr-ft ² -°F ±10% 0.3 W/m-°C ±10%
Linear Thermal Expansion Coeff. (ppm/°C)	40 ±10%
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:

Temperature	Time	Pressure
100°C	4hr	10-15 psi
125°C	2hr	5-15 psi
150°C	1hr	5-15 psi

The die or component can also be tacked on the substrate at 80°C or higher with 5 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.

SHELF LIFE:

Storage temperature	Shelf Life
25 °C	1 yr in sealed package
Floor Life	>180 days @25 C

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.

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.