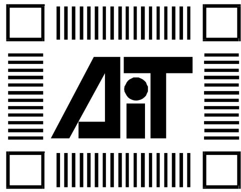

AI TECHNOLOGY INC
70 Washington Road
Princeton Jct., NJ 08550
(609) 799-9388 fax (609) 799-9308
E-Mail: ait@aitechnology.com
Internet: http://www.aitechnology.com

DIE-ATTACH FILM
ESP7663-FP-18

Low Bond Line
High Flow
Electrically Insulating
Ultra-Low Ionic Impurities
CTE of 18 ppm/ºC without Fiberglass Mesh

IDEAL FOR:

- CTE Matching Copper Laminate in All Axis
- Component Attach
- Dicing Die Attach Film
- High Temperature Laminate
- Reducing Shear Stress and Z-axis Expansion Stress

DESCRIPTION:

ESP7663-FP-18 is a film adhesive that matches the CTE expansion of copper-fiberglass laminate of 18 ppm/C. It is ideal of attached large and small area of dies, components and substrate onto the FR4 board and copper substrate. It is also ideal for wafer lamination form for dicing die-attach application film adhesive with low thermal stress requirement. It contains a modified quartz particles with 10 micron cut-off. It is also engineered and proven with outstanding molecular structure for stress absorbing capaility.

ESP7663-FP-18 is a dry epoxy film that may be melt-laminated onto wafer or substrate of circuite sites at 100-130ºC @ 5 psi without premature curing. It is also useful for bonding component and substrate to substrate and carrier with matched thermal coefficients of expansion. Having isotropic expansion of 18 ppm/ºC also reduces Z-axis expansion stress when standard fiber-glass laminate adhesive with over 90 ppm/ºC is used.

AVAILABILITY:

ESP7663-FP-18 is available in wafer, sheet sizes or as custom preforms. Standard thickness available is 0.001" and 0.002". Special thicknesses with tight tolerance are available.

APPLICATION PROCEDURES:

For Wafer Laminated Die-Attach:

(1) Keep product at room temperature for 15 minutes. Remove film from protective paper.

(2) Before using, remove protective liner from film.

(3) Pre-laminate at 80-100ºC @ >10 psi. Dice with standard tape and release procedure.

(4) Place on heated substrate and cure*.

TYPICAL PROPERTIES*

Property	Value
Electrical Resistivity (150 ºC/ 60 minutes)	>1x10^{14} ohm-cm
Dielectric Strength (Volts/mil)	> 750
Glass Transition Temp.(ºC)	175±15%
Current Carrying Capabilities	N/A
Lap-Shear Strength	N/A
Device Push-off Strength	>4000 psi >27.8 N/mm²
Hardness (Type)	90 (D)±15%
Cured Density (gm/cc)	2.3±10%
Thermal Conductivity	>6.7 Btu-in/hr-ft²-ºF±10% >0.9 W/m-ºC±10%
Linear Thermal Expansion Coeff. (ppm/ºC)	18±10%
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
100ºC	8 hr	12-15 psi
125ºC	3 hr	10-15 psi
150ºC	60 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.

SHELF LIFE:

Storage temperature	Shelf Life
25ºC	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.

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.