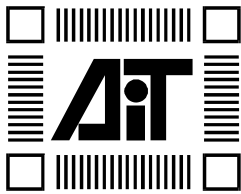

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TACK-FREE-EPOXY FILM
ESP7455-HK

Flexible Epoxy Film
Thermally Conductive
Higher Flow During Bonding
Outstanding Thermal Stability
Meet 883/5011 & NASA-ESA Spec.

IDEAL FOR:

- Heatsink Attach
- Substrate Attach
- Die & Component Attach
- Large Area & Mismatched CTE Bonding
- In-Line Direct Bonding with "Tack-and-Cure" Process

DESCRIPTION:

ESP7455-HK is an alumina-filled, higher flow epoxy film adhesive designed for bonding component and substrate to a mismatched substrate or carrier. The adhesive film has very low ionic impurities of less than 10 ppm and high thermal stability with TGA degradation at 450ºC.The dry, tack-free epoxy film may be tacked with placement pressure and continue to finish curing without pressure. This unique "tack-and-cure" processing of the adhesive film makes it ideal for an automated assembly.

ESP7455-HK has good thermal conductivity. The extra low Tg of -55ºC component helps to minimize thermal stress on the bonded parts during thermal cycling or shock testing from -55 to 150ºC.

AVAILABILITY:

ESP7455-HK is available in sheet sizes or as custom preforms. Standard thicknesses are 0.003" and 0.006". Special thicknesses are available. The film is self supporting without the need of fiberglass mesh reinforcement.

APPLICATION PROCEDURES:

(1) Keep product at room temperature for 15 minutes before using.

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

(3) Cut to desired size.

(4) Place on substrate and cure according to one of the recommended cure schedules.

TYPICAL PROPERTIES*

Property	Value
Electrical Resistivity (150 ºC/ 60 min)	>1x10^{14} ohm-cm
Dielectric Strength (Volts/mil)	750 ±20%
Glass Transition Temp.(ºC)	-55 ±10%
Current Carrying Capabilities	N/A
Lap-Shear Strength	
Device Push-off Strength	>1500 psi >13.8 N/mm²
Hardness (Type)	90 (A) ±10%
Cured Density (gm/cc)	2.5
Thermal Conductivity	>14.3 Btu-in/hr-ft²-ºF ±10% >2.0 W/m-ºc
Linear Thermal Expansion Coeff. (ppm/ºC)	110 ±15%
Maximum Continuous Operation Temp. (ºC)	<175

* 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	30 min	>12 psi
150ºC	10 min	>8 psi
175ºC	<3 min	>8 psi

The die or component can also be tacked on the substrate at 125ºC or higher with >12 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
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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