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TACK-FREE-EPOXY FILM
ESP7455

Flexible Epoxy Film Adhesive
"2nd Generation"
Thermally Conductive
Outstanding Thermal Stability
Meets 883/5011 Spec.

IDEAL FOR:

- **Heatsink Attach**
- **Substrate Attach**
- **Die & Component Attach**
- **Large Area & Mismatched CTE Bonding**
- **In-Line Direct Bonding**

DESCRIPTION:

Tack-Free ESP 7455 is an alumina-filled, epoxy film adhesive designed for bonding component and substrate to a mismatched substrate or carrier. The dry, tack-free handling of the film makes it suitable for an automated assembly. The adhesive film has very low ionic impurities of less than 10 ppm and high thermal stability with TGA degradation at 450ºC.

ESP7455 has good thermal conductivity. The extra low Tg of -60ºC helps to minimize thermal stress on the bonded parts during thermal cycling or shock testing from -55 to 150ºC.

AVAILABILITY:

ESP7455 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 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 schedules.

TYPICAL PROPERTIES*

Electrical Resistivity (150º ºC/ 60 min)	**>1x10 ^{14} ohm-cm**
Dielectric Strength (Volts/mil)	**>750**
Glass Transition Temp.(ºC)	**-60**
Current Carrying Capabilities	**N/A**
Lap-Shear Strength	**500 psi**
	3.5 N/mm²
Device Push-off Strength	**1500 psi**
	10.3 N/mm²
Hardness (Type)	**82 (A)**
Cured Density (gm/cc)	**2.3**
Thermal Conductivity	**12 Btu-in/hr-ft²-ºF**
	1.71 W/m-ºC
Linear Thermal Expansion Coeff. (ppm/ºC)	**110**
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	4 hrs	5-10 psi
125ºC	2 hrs	5-10 psi
150ºC	1 hr	5-10 psi

The die or component can also be tacked on the substrate at 125ºC or higher with 5-10 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.

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.