AES 300 Adhesive

Product Information

Description

AES 300 Adhesive, an offering within our Advanced Electronic Solutions portfolio, is designed to meet next generation needs of 5G and 6G platforms, anticipating requirements for both wireless and digital future designs. AES 300 Adhesive is an extremely low dielectric constant and low loss circuit material.

This product is a fluoropolymer-based adhesive film that is thin and flexible.

AES 300 Adhesive offers benefits of superior electrical and thermal performance, typical of fluoropolymers, and overcomes traditional limitations associated with current PTFE laminates.

Key Features and Benefits

- Low loss tangent and dielectric constant.
- Excellent adhesion to plating chemistries.
- Excellent compatibility with standard PCB processing.
- Negligible variance in dielectric constant and thickness for excellent reproducibility of results.

Construction Options

- Thickness: 25 µm
- Panel Sizes: Rolls up to 500 mm wide
- Sheeted product with 500 mm maximum transverse dimension

Lamination

As with any thermoplastic film, AES 300 Adhesive is suitable for single lamination constructions and designs. However, where multiple lamination cycles may be necessary, review of the design, including copper area, thickness, and number of sequential lamination cycles necessary, is recommended, prior to production commitment.

A recommended lamination press cycle is shown in Figure 1. Pressure can be varied to balance circuit registration, layer to layer adhesion, and copper fill requirements. Suitability for use should be verified for each new design. AES 300 Adhesive requires no drying or special storage conditions; room temperature with dust protection is adequate. Care should be taken to ensure that adhesive surfaces are clean and particle free prior to lamination.

Figure 1. Recommended AES 300 Adhesive Lamination Press Cycle

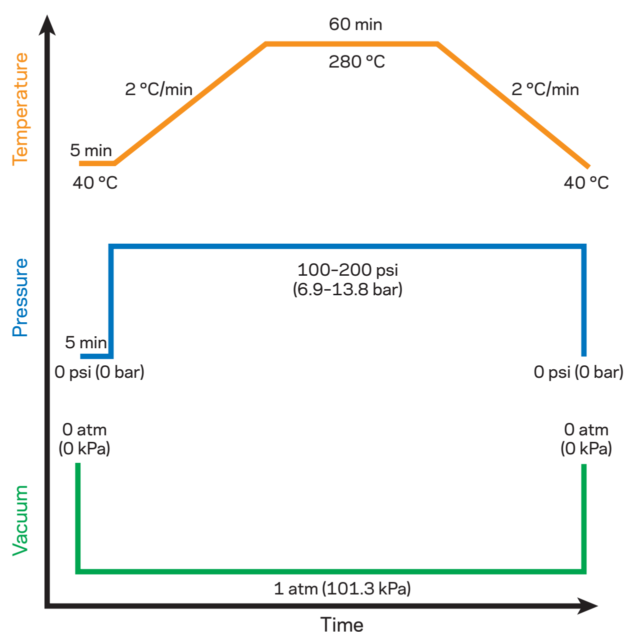

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Table 1. Properties of AES 300 Adhesive[1]

Property	25 µm	Direction	Units	Test Conditions	Test Method
Electrical Properties					
Dielectric Constant	2.12	In-plane (X/Y)	—	10 GHz 23 °C/24 hr/50% RH	IPC TM-650 2.5.5.15
Dissipation Factor	0.0005				IPC TM-650 2.5.5.15
Dielectric Strength	$2.77x10^6$ (7055)	Z	V/cm (V/mil)	23 °C/24 hr/50% RH	ASTM D149
Thermal Properties					
Melting Temperature (T_m)	260	—	°C	1 heat method	ASTM D3418
Decomposition Temperature (T_d)	471	—	°C	5% weight loss	IPC TM-650 2.3.40
Mechanical Properties					
Tensile Strength	39.9/22.1	MD/TD	Mpa	23 °C/50% RH	ASTM D882
Tensile Modulus	8.9/4.3	MD/TD	Mpa	23 °C/50% RH	ASTM D882
Tensile Elongation	293/350	MD/TD	%	23 °C/50% RH	ASTM D882
Physical Properties					
Thickness	25.0	Z	µm	—	IPC TM-650 2.2.18
Flammability	V-0	—	—	—	UL94
Moisture Absorption	0.02	—	%	E1/105 + D48/50	IPC TM-650 2.6.2.1
Density	2.17	—	g/cm^3	C-24/23/50	IPC TM-650 2.3.5

[1]This table gives properties (not specifications) based on production performance. Chemours does not make any express or implied warranty that these products will have these typical properties.

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