

APICAL® Corona Resistant Polyimide Film

Description: Apical® corona resistant polyimide 110CR and L50CR11 are high temperature Polyimide films. These CR films have excellent thermal and Electrical stability over the long life of any motor.

Apical® 110CR and L50CR11 is designed to withstand the compounding conditions and form strong interfacial bonding with many materials. The polymer will remain stable during extended high temperature continuous use conditions.

Applications

- Motors
- Generators
- Transformers

Attributes

- Excellent thermal and electrical stability
- Excellent adhesion to copper
- Excellent corona resistant stability

Typical Properties 110CR@ 27um (1.10 mil)

Electrical		
	Value	Test Method
Corona Resistance hrs	>100,000	IEC 60343
Dielectric Strength v/mil	6000	ASTM D149
Volume Resistivity ohm/cm	4.5×10^{18}	ASTM D257
Surface Resistivity ohm/sq	1.5×10^{16}	ASTM D257
Dielectric Constant	2.77	IPC TM 650
Dissipation Factor 1MHz	0.000024	IPC TM 650

Mechanical		
	Value	Test Method
Tensile psi (MPa)	40,000 (276)	ASTM D882
Elongation %	98	ASTM D882
Modulus ksi	560	ASTM D882
Tear Propagation	0.9	ASTM D1922
Tear Initial	7.1	ASTM D1004
Yield g/m2	44.88	Kaneka Method
Density	1.57	ASTM D1505

Typical Properties L50CR11@ 38.8um (1.53 mil)

Mechanical		
	Value	Test Method
Tensile psi (mpa)	22,000 (152)	ASTM D882
Elongation %	98	ASTM D882
Modulus ksi	410	ASTM D882
Heatseal g/in	1500	ASTM D1922
Bonding g/in	550	ASTM D1004
Density	1.75	ASTM D1505
Yield g/m2	67.9	Kaneka Method

Electrical		
	Value	Test Method
Dielectric Strength v/mil	4800	ASTM D149

Thermal		
	Value	Test Method
Shrinkage	200°C	ASTM D5214
	400°C	
Thermal Conductivity (W/m-K)	.250	ASTM D5470
Moisture Absorption	2.46	

The data noted in these technical data sheets are given as examples and are not intended to be read as guaranteed values.

Technical Support

Apical® scientists have extensive knowledge and practical experience with Polyimides, their applications, and their influence on composites properties. Please do not hesitate to request our assistance. The test methods used to determine the reported properties are available upon request.

Safety: Read and understand the **Material Safety Data Sheet** before working with this product.

Additional Information: www.kaneka.com

Processing

When processing any AF Laminated film, there are three critical variables that must be controlled: Time, Temperature and Pressure,

Time – depends upon the speed of the wrapping line and length of the ovens.

Temperature - 270°C to 325°C with a minimum of 10 Seconds.

Pressure – Sufficient payoff tension for conductor to fluoropolymer and/or fluoropolymer to fluoropolymer contact.

Heatseal – Film to film seal or film to metal seal. The heatseal strength between AF type films (coated side to coated side or uncoated side depending on type). Measured by an instron tensile tester after jaw sealing.

Bonding – The bond between FEP and polyimide film. Measured by an instron tensile tester after laminating.

Health and Safety Information

Appropriate literature has been assembled which provides information pertaining to the health and safety concerns that must be observed when handling Apical® CR. Before working with any product, you must read and become familiar with the available information concerning its hazards, proper use, and handling. This cannot be overemphasized. Further information may be obtained by contacting Kaneka North America – Apical Division 800-222-8128 or www.apicalpolyimide.com

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The Kaneka logo consists of the word "kaneka" in a bold, blue, sans-serif font. The letter "k" is stylized with a horizontal bar that extends to the left and then curves upwards to form the vertical stem of the letter.