

APICAL® 50AV



APICAL polyimide film possesses an excellent balance of physical, thermal, electrical and chemical properties over a wide range of temperatures (-269°C to 400°C). More precise thickness control, superior web flatness, plus improved adhesion and excellent dimensional stability are standard features with Apical polyimide films.

Characteristics

- Excellent thermal and electrical stability
- Optimal flexibility
- Ideal elongation

Applications

- Polyimide base materials for FPC
- Motor generator insulation
- Wire and cable insulation
- Barcode label
- Pressure sensitive tape

Construction

Items	Mils	Microns
Nominal Thickness	0.50	12.7

Mechanical Properties

Items	Typical Values	Test Method
Tensile Strength MD, kpsi (MPa)	42 (293)	ASTM D882
Tensile Strength TD, kpsi (MPa)	42 (293)	ASTM D882
Tensile Modulus MD, kpsi (GPa)	400 (2.8)	ASTM D882
Tensile Modulus TD, kpsi (GPa)	400 (2.8)	ASTM D882
Elongation MD (TD), %	104 (100)	ASTM D882

Thermal Properties

Items	Typical Values	Test Method
Heat Shrinkage MD %	0.09	200 °C – 2 hrs
Heat Shrinkage TD %	0.02	200 °C – 2 hrs
Coefficient of Thermal Expansion MD, ppm/°C	32	TMA 100–200 °C
Coefficient of Thermal Expansion TD, ppm/°C	31	TMA 100–200 °C

Electrical Properties

Items	Typical Values	Test Method
Dielectric Strength, KV/mil	9.5	ASTM D149
Dielectric Constant, 1kHz	3.0	ASTM D150
Dissipation Factor, 1kHz	0.0030	ASTM D150
Volume Resistivity, Ohm-cm	>1E+16	ASTM D257

Physical Properties

Items	Typical Values	Test Method
Water Absorption, %	2.7	IPC-TM650-2.6.2
Coefficient of Humidity Expansion Typical, ppm/%RH	16	HMA
Density, g/cm ³	1.42	ASTM D1505
Yield, ft ² /lb (m ² /kg)	267 (55)	

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

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