

Wire and Cable - Motor / Generator

Apical Polyimide Film is a proven product in the wire and cable and motor / generator markets. This film is a tough aromatic polyimide that has been developed for use in demanding applications.

Characteristics

- Improved bond/peel strengths
- Ideal elongation characteristics
- Optimal flexibility
- Excellent dielectric properties

Applications

- Traction Equipment
- Mining Equipment
- Drilling pumps

Standard Products

AF SERIES	AV SERIES
120AF616	50AV
150AF019	100AV
200AF919	200AV
250AF029	300AV
300AF929	500AV
300AF021	100AVY
500AF131	
150AFY019	

PHYSICAL PROPERTIES

		Apical		Kapton		
		120AF616	150AF019	120FN616	150FN019	Test Method
Ultimate Tensile (psi)						
	23°C	28,000	23,000	30,000	23,500	ASTM D-882
	200°C	14,500	13,500	17,500	13,000	
Stress at 5% Elongation						
MD (psi)	23°C	10,500	8,500	11,500	9,500	ASTM D-882
	200°C	7,000	5,700	8,000	6,000	
Ultimate Elongation (%)						
	23°C	90	95	75	70	ASTM D-882
	200°C	100	105	80	75	
Tensile Modulus (psi)						
	23°C	405,000	343,000	360,000	330,000	Note 1
	200°C	205,000	185,000	235,000	165,000	
Tear Strength Propagating						
	(lbs)	0.03	0.06	0.02	0.11	Note 2
Tear Strength Initial						
(Graves)	(lbs)	1.32	1.55	2.6	2.6	ASTM D-1004
Density	(g/cm ³)	1.53	1.67	1.53	1.67	ASTM D-1505

Notes:

(1) Apical Test - ASTM D-2176
Kapton Test - ASTM D-882

(2) Apical Test - ASTM D-1938
Kapton Test - ASTM D-1922

THERMAL PROPERTIES

	Apical		Kapton		Test Method
	120AF616	150AF019	120FN616	150FN019	
Shrinkage (%) 150°C-For 30 min					IPC TM-650 2.2.4 Method A
MD	0.08	0.09	0.17	0.17	
TD	0.03	0.02			
Heat Seal Strength (g/in)					
FEP to FEP	1,000	1,200	-	-	MIL P 46112B
FEP to Film	-	900			

Note 1 Data for Kapton is for 100HN film

ELECTRICAL PROPERTIES

	Apical		Kapton		Test Method
	120AF616	150AF019	120FN616	150FN019	
Dielectric Strength (v/mil)	6,900	5,000	6,900	5,000	ASTM D-149
Dielectric Constant	3.1	2.7	3.1	2.7	ASTM D-150
Dielectric Factor	0.0014	0.0012	0.0015	0.0013	ASTM D-150
Volume Resistivity (-cm)	>10 ¹⁶	>10 ¹⁶	1.4X10 ¹⁷	2.3X10 ¹⁷	ASTM D-257

MOISTURE ABSORPTION

	Apical		Kapton		Test Method
	120AF616	150AF019	120FN616	150FN019	
Moisture Absorption (%)					
23°C, 50%RH	0.8	0.8	1.3	0.8	-
23°C immersion 24 hrs	1.7	1.7	-	-	-

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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