

DuPont™ Kapton® FN

Polyimide Film

Product Description

DuPont™ Kapton® FN is a general purpose HN film that is coated or laminated on one or both sides with FEP fluoropolymer. Kapton® FN imparts heat sealability, provides a moisture barrier, and enhances chemical resistance.

Kapton® FN is recommended in applications that require a heat bondable film, or moisture and chemical resistance beyond the capabilities of uncoated Kapton® films. A list of available constructions can be found in the DuPont™ Kapton® polyimide film general specification, EI-10167.

Applications

- Tubing
- Heater circuits
- Heat sealable bags
- Automotive diaphragms and manifolds
- Electrical insulation

Product Specifications

Kapton® FN is manufactured, slit and packaged according to the product specifications listed in EI-10167, DuPont™ Kapton® polyimide film general specification.

Certification

Kapton® FN meets ASTM D5213 (type 2, item A) requirements.

Table 1. Physical Properties of Kapton® FN Film

Property	Typical Value for Film Type			Test Method
	120FN616	150FN019	250FN029	
Ultimate Tensile Strength, MPa (psi) at 23°C (73°F) at 200°C (392°F)	207 (30,000) 121 (17,500)	162 (23,500) 89 (13,000)	200 (29,000) 115 (17,000)	ASTM D882, Method A*
Yield Point at 3%, MPa (psi) at 23°C (73°F) at 200°C (392°F)	61 (9000) 42 (6000)	49 (7000) 43 (6000)	58 (8500) 36 (5000)	ASTM D882
Stress at 5% Elongation, MPa (psi) at 23°C (73°F) at 200°C (392°F)	79 (11,500) 53 (8000)	65 (9500) 41 (6000)	76 (11,000) 48 (7000)	ASTM D882
Ultimate Elongation, % at 23°C (73°F) at 200°C (392°F)	75 80	70 75	85 110	ASTM D882
Tensile Modulus, GPa (psi) at 23°C (73°F) at 200°C (392°F)	2.48 (360,000) 1.62 (235,000)	2.28 (330,000) 1.14 (165,000)	2.62 (380,000) 1.38 (200,000)	ASTM D882
Impact Strength at 23°C (73°F), N·cm (ft·lb)	78 (0.58)	68.6 (0.51)	156.8 (1.16)	DuPont Pneumatic Impact Test
Tear Strength, initial Graves, N (lbf)	1.8 (2.6)	1.5 (2.6)	17.8 (4.0)	ASTM D1004
Tear Strength, propagating Elmendorf, N	7.2	16.3	26.3	ASTM D1922
Density, g/cc or g/mL	1.53	1.67	1.57	ASTM D1505

*Specimen size 25 x 150 mm (1.6 in); jaw separation 100 mm (4 in), jaw speed, 50mm/min (2 in/min). Ultimate refers to the tensile strength and elongation measured at break.

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Table 2. Typical Electrical Properties of Kapton® FN Film at 23°C (73°F), 50% RH

Property	Typical Value for Film Type			Test Method
	120FN616	150FN019	250FN029	
Dielectric Strength, V/μm (V/mil)	272 (6900)	197 (5000)	197 (5000)	ASTM D149
Dielectric Constant	3.1	2.7	3.0	ASTM D150
Dissipation Factor	0.0015	0.0013	0.0013	ASTM D150
Volume Resistivity, Ω · cm				ASTM D257
23°C (73°F)	1.4 × 10 ¹⁷	2.3 × 10 ¹⁷	1.9 × 10 ¹⁷	
200°C (392°F)	4.4 × 10 ¹⁴	3.6 × 10 ¹⁴	3.7 × 10 ¹⁴	

Table 3. Chemical Properties of Kapton® FN Film

Property	Typical Value for Film Type			Test Method
	120FN616	150FN019	400FN022	
Moisture Absorption, % at 23°C (73°F), 50% RH	1.3	0.8	0.4	ASTM D570
98% RH	2.5	1.7	1.2	
Water Vapor Permeability, g/(m ² ·24 h)	17.5	9.6	2.4	ASTM E96
g/(100 in ² ·24 h)	1.13	0.62	0.16	



For more information on DuPont™ Kapton® polyimide films or other DuPont products, please visit our website.

kapton.com

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