

DuPont™ Kapton® 50EN Polyimide Film, 13 Micron Thickness

Category : Polymer , Film , Thermoset , Polyimide, TS , Polyimide, Thermoset Film

Material Notes:

Film thickness 13 micron (0.5 mil) Kapton® Type E and EN films have superior dimensional stability, low CHE, a CTE close to copper, and a high modulus. This type is exceptional for applications requiring adhesive or adhesiveless constructions. General Kapton® information: Kapton® is synthesized by polymerizing an aromatic dianhydride with an aromatic diamine. It has excellent chemical resistance; there are no known organic solvents for the film. It does not melt. It can be used at both high and low temperature extremes. Kapton® polyimide films can be used in a variety of electrical and electronic uses: wire and cable tapes, formed coil insulation, substrates for printed circuit boards, motor slot liners, magnet wire insulation, transformer and capacitor insulation, magnetic and pressure-sensitive tapes, and tubing. Data provided by DuPont High Performance Films.

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Kapton-50EN-Polyimide-Film-13-Micron-Thickness.php

Physical Properties	Metric	English	Comments
Density	1.46 g/cc	0.0527 lb/in ³	
Water Absorption	2.2 %	2.2 %	24 hr/23°C. ASTM D570

Mechanical Properties	Metric	English	Comments
Film Elongation at Break, MD	55 %	55 %	Orientation not specified; ASTM D882
Poissons Ratio	0.34	0.34	Value for Kapton® HN
Secant Modulus	4.80 GPa	696 ksi	ASTM D882
Coefficient of Friction, Dynamic	0.48	0.48	Value for Kapton® HN. Film to film. ASTM D1894-90
Coefficient of Friction, Static	0.63	0.63	Value for Kapton® HN. Film to film. ASTM D1894-90
Film Tensile Strength at Break, MD	276 MPa	40000 psi	Orientation not specified; ASTM D882

Thermal Properties	Metric	English	Comments
CTE, linear	20.0 µm/m-°C	11.1 µin/in-°F	Value for Kapton® HN
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	32.0 µm/m-°C	17.8 µin/in-°F	
	@Temperature 100 °C	@Temperature 212 °F	Value for Kapton® HN
	40.0 µm/m-°C	22.2 µin/in-°F	Value for Kapton® HN
	@Temperature 250 °C	@Temperature 482 °F	
Specific Heat Capacity	1.09 J/g-°C	0.261 BTU/lb-°F	Value for Kapton® HN

Thermal Properties	Metric	English	Comments
Thermal Conductivity	W/m-K	BTU-in/hr-ft ² -°F	Valid for Kapton® HN
Maximum Service Temperature, Air	400 °C	752 °F	Kapton® can function after brief exposure to 400°C (750°F). Various grades are UL rated for continuous service at 220-240°C (430-460°F).
Minimum Service Temperature, Air	-269 °C	-452 °F	Maintains properties and flexibility
Glass Transition Temp, Tg	385 °C	725 °F	Value for Kapton® HN
Flammability, UL94	V-0	V-0	

Optical Properties	Metric	English	Comments
Refractive Index	1.70	1.70	Value for Kapton® HN. Na D line; ASTM D542-90
	@Wavelength 589.3 nm	@Wavelength 589.3 nm	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+10 ohm-cm	1.00e+10 ohm-cm	Kapton® HN in damp heat; IPC-TM-650; Method 2.5.17
	1.00e+17 ohm-cm	1.00e+17 ohm-cm	per ASTM D257-91 for Kapton® HN
Dielectric Constant	3.2	3.2	Use evaporated metal electrodes, two terminal system of measurement at standard conditions.; ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	295 kV/mm	7490 kV/in	Flat sheets in air placed between 1/4 in diameter brass electrodes with 0.8 mm (1/32 in) edge radius subjected to 60 cycles AC voltage at 600V/s rate of rise to the breakdown voltage.; ASTM D149-81
Dissipation Factor	0.0020	0.0020	Same test as dielectric constant.
	@Frequency 1000 Hz	@Frequency 1000 Hz	

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