



Kapton®

polyimide film

Thermally Conductive MTB Film for Loudspeaker Voice Coils and Electrical Insulating Pads

Product Description

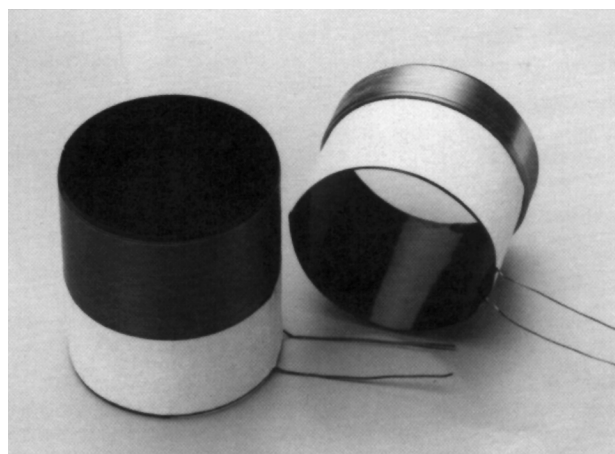
Kapton® MTB polyimide film is a black, homogeneous product with increased thermal conductivity over Kapton® HN. Three-mil and five-mil thicknesses are available. Its black color enhances its thermal radiation properties, making it ideal for applications requiring efficient thermal energy transfer, such as loudspeaker voice coils and electrical insulating pads. In addition, it has excellent adhesion properties, making it compatible with difficult adhesion applications.

The polyimide and filler materials in MTB are thoroughly combined and matrixed. Because no texturing or color coatings are required, potential contamination from processing equipment is avoided. Its uniform composition ensures consistent handling, cutting, and tooling properties from order to order.

Kapton® MTB has higher modulus than HN; its resulting stiffness offers improved strength to the finished product. It is a very durable film that is resistant to creasing, tearing, and denting. All Kapton® films retain their properties for extended storage periods.

Packaging

MTB is sold in roll form. In addition to the standard put-ups, it can be custom slit for specific requirements.



Static Electricity

Static electrical charges can accumulate during unwinding, sheeting, or handling operations. Static buildup across the surface of most thin, polymeric-based films can cause them to stick to themselves as well as to other surfaces. It may be necessary to add static elimination devices to the handling equipment.

Storage

Kapton® polyimide film will retain its original properties for several years when stored in its original packaging at temperatures between 4 and 29°C (40 and 85°F).

Disposal

Landfill disposal is currently preferred for Kapton® film.

Physical Properties of Kapton® MTB Polyimide Film vs. HN

Property	300MTB	500MTB	500HN	Test Method
Thickness	3-mil	5-mil	5-mil	—
Color	Black	Black	Amber	—
Thermal Conductivity, W/m·K	0.45	0.45	0.15	ASTM F-433-87
Modulus, kpsi	470	430	375	ASTM D-882-91
Dielectric Strength, AC V/mil (Min.)	1,800	1,600	3,200	ASTM D-149-94
Approximate Yield, ft ² /lb	36	22	27	—
Elongation, % MD and TD				ASTM D-882-91
Maximum, %	100	100	120	
Minimum, %	50	50	60	
Shrinkage, % MD and TD, Max. at 400°C (752°F)	2.0	2.0	2.0	IPC-TM-650
Moisture Absorption, %	3.0	3.0	3.0	ASTM D-570-92
Volume Resistivity, ohm-cm at 200°C (392°F) (Max.)	10 ¹²	10 ¹²	10 ¹²	ASTM D-257-93
Dielectric Constant at 1 kHz (Max.)	5.2	5.3	3.8	ASTM D-150-94
Dissipation Factor at 1 kHz (Max.)	0.0025	0.0032	0.0035	ASTM D-150-94
Tensile Strength, psi at 23°C (73°F), MD and TD				
Maximum, psi	25,000	25,000	39,000	ASTM D-882-91
Minimum, psi	15,000	15,000	24,000	
MIT Fold Endurance, cycles	27,000	5,000	1,500	ASTM D-2176-89
Cut-Through Resistance, lb	85	105	95	DuPont #PT-0025
Initial Tear Strength, MD and TD, lb	6	10	12	ASTM D-1004-90

Packaging

Rolls of Kapton® MTB film are available in widths from 10 to 46 in and are slit to customer requirements. Slitting tolerances are $\pm 1/16$ in. Roll core sizes are 3-in and 6-in inside diameter. Labels

inside the roll cores contain the lot number, DuPont order number, customer order number, material specification, and other pertinent information. Retain the labels for reference in case of inquiries.

United States

DuPont High Performance Materials
P.O. Box 89, Rt. 23 So. & DuPont Rd.
Circleville, OH 43113
Product Information: (800) 237-4357
Ordering Information: (800) 967-5607
Fax: (800) 879-4481

Canada

DuPont Canada, Inc.
P.O. Box 2200 Streetsville
Mississauga, Ontario
Canada L5M 2H3
Inquiries: (905) 821-5603
Customer Service: (800) 784-5231
Fax: (905) 821-5230

Europe

DuPont de Nemours
(Luxembourg) S.A.
Contern
L-2984 Luxembourg
Grand Duchy of Luxembourg
352-3666-5575
Fax: 352-3666-5000

Contact DuPont on the Internet at www.dupont.com

The information given herein is based on data believed to be reliable, but the DuPont Company makes no warranties express or implied as to its accuracy and assumes no liability arising out of its use by others. This publication is not to be taken as a license to operate under, or recommendation to infringe, any patent.

Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.



Kapton®
polyimide film