

DuPont™ Kapton® 200RS100

Polyimide Film

Description

DuPont™ Kapton® 200RS100 is a two layer polyimide film with an electrically conductive layer on one side and a dielectric insulator on the other side. The temperature is highly customizable based on distance between electrodes and can be designed for temperatures up to 200°C in continuous heating. Only for short term use, the film can reach 240°C. Kapton® RS has proven performance in applications where a precisely controlled surface resistivity was needed. It provides a durable resistivity, which is only slightly affected by temperature and humidity changes. Kapton® RS film retains all the outstanding inertness, radiation and temperature resistance of other Kapton® polyimide films, which make them ideal for use in extreme environments.

Heating applications requiring thin, light-weight, uniform or high temperature performance would benefit from this all-polyimide conductive film. Given the low thermal mass, this material is a more efficient heater than other systems. The material is not limited by inputs such as current or voltage and can be designed for any output temperature desired. It can also be easily cut into various configurations and will continue to function even if it has been punctured. Due to its polyimide composition, it is resilient to high temperature, thin, and highly flexible.

Characteristics

- High Tg
- Conductive side: black matte surface
- Dielectric side: shiny smooth surface
- Durable from -270°C to 200°C
- Thermally durable to 325°C in oxygen-free environments

Applications

- Surface Deicing
- Automotive Interior Heating
- Aerospace Temperature Regulation
- Industrial Tube Heating
- Composite Curing
- Wearables
- Consumer Appliances

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Table 1 Typical Properties of Kapton® 200RS100 Film

Property	Units	Value	Method, Comments
Key Properties			
Thickness	µm	50	
Surface resistivity	ohms/sq	100	Four-point probe measurement Range 92-104 ohm/square (MD, TD direction)
Surface resistivity – water bath	ohms/sq	+1.8	Immersion 20 hours, hand-dried. Four-point probe measurement.
Additional Properties			
Dielectric strength	V//25µm	>2,500	ASTM D-149 (60Hz, 0.25 inch electrodes, 500V/sec rise)
Tensile strength md/td	MPa	>100	ASTM D-882
Tensile modulus md/td	MPa	>2,750	ASTM D-882
Elongation to break md/td	%	>40	ASTM D-882
Initial tear strength md/td	N	>12	ASTM D-1004
MIT fold endurance md/td	cycles	>35,000	ASTM D-2176
Density	g/cc	1.46	ASTM D-1505
Light transmission		Opaque	
Flammability	rating	94V-0	UL-94
% Water uptake	%	1.9	Immersion 24 hours. % wt loss 30°C →150°C



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

kapton.com

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