



DuPont™ Kapton® 200RS100

ELECTRICALLY CONDUCTIVE POLYIMIDE FILM

Technical Data Sheet

Description

DuPont™ Kapton® 200RS100 polyimide film is an electrically conductive film, which is precisely loaded with conductive carbon to produce film with a tightly controlled surface resistivity. The resistive property is throughout the bulk of the film, so it cannot be cracked, rubbed off or otherwise easily damaged, as is often the case with surface coatings or metallizations.

Kapton® 200RS100 is similar to Kapton® XC film, which has proven performance in numerous applications where a precisely controlled surface resistivity was needed. It provides a durable resistivity, which is only slightly affected by temperature and humidity changes. Both RS and XC films retain all the outstanding inertness, radiation and temperature resistance of other Kapton® polyimide films, which make them ideal for use in extreme environments.

Like other polyimide films, Kapton® 200RS100 has excellent thermal, electrical and mechanical properties and excellent chemical resistance.

Applications requiring high temperature performance would benefit from this all-polyimide conductive film. A typical application for this product is flat heaters. As a heater, this material is more efficient since the entire surface area will conduct heat. It can also be easily cut into various configurations. Due to its polyimide composition, it is resilient to high temperature, thin, and highly flexible.

Applications

- Heaters
- Automotive
- Aerospace
- Consumer

Specifications

- High Tg
- Conductive side: black matte surface
- Dielectric side: shiny smooth surface
- Durable from -270°C to 240°C
- Thermally durable to 325°C in oxygen-free environments
- 7X more stable resistivity over time and temperature compared to Kapton® XC

Processing

Kapton® 200RS100 film can be processed using normal roll-to-roll processing. Typical properties for Kapton® RS are shown in **Table 1**.

Construction

The standard conductive Kapton® 200RS100 film is a two-layer film. The total thickness is 2 mil (1 mil of the total thickness is a conductive layer and 1 mil is an insulative layer). The nominal resistivity of the conductive layer is 100 ohms/sq.

Storage Conditions and Shelf Life

Proper storage of Kapton® film will ensure its performance. Kapton® 200RS100 should not be exposed to ultraviolet radiation as from direct sunlight or in conditions of high humidity for extended periods of time. The storage life will be decreased dramatically under these conditions. The shelf life for Kapton® in typical warehouse temperature will be in excess of 20 years. Rolls should be kept wrapped in storage to prevent surface contamination.

Packaging

Kapton® 200RS100 films are supplied in rolls with a maximum width of 48 inches and customized lengths. Narrower widths and cut sheets are available upon special request. All Kapton® packaging materials are 100% recyclable.

Safe Handling

Proper care should be taken when handling Kapton® polyimide film. Processing at high temperatures requires adequate ventilation and air circulation.

Kapton® 200RS100 films are electrically conductive. Caution should be taken when working around electric to avoid shorting.

Scrap film should be disposed of in a landfill.

Table 1
Typical Properties of Kapton® 200RS100 Film

Property	Unit	200RS100	Test Method
Mechanical			
Tensile Strength, md/td	Kpsi	19/17	ASTM D-882
Tensile Modulus, md/td	Kpsi	450/420	ASTM D-882
Elongation to break, md/td	%	40/45	ASTM D-882
Density	g/cc	1.46	ASTM D-1505
Optical			
Light transmission		opaque	
Electrical			
Surface Resistivity	ohms/sq	100	four-point probe

For more information on DuPont™ Kapton® or other High Performance Materials, please contact your local representative, or visit our website for additional regional contacts:

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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.

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