**DESCRIPTION**

DuPont™ Kapton® corona resistant film is a state of the art polyimide film that withstands the damaging effects of corona discharge. This corona resistance provides improved service life and operational efficiencies vs conventional insulation materials.

Kapton® 150FCRC019 is a composite film consisting of Kapton® 100CRC corona resistant polyimide film and a heat fusible FEP fluoropolymer film. In addition to the corona resistant properties, Kapton® FCRC offers excellent, physical, electrical, thermal, and chemical resistant characteristics expected with Kapton® polyimide films.

Kapton® 150FCRC019 has been developed for use as a magnet wire insulation in rail traction, industrial motors and generators where there is a need for enhanced insulation life under partial discharge environments.

Kapton® FCRC may also be used in other electrically insulating applications where partial discharge may occur.

**CHARACTERISTICS**
- Corona resistant film
- Heat fusible adhesive
- High dielectric strength
- Reduced thickness versus mica laminates

**APPLICATIONS**
- Magnet wire
- Traction motors: rail, auto, mining
- Industrial motor insulation
- Wind, hydro generators
- ESP motors
- High temperature
- High reliability
- Aerospace and specialty wires

### Table 1–Typical Physical Properties of DuPont™ Kapton® 150FCRC019 Polyimide Film

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Typical Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>mil</td>
<td>1.5</td>
<td>ASTM D-374</td>
</tr>
<tr>
<td></td>
<td>µm</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>kpsi</td>
<td>26</td>
<td>ASTM D-882</td>
</tr>
<tr>
<td></td>
<td>MPa</td>
<td>179</td>
<td></td>
</tr>
<tr>
<td>Elongation</td>
<td>%</td>
<td>90</td>
<td>ASTM D-882</td>
</tr>
<tr>
<td>Tensile Modulus</td>
<td>kpsi</td>
<td>330</td>
<td>ASTM D-882</td>
</tr>
<tr>
<td></td>
<td>GPa</td>
<td>2.28</td>
<td></td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>V/mil</td>
<td>4600</td>
<td>ASTM D-149</td>
</tr>
<tr>
<td></td>
<td>kV/mm</td>
<td>181</td>
<td></td>
</tr>
<tr>
<td>315 °C Heat Seal Strength</td>
<td>gms/in</td>
<td>1100</td>
<td>DuPont Test Method</td>
</tr>
<tr>
<td></td>
<td>gms/cm</td>
<td>433</td>
<td></td>
</tr>
<tr>
<td>Melt Point, TEP</td>
<td>°C</td>
<td>&gt;257</td>
<td>ASTM E-794</td>
</tr>
<tr>
<td>Yield</td>
<td>ft²/lb</td>
<td>78</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>m²/kg</td>
<td>16</td>
<td>–</td>
</tr>
<tr>
<td>Density</td>
<td>g/cc</td>
<td>1.65</td>
<td>ASTM D-1505</td>
</tr>
</tbody>
</table>

Results Below - polyimide film data only

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Typical Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Constant @ 1 kHz</td>
<td></td>
<td>3.4</td>
<td>ASTM D-150</td>
</tr>
<tr>
<td>Dissipation Factor @ 1 kHz</td>
<td></td>
<td>0.002</td>
<td>ASTM D-150</td>
</tr>
<tr>
<td>Volume Resistivity</td>
<td>ohm-cm</td>
<td>&gt;10¹⁶</td>
<td>ASTM D-257</td>
</tr>
<tr>
<td>UL Electrical RTI</td>
<td>°C</td>
<td>240*</td>
<td>UL 746B</td>
</tr>
<tr>
<td>UL Mechanical RTI</td>
<td>°C</td>
<td>200*</td>
<td>UL 746B</td>
</tr>
<tr>
<td>Flammability</td>
<td>UL-94</td>
<td>V-0*</td>
<td>UL Test Method</td>
</tr>
</tbody>
</table>

*Expected results at UL, material under current review
Figure 1—Comparison of Voltage Endurance, DuPont™ Kapton® corona resistant base film (100CRC) to DuPont™ Kapton® 100HN

Voltage Endurance of Film Subject to Partial Discharge
Hours to Failure - ASTM D-2275
1/2" Diameter Electrodes, 5th out of 9

For more information on DuPont™ Kapton® polyimide films, please contact your local representative, or visit our website for additional regional contacts:

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