DuPont BQ221
CARBON CONDUCTIVE COMPOSITION

Product Description
DuPont BQ221 is a highly active carbon conductor designed as a working electrode for high sensitivity biosensor. It may be used on both PET and Polycarbonate substrates.

Product Benefits
- High Sensitivity
- Low Resistivity
- Compatible with variety of silver conductors

Processing
Screen Printing Equipment
Reel-to-reel, semi-automatic or manual

Ink Residence Time on Screen
> 1 hour

Screen Type
Polyester, stainless steel

Typical Cure Conditions
Box Oven: 130°C for 5-10 minutes
Reel-to-reel: 140°C for 1 minutes

Typical Circuit Line Thickness Printed with 200-mesh stainless screen
8 - 12 microns

Clean-up Solvent
Ethylene diacetate or methyl propasol acetate

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Table 1
Composition Properties

<table>
<thead>
<tr>
<th>Test</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solids (150°C) [%]</td>
<td>32.0 - 34.0</td>
</tr>
<tr>
<td>Viscosity (Pa.S) [Brookfield RVT, spindle#14, 10rpm, 25°C]</td>
<td>35 - 85</td>
</tr>
<tr>
<td>Coverage (cm²/g @ 12.5 microns)</td>
<td>200</td>
</tr>
<tr>
<td>Thinner</td>
<td>DuPont 8260</td>
</tr>
</tbody>
</table>

Table 2
Typical Physical Properties on 5-mil Polyester Film

<table>
<thead>
<tr>
<th>Test</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Resistivity (Ω/sq/mil)</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>PET, untreated (B)</td>
<td>5</td>
</tr>
<tr>
<td>Abrasion Resistance (H), Pencil Hardness [ASTM D3363-74]</td>
<td>4</td>
</tr>
<tr>
<td>Soldering</td>
<td>Not Recommended</td>
</tr>
</tbody>
</table>

Table 1 & 2 show anticipated typical physical properties for DuPont BQ221 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.
Storage and Shelf Life
BQ Series compositions should be stored in a clean, stable environment at room temperature (~25°C) with their lids tightly sealed. Storage in high temperature (>30°C) or in freezers (<0°C) is NOT recommended as this could cause irreversible changes in the material. The shelf life of compositions in factory-sealed (unopened) containers stored under room temperature (~25°C) conditions is 6 months from the date of shipment. Some settling of solids may occur over time, so composition should be stirred thoroughly before use.

Safety and Handling
For Safety and Handling information pertaining to this product, read the Material Safety Data Sheet (MSDS).