DuPont 5025
SILVER CONDUCTOR

Technical Data Sheet

Product Description
DuPont 5025 silver conductor is used to fabricate low voltage circuitry, especially on flexible substrates. It can be used with manual, semi-automatic, and reel-to-reel equipment.

Product Benefits
- Best general purpose Ag for higher temperature operations

Processing
- Screen Printing Equipment
  Reel-to-reel, Semiautomatic, manual
- Substrates
  Polyester, polyimide, paper, epoxy glass
- Ink Residence Time on Screen
  > 2 hours
- Screen Types
  Stainless steel, Polyester
- Typical Cure Conditions
  Box Oven: 120°C for 5 - 6 minutes
  Reel-to-reel: 140°C for 1 minute
- Typical Circuit Line Thickness Printed with 325-mesh stainless steel screen
  12 - 15 microns
- Clean-up Solvent
  Ethylene diacetate or methyl propasol acetate

Table 1
Typical Physical Properties on 5-mil Polyester Film

<table>
<thead>
<tr>
<th>Test</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Resistivity (mΩ/sq/mil)*</td>
<td>12 - 15</td>
</tr>
<tr>
<td>Resistivity after Flex (mΩ/sq/mil)</td>
<td></td>
</tr>
<tr>
<td>15 sec after test</td>
<td></td>
</tr>
<tr>
<td>Crease (180º, 1 cycle)</td>
<td>≤ 50</td>
</tr>
<tr>
<td>Adhesion/Tape Pull (3M Scotch Tape #600)</td>
<td>No Ag Transfer</td>
</tr>
<tr>
<td>Abrasion Resistance, Pencil Hardness (ASTM D3363-74) [H]</td>
<td>≥1</td>
</tr>
<tr>
<td>Operating Use Temperature (ºC)</td>
<td>≤ 110</td>
</tr>
<tr>
<td>Solderability</td>
<td>Not Recommended</td>
</tr>
</tbody>
</table>

Change is Physical Properties after Environment Test *

Change is Physical Properties after Environment Test (%) <10

Environmental Tests
- Thermal Shock (+85°C to -40°C, 30 min. each, 5 cycles)
- Dry Heat (+85°C, 20 days)
- Humidity (+65°C, 95% RH, 10 days) [MIL Std 202E, method 103, cond. A]
- Salt Spray (+35°C, 5% salt, 10 days) [ASTM B117]
- Silver Migration (1 V DC/mil gap, +45º, 90% RH, 500 hr, tested on 40 and 70-mil gaps)
- Sulfate Dioxide (+45°C, 90% RH, 500 hrs in a 9-liter chamber containing 500 mg of flowers of sulfur)

Table 1 & 2 show anticipated typical physical properties for DuPont 5025 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.
Dry and cure in a well ventilated oven or conveyor dryer where the exhaust meets environmental regulations.

Storage and Shelf Life
Containers should be stored, tightly sealed, in a clean, stable environment at room temperature (<25°C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

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

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Viscosity (Pa.S) [Brookfield 0.5RVT, 5rpm #14, 25°C]</td>
<td>20 - 30</td>
</tr>
<tr>
<td>Solids (150°C) [%]</td>
<td>68 - 72</td>
</tr>
<tr>
<td>Coverage (cm²/g) [Dependent on print thickness]</td>
<td>230 - 320</td>
</tr>
<tr>
<td>Thinner</td>
<td>DuPont 8210</td>
</tr>
</tbody>
</table>

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