DuPont™ Pyralux® LF
Acrylic Sheet Adhesive
Flexible Circuit Materials

Product Description
DuPont™ Pyralux® LF Sheet Adhesive is proprietary B-staged modified acrylic adhesive. This stand-alone adhesive is primarily utilized to bond flexible inner layers or rigid cap layers in multilayer laminates. It is also widely used to bond flexible circuits to rigid boards during the fabrication of rigid-flex circuits, as well as bonding stiffeners and heat sinks to flexible circuits and rigid boards.

Key Features and Benefits
• Excellent bond strength affords high reliability
• High thermal resistance to facilitate processing
• Able to withstand multiple lamination cycles
• Certified to IPC-4203/18
• No refrigeration required for storage
• RoHS Compliant

Packaging
Pyralux® LF Sheet Adhesive is supplied on 24 in (610 mm) wide by 250 ft (76 m) long rolls, on nominal 3 in (76 mm) cores. Narrower widths or cut sheets are also available by special order.

Storage Conditions and Warranty
Pyralux® LF Sheet Adhesive should be stored in the original packaging at temperatures of 4 - 29 °C (40 - 85 °F) and below 70% humidity. The product should not be frozen and should be kept dry, clean, and well-protected. Subject to compliance with the foregoing handling and storage recommendations, DuPont's warranties, as provided in the DuPont Standard Conditions of Sale, shall remain in effect for a period of two years following the date of shipment.

Processing
Lamination conditions for DuPont™ Pyralux® LF flexible circuit materials are typically in the following ranges:
Part Temperature: ........................................................182 - 199 °C (360 - 390 °F)
Pressure: .................................................................14 - 28 kg/cm² (200 - 400 psi)
Time: .................................................................1 - 2 hours, at temperature

Pyralux® LF Sheet Adhesive processing guide available from your DuPont sales representative.

Table 1 - Standard Pyralux® LF Sheet Adhesive Offerings

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Adhesive Thickness µm (mil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF0100</td>
<td>25 (1.0)</td>
</tr>
<tr>
<td>LF0200</td>
<td>51 (2.0)</td>
</tr>
<tr>
<td>LF0300</td>
<td>76 (3.0)</td>
</tr>
<tr>
<td>LF0400</td>
<td>102 (4.0)</td>
</tr>
<tr>
<td>LF1500</td>
<td>13 (0.5)</td>
</tr>
<tr>
<td>LF1700</td>
<td>18 (0.7)</td>
</tr>
<tr>
<td>LF1800</td>
<td>20 (0.8)</td>
</tr>
<tr>
<td>FL7049</td>
<td>38 (1.5)</td>
</tr>
</tbody>
</table>

Pyralux® LF Sheet Adhesive Construction Selection
For further support in selecting the appropriate Pyralux® LF Sheet Adhesive construction, please use the Laminate Product Selector at pyralux.dupont.com. This tool can help identify the appropriate product code for your sheet adhesive solution.

Safe Handling
Prior to handling, DuPont recommends referencing the Pyralux® Safe Handling Guide available at pyralux.dupont.com.

Quality and Traceability
DuPont™ Pyralux® LF Sheet Adhesive is manufactured under a certified ISO9001:2015 Quality Management System facility. Complete material and manufacturing records, which include archive samples of finished product, are maintained by DuPont. Each manufactured lot is identified for reference traceability. The packaging label serves as the primary tracking mechanism in the event of customer inquiry and includes the product name, batch number, size, and quantity.
## Table 2 - DuPont™ Pyralux® LF Sheet Adhesive Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>LF0100 Typical Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dielectric Constant (Dk)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MHz</td>
<td>3.5</td>
<td>IPC-TM-650 2.5.5.3</td>
</tr>
<tr>
<td>10 GHz</td>
<td>2.8</td>
<td>ASTM D2520</td>
</tr>
<tr>
<td><strong>Loss Tangent (Df)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MHz</td>
<td>0.03</td>
<td>IPC-TM-650 2.5.5.3</td>
</tr>
<tr>
<td>10 GHz</td>
<td>0.02</td>
<td>ASTM D2520</td>
</tr>
<tr>
<td>*<em>Peel Strength</em> (Adhesion to Copper)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As Received, N/mm (lb/in)</td>
<td>1.8 (10.0)</td>
<td>IPC-TM-650 2.4.9</td>
</tr>
<tr>
<td>After Solder, N/mm (lb/in)</td>
<td>1.6 (9.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Adhesive Flow, mm (mil)</strong></td>
<td>0.05 - 0.10 (2 - 4)</td>
<td>IPC-TM-650 2.3.17.1</td>
</tr>
<tr>
<td><strong>Solder Float, 288 °C for 10 s</strong></td>
<td>Pass</td>
<td>IPC-TM-650 2.4.13</td>
</tr>
<tr>
<td><strong>Volume Resistivity, Ω · cm</strong></td>
<td>&gt; 10^{15}</td>
<td>IPC-TM-650 2.5.17</td>
</tr>
<tr>
<td><strong>Surface Resistance, Ω</strong></td>
<td>&gt; 10^{14}</td>
<td>IPC-TM-650 2.5.17</td>
</tr>
</tbody>
</table>

Data within this table are typical values for the listed product. Performance can vary depending on construction and processing.

*Lamination Conditions: 14 kg/cm² (200 psi) at 182 °C (360 °F) for 1 hour to treated side of 1 oz RA copper foil.

For more information on DuPont™ LF Sheet Adhesive or other DuPont products, please visit our website.