



DuPont™ Pyralux® FR

Flame Retardant Acrylic Sheet Adhesive

Flexible Circuit Materials

Product Description

DuPont™ Pyralux® FR Sheet Adhesive is proprietary flame retardant B-staged modified acrylic adhesive. This stand-alone adhesive is primarily utilized to bond flexible inner layers of multilayers, as well as bonding stiffeners and heat sinks to flexible circuits and rigid boards.

Key Features and Benefits

- Flame retardant modified acrylic adhesive composition
- Excellent bond strength affords high reliability
- Able to withstand multiple lamination cycles
- No refrigeration required for storage
- Certified to IPC-4203/18†
- UL File E124294
- RoHS Compliant

Packaging

Pyralux® FR 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

DuPont™ Pyralux® FR Sheet Adhesive should be stored in original packaging at temperatures of 4 - 29 °C (40 - 85 °F) and below 70% relative 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 on the Certificate of Analysis.

Processing

Lamination conditions for DuPont™ Pyralux® FR 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® FR Sheet Adhesive processing guide available from your DuPont sales representative.

Table 1 - Standard Pyralux® FR Sheet Adhesive Offerings

Product Code	Adhesive Thickness µm (mil)
FR0100	25 (1.0)
FR0200	51 (2.0)
FR0300	76 (3.0)
FR0400	102 (4.0)
FR1500	13 (0.5)
FR1700	18 (0.7)

Pyralux® FR Sheet Adhesive Construction Selection

For further support in selecting the appropriate Pyralux® FR 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. Pyralux® FR flexible circuit materials DO NOT contain polybrominated biphenyls (PBBs), polybrominated biphenyl oxides (PBBOs), or polybrominated diphenyl ethers (PBDEs).

Quality and Traceability

DuPont™ Pyralux® FR 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.

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Product Performance

Table 2 - DuPont™ Pyralux® FR Sheet Adhesive Properties

Property	FR0100 Typical Value	Test Method
Dielectric Constant (Dk)		
1 MHz	3.6	IPC-TM-650 2.5.5.3
10 GHz	2.9	ASTM D2520
Loss Tangent (Df)		
1 MHz	0.03	IPC-TM-650 2.5.5.3
10 GHz	0.02	ASTM D2520
Peel Strength* (Adhesion to Copper)		
As Received, N/mm (lb/in)	1.6 (9.0)	IPC-TM-650 2.4.9
After Solder, N/mm (lb/in)	1.6 (9.0)	
Adhesive Flow, mm (mil)	0.10 - 0.15 (4 - 6)	IPC-TM-650 2.3.17.1
Solder Float, 288 °C for 10 s	Pass	IPC-TM-650 2.4.13
Volume Resistivity, $\Omega \cdot \text{cm}$	$> 10^{15}$	IPC-TM-650 2.5.17
Surface Resistance, Ω	$> 10^{15}$	IPC-TM-650 2.5.17

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.

†Exception: The DuPont flow requirement, using IPC-TM-650, Method 2.3.17.1, is 10.0 mils/mil of adhesive thickness.



pyralux.dupont.com

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

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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-50102-5 and "DuPont Policy Regarding Medical Applications" H-50103-5.

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