

DuPont™ Pyralux® HXC

black flexible circuit material

Technical Information

Description

DuPont™ Pyralux® HXC black flexible circuit material is a halogen free coverlay made with DuPont™ Kapton® MBC black polyimide film. It is coated on one side with a proprietary B-staged modified epoxy adhesive. Coverlay is used to encapsulate etched details in flexible and rigid-flex multilayer constructions for environmental and electrical insulation. Pyralux® HXC meets UL-94 VTM-0 requirement stand alone and the halogen-free requirements of the RoHS directive.

Pyralux® HXC coverlay products are designed to provide superior performance and compatibility with Pyralux® all Polyimide (AP) laminates to allow circuit fabricators to achieve high yields in processing.

Construction

Coverlay is available in a variety of film and adhesive thicknesses. **Table 1** lists typical constructions. The product code must be used when ordering coverlay from DuPont.

Typical Data

See **Table 2**.

Table 1
Coverlay Product Codes

Product Code	Adhesive	Kapton® MBC black polyimide film
	Mil (µm)	Mil (µm)
HXC1215	0.6 (15)	1/2 (12.5)
HXC1220	0.8 (20)	1/2 (12.5)
HXC1225	1 (25)	1/2 (12.5)
HXC2525	1 (25)	1 (25)

Product Code

HX C 12 20

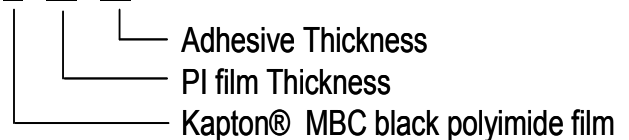


Table 2 Coverlay Properties¹
[Adhesive thickness: 25 µm, Polyimide thickness: 12 µm]

Test Item	Units	Test Conditions	Typical Value	Test Method
Flammability	–	VTM-0 Stand alone	Pass*	UL-94* File E161336, Vol. 3
Peel Strength	N/mm	AR	0.85	IPC-TM-650 2.4.9
		After MEK/10 min.	0.65	
Dimensional Stability	%	MD	-0.05	IPC-TM-650 2.2.24
		TD	0.05	
Solder Resistance	–	288°C 10 sec	Pass	IPC-TM-650 2.4.13
Resin Flow	mm	–	0.11	IPC-TM-650 2.3.17.1
Dielectric Constant	Dk	1 GHz	5.0	DuPont Method
Dissipation Factor	Df	1 GHz	0.1	DuPont Method
Surface Resistivity	ohm	–	6.85 E+12	IPC-TM-650 2.5.17
Volume Resistivity	ohm	–	3.12 E+14	

¹This information is based on data believed to be reliable, but DuPont makes no warranties, express or implied, as to its accuracy and assumes no liability arising out of its use. The data listed herein falls within the normal range of product properties but should not be used to establish specification limits or used alone as the basis of design. Because DuPont cannot anticipate or control the many different conditions under which this information and/or product may be used, it does not guarantee the usefulness of the information or the suitability of its products in any given application. Users should conduct their own tests to determine the appropriateness of the product for their particular purposes.

Packaging

DuPont™ Pyralux® HXC black flexible circuit material coverlay composites are supplied on 19.7/9.8 inch (500mm/249mm) wide by 656 ft (200m) long rolls.

Processing

Laminating conditions for Pyralux® HXC flexible composites are typically in the following ranges:

Part Temperature:	160–180°C (320–356°F)
Pressure:	2–4 MPa (290–580 psi)
Time:	60–90 minutes, at temperature

If press pad made by paper is used, be sure to confirm that non de-lamination occurs between adhesive and film. Moisture in press pad may make adhesive weaker and cause de-lamination. For further processing information, contact your DuPont representative.

Storage

The products need refrigeration and should not be frozen. Keep coverlay at 5°C or below. Room temperature accelerates adhesive's semi-cured condition. If storage conditions have been deviated from these limits, the shelf life is reduced. Keep the material clean and well protected.

This product should retain its original properties for normal usage within four months from the production date, if kept as advised above.

Coverlay should not be automatically discarded if storage conditions have deviated from these limits. We recommend that material which has been stored outside these conditions be examined in a practical test before being committed to production.

Safe Handling

Pyralux® HXC coverlay composites contain a B-staged adhesive. Because B-staged adhesive contains trace quantities (parts per million) of unreacted monomers, precautions and recommendations should be taken to minimize contact.

To eliminate contact between the skin and the adhesive, wear lint-free gloves or fingerpads. Anyone handling Pyralux® HXC should wash their hands with soap before eating, smoking, or using restroom facilities. Gloves and fingerpads should be changed daily, and wash other protective clothing frequently.

Adequate ventilation and exhaust is recommended in press rooms to prevent the buildup of potentially harmful vapors, to remove disagreeable odors and to dissipate heat. Drill rooms should be furnished with standard equipment recommended by drill vendors and required by OSHA standards.

For more information on DuPont™ Pyralux® flexible circuit materials, please contact your local representative, or 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-51459 or H-50102-2.

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