



GLOBAL LAMINATES, INC.



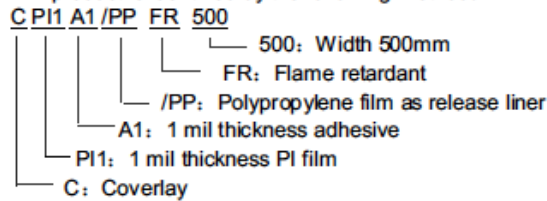
CPI FR Flame Retardant & RoHS Coverlay of Polyimide with Adhesive

1. Description & Designation:

CPI FR product consists of PI film coating adhesive clad release film. It includes various types according to different thickness PI film, adhesive and release film utilized to meet the specific needs of customers.

| | Materials | Thickness | Supplier |
|--------------|------------------|---|----------------|
| Base film | Polyimide film | 0.5, 1.0 and 2.0 mils (0.0125, 0.025, 0.050mm) etc. | Kaneka, Dupont |
| Release Film | PP Film | 2.0 mils (0.050mm) etc. | Toray of USA |
| | Release Paper | Cover PE in double sides and release on one side | Japan, Taiwan |
| Adhesive | Acrylic adhesive | Translucence, Thickness 0.5 2 .0 mils (0.0125 0.050mm) etc. | USA, Japan |

- Some special types appointed by customers can also be produced besides the common types listed in the above form.
- CPI FR product is identified by the following method:



2. Features & Applications:

CPI FR products are widely used in flexible printed circuits board of PI film as coverlay with the following features.

- Meet the RoHS requirement and pass SGS certificate.
- Good electrical property, high bond strength to copper circuit traces, and excellent dimensional stability.
- Low flow system that minimizes adhesive squeeze out.
- UL 94V 0 approved and UL file No.E192337 for main products.

3. Package

- Standard roll: 50+0.25 or 100+0.25 square meters per roll, maximum 2 splices and minimum 20m distance during two splices.
- Standard width: 500mm or 24 inches width except the customer's special instruction within the maximum width 24 inches.
- Inner diameter core: 6 inches (152mm) or 3 inches (76mm), packed in carton and outside wrapped with PE film.

4. Storage:

- Storage time: 12 months since production date; please use after inspection again passed for the materials over the storage time.
- Recommended storage condition: temperature 68 86° (about room Temp. and cool no needed), maximum relative humidity 75%.



GLOBAL LAMINATES, INC.



CPI FR Flame Retardant & RoHS Coverlay of Polyimide with Adhesive Data Sheet of Performance

| Property To Be Tested | Test Method | Typical Product Value CPI1A1/PP FR | Typical Product Value CPI0.5A0.6/PP FR |
|---|--|---------------------------------------|---|
| *Peel strength, minimum, lb./in. width As received After sold float | IPC TM 650 2.4.9 Method B Method D | 8.0 8.0 | 6.0 6.0 |
| Tensile strength, minimum lb./in. ² | IPC TM 650 2.4.19 | 17,800 | 14,200 |
| Elongation, minimum percent | IPC TM 650 2.4.19 | 40 | 40 |
| Dimensional stability, maximum, percentage, | IPC TM 650 2.2.4 Method B Method C | +/- 0.10 +/- 0.20 | +/- 0.10 +/- 0.20 |
| Adhesive Appearance | By eye | Translucence | Translucence |
| Adhesive Thickness | Q000463 | 0.025mm | 0.016mm |
| Adhesive flow, maximum (squeeze out in inch), | IPC TM 650 2.3.17.1 | 3 mils/mil | 1.8 mils/0.6mil |
| Flammability | IPC TM 650 2.3.8.1 | UL94V 0 | UL94V 0 |
| Volatile content, maximum percentage, | IPC TM 650 2.3.37 | 3.0 | 3.0 |
| *Solder float | IPC TM 650 2.4.13 | 550? 30seconds Pass | 550? 30seconds Pass |
| *Chemical resistance, percentage | IPC TM 650 2.3.2 | 90 | 90 |
| Dielectric constant, maximum (at 1 MHz) | IPC TM 650 2.5.5.3 | 3.0 | 3.0 |
| Dissipation factor, maximum (at 1 MHz) | IPC TM 650 2.5.5.3 | 0.04 | 0.04 |
| Volume resistivity, minimum, megohm cm | IPC TM 650 2.5.17 | 10 ⁶ | 10 ⁶ |
| Surface resistance, minimum, megohms | IPC TM 650 2.5.17 | 10 ⁵ | 10 ⁵ |
| Dielectric strength, minimum, volts/mil | ASTM D 149 | 2000 | 2000 |
| Insulation resistance, minimum, megohms, at ambient | IPC TM 650 2.6.3.2 | 10 ⁴ | 10 ⁴ |
| Moisture and insulation resistance, minimum, megohms | IPC TM 650 2.6.3.2 | 10 ³ | 10 ³ |
| *Moisture absorption, maximum, percent | IPC TM 650 2.6.2 | 4.0 | 4.0 |

Mark:

- (1) These data are applied to the relevant coverlay laminate with 10z/SF ED copper.
- (2) Recommended laminating cycle is 330 340°F for 45 60 minutes at 215 285 psi.
- (3) Above data sheet are base on the typical products values. The final data for specific products supplied, please check the testing report attached with the shipment. These data are only for user's reference. The user should determine the suitability of JJFlex CPIFR materials for each application.