



**Thermal Transfer Printable Polyimide  
1 mil STATIC DISSIPATIVE, LT. YELLOW**

**Description:** POLYONICS XF-700 is a polyimide film with a high-temperature permanent pressure sensitive acrylic adhesive and a high opacity, light yellow tinted topcoat specifically designed for barcode or alphanumeric identification of printed circuit boards, or related electronic components using thermal transfer printing. **XF-700 is deemed to be a STATIC SAFE product in accordance with EIA 625, EIA 541. The Test Methods employed were in accordance with EOS/ESD S11.11.**

**Use:** POLYONICS XF-700 is specifically designed for high-temperature-lead-free solder applications. It is the ideal label to withstand surface mount board processes, on either the top or bottom side of the board. It can also be used on the top side of the board in mixed processes.

**Properties:** The XF-700 topcoat, in combination with the appropriate thermal transfer ribbon, passes the requirements of **MIL-STD-202G, Notice 12, Method 215K** and **MIL-STD-883E, Notice 4, Method 2015.13**. The print resists smearing, even when the board and label are directly removed from a reflow or wave solder environment. Preheating the labeled product can further enhance print permanence in the case of extreme solvent and/or abrasion exposure, although this is not typically required for board processing applications. **Moreover, when the label is peeled from its release liner, less than 25 volts per square inch of electrostatic charge is generated, making it safe to use in a static free work environment, per EIA 625 and 541.**

| Properties                       | Test Method            | Average Results   |            |
|----------------------------------|------------------------|---|------------|
|                                  |                        | USA Units   | SI Units   |
| <b>Thickness</b>                 | <b>ASTM D1000</b>      |   |            |
| -Substrate                       |                        | 0.0015 inch   | 0.038 mm   |
| -Adhesive                        |                        | 0.0010 inch   | 0.025 mm   |
| -Total                           |                        | 0.0025 inch   | 0.063 mm   |
| <b>Adhesion</b>                  | <b>Polyonics 80313</b> |   |            |
| <b>Stainless Steel</b>           | <b>20 minute dwell</b> | ≥ 27 oz/in  | 30N/100 mm |
|                                  | <b>24 hour dwell</b>   | ≥ 30 oz/in  | 33N/100 mm |
| <b>Tack</b>                      | <b>Polyonics 80155</b> |   |            |
|                                  |                        | ≥ 1000g   |            |
| <b>Surface Resistivity</b>       | <b>EOS/ESD S.11.11</b> | Label surface >10 <sup>7</sup> Ohms                                       |            |
| <b>Peel Value (Volts/sq.in.)</b> | <b>Polyonics 80331</b> | < 25 volts  |            |
| <b>Temperature Rating:</b>       |                        | -40 to 550°F (-40 to 287°C)   |            |
| <b>Shelf Life</b>                |                        | 1 year below 80°F (27°C) and 60% R.H.                                     |            |
| <b>UL File #</b>                 |                        | TBD   |            |
| <b>Ribbon recommendations</b>    |                        | Armor AXR7+, Sony 4070, JPP1, Ricoh B110C, Union Chemicar US300, DNP R510 |            |

All SI units are mathematically derived from U.S. conventional units.

**Note.** All values shown are averages and should not be used for specification purposes. Adhesive and tack values have a 10% tolerance allotted to the values stated above. Test data and test results contained in this document are for general information only and shall not be relied upon by POLYONICS customers for designs and specifications, or be relied on as meeting specified performance criteria. Customers desiring to develop specifications or performance criteria for specific product applications should contact POLYONICS for further information.

Labels printed with a recommended thermal transfer ribbon. Labels printed with 6.7 mil X dimension bars at 2:5 ratio. Labels exposed to indicated environments:

| Properties                      | Test Method      | Test Environment   | PCS <sup>1</sup> | Read Rate <sup>2</sup> |
|---------------------------------|------------------|--|------------------|------------------------|
| <b>Heat/Chemical Resistance</b> | <b>Polyonics</b> | Control  | 99%              | 100%                   |
|                                 |                  | Kyzen Corp. Aquanox SSA 30% aqueous 40-45°C, 5 min.            | 99%              | 100%                   |
|                                 |                  | Re-Entry KNI 2000 Terpene, 40-45°C, 5 min.                     | 100%             | 99%                    |
|                                 |                  | Alpha Metals Inc. EC-7R Terpene, 40-45°C, 5 min.               | 98%              | 100%                   |
|                                 |                  | Alpha Metals Inc. 2110 Saponifier 10% aqueous, 65-70°C, 5 min. | 98%              | 100%                   |
|                                 |                  | Isopropanol 99%, 65-70°C, 5min.                                | 99%              | 100%                   |
|                                 |                  | Kyzen XJN+ 30%, 5 min.   | 99%              | 100%                   |

<sup>1</sup>PCS - Print Contrast Signal. PCS determined with Quick Check 650, 0.005" aperture, 660 nm wavelength. Quick Check 650 manufactured by Photographic Sciences Corp.

<sup>2</sup> Read rate determined using PSC 850 laser scanner.

| Properties                 | Test Method  | Test Fluid                                     | Results                       |
|----------------------------|--|--|-------------------------------|
| <b>Chemical Resistance</b> | <b>MIL-STD-202G, Notice 12, Method 215K<br/>MIL-STD-883E, Notice 4, Method 2015.13</b> |  |                               |
|                            |  | Solvent A- 1 part IPA, 3 parts Mineral Spirits | No visible effect             |
|                            |  | Solvent B- 1,1,1 Trichloroethane               | Solvent deleted per notice 12 |
|                            |  | Solvent C- Terpene Defluxer                    | No visible effect             |
|                            |  | Solvent D- Saponifier                          | No visible effect             |

**Trademarks:**

XJN+ & Aquanox SSA-™ is a trademark of Kyzen Corporation.

EC-7R™ is a trademark of Petroferm Inc.

RE-ENTRY™ is a registered trademark of Environsolv Inc.

**References:**

ASTM: American Society for Testing and Materials (U.S.A.)

SI: International Systems of Units.



**WARRANTY-LIMITATION**

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