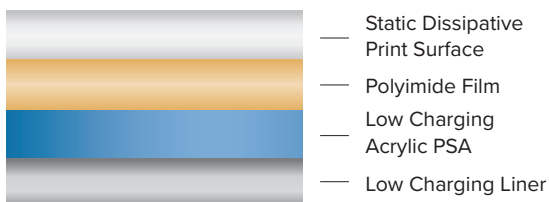


## 1 MIL ESD-SAFE SEMI GLOSS WHITE POLYIMIDE LABEL

POLYONICS XF-781 is a 1 mil (25 µm) polyimide film with a 1 mil (25 µm) low charging, acrylic, pressure sensitive adhesive, a high opacity, semi-gloss, white static dissipative topcoat and low charging liner specifically designed for thermal transfer printing.

**XF-781**

### APPLICATIONS

- Identification of static sensitive circuit boards
- Asset tracking
- Warranty labeling
- ESD-Safe packaging

### FEATURES

- Durable, static dissipative thermal transfer printable top surface.
- Low charging adhesive.
- Complies with ANSI/ESD S541.
- REACH and RoHS compliant.
- Dimensionally stable at high temperatures.
- Heat, cold, solvent, and chemical resistant.
- The topcoat, with a recommended 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 when board and label are directly removed from a reflow or wave solder environment.

### SPECIAL CONSIDERATIONS

- Intended for industrial use only.
- The surface on which the label is applied should be clean, dry and free of any contamination, such as dust, oil or rust. Isopropyl alcohol is recommended to clean the surface.
- Use firm pressure when applying label to increase the physical contact of the adhesive with the surface.
- Pressure sensitive adhesives will provide stronger bonds to warm surfaces by increasing adhesive flow and peel strength.
- Preheating the labeled product can enhance print permanence for cases of extreme solvent and/or abrasion exposure.
- Topcoat and print should not be contacted while exposed to elevated temperatures.
- Long exposures to elevated temperatures may result in a reduction in the ESD properties.
- Ionization is recommended to be used in conjunction with ESD-Safe labels.

## TECHNICAL DATA

Properties	Test Method	Average Results (Imperial Units)	Average Results (SI Units)
Thickness	ASTM D-1000		
Face Sheet		1.5 mil	38 μm
Adhesive		1 mil	25 μm
Liner		3.1 mil	79 μm
Total		5.6 mil	142 μm
Adhesion	Polyonics 80313		
Stainless Steel	20 minute dwell	≥ 27 oz/in	≥ 30 N/100 mm
	24 hour dwell	≥ 30 oz/in	≥ 33 N/100 mm
Tack	Polyonics 80155	≥ 1000 g/in	≥ 39 g/mm
UV and Weather	ASTM G154	No visible effect	
Surface Resistance	EOS/ESD STM 11.11	> 10 <sup>8</sup> and < 10 <sup>11</sup> Label Surface	
		4" x 4"	100 mm x 100 mm
		Measured at 73 °F (23 °C) +/- 5.4 °F (3 °C) and 50% +/- 3% RH	
Static Decay	EIA 541	To 1% of initial charge – 0.02 sec	
ESD Surface Durability	ASTM D4752-10	> 500 IPA double Rubs	
Low Charging PSA/Liner	Modified ESD ADV 11.2	< 125 volts	
		1" x 1" area	25 mm x 25 mm area
Temperature Rating	Long Term	100 hrs @ 302 °F	100 hrs @ 150 °C
	Operating	5 min @ 500 °F	5 min @ 260 °C
	Short Term	90 sec @ 572 °F	90 sec @ 300 °C
Shelf Life	Face, PSA and Liner	1 year below 80 °F (27 °C) and 60% R.H.	
UL File #	MH19503-20180301		
UL Tested Ribbons	DNP R510 HF, Ricoh B110C, Armor AXR7+		

## DURABILITY TESTING: HEAT/CHEMICAL

Test Method	Test Environment	PCS <sup>1</sup>	Read Rate <sup>2</sup>
Polyonics 80386	Control 158 °F (70 °C), 5 min.	99%	100%
	Alpha Metals Inc. 2110 Saponifier 6%, aqueous, 158 °F (70 °C), 5 min.	97%	100%
	Isopropanol 99% 158 °F (70 °C), 5 min	99%	100%
	Kyzen XJN+, 30%, 158 °F (70 °C), 5 min.	99%	100%

## DURABILITY TESTING: CHEMICAL RESISTANCE

Test Method	Test Fluids	Results
MIL-STD-202G, Notice 12, Method 215K MIL-STD-883E, Notice 4, Method 2015.13	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

**NOTES:**

All values shown are averages and should not be used for specification purposes.

Adhesion and tack values have a 15% tolerance allotted to the above values stated.

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

**References:** ASTM: American Society for Testing and Materials (U.S.A.) SI: International Systems of Units.

**POLYONICS MATERIAL COMPLIANCE**

<b>RoHS</b> (Restriction of Hazardous Substances) EU Directive 2002/95/EC	Limits set forth in Directive 2011/65/EU
<b>REACH</b> (Registration Evaluation and Authorization of Chemicals) EU Directive 1907/2006/EC	Limits set forth in Directive 1907/2006/EC Article 7 (2)
<b>Halogen Free</b> - Restriction use of Halogen (IEC 61249-2-21)	Limits set forth in International Electrochemical Commission

**WARRANTY-LIMITATION**

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The above warranties extend solely to Buyer and all warranty claims must be made by the Buyer. Rework or Replacement shall neither exceed nor decrease the original warranty period.

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