

1 MIL POLYIMIDE ESD-SAFE FILM

POLYONICS XF-114 is a 1 mil polyimide film with a durable ESD-Safe non-metallic static dissipative topcoat.

XF-114



FEATURES

- Static dissipative & low-charging
- REACH and RoHS compliant
- Dimensionally stable at high temperatures
- Chemically resistant

APPLICATIONS

- Static dissipative packaging, wraps, protective layers, barriers, printed electronics, etc.

SPECIAL CONSIDERATIONS

- Intended for industrial use only

TECHNICAL DATA

Properties	Test Method	Average Results (Value)	Average Results (Units)
Thickness <i>1 mil Polyimide</i> <i>ESD Topcoat</i> <i>Total</i>	ASTM D-1000		
		0.001 (25.4)	Inch (μm)
		0.0003 (7.6)	Inch (μm)
		0.0013 (33.0)	Inch (μm)
Surface Resistance	EOS/ESD STM11.11	>10 ⁴ and < 10 ⁹ Ohms	
ESD Surface Durability	ASTM D4752-10	>500 Double IPA Rubs	
Thermal Expansion <i>1 mil Polyimide</i>	TMA	0.12	W/m•K
Thermal Conductivity	ASTM F-433-77 (1987)	231 (33,500)	MPa (psi)
Tensile Strength <i>1 mil Polyimide</i>	ASTM D882	138	MPa
Tear Strength Initial	ASTM D-1004-90	7.2 (1.6)	N (lbf)
Tear Strength Propagating	ASTM D-1922-89882	0.07 (0.02)	N (lbf)
Tensile Modulus <i>1 mil Polyimide</i>	ASTM D882	2.5	GPa
Elongation <i>1 mil Polyimide</i>	ASTM D882	35%	@ 20 °C
Volume Resistivity <i>1 mil Polyimide</i>	ASTM D-257	10 ¹⁷	Ohm-cm
Dielectric Constant <i>1 mil Polyimide</i>	IPCTM-650	7.7 (303)	@ 1 MHz

DURABILITY TESTING

Properties	Test Method	Test Fluid	Results
Chemical Resistance	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 C- Terpene Defluxer	No visible effect
		Solvent D- Saponifier	No visible effect
Weathering Test	ASTM G154	-	No visible effect
Temperature Rating	Long Term	-	100 hours at 302 °F (125 °C)
	Operating	-	5 minutes at 500 °F (260 °C)
	Short Term	-	90 seconds at 572 °F (300 °C)
Shelf Life	1 year below 80 °F (27 °C) and 60% R.H.		

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. 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.

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

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POLYONICS MATERIAL COMPLIANCE

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

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