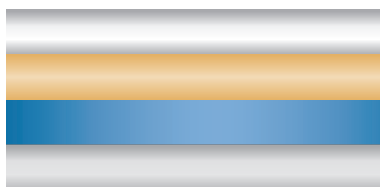


1 MIL SEMI-GLOSS WHITE POLYIMIDE LABEL

POLYONICS XF-3981 is a 1 mil (25 µm) polyimide film with a high-temperature, permanent, pressure sensitive acrylic adhesive and a high opacity, semi-gloss white topcoat specifically designed to be flame retardant to the UL94 V-0 standard.

XF-3981

- Semi-gloss White Print Surface
- Polyimide Film
- Acrylic PSA
- Glassine Liner

FEATURES

- Designed to prevent the propagation of fire
- Meets the UL94 V-0 standard.
- Halogen-free
- Can be printed with thermal transfer or flexographic ink systems
- When printed with a recommended thermal transfer ribbon, the label is resistant to chemical exposure such as isopropanol, terpene, and saponifiers.
- The image is smear-resistant, even when the directly exposed to rubbing or incidental contact.
- Dimensionally stable at high temperatures

APPLICATIONS

- Battery labels where flame, chemical and high temperature exposure may result
- Tracking labels for mobile hand-held devices
- Electronic product identification labels
- UL rating label for an electronic device
- Small label applications that require high resolution printing
- IC labeling for work in process, permanent ID and warranty labeling
- Asset tracking
- Low profile label applications where label thickness is an issue

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 temperature.

TECHNICAL DATA

Properties	Test Method	Average Results (Imperial Units)		Average Results (SI Units)
Thickness	ASTM D-1000			
Face		1.5 mil		38 µm
Adhesive		1.1 mil		28 µm
Total		2.6 mil		66 µm
Adhesion	Polyonics 80313			
Stainless Steel	20 minute dwell	≥ 27 oz/in		≥ 29 N/100 mm
	24 hour dwell	≥ 32 oz/in		≥ 35 N/100 mm
Tack	Polyonics 80155	≥ 1000 g/in		≥ 39 g/mm
Opacity	Polyonics 80166	≥ 85%		
Color		White		
Gloss	BYK Gardner	> 75GU @ 140 °F (60 °C)		
Flammability	UL94 Standard			
	VTM-O rating	Pass		
	V0 rating	Pass (Aluminum substrate)		
Federal Aviation Regulation	25.853 & 25.855	Pass		
Smoke	BSS7238	Pass		
Toxicity	BSS7239	Pass		
Automotive Interiors	FMVSS302	Pass		
Weatherometer Testing	ASTM G154	No Visible Effect		
Temperature Rating	Long term	100 hrs @ 257 °F, 24 hrs @ -94 °F		100 hrs @ 125 °C, 24 hrs @ -70 °C
	Operating	5 mins @ -67 °F to 500 °F		5 mins @ -55 °C to 260 °C
	Short term	90 sec @ 572 °F		90 sec @ 300 °C
Shelf Life	1 year below 80 °F (27 °C) and 60% R.H.			
UL Approved Ribbons	ITW B324, DNP R510 HF, Armor AXR7+, Armor AXR8, IIMAK SP330, Fujicopian FTX308			
UL 969 File #	MH 19503 PGJ12			
UL 94 File #	E338081			

DURABILITY TESTING: HEAT/CHEMICAL

Test Method	Test Fluids	PCS ¹	Read Rate ²
Polyonics 80386	Control: 158 °F (70 °C), 5 min.	99%	100%
	Re-entry KNI 2000 Terpene 104 °F - 113 °F (40 °C - 45 °C), 5 min.	98%	100%
	Isopropanol 99%, 158 °F (70 °C), 5 min.	99%	100%

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.

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

¹PCS Print Contrast Signal. PCS determined with Quick Check 650, 0.005" aperture, 660 nm wave lengths.

Quick Check 650 manufactured by: Photographic Sciences Corp.

² Read rate determined using PSC 850 laser scanner.

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

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

POLYONICS MATERIAL RECOGNITION

Underwriters Laboratories UL94 Standard – V-0	Approved
Underwriters Laboratories UL969 Standard – Indoor	Approved

WARRANTY-LIMITATION

Polyonics' products are sold with the understanding that the Buyer will test them in actual use and determine for him/herself their adaptability to his/her intended uses. Polyonics warrants to the buyer that its products are free from defects in material and workmanship, but limits its obligations under this warranty to replacement of the products shown to Polyonics' satisfaction to have been defective, provided that the Buyer has complied with the handling, storage and shelf life requirements as specified by Polyonics in applicable materials specifications.

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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September 2019



Polyonics World Headquarters
28 Industrial Park Drive
Westmoreland, NH 03467 U.S.A.

Ph: 603.352.1415
Fax: 603.352.1936
Email: info@polyonics.com

Polyonics Asia
Fuweo Mansion Rm 411
Hongtu Road 88
Nancheng District
Dongguan, Guangdong, China 523078

Ph: 86.755.8825.0441
Fax: 86.755.8825.2429
Email: infoasia@polyonics.com

polyonics.com

