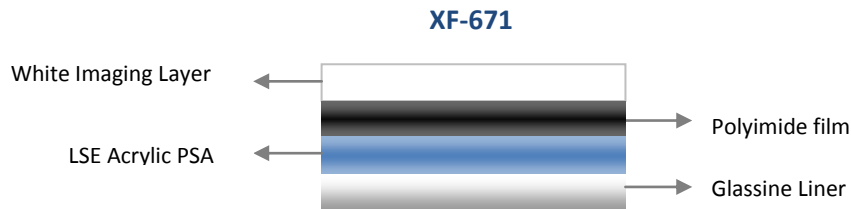




Description:

POLYONICS XF-671 is a 1 mil (25µm) polyimide laser markable label material tested to the FDA Class II multi-use UDI label requirements. XF-671 has a high opacity, white topcoat designed for laser marking with a CO₂, YAG, UV or Fiber Diode system. The material can be die or laser cut and uses Polyonics ThermoGard™ technology and includes a high temperature permanent pressure sensitive acrylic adhesive (PSA) and glassine liner.



Use:

The XF-671 material is designed to be die or laser cut into discrete labels by mechanical methods and marked with a CO₂, YAG, UV or Fiber Diode laser set to the correct power settings. The markings can be very small and include text, bar code or graphics. The material provides a very readable, high contrast background for compared to direct laser marking. The marked labels provide a durable identification system that can be used in high temperature and harsh environments including chemical and steam exposure. For example, the XF-671 is an excellent option for UDI labels used to track medical devices as the laser marking will survive the autoclave sterilization requirements of FDA Class II multi-Use medical devices.

Applications:

- Tested to the FDA Class II Multi-use UDI Label Requirements
- ID tracking for components with low surface energy (LSE) surfaces
- When dimensional stability of the label is critical
- IC labeling for work in process, permanent ID & warranty labeling
- Product ID, asset tracking
- Protect static sensitive devices
- Anywhere a label will be exposed to extreme temperatures, harsh environments and/or Exposure to chemicals

Special Considerations:

- The surface that you want to label should be clean, dry and free of any surface contamination, such as dust, oil or rust. Isopropyl alcohol would be a recommend solvent to clean the surface.
- When you apply the label, you must use firm pressure to increase the physical contact of the adhesive with the surface of the product.
- Pressure sensitive adhesives will provide stronger bonds to a warm surface versus cold.
- The XF-671 is designed for laser marking with a CO₂, YAG, UV or Fiber Diode laser. It is not designed for secondary printing such as thermal transfer or flexographic print systems.
- 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.
- 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.



POLYONICS

Laser Markable Label Materials

XF-671

1mil White Polyimide

Polyonics Material Data

PROPERTIES	TEST METHODS	AVERAGE RESULTS	
		USA Units	SI Units
Thickness	ASTM D1000		
Image Layer (white)		0.0002 inch	0.005 mm
Film		0.0010 inch	0.025 mm
Adhesive		0.0011 inch	0.028 mm
Total		0.0023 inch	0.058 mm
Adhesion	Polyonics 80313		
Stainless Steel	20 minute dwell	≥ 100 oz/in	110N/100 mm
	24 hour dwell	≥ 120 oz/in	143N/100 mm
Gloss	BYK Tester @ 60°	40-70 GU	
Tack	Polyonics 80155	≥ 3000 g/in	
Temperature Rating:	Long term	100 hours at 302°F (125°C)	
	Operating	5 minutes -67F (-55C) to 500F (260C)	
	Short term	90 seconds at 572°F (300°C)	
UDI Performance	Sterilization	>3300 Cycles at 134°C/3.5 minutes	
	Wash/Disinfection	<500 cycles	
		HIP Detergent Wash	50°C
		Disinfection	90°C/10 Minutes
Coating Durability	ASTM D4752-10	IPA	MEK
		>100 Double rubs	>12 Double rubs
	Abrasion (GMW 3208)	100 Cycles	
	UL/IEC 61010	30sec 70 isopropyl alcohol	
Out Gassing	ASTM E595	TML=1.02%, CVCM=0.03%, WVR=0.54%	
Application Temperature		50°F	
Shelf Life		1 year below 80°F (27°C) and 60% R.H.	

Notes:

- All SI units are mathematically derived from US conventions

References:

- ASTM: American Society for Testing and Materials
- SI: International Systems of Units





POLYONICS

Laser Markable Label Materials

XF-671

1mil White Polyimide LML

Polyonics Material Compliance

RoHS- Restriction of Hazardous Substances (EU Directive 2002/95/EC)	Limits set forth in Directive 2005/618/EC amending Directive 2002/95/EC
REACH- Registration Evaluation and Authorization of Chemicals (EU Directive 1907/2006/EC)	Limits set forth in Directive 1907/2006/EC Article 7 (2)
Halogens- Restriction use of Halogen (IEC 61249-2-21)	Limits set forth in International Electrochemical Commission

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 obligation 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 Buyer. Rework or Replacement shall neither extend nor decrease the original warranty period. The term of all warranty periods shall not exceed thirty (30) days from the date of the original shipment.

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Polyonics, Inc

28 Industrial Park Drive
Westmoreland, N.H. 03467
P: +1 603-352-1415
Fax: +1 603-352-1936
Toll free: 1-888- POLYONX (765-9669)
E: info@polyonics.com
W: www.polyonics.com

Dongguan

Asia Technical Center Fuwei Mansion Rm 411
Hongtu Road 88, Nancheng District
Dongguan, Guangdong, China 523078
P: 86-755-8825-0441
F: 86-755-8825-2429
E: infoasia@polyonics.com
W: polyonics-cn.com