

This technical data sheet refers to the following Lighthouse product(s):

CPMS96, White Gloss Polyimide

THERMAL TRANSFER PRINTABLE WHITE POLYIMIDE, A NON-CONDUCTIVE, STATIC DISSIPATIVE MATERIAL SUITABLE FOR LEAD FREE ELECTRONICS APPLICATIONS.

DESCRIPTION

A special 1 mil (25µ) polyimide film with a high temperature permanent pressure sensitive acrylic adhesive and a high opacity, gloss white topcoat specifically designed for thermal transfer printing. Using a 1 mil vs. a 2 mil polyimide film base offers polyimide thermal performance at less cost.

PROPERTIES

The topcoat, in combination with the Lighthouse durable resin 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 labelled 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 100 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.**

APPLICATIONS

- ❑ 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, and is recommended for the bottom side which is directly exposed to the wave solder environment;
- ❑ 1 mil polyimide is perfect in applications where low profile labeling is required such as silk screening or stacking;
- ❑ It is particularly useful in manufacturing processes where dimensional stability of the label is critical;
- ❑ IC labeling for work in progress, permanent ID and warrantee labeling;
- ❑ Product ID, asset tracking;
- ❑ Anywhere a label will be exposed to extreme temperature resistance.

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 recommended 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, as compared to a colder one. The adhesive will 'flow' more readily, increasing the surface area and increasing the adhesion peel strength;
- ❑ The top coat and print should not be contacted while exposed to elevated temperature;
- ❑ 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 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 us for further information.

MATERIAL SPECIFICATIONS

Properties	Test Method	Average Results	
		USA Units	SI Units
Thickness	ASTM D1000		
-Substrate		0.0015 inch	0.038 mm
-Adhesive		0.0010 inch	0.025 mm
-Total		0.0025 inch	0.064 mm
Adhesion	80313		
Stainless Steel	20 minute dwell	≥ 27 oz/in	30N/100 mm
	24 hour dwell	≥ 30 oz /in	33N/100 mm
Tack	80155	≥ 1000g	
Label Surface Resistance	EOS/ESD S.11.11	≥ 10 ⁸ Ω and ≤ 10 ¹¹ Ω	
Peel Value (Volts/sq. in.)	80331	< 100 volts	
Static Decay Label Surface	EIA 541	To 1% of initial charge- 0.02 seconds	
Temperature Rating	Long Term	100 hours at 302°F (125°C)	
	Operating	5 minutes at 50°F (260°C)	
	Short Term	90 seconds at 572°F (300°C)	
	Overall Temp Range	-40°F (-40°C) to 998.6°F (537°C)	
Shelf Life	1 year below 80°F (27°C) and 60% R.H.		
UL File #	PJI2.MH19503		
UL Tested Ribbons	Lighthouse durable resin ribbons		

DURABILITY TESTING

Properties	Test Method	Test Environment	PCS ¹	Read Rate ²
Heat / Chemical	80386	Control 70°C, 5 min	99%	100%
		Alpha Metals Inc. 2110 Saponifier 6%, aqueous, 70°C, 5 min	97%	100%
		Isopropanol 99% 70°C, 5 min	99%	100%
		Kyzen XJN+, 30%, 70°C, 5 min	99%	100%

CHEMICAL 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 B – 1 ,1,1 Trichloroethane	Solvent deleted per notice 12
		Solvent C – Terpene Defluxer	No visible effect
		Solvent D – Saponifier	No visible effect

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 Authorisation 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

KEY FOR TABLES

- ☐ All SI units are mathematically derived from U.S. conventional units.
- ☐ 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:
- ☐ ¹PCS – Print Contrast Signal. PCS determined with Quick Check 650, 0.005" aperture, 660 mm wavelength.
- ☐ Quick Check 650 manufactured by: Photographic Sciences Corp.
- ☐ ²Read rate determined using a PSC Quick Check 850 laser scanner.

IMPORTANT NOTICE

All Lighthouse products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects.

Published information concerning Lighthouse products is based on research, which the Company believes to be reliable, although such information does not constitute a warranty.

Because of the variety of uses of Lighthouse products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. The seller shall not be liable for damages in excess of the purchase price of the product nor for incidental or consequential damages.

All specifications are subject to change without prior notice.