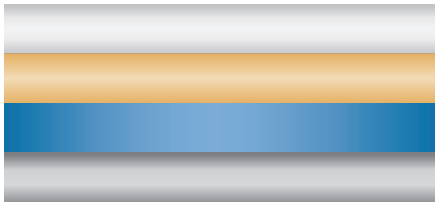
POLYONICS®
Personal Chemistry

THERMAL TRANSFER PRINTABLE LABELS
XF-528

1 MIL HIGH GLOSS WHITE POLYIMIDE LABEL

POLYONICS XF-528 is a 1 mil (25 µm) polyimide film with a high-temperature, permanent, pressure sensitive acrylic adhesive and a high opacity, high gloss, white topcoat specifically designed for thermal transfer printing and applications requiring low outgassing.

XF-528



FEATURES

- Durable thermal transfer printable top surface
- Low out gassing adhesive
- High resolution (600dpi) printing
- UL 969 recognized
- REACH and RoHS compliant
- Dimensionally stable at high temperatures
- Chemically resistant
- Heat, cold, solvent 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.

APPLICATIONS

- Top or bottom side PCB tracking
- High resolution printing
- ID and tracking for applications requiring low out gassing

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.

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TECHNICAL DATA

Properties	Test Method	Average Results (Imperial Units)	Average Results (SI Units)
Thickness	ASTM D-1000		
Top Sheet		1.5 mil	38 µm
Adhesive		1 mil	25 µm
Total		2.5 mil	63 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
Gloss	K Tester @ 60°	> 90GU	
Color		L=90	
Out Gassing[1]	ASTM E595	Pass - TML < 1.0%, CVCM < 0.1%, WVR ≤ 1.0%	
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	1 year below 80 °F (27 °C) and 60% R.H.		
UL File#	PGJ12.MH19503		
MIL PRF-61002B	Meets the criteria with DNP R510HF and Ricoh B110CR ribbons[2]		
Recommended Ribbons	DNP R510 HF, Ricoh B110CR, ITW B324, Armor AXR7+		

DURABILITY TESTING: HEAT/CHEMICAL

Test Method	Test Environment	SC[3]	MOD[4]
Polyonics 80386	Control 158 °F (70 °C), 5 min.	≥ B grade	≥ B grade
	Alpha Metals Inc. 2110 Saponifier 6%, aqueous, 158 °F (70 °C), 5 min.	≥ B grade	≥ B grade
	Isopropanol 99% 70°C, 158 °F (70 °C), 5 min.	≥ B grade	≥ B grade
	Kyzen XJN+, 30%, 70°C, 158 °F (70 °C), 5 min.	≥ B grade	≥ B grade

DURABILITY TESTING: CHEMICAL RESISTANCE

Test Method	Test Fluids	Results
MIL-STD-202G, Notice 12, Method 215K, MIL-STD-883E, Notice 4, Method 2015.13	1 part IPA, 3 parts mineral spirits	No visible effect
	Terpene Defluxer	No visible effect
	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.

[1]For the low-outgassing test report, please contact Polyonics

[2]Not tested with all recommended ribbons

[3]SC=signal contrast, measured via Web Scan TruRemote Wide Angle per ISO 15415.

[4]MOD=modularity, measured via Web Scan TruRemote Wide Angle per ISO 15415.

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

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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RoHS Compliant
SJ/T11364-2006 & EU202/95/EC
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