Technical Data Sheet

BRADY B-727 GLOSSY WHITE THERMAL TRANSFER PRINTABLE POLYIMIDE LABEL STOCK

TDS No. B-727
Effective Date: 01/21/2019

Description:

GENERAL

Print Technology: Thermal transfer
Material Type: Polyimide
Finish: Glossy
Adhesive: Permanent Acrylic

APPLICATIONS

Printed circuit board and electronic component pre-process labeling

RECOMMENDED RIBBONS

Brady Series R6000 Halogen Free

REGULATORY/AGENCY APPROVALS

UL: Brady B-727 is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with the Brady Series R6000 Halogen Free ribbon. See UL file MH17154 for specific details. UL information can be accessed on-line at UL.com in the UL Product iQ area.

For information on the Weee-RoHS compliance status for a Brady Product go to one of the following websites:
In Canada: www.bradycanada.ca/weee-rohs
In Europe: www.bradyeurope.com/rohs
In Japan: www.brady.co.jp/products/labelsuse/rohs
All other regions: www.bradyid.com/weee-rohs

SPECIAL FEATURES

B-727, in combination with the Brady Series R6000 Halogen Free ribbon, meets the requirements of MIL-STD-202G, Method 215K.

Preheat can be employed to further enhance print permanence in the case of extreme solvent and/or abrasion exposure.

B-727 is designed to withstand multiple cycles of harsh condition washes for printed circuit boards.

B-727 is dibutyl and dioctyl tin free.

Details:

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
Thickness	ASTM D1000	
	-Substrate (topcoat and film)	0.0027 inch (0.068 mm)
	-Adhesive	0.0017 inch (0.043 mm)
	-Total (excluding liner)	0.0044 inch (0.111 mm)
Adhesion to:	ASTM D1000	
-Stainless Steel	20 minute dwell	46 oz/in (50 N/100 mm)
	24 hour dwell	57 oz/in (62 N/100 mm)
-Epoxy PC Board	20 minute dwell	36 oz/in (39 N/100 mm)
	24 hour dwell	49 oz/in (54 N/100 mm)

Tack	ASTM D2979 Polyken™ Probe Tack 0.5 second dwell	67 oz (1900 g)
Drop Shear	PSTC-7 (1/2" x 1" sample)	> 100 hours
Dielectric Strength	ASTM D1000	10,000 volts

Performance properties were tested on B-727 printed with the Brady Series R6000 Halogen Free ribbon. Printed samples of B-727 were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
Short Term High Service Temperature	80 seconds at various Temperatures	No visible effect to label at 572°F (300°C), label discolors slightly at 626°F (330°C) but is still functional, label still functional but moderately discolored at 662°F (350°C); print is still legible
	5 minutes at various Temperatures	No visible effect to label at 500°F (260°C), label discolors slightly at 518°F (270°C), at 572°F (300°C) label moderately discolors and adhesive discolors at label edge. Label remains functional. Print is legible
	2 hours at various Temperatures	No visible effect to label at 338°F (170°C), label discolors slightly at 374°F (190°C), moderately at 428°F (220°C) and severely at 500ºF (260°C). Label remains functional. Print is legible
Long Term High Service Temperature	1000 hours at various Temperatures	No visible effect to label at 212°F (100°C), label discolors slightly at 248°F (120°C), moderately at 293°F (145°C). Label remains functional. Print is legible
Low Service Temperature	1000 hours at -94°F (-70°C)	No visible effect
Humidity Resistance	1000 hours at 95°C (37°C)/95%RH	No visible effect
UV Light Resistance	ASTM G155, cycle 1, Dry 1000 hours in Q-Sun Xenon Test Chamber	Topcoat turns yellow, label remains functional
Weatherability*	ASTM G155, Cycle 1 1000 hours in Xenon arc Weather-Ometer®	Slight discoloration
Salt Fog Resistance	ASTM B117 1000 hours in 5% salt fog solution chamber	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306)	Print legible after 100 cycles
Chemical Vapor Phase Resistance	Labels adhered to epoxy PC board and exposed to the vapor of the boiling chemical for 10 minutes and then rubbed with a cotton swab saturated with the chemical for 10 rubs Test samples were baked 4 minutes at 160°C prior to testing Ionox® 3955 Micronox® MX2501	 Severe print removal Complete print removal

*B-727 is not recommended for outdoor use.

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples were printed with the Brady Series R6000 Halogen Free ribbon. Samples were laminated to epoxy PC board. Test samples were exposed to the indicated environments. Test samples were baked 4 minutes at 160°C before testing. All test samples were immersed in the test fluids for 10 minutes. Samples were rubbed 10 times with a cotton swab saturated with the test fluid.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL	R6000 HALOGEN FREE	
		WITHOUT RUB	WITH RUB
Kyzen Corp. 15% Aquanox® A4625 at 140°F (60°C)	No visible effect	1	4
Kyzen Corp. 17% Aquanox® A4520 at 140°F (60°C)	No visible effect	1	3
Kyzen Corp. 10% Aquanox® A4638 at 150°F (65°C)	No visible effect	1	1
Kyzen Corp. 20% Aquanox® A4703 at 145°F (63°C)	No visible effect	1	1
Zestron, 15% Atron® AC205 at 150°F (65°C)	No visible effect	1	5
Zestron, 15% Atron® AC207 at 150°F (65°C)	No visible effect	1	5
Zestron, 15% Vigon® A201 at 150°F (65°C)	No visible effect	1	5
Zestron, 15% Vigon® N600 at 150°F (65°C)	No visible effect	1	5
Isopropyl Alcohol 99% at 180°F (82°C)	No visible effect	1	2
Deionized water at 212°F (100°C)	No visible effect	1	1

Rating Scale:
1=no visible effect
2=slight smear or print removal, detectable but minimal smear
3=moderate smear or print removal (print still legible)
4=severe smear or print removal (print illegible or just barely legible)
5=complete print removal

PERFORMANCE PROPERTY	TEST METHOD
Solvent Resistance	**MIL-STD-202G, Method 215K**

Test samples were printed with the Brady Series R6000 Halogen Free ribbon. Labels were printed with alphanumerics and barcodes. Test samples were subjected to 3 cycles of 3 minute immersions immediately followed by a toothbrush rub after each immersion.

TEST FLUID	RESULTS R6000 HALOGEN FREE
Solvent A 1 part IPA, 3 parts mineral spirits	Meets requirement
Solvent C Terpene Defluxer	Meets requirement
Solvent D Saponifier @ 70°C	Meets requirement

Shelf Life:
Shelf life is two years from the date of receipt for this product as long as this product is stored in its original packaging in an environment below 80° F (27° C) and 60% RH. It remains the responsibility of the user to assess the risk of using this product. We encourage customers to develop testing protocols that will qualify a product's fitness for use in their actual application.

Trademarks:
ANSI: American National Standards Institute (U.S.A.)
ASTM: American Society for Testing and Materials (U.S.A.)
All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units
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Ionox® is a registered trademark of the Kyzen Corporation
Micronox® is a registered trademark of the Kyzen Corporation
PSTC: Pressure Sensitive Tape Council (U.S.A.)
Polyken™ is a trademark of Testing Machines Inc.
UL: Underwriters Laboratories Inc. (U.S.A.)
Vigon® is the registered trademark of Zestron Corporation
Weather-Ometer® is a registered trademark of Atlas Material Testing Technology LLC

Note: All values shown are averages and should not be used for specification purposes.
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