BRADY B-717 THERMAL TRANSFER PRINTABLE GLOSSY WHITE STATIC DISSIPATIVE POLYIMIDE LABEL STOCK

TDS No. B-717
Effective Date: 01/21/2019

Description:

GENERAL

Print Technology: Thermal Transfer
Material Type: Polyimide
Finish: Glossy
Adhesive: Static Dissipative 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-717 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-717 is constructed with a static dissipative adhesive. This product has adhesive surface resistivity values in the recommended range for dissipative ESD packaging materials as defined by ANSI/ESD S541-2008 (between 10^4 and 10^{11} ohms).
B-717 in combination with the 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-717 is designed to withstand multiple cycles of harsh condition washes for printed circuit boards.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D1000 -Substrate -Adhesive -Total (excluding liner)	 0.0025 inch (0.063 mm) 0.0017 inch (0.043 mm) 0.0042 inch (0.106 mm)
Adhesion to: -Stainless Steel	ASTM D1000 20 minute dwell 24 hour dwell	 40 oz/in (44 N/100 mm) 55 oz/in (61 N/100 mm)
Tack	ASTM D2979 Polyken™ Probe Tack 0.5 second dwell	49 oz (1400 g)
Drop Shear	PSTC-7 (except use ½" x 1" sample)	>100 hours
Dielectric Strength	ASTM D1000	12,000 volts total
Adhesive Surface Resistivity	EOS/ESD STM11.11	3.9 x 10^8 ohms/sq

Performance properties tested on B-717 printed with the Brady Series R6000 Halogen Free thermal transfer ribbon. Printed samples of B-717 were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	AVERAGE 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 still functional, at 662°F (350°C) label still functional but moderately discolored and adhesive discolored at label edge; 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 still 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 500°F (260°C). Label remains functional. Print is still 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 still legible.
Low Service Temperature	1000 hours at -94°F (-70°C)	No visible effect
Humidity Resistance	1000 hours at 100°F (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 light 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	Label adhered to epoxy PC board and exposed to the vapor of 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® MX 2501	 Severe print removal Complete print removal

*B-717 is not recommended for outdoor use.

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Test samples were printed with the Brady Series R6000 Halogen Free ribbon. Labels were adhered 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 prior to rub with cotton swab ten times.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION TO 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
Chemical Resistance	MIL-STD-202G, Method 215K

Test samples were printed with the Brady Series R6000 Halogen Free ribbon. Labels were printed with alphanumerics and bar codes. 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 requirements
Solvent C Terpene Defluxer	Meets requirements
Solvent D Saponifier @ 70°C	Meets requirements

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.)
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Atron® is a registered trademark of the Zestron Corporation
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
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Note: All values shown are averages and should not be used for specification purposes.
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