Technical Data Sheet

BRADY B-728 MATTE WHITE THERMAL TRANSFER PRINTABLE POLYIMIDE LABEL STOCK

TDS No. B-728
Effective Date: 01/21/2019

Description:

GENERAL

Print Technology: Thermal Transfer
Material Type: Polyimide
Finish: Matte
Adhesive: Permanent Acrylic

APPLICATIONS

Printed circuit board and electronic component pre-process labeling

RECOMMENDED RIBBONS

Brady Series R6000 Halogen Free
Brady Series R4700

REGULATORY/AGENCY APPROVALS

UL: B-728 is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with the Brady Series R6000 Halogen Free and the Brady Series R4700 Series ribbons. See UL file MH17154 for specific details. UL information can be accessed online 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-728 in combination with the Brady Series R6000 Halogen Free ribbon meets the requirements of MIL-STD-202G, Method 215K.

B-728 matte topcoat is designed to resist solder balls from sticking to the label after exposure to molten wave solder.

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

B-728 is designed to survive multiple cycles of harsh condition washes used for printed circuit board cleaning processes.

Details:

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
Thickness	ASTM D1000 -Substrate -Adhesive -Total (excluding liner)	 0.0027 inch (0.068 mm) 0.0017 inch (0.043 mm) 0.0044 inch (0.111 mm)
Adhesion to: -Stainless Steel -Epoxy PC Board	ASTM D1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 39 oz/in (43 N/100 mm) 49 oz/in (53 N/100 mm) 32 oz/in (35 N/100 mm) 39 oz/in (43 N/100 mm)
Tack	STM D2979 Polyken™ Probe Tack 0.5 second dwell	56oz (1576 g)
Drop shear	PSTC-7 (except use ½" x 1" sample)	> 100 hours
Flammability	ASTM D1000 Average Burn Time	 < 2 seconds
Dielectric Strength	ASTM D1000	10700 volts

Performance properties were tested on B-728 printed with the Brady Series R6000 Halogen Free ribbon. Printed samples of B-728 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 Temperatures	80 seconds at various temperatures	No visible effect to label at 572°F (300°C), label discolors slightly at 608°F (320°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 260°C, label discolors slightly at 270°C, at 300°C label moderately discolors and adhesive discolors at label edge. Label remains functional.
	2 hours at various temperatures	No visible effect to label at 170°C, label discolors slightly at 190°C, moderately at 220°C, and severely at 260°C. Label remains functional.
Long Term High Service Temperature	1000 hours at 212°F (100°C)	No visible effect to label at 100°C, label discolors slightly at 120°C, moderately at 145°C. Label remains functional.
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 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® MX 2501	 No visible effect with rub, moderate to total print smear with rub. No visible effect with and without rub.

*B-728 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 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	3
Kyzen Corp. 17% Aquanox® A4620 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	3
Zestron 15% Atron® AC205 at 150°F (65°C)	No visible effect	1	4
Zestron 15% Atron® AC207 at 150°F (65°C)	No visible effect	1	4
Zestron 15% Vigon® N600 at 150°F (65°C)	No visible effect	1	4
Zestron 15% Vigon® A201 at 150°F (65°C)	No visible effect	1	4
99% Isopropyl Alcohol at 180°F (82°C)	No visible effect	1	1
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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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.)
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Note: All values shown are averages and should not be used for specification purposes.
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