Technical Data Sheet

BRADY B-729 MATTE WHITE LOW PROFILE THERMAL TRANSFER PRINTABLE POLYIMIDE LABEL STOCK

TDS No. B-729
Effective Date: 05/06/2014

Description:

GENERAL

Print Technology: Thermal Transfer
Material Type: White Polyimide (1 mil film)
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

Brady B-729 is RoHS compliant to RoHS Directive 2011/65/EU.

B-729 is UL Recognized to UL969 Labeling and Marking Standard when printed with Brady Series R6000 Halogen Free and Series R4700 ribbons. See UL file MH17154 for specific details. UL information can be accessed online at *UL.com*. Search in *Certifications* area.

SPECIAL FEATURES

B-729 in combination with the Series R6000 Halogen Free ribbon meets the requirements of MIL-STD-202G, Method 215K.

B-729 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-729 is designed to survive multiple cycles of harsh condition washes used for circuit board cleaning processes.

Details:

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
Thickness	ASTM D1000 -Substrate -Adhesive -Total	 0.0017 inch (0.043 mm) 0.0017 inch (0.043 mm) 0.0034 inch (0.086 mm)
Adhesion to: -Stainless Steel -Epoxy PC Board	ASTM D1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 34 oz/in (37 N/100 mm) 46 oz/in (50 N/100 mm) 30 oz/in (33 N/100 mm) 37 oz/in (40 N/100 mm)
Tack	STM D2979 Polyken™ Probe Tack 1 second dwell	51 oz (1437 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	8500 volts

Performance properties tested on B-729 printed with Brady Series R6000 Halogen Free thermal transfer ribbon. Printed samples of B-729 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 572°F (300°C)	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 500°F (260°C)	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 338/°F (170°C)	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 without rub, moderate to total print smear with rub. No visible effect with and without rub

*B-729 is not recommended for outdoor use

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples printed with Series R6000 Halogen Free thermal transfer ribbon. Labels were adhered to epoxy PC board. Test samples were exposed to indicated environments. Test samples 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	No visible effect	1	4

150°F (65°C)			
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 Series R6000 Halogen Free thermal transfer ribbons. Labels 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

Product testing, customer feedback and history of similar products support a customer performance expectation of at least 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. We are confident that our product will perform well beyond this time frame however it remains the responsibility of the user to assess the risk of using such product. We encourage customers to develop functional testing protocols that will qualify a product's fitness for use in their actual applications.

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
Aquanox® is a registered trademark of the Kyzen Corporation
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
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.
Test data and test results contained in this document are for general information only and shall not be relied upon by Brady customers 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 Brady for further information.

Product compliance information is based upon information provided by suppliers of the raw materials used by Brady to manufacture this product or based on results of testing using recognized analytical methods performed by a third party, independent laboratory. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this information.

WARRANTY
Brady products are sold with the understanding that the buyers will test them in actual use and determine for themselves their adaptability to their intended uses. Brady warrants to the buyers that its products are free from defects in material and workmanship, but limits its obligation under this warranty to replacement of the product shown to Brady's satisfaction to have been defective at the time Brady sold it. This warranty does not extend to any persons obtaining the product from the buyers. This warranty is in lieu of any other warranty, express or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, and of any other obligations or liability on Brady's part. Under no

circumstances will Brady be liable for any loss, damage, expense, or consequential damages of any kind arising in connection with the use, or inability to use, Brady's products.

Brady North America | 6555 W. Good Hope Rd | Milwaukee, WI 53223 | USA | Tel: 414-358-6600 | Fax: 800-292-2289