BRADY B-724 THERMAL TRANSFER PRINTABLE POLYIMIDE LABEL STOCK

TDS No. B-724
Effective Date: 01/25/2019

Description:

GENERAL

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

APPLICATIONS

Printed circuit board and electronic component pre-process labeling

RECOMMENDED RIBBONS

Brady Series R4300

REGULATORY APPROVALS

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-724 in combination with the Series R4300 ribbon passes the requirements of:
MIL-STD-202G, Method 215K
SAE AS81531 Marking of Electrical Insulating Material

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

B-724 is designed to withstand multiple cycles of harsh condition washes for printed circuit boards. Degradation of topcoat may be seen in certain aqueous chemistries.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D1000 -Substrate -Adhesive -Total (excluding liner)	 0.0028 inch (0.072 mm) 0.0016 inch (0.039 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	 45 oz/inch (49 N/100 mm) 47 oz/inch (51 (N/100 mm) 33 oz/inch (36 N/100 mm) 48 oz/inch (53 N/100 mm)
Tack	ASTM D2979 Polyken™ Probe Tack (1 second dwell, 1 cm/sec separation)	66 oz (1883 grams)

Drop Shear	PSTC-7 (except use ½" x 1" sample)	Over 100 hours
Dielectric Strength	ASTM D1000	10000 volts
Flammability	ASTM D1000 Average Burn Time	Less than 5 seconds

Performance properties were tested on B-724 printed with the Brady Series R4300 thermal transfer ribbon. Printed samples of B-724 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 626°F (330°C), label discolors slightly at 644°F (340°C), but still functional, at 662°F (350°C) label still functional but slightly discolored and adhesive discolored at label edge.
	5 minutes at various temperatures	No visible effect to label at 536°F (280°C),label discolors slightly at 572°F (300°C) but still functional, at 608°F (320°C) label still functional but slightly discolored and adhesive discolored at edge.
	2 hours at various temperatures	No visible effect to label at 500°C (260°C), adhesive brown at edge of label at 536°F(280°C).
Long Term High Service Temperature	1000 hours at various temperatures	No visible effect to label at 180°C, at (200°C) label still functional but slightly discolored and adhesive brown at edge.
Low Service Temperature	1000 hours at -94°F (-70°C)	No visible effect
Weatherability[1]	ASTM G155, Cycle 1 1000 hours in Xenon Arc Weather-Ometer®	Topcoat degraded
Humidity Resistance	1000 hours at 100°F, 95% RH	No visible effect
UV Light Resistance	ASTM G155, cycle 1, dry 1000 hours in Q-Sun Xenon Test Chamber	Topcoat fades to off-white, label still functional
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306)	Print legible after 100 cycles
Salt Fog Resistance	ASTM B117 1000 hours in 5% salt fog solution chamber	Slight discoloration of topcoat, no visible effect to print
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 wetted cotton swab for 10 rubs. Test samples were baked 4 minutes at 160°C prior to testing. Ionox® 3955	 Slight print smear

	Micronox® MX 2501	Slight print smear
Wave Solder	Label adhered to epoxy PC board and exposed to 10 second dip at 249°C	No visible effect

[1]B-724 is not recommended for outdoor use.

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples were printed with the Brady Series R4300 thermal transfer 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	R4300	
		WITHOUT RUB	WITH RUB
Kyzen Corp. 15% Aquanox® A4625 at 140°F (60°C)	No visible effect	1	1
Kyzen Corp. 17% Aquanox® A4620 at 140°F (60°C)	No visible effect	1	2
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	2
Zestron 15% Atron ® AC207 at 150°F (65°C)	No visible effect	1	2
Zestron 15% Vigon® A201 at 150°F (65°C)	No visible effect	1	2
Zestron 15% Vigon® N600 at 150°F (65°C)	No visible effect	1	2
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 215 K

Test samples were printed with the Brady Series R4300 thermal transfer 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 R4300
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.

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ASTM: American Society for Testing and Materials (U.S.A.)
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Ionox® is a registered trademark of the Kyzen Corporation
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Note: All values shown are averages and should not be used for specification purposes.
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Brady North America | 6555 W. Good Hope Rd | Milwaukee, WI 53223 | USA | Tel: 414-358-6600 | Fax: 800-292-2289