Technical Data Sheet

BRADY B-776 GLOSSY LIGHT GREEN THERMAL TRANSFER PRINTABLE POLYIMIDE LABEL STOCK

TDS No. B-776
Effective Date: 02/27/2015

Description:

GENERAL

Print Technology: Thermal Transfer
Material Type: Light Green Polyimide (2 mil film)
Finish: Glossy
Adhesive: Permanent Acrylic

APPLICATIONS

Printed circuit board and electronic component preprocess labeling

RECOMMENDED RIBBONS

Brady Series R6000 Halogen Free

REGULATORY/AGENCY APPROVALS

UL: B-776 is UL Recognized to UL 969 Labeling and Marking Standard when printed with Brady Series R6000 Halogen Free ribbon. See UL file MH17154 for specific details.

Brady B-776 is RoHS compliant to RoHS directive 2011/65/EU.

SPECIAL FEATURES

B-776, in combination with 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-776 is designed to withstand multiple cycles of harsh condition washes for printed circuit boards.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	 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 D 1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 46 oz/in (50 N/100 mm) 57 oz/in (62 N/100 mm) 36 oz/in (39 N/100 mm) 49 oz/in (54 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack 1 second dwell	53 oz (1500 gram)
Drop Shear	PSTC-7 (except use 1/" x 1" sample)	>100 hours
Dielectric Strength	ASTM D 1000	10,400 volts

Performance properties tested on B-776 printed with Series R6000 Halogen Free ribbon. Printed samples of B-776 were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULT
Short Term High Service Temperature	80 seconds at 572°F (300°C)	No visible effect to label at 572°F (300°C), label discolored very slightly at 626°F (330°C). Label remains functional, print is legible
	5 minutes at 500°F (260°C)	No visible effect to label at 500°F (260°C), label discolors slightly at 572°F (300°C), moderate discoloration at 608°F (320°C). Label remains functional, print is legible
	2 hours at 338°F (170°C)	No visible effect to label at 338°F

		(170°C), label discolors slightly at 446°F (230°C), moderate discoloration at 482°F (250°C). Label remains functional, print is legible.
Long Term High Service Temperature	1000 hours at 212°F (100°C)	No visible effect to label at 212°F (100°C), label discolors slightly at 248°F (120°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 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	Very slight discoloration
Weatherability*	ASTM G 155, cycle 1 1000 hours in Xenon Arc Weatheromenter	Very slight discoloration
Salt Fog Resistance	ASTM B 117 1000 hours in 5% salt fog solution chamber	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 1912A, Method 5306)	R6000 Halogen Free: Print legible after 100 cycles
Chemical Vapor Phase Resistance	Labels adhered to epoxy PC board and exposed to the vapor 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 Severe print removal

*B-776 is not recommended for outdoor use.

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples printed with the Series R6000 Halogen Free thermal transfer ribbon. Samples 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	5
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	4
Zestron 15% Atron® AC205 at 150°F (65°C)	No visible effect	1	3
Zestron 15% Atron® AC207 at 150°F (65°C)	No visible effect	1	4
Zestron 15% Vigon® A201 at 150°F (65°C)	No visible effect	1	4
Zestron 15% Vigon® N600 at 150°F (65°C)	No visible effect	1	4
99% Isopropyl Alcohol at 180°F (82°C)	No visible effect	1	2
Deionized water at212°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 printed with Series R6000 Halogen Free 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 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 80% 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 application.

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.

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