



## Technical Data Sheet

### BRADY B-777 GLOSSY WHITE THERMAL TRANSFER PRINTABLE POLYIMIDE LABEL STOCK

**Description:**

**GENERAL**

**Print Technology:** Thermal Transfer

**Material Type:** 2.0 mil polyimide film with white topcoat

**Finish:** Glossy

**Adhesive:** Permanent Acrylic

**APPLICATIONS**

Printed circuit board and electronic component pre-process labeling.

**RECOMMENDED RIBBONS**

Brady Series R6300, R4900A

**AGENCY APPROVAL**

B-777 is UL recognized to UL969 Labeling and Marking Standard when printed with Brady Series R6300 ribbon. See UL file MH25991 for specific details.

**SPECIAL FEATURES**

B-777 in combination with the Series R6300 ribbon, meets the requirements of MIL-STD-202G, Method 215K.

B-777 is designed to withstand multiple cycles of harsh condition washes for printed circuit boards **without reflow or preheating** for improving print performance.

**Details:**

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
Thickness	ASTM D1000 -Substrate (topcoat and film) -Adhesive -Total (excluding liner)	0.0023 inch (0.05842 mm) 0.0018 inch (0.0457 mm) 0.0042 inch (0.1041 mm)
Adhesion to: -Stainless Steel	ASTM D1000 20 minute dwell 24 hour dwell	54 oz/ in (59 N/100 mm) 65 oz/in (71 N/100 mm)

-Epoxy PC Board	20 minute dwell 24 hour dwell	51 oz/in (56 N/100 mm) 70 oz/in (76 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack 0.5 second dwell	59 oz (1672 g)
Drop Shear	PSTC-7 1/2" x 1"	> 50 hours
Dielectric Strength	ASTM D149-97 0.25" probe; 500V/s	9,750 volts

Performance properties tested on B-777 printed with Brady Series R6300 thermal transfer ribbon. Printed samples of B-777 were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

<b>PERFORMANCE PROPERTIES</b>	<b>TEST METHODS</b>	<b>TYPICAL RESULTS</b>
Short Term High Service Temperature	80 seconds at 572°F (300°C)	Very slight discoloration and very slight shrinkage of label
	5 minutes at 500°F (260°C)	Very slight discoloration
	2 hours at 338°F (170°C)	No visible effect
Long Term High Service Temperature	1000 hours at 212°F (100°C)	Very slight fading of print but is still very legible. Label remains functional.
Low Service Temperature	1000 hours at -94°F (-70°C)	No visible effect
Humidity Resistance	1000 hours at 95°C (37°C)/95%RH	No visible effect
UV Light Resistance	ASTM G155, cycle 1, Dry 1000 hours in Q-Sun Xenon Test Chamber	No visible effect

Weatherability*	ASTM G155, Cycle 1 1000 hours in Xenon arc Weather-Ometer®	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 250 g/arm	Print legible after 50 cycles
Salt Fog Resistance	ASTM B117 1000 hours in 5% salt fog solution chamber	No visible effect
Chemical Vapor Phase Resistance	Labels 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® MX2501	No visible effect  Slight print smearing

\*B-777 is not recommended for outdoor use.

<b>PERFORMANCE PROPERTY</b>	<b>CHEMICAL RESISTANCE</b>
-----------------------------	----------------------------

Samples printed with Series R6300 thermal transfer ribbon then laminated to FR-4 epoxy PC board. After 24 hr dwell, test samples were exposed to the indicated environments. All test samples were immersed in the test fluids then rubbed 10 times with a cotton swab saturated with the test fluid.

<b>CHEMICAL REAGENT</b>	<b>SUBJECTIVE OBSERVATION OF VISUAL CHANGE</b>		
	<b>EFFECT TO LABEL</b>	<b>R6300 RIBBON</b>	
		<b>WITHOUT RUB</b>	<b>WITH RUB</b>

Kyzen Corp. 15% Aquanox® A4625 at 140°F (60°C)	No visible effect	1	3
Kyzen Corp. 17% Aquanox® A4520 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	3
Zestron, 15% Atron® AC207 at 150°F (65°C)	No visible effect	1	3
Zestron, 15% Vigon® A201 at 150°F (65°C)	No visible effect	1	3
Zestron, 15% Vigon® N600 at 150°F (65°C)	No visible effect	1	2
Isopropyl Alcohol 99% at 180°F (82°C)	No visible effect	1	1
Deionized water at 212°F (100°C)	No visible effect	1	1
Ionox® 3955 vapor phase (no prebake)	No visible effect	2	5

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 Series R6300 thermal transfer ribbon. Labels were printed with alphanumeric 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 WITH R6300 SERIES RIBBON
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:**

Two years when stored in its original packaging in an environment below 80°F (27°C) and 80%RH.

**Trademarks:**

ANSI: American National Standards Institute (U.S.A.)

ASTM: American Society for Testing and Materials (U.S.A.)

PSTC: Pressure Sensitive Tape Council (U.S.A.)

Polyken™ is a trademark of Testing Machines Inc.

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

Vigon® is a registered trademark of the Zestron Corporation

Weather-Ometer® is a registered trademark of Atlas Material Testing Technology LLC

UL: Underwriters Laboratories Inc. (U.S.A.)

All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units.

**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.

## **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.

Copyright 2016 Brady Worldwide, Inc. | All Rights Reserved

Material may not be reproduced or distributed in any form without written permission.

---

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