

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

TDS No. B-776

Effective Date: 03/09/2020

Description:

GENERAL

Print Technology: Thermal Transfer

Material Type: Light Green Polyimide

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. UL information can be accessed on-line 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-776, in combination with the Brady 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 (excluding liner) | 0.0027 inch (0.068 mm) 0.0017 inch (0.043 mm) 0.0044 inch (0.111 mm) |
| Adhesion to: -Stainless Steel | ASTM D 1000 20 minute dwell 24 hour dwell | 46 oz/in (50 N/100 mm) 57 oz/in (62 N/100 mm) |
| -Epoxy PC Board | 20 minute dwell 24 hour dwell | 36 oz/in (39 N/100 mm) 49 oz/in (54 N/100 mm) |
| Tack | ASTM D 2979 Polyken™ Probe Tack 0.5 second dwell | 53 oz (1500 gram) |
| Drop Shear | PSTC-7 (except use 1/2" x 1" sample) | >100 hours |
| Dielectric Strength | ASTM D 1000 | 10,400 volts |

Performance properties were tested on B-776 printed with the Brady 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 various temperatures | 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 various temperatures | 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 various temperatures | 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 various temperatures | 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 Weatherometer | 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. | |
| | lonox® 3955 | Severe print removal |
| | Micronox® MX2501 | Severe print removal |

*B-776 is not recommended for outdoor use.

| PERFORMANCE PROPERTY | CHEMICAL RESISTANCE |
|----------------------|---------------------|
|----------------------|---------------------|

Samples were printed with the Brady 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 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 thermal transfer ribbon. 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 applications.

Trademarks:

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

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

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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