

## BRADY B-473 THERMAL TRANSFER PRINTABLE GLOSSY WHITE STATIC DISSIPATIVE POLYESTER LABEL STOCK

TDS No. B-473  
Effective Date: 1/18/2019

### Description:

#### GENERAL

**Print Technology:** Thermal Transfer

**Material Type:** White Polyester

**Finish:** Glossy

**Adhesive:** Static Dissipative Permanent Acrylic

#### APPLICATIONS

Printed circuit board and electronic component post-process labeling

#### RECOMMENDED RIBBONS

Brady Series R6000 Halogen Free

#### REGULATORY/AGENCY APPROVALS

**UL:** B-473 is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with the 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.

**CSA:** B-473 is CSA Accepted when printed with the Brady Series R6000 ribbon. See CSA file 041833 for specific details. CSA information can be accessed online at [directories.csa-international.org](http://directories.csa-international.org).

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](http://www.bradycanada.ca/weee-rohs)

In Europe: [www.bradyeurope.com/rohs](http://www.bradyeurope.com/rohs)

In Japan: [www.bradycorp.jp/products/labelsuse/rohs](http://www.bradycorp.jp/products/labelsuse/rohs)

All other regions: [www.bradycorp.com/weee-rohs](http://www.bradycorp.com/weee-rohs)

#### SPECIAL FEATURES

B-473 is constructed with a static dissipative adhesive. This product has surface resistivity values in the recommended range for dissipative ESD packaging materials as defined by ANSI/ESD S5412008 (between  $10^4$  and  $10^{11}$  ohms).

#### Details:

| PHYSICAL PROPERTIES               | TEST METHODS                                                                  | AVERAGE RESULTS                                                         |
|-----------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Thickness                         | ASTM D 1000<br>-Substrate<br>-Adhesive<br>-Total                              | 0.0020 inch (0.05 mm)<br>0.0014 inch (0.04 mm)<br>0.0034 inch (0.09 mm) |
| Adhesion to:<br>- Stainless Steel | ASTM D 1000<br>20 minute dwell<br>24 hour dwell                               | 49 oz/inch (54 N/100 mm)<br>60 oz/inch (66 N/100 mm)                    |
| Tack                              | ASTM D 2979<br>Polyken™ Probe Tack<br>(0.5 second dwell, 1 cm/sec separation) | 31 oz (885 g)                                                           |
| Drop Shear                        | PSTC-7 (except use 1/2" x 1" sample)                                          | 70 hours                                                                |
| Tensile Strength and Elongation   | ASTM D 1000<br>-Machine<br>-Cross                                             | 38 lbs/inch (665N/100 mm), 68%<br>56 lbs/inch (980N/100 mm), 46%        |
| Dielectric Strength               | ASTM D 1000                                                                   | 9000 volts                                                              |
| Adhesive Surface Resistivity      | EOS/ESD STM11.11                                                              | $4.1 \times 10^8$ ohm/sq                                                |

The following testing was performed with B-473 thermal transfer printed using the Brady Series R6000 Halogen Free ribbon. Samples laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Results are the same for both ribbons unless otherwise noted.

| PERFORMANCE PROPERTIES              | TEST METHOD                                                                      | TYPICAL RESULTS                                                                                                                              |
|-------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Short Term High Service Temperature | 5 minutes at various Temperatures                                                | No visible effect to label at 180°C. Slight film shrinkage at 190°C but label is still functional. At 210°C label has severe film shrinkage. |
| Long Term High Service Temperature  | 30 days at 248°F (120°C)                                                         | No visible effect at 120°C                                                                                                                   |
| Low Service Temperature             | 30 days at -40°F (-40°C)                                                         | No visible effect at -40°C                                                                                                                   |
| Humidity Resistance                 | 30 days at 100°F (37°C) and 95% R.H.                                             | No visible effect                                                                                                                            |
| UV Light Resistance                 | 30 days in UV Sunlighter™ 100                                                    | No visible effect                                                                                                                            |
| Weatherability                      | ASTM G155, Cycle 1<br>30 days in Xenon Arc WeatherOmeter®                        | No visible effect                                                                                                                            |
| Salt Fog Resistance                 | ASTM B 117<br>30 Days in 5% salt fog solution chamber                            | No visible effect                                                                                                                            |
| Abrasion Resistance                 | Taber Abraser, CS-10 grinding wheels,<br>250 g/arm (Fed. Std. 191A, Method 5306) | R6000: Print Legible after 100 cycles<br>R6000 Halogen Free: Print legible after 100 cycles                                                  |

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

Samples printed with the Brady Series R4900 and the Brady Series R6000 Halogen Free ribbons. Test was conducted at room temperature after 24 hour dwell. Testing consisted of 5 cycles of 10 minute immersions in the specified chemicals followed by a 30 minute recovery period. Samples rubbed 10 times with cotton swab immersed in test fluid after final immersion.

| CHEMICAL REAGENT              | SUBJECTIVE OBSERVATION OF VISUAL CHANGE |                   |                   |                    |                   |
|-------------------------------|-----------------------------------------|-------------------|-------------------|--------------------|-------------------|
|                               | EFFECT TO LABEL STOCK                   | R4900             |                   | R6000 HALOGEN FREE |                   |
|                               |                                         | WITHOUT RUB       | WITH RUB          | WITHOUT RUB        | WITH RUB          |
| Methyl Ethyl Ketone           | Slight adhesive ooze                    | No visible effect | Printing removed  | No visible effect  | Printing removed  |
| Toluene                       | Slight adhesive ooze                    | No visible effect | Printing removed  | No visible effect  | Printing removed  |
| Isopropyl Alcohol             | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| Mineral Spirits               | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| JP-4 Jet Fuel                 | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| Mil 5606 Oil                  | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| ASTM #3 Oil                   | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| Gasoline                      | Slight adhesive ooze                    | No visible effect | No visible effect | No visible effect  | No visible effect |
| Skydrol® 500B-4               | Slight adhesive ooze                    | No visible effect | Printing removed  | No visible effect  | Printing removed  |
| Super Agitene®                | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| Alphametals BIOACT® EC-7R™    | Slight adhesive ooze                    | No visible effect | No visible effect | No visible effect  | No visible effect |
| Deionized Water               | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| 3% Alconox® Detergent         | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| 10% Sodium Hydroxide Solution | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |
| 10% Sulfuric Acid Solution    | No visible effect                       | No visible effect | No visible effect | No visible effect  | No visible effect |

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.

**Trademarks:**

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

Alconox® is a registered trademark of Alconox Co.

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

BIOACT® is a registered trademark of Petroferm, Inc.

EC-7R™ is a trademark of Petroferm Inc.

EIA: Electronic Industry Association (U.S.A.)

EOS/ESD: Electrical Overstress/Electrostatic Discharge (U.S.A.)

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

Polyken™ is a trademark of Testing Machines Inc.

Skydrol® is a registered trademark of the Monsanto Company

Sunlighter™ is a trademark of the Test Lab Apparatus Company

Super Agitene® is a registered trademark of Graymills Corporation

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

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**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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