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**TDS No. B-423**  
**Effective Date: 06/03/2004**

**BRADYBONDZ(TM) B-423 THERMAL TRANSFER PRINTABLE  
GLOSSY WHITE POLYESTER LABEL STOCK**

**Description:**

**GENERAL**

**Print Technology:** Thermal transfer

**Materials Type:** White polyester

**Finish:** Glossy white

**Adhesive:** Permanent acrylic

**APPLICATIONS**

Electronic PCB and component identification, bar code label and rating plates.

**RECOMMENDED RIBBONS**

Brady series R6000

Brady series R4400 (colors - red, blue, green, white)

Brady series R4900 and R6200 (alternates)

**AGENCY APPROVALS**

**UL: B-423** is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with Brady Series R6000 ribbon. See UL file MH17154 for specific details. UL information can be accessed on line at *UL.com*. Search in *Certifications* area. The Brady Series R4900 ribbon is also UL approved.

**CSA: B-423** is CSA Accepted to C22.2 No.0.15-95 Adhesive Labels Standard when printed with Brady Series R6000 ribbon. See CSA file 041833 for specific details. CSA information can be accessed online at *directories.csa-international.org*.

**DIN VDE 0472 Part 815:** Brady **B-423** meets requirements of a halogen-free material per DIN VDE 0472 part 815. (Statement based on review of product construction and confirmation halogen content test run at an independent test laboratory.)

**Details:**

| PHYSICAL PROPERTIES                                                            | TEST METHODS                                                                                                                      | AVERAGE RESULTS                                                                                                                                                             |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thickness                                                                      | ASTM D 1000<br>-Substrate<br>-Adhesive<br>-Total                                                                                  | 0.002 inch (0.0508 mm)<br>0.001 inch (0.0254 mm)<br>0.003 inch (0.0762 mm)                                                                                                  |
| Adhesion to:<br>-Stainless Steel<br><br>- Painted Enamel<br><br>- Textured ABS | ASTM D 1000<br>20 minute dwell<br>24 hour dwell<br><br>20 minutes dwell<br>24 hour dwell<br><br>20 minutes dwell<br>24 hour dwell | 51 oz/inch (56 N/100 mm)<br>78 oz/inch (85 N/100 mm)<br><br>54 oz/inch (59 N/100 mm)<br>67 oz/inch (73 N/100 mm)<br><br>10 oz/inch (11 N/100 mm)<br>15 oz/inch (17 N/100mm) |
| Tack                                                                           | ASTM D 2979<br>Polyken™ Probe Tack<br>1 second dwell                                                                              | 21 oz (600 g)                                                                                                                                                               |
| Dielectric Strength                                                            | ASTM D 1000                                                                                                                       | 8600 Volts                                                                                                                                                                  |

**B-423** is not recommended for low surface energy surfaces such as polyethylene and polypropylene.

Performance properties tested on **B-423** printed with Series R6000 and R6200 ribbons using the Bradyprinter™ THT Model 300X-Plus thermal transfer printer. Printed samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environments. Unless noted, results are the same for both ribbons.

| PERFORMANCE PROPERTIES              | TEST METHOD                       | TYPICAL RESULTS                                                                                                                    |
|-------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| High Service Temperature            | 30 days at various temperatures   | No visible effect to label at 110°C. Slight discoloration at 120°C; moderate discoloration at 145°C but label is still functional. |
| Low Service Temperature             | 30 days at -70°C                  | No visible effect                                                                                                                  |
| Short Term High Service Temperature | 5 minutes at various temperatures | No visible effect to label at 180°C. Slight discoloration and label shrinkage at 200°C; label                                      |

|                     |                                                       |                                                                             |
|---------------------|-------------------------------------------------------|-----------------------------------------------------------------------------|
|                     |                                                       | is functional. Label becomes nonfunctional at 210°C due to label shrinkage. |
| Humidity Resistance | 30 days at 100°F (37°C) and 95% relative humidity.    | No visible effect                                                           |
| UV Light Resistance | 30 days in UV Sunlighter™ 100                         | Slight discoloration                                                        |
| Weatherability      | ASTM G26<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                                                           |

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

Samples were printed with Series R6000 and R6200 ribbons using a Bradyprinter™ 300X-Plus thermal transfer printer. Samples were laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Testing was conducted at room temperature and consisted of 30 minute immersions in the specified test fluid. After immersion, the samples were removed from the test fluid and the printed image rubbed 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of the print for each sample.

| CHEMICAL REAGENT  | SUBJECTIVE OBSERVATION OF VISUAL CHANGE |                          |          |             |          |
|-------------------|-----------------------------------------|--------------------------|----------|-------------|----------|
|                   | EFFECT TO LABEL STOCK                   | EFFECTS TO PRINTED IMAGE |          |             |          |
|                   |                                         | R6000                    |          | R6200       |          |
|                   |                                         | WITHOUT RUB              | WITH RUB | WITHOUT RUB | WITH RUB |
| Acetone           | Slight adhesive ooze                    | 1                        | 5        | 1           | 5        |
| Toluene           | Slight adhesive ooze                    | 1                        | 5        | 1           | 5        |
| Isopropyl Alcohol | No visible effect                       | 1                        | 1        | 1           | 1        |
| Mineral           | No visible                              | 1                        | 1        | 1           | 1        |

|                                       |                      |   |     |   |   |
|---------------------------------------|----------------------|---|-----|---|---|
| Spirits                               | effect               |   |     |   |   |
| Gasoline                              | Slight adhesive ooze | 1 | 1   | 1 | 1 |
| JP-8 Jet Fuel                         | Slight adhesive ooze | 1 | 1   | 1 | 1 |
| Brake Fluid                           | No visible effect    | 1 | 1-2 | 1 | 5 |
| Skydrol® 500B-4                       | Slight adhesive ooze | 1 | 5   | 2 | 5 |
| SAE 20 WT Oil at 70°C                 | No visible effect    | 1 | 1   | 1 | 1 |
| MIL 5606 Oil                          | No visible effect    | 1 | 1   | 1 | 1 |
| Formula 409® Cleaner                  | No visible effect    | 1 | 1   | 1 | 1 |
| Northwoods™ Buzz Saw Citrus Degreaser | No visible effect    | 1 | 1   | 1 | 1 |
| Deionized Water                       | No visible effect    | 1 | 1   | 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 and/or topcoat removal

NP= print removed prior to rub

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 degrees F and 60% 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 applications.

**Trademarks and References:** BradyBondz™ is a trademark of Brady Worldwide, Inc.

BradyPrinter™ is a trademark of Brady Worldwide, Inc.

Formula 409® is a registered trademark of the Clorox Company

Northwoods™ is a trademark of the Superior Chemical Corporation  
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

ASTM: American Society for Testing and Materials (U.S.A.)  
CSA: Canadian Standards Association  
SAE: Society of Automotive Engineers (U.S.A.)  
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.**

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