Technical Data Sheet

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

TDS No. B-423
Effective Date: 12-Mar-2010

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 and solar panel identification.

RECOMMENDED RIBBONS
Brady series R6000
Brady series R6000HF (low halogen)
Brady series R4400 (colors - red, blue, green, white)
Brady series R4900 and R6200 (alternates)

REGULATORY/AGENCY APPROVALS
UL: B-423 is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with Brady Series R6000 ribbon. R6000HF UL Recognition pending. 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.)

Brady B-423 is RoHS compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

SPECIAL FEATURES
Brady B-423 is UL Recognized for Outdoor Use on glass, thermoset polyester plastic and polyvinyl fluoride plastic surfaces to support solar panel identification applications.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	 0.002 inch (0.0508 mm) 0.001 inch (0.0254 mm) 0.003 inch (0.0762 mm)
Adhesion to: -Stainless Steel - Painted Enamel - Textured ABS	ASTM D 1000 20 minute dwell 24 hour dwell 20 minutes dwell 24 hour dwell 20 minutes dwell 24 hour dwell	 51 oz/inch (56 N/100 mm) 57 oz/inch (62 N/100 mm) 51 oz/inch (56 N/100 mm) 54 oz/inch (59 N/100 mm) 10 oz/inch (10 N/100 mm) 10 oz/inch (10 N/100mm)

- Polypropylene	20 minutes dwell 24 hour dwell	36 oz/inch (40 N/100 mm) 39 oz/inch (42 N/100 mm)
- Polyester Powder Coated Paint	20 minutes dwell 24 hour dwell	32 oz/in (35 N/100 mm) 43 oz/in (47 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack 1 second dwell	26 oz (800 g)
Dielectric Strength	ASTM D 1000	8400 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, R6000HF and R6200 ribbons. 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 G155, Cycle 1 30 days in Xenon Arc Weatherometer	No visible effect
Salt Fog Resistance	ASTM B 117 30 days in 5% salt fog solution chamber	No visible effect

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples were printed with Series R6000, R6000HF and R6200 ribbons. 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		R6000HF		R6200	
		WITHOUT RUB	WITH RUB	WITHOUT RUB	WITH RUB	WITHOUT RUB	WITH RUB
Acetone	Slight adhesive ooze	1	5	1	5	1	5
Toluene	Slight adhesive ooze	1	5	1	5	1	5
Isopropyl Alcohol	No visible effect	1	1	1	1	1	1
Mineral Spirits	No visible effect	1	1	1	1	1	1
Gasoline	Slight adhesive ooze	1	1	1	1	1	1

JP-8 Jet Fuel	Slight adhesive ooze	1	1	1	1	1	1
Brake Fluid - DOT 3	No visible effect	1	1-2	1	1	1	5
Skydrol® 500B-4	Slight adhesive ooze	1	5	1	5	2	5
SAE 20 WT Oil at 70°C	No visible effect	1	1	1	1	1	1
MIL 5606 Oil	No visible effect	1	1	1	1	1	1
Formula 409® Cleaner	No visible effect	1	1	1	1	1	1
Northwoods™ Buzz Saw Citrus Degreaser	No visible effect	1	1	1	1	1	1
Deionized Water	No visible effect	1	1	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 (27°C) 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:
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.

Product compliance information is based upon information provided by suppliers of the raw materials used by Brady to manufacture this product or based on results of testing using recognized analytical methods performed by a third party, independent laboratory. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this 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.