BRADY B-428 THERMAL TRANSFER PRINTABLE METALLIZED POLYESTER LABEL STOCK

TDS No. B-428
Effective Date: 26-Sep-2006

Description:

GENERAL
Print Technology: Thermal Transfer
Material Type: Metallized Polyester (3 mil film)
Finish: Matte
Adhesive: Permanent Acrylic

APPLICATIONS
Designed for applications, like rating and serial plates, that utilize barcodes, alphanumerics, graphic symbols and logos and require nameplate-like quality.

RECOMMENDED RIBBONS
Brady Series R4300
Brady Series R6200 (alternate)

REGULATORY/AGENCY APPROVALS
UL: B-428 is a UL Recognized Component when printed with the Brady Series R4300 Ribbon. See UL file MH17154 for specific details. UL information can be accessed online at *UL.com*. Search in *Certifications* area.
CSA: B-428 is a CSA Accepted material when printed with the Brady Series R4300 Ribbon or R6200 Ribbon. See CSA Acceptance Record LS 41833 for specific details. CSA information can be accessed online at *directories.csa-international.org*.
DIN VDE 0472 Part 815: Brady B-428 meets the requirements of a halogen-free material per DIN VDE 0472 part 815. (Statement based on review of product construction and confirmatory halogen content test run at an independent test laboratory.)

Brady B-428 is RoHS compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

SPECIAL FEATURES
B-428 is designed to withstand numerous solvents and variable temperatures when applied to various surfaces.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	 0.0034 inch (0.086 mm) 0.0010 inch (0.026 mm) 0.0044 inch (0.112 mm)
Adhesion to: -Stainless Steel -Polypropylene	ASTM D 1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 30 oz/in (33 N/100 mm) 40 oz/in (43 N/100 mm) 12 oz/in (13 N/100 mm) 20 oz/in (22 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack	 28 oz (789 g)

	1 second dwell	

Performance properties tested on printed B-428 labels laminated to aluminum panels. Samples thermal transfer printed with alphanumerics, and 5 mil and 10 mil minimum X dimension barcodes using a Series R4300 ribbon and a BradyPrinter™ THT Model 203 Thermal Transfer Printer.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
High Service Temperature	30 days at various temperatures	No visible effect to label at 248°F (120°C). Slight discoloration at 293°F (145°C). Moderate discoloration at 320°F (160°C), but label is still functional.
Low Service Temperature	30 days at -40°F (-40°C)	No visible effect
Humidity Resistance	30 days at 100°F (37°C), 95% R.H.	No visible effect
UV Light Resistance	30 days in UV Sunlighter™ 100	No visible effect
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Slight topcoat yellowing
Salt Fog Resistance	30 days in 5% salt fog	No visible effect

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples printed with a Series R4300 black ribbon and a Series R6200 black ribbon using a BradyPrinter™ THT Model 203 Thermal Transfer Printer. Test was conducted at room temperature after 24 hour dwell. Testing consisted of 5 cycles of 10 minute immersions in the specified chemical reagent followed by 30 minute recovery periods. After final immersion, samples rubbed 10 times with cotton swab saturated with test fluid.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE (R4300 RIBBON)		
	EFFECT TO LABEL STOCK	EFFECT TO PRINT	EFFECT TO PRINT WITH RUB
Methyl Ethyl Ketone	No visible effect	No visible effect	Moderate print removal
1,1,1-Trichloroethane	No visible effect	No visible effect	Moderate print removal
Toluene	No visible effect	No visible effect	Moderate print removal
Mineral Spirits	No visible effect	No visible effect	No visible effect
JP-8 Jet Fuel	No visible effect	No visible effect	No visible effect
SAE 20 WT Oil	No visible effect	No visible effect	No visible effect
SAE 20 WT Oil @ 70C	No visible effect	No visible effect	Severe print removal
IPA	No visible effect	No visible effect	No visible effect
ASTM #3	No visible effect	No visible effect	No visible effect
Mil 5606 oil	No visible effect	No visible effect	No visible effect
Skydrol® 500B	No visible effect	No visible effect	Slight print removal
Super Agitene®	No visible effect	No visible effect	No visible effect
Deionized Water	No visible effect	No visible effect	No visible effect
3% Alconox® Detergent	No visible effect	No visible effect	No visible effect
10% Sulfuric Acid Solution	No visible effect	No visible effect	No visible effect
10% Sodium Hydroxide Solution	No visible effect	No visible effect	No visible effect

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE (R6200 RIBBON)		
	EFFECT TO LABEL STOCK	EFFECT TO PRINT	EFFECT TO PRINT WITH RUB
Methyl Ethyl Ketone	No visible effect	No visible effect	Moderate print removal
1,1,1-Trichloroethane	No visible effect	No visible effect	Moderate print removal
Toluene	No visible effect	No visible effect	Moderate print removal
Mineral Spirits	No visible effect	No visible effect	Slight print removal
JP-8 Jet Fuel	No visible effect	No visible effect	Slight print removal
SAE 20 WT Oil	No visible effect	No visible effect	No visible effect
SAE 20 WT Oil @ 70C	No visible effect	No visible effect	Severe print removal
IPA	No visible effect	No visible effect	Slight print removal
ASTM #3	No visible effect	No visible effect	No visible effect
Mil 5606 oil	No visible effect	No visible effect	Slight print removal
Skydrol® 500B	No visible effect	No visible effect	Moderate print removal
Super Agitene®	No visible effect	No visible effect	Slight print removal
Deionized Water	No visible effect	No visible effect	No visible effect
3% Alconox® Detergent	No visible effect	No visible effect	No visible effect
10% Sulfuric Acid Solution	No visible effect	No visible effect	No visible effect
10% Sodium Hydroxide Solution	No visible effect	No visible effect	No visible effect

Product testing, customer feedback, and history of similar products, support a customerperformance 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 degrees 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:
Alconox® is a registered trademark of Alconox Co.
BradyPrinter™ is a trademark of Brady Worldwide, Inc.
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
ASTM: American Society for Testing and Materials (U.S.A.)
CSA: Canadian Standards Association
PSTC: Pressure Sensitive Tape Council (U.S.A.)
SAE: Society of Automotive Engineers (U.S.A.)
UL: Underwriters Laboratories Inc. (U.S.A.)
All S.I. units 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.

Specification Of PermaShield™ Thermal Transfer Printable Labels

Application(s):	General & Industrial Identification, General Identification, Through Hole - Top
Agency Approval(s)/Compliance:	AGA Approved, CSA Approved, Halogen-Free (DIN VDE 0472/parts 815), UL Recognized
Size:	2.750" W x 1.750" H (69.850 mm W x 44.450 mm H)
Printable Area:	2.750" W x 1.750" H (69.850 mm W x 44.450 mm H)
Web Width:	3.200" (81.28 mm)
Label Type/Style:	Label
Vertical Repeat:	2.125" (53.98 mm)
Color:	Silver
Finish:	Matte
Qty Per Row:	1
Material Type:	Polyester
Material Description:	Metallized Polyester with Overlaminate
Brady Material #:	B-428, B-966B
Recommended Ribbon Series:	4302
Suggested Ribbon Part#:	R4300
Acceptable Ribbon Series:	6200, 4500 (colors)
After Process:	Yes, this material will work with this application
Printer Compatibility:	BBP81, Brady 1244, Brady 1344, Brady 200MVP Plus, Brady 2461, Brady 300MVP Plus, Brady 300X-Plus II, Brady 3481, Brady 360X-Plus II, Brady 600X-Plus II, Brady 6441, Brady IP, Tagus T200, Tagus T300, Thermal Transfer Printers
Surface:	Smooth
Surface Mount Technology:	No, this material does not work with this application
Through Hole Technology:	Top: Yes. In extreme high temperatures, testing of this material is recommended, Bottom: No
RoHS Compatibility:	Compliant with RoHS Directive. NOTE: All statements concerning RoHS Directive compliance refer to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC. Product compliance is based upon information provided by suppliers of the raw materials used by Brady to manufacture these products, or by independent laboratory testing of these products. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this information.
QTY/UOM:	1,000/Roll