

BRADY B-443 THERMAL TRANSFER PRINTABLE MATTE WHITE POLYESTER LABEL STOCK

TDS No. B-443

Effective Date: 1/18/2019

Description:

GENERAL

Print Technology: Thermal Transfer

Material Type: White Polyester

Finish: Matte

Adhesive: Permanent Acrylic-Rubber Hybrid

APPLICATIONS

B-443 is recommended for applications where halogen-free self-extinguishing properties are required.

B-443 is also recommended for use as a part number replacement label for Brady B-1000 RFID tags.

RECOMMENDED RIBBONS

Brady Series R6400

REGULATORY/AGENCY APPROVALS

UL: B-443 is a UL Recognized Component when printed with the Brady Series R6400 ribbon. See UL file MH17154 for specific details. UL information can be accessed online at UL.com in the UL Product iQ area.

REGULATORY APPROVALS

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

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Total Thickness	0.0031 inch (0.078 mm)
Adhesion to:	ASTM D 1000	
-Stainless Steel	20 minute dwell 24 hour dwell	43 oz/in (48 N/100 mm) 65 oz/in (71 N/100 mm)
-Polypropylene	20 minute dwell 24 hour dwell	47 oz/in (51 N/100 mm) 58 oz/in (64 N/100 mm)
-2024-T3 Aluminum	20 minute dwell 24 hour dwell	37 oz/in (41 N/100 mm) 44 oz/in (48 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack (1 second dwell, 1 cm/sec separation)	56.9 oz (1614 g)
Dielectric Strength	ASTM D1000	5984 Volts
Drop Shear	PSTC-107 (1" x 0.5" test area)	500 hours
Tensile and Elongation	ASTM D 1000	

	-Machine direction -Cross web direction	26 lbf/in (45 N/10 mm), 115% 36 lbf/in (64 N/10 mm), 54%
Flammability	14 CFR, Section 25.853(a); Appendix F, Part 1, paragraph (a)(1)(ii); Applied to 0.025" aluminum panel FMVSS302 Flammability	Meets Requirements Meets Requirements

Performance properties tested with B-443 printed with the Brady Series R6400 thermal transfer ribbon. Samples were laminated to aluminum or stainless steel panels prior to exposure.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
High Service Temperature	30 days at various temperatures	230°F (110°C) - Slight discoloration 248°F (120°C) - Slight discoloration 293°F (145°C) - Severe discoloration
Low Service Temperature	30 days at various temperatures	-94°F (-70°C) - No visible effect -40°F (-40°C) - No visible effect
Short Term High Service Temperature	5 minutes at various temperatures	356°F (180°C) - Slight discoloration 410°F (210°C) - Slight discoloration
Humidity Resistance	30 days at 100°F (38°C), 95% R.H.	No visible effect
UV Light Resistance	ASTM G155, Cycle 1 (no spray) 30 days in Xenon Arc Weatherometer	Slight discoloration
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Slight discoloration
Salt Fog Resistance	ASTM B117 30 days in 5% salt fog solution chamber	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 250 g/arm (Fed. Std. 191A, Method 5306)	R6400: Print legible after 100 cycles

PERFORMANCE PROPERTIES	CHEMICAL RESISTANCE
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B-443 was printed with the Brady Series R6400 ribbon. Samples were laminated to aluminum or polyester panels. Except where noted, testing was conducted at room temperature after 24 hour dwell. Testing consisted of 5 cycles of a 10 minute immersion in the specified test fluid followed by a 30 minute recovery period.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO FILM/ADHESIVE	SERIES R6400 RIBBON	
		WITHOUT RUB	WITH RUB
Cleaners and Solvents			
Isopropyl Alcohol	No visible effect	No visible effect	No visible effect
Methyl Ethyl Ketone	Slight adhesive ooze	No visible effect	No visible effect
Acetone	No visible effect	No visible effect	No visible effect
Toluene	Moderate edge wrinkling	No visible effect	No visible effect
Northwoods™ Buzz Saw Cleaner and Degreaser	Moderate discoloration; Increased surface roughness	Complete Removal	Complete Removal
Formula 409®	No visible effect	Complete Removal	Complete Removal
10% Sodium Hydroxide	No visible effect	Complete Removal	Complete Removal
10% Sulfuric Acid	No visible effect	No visible effect	No visible effect
3% Alconox® Powdered Precision Cleaner	No visible effect	No visible effect	No visible effect
BIOACT® EC-7R™	No visible effect	Moderate Removal	Moderate Removal
Fuels, Oils and Lubricants			
Kerosene	Slight edge lift	No visible effect	No visible effect
15W40 Oil	No visible effect	No visible effect	No visible effect
DOT3 Brake Fluid	No visible effect	No visible effect	No visible effect
Aerospace Related Fluids			
Skydrol® 500 B4	Slight adhesive ooze	No visible effect	No visible effect
Royco® 756	No visible effect	No visible effect	No visible effect

B-443 is not recommended for use in contact with high pH fluids.

RF PERFORMANCE PROPERTIES	IMPACT TO B-1000 RFID TAG PERFORMANCE
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A single B-443 label was laminated to the facesheet of a large, dual-record ATA-formatted Brady B-1000 RFID tag. The stackup was then mounted on 0.062" thick aluminum panels. Read range measurements were performed using a patch antenna in an anechoic environment, with a sample to antenna distance of 0.5 m. EU (ETSI) read range was measured at 865 MHz and US (FCC) read range was measured at 905 MHz.

Sample	% Change in ETSI Read Range	% Change in FCC Read Range
B-443 on B-1000	+76.76%	-45.12%

Brady does not recommend applying more than one layer of B-443 to a B-1000 RFID tag in order to maintain acceptable RFID tag performance.

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.)
PSTC: Pressure Sensitive Tape Council (U.S.A.)
SAE: Society of Automotive Engineers (U.S.A.)
UL: Underwriters Laboratories Inc. (U.S.A.)
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 Eastman Chemical Company
Alconox® is a registered trademark of Alconox, Inc.
Royco® is a registered trademark of Anderol, Inc.
BIOACT® is a registered trademark of Vantage Specialties, Inc.
EC-7R™ is a trademark of Vantage Specialties, Inc.

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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