Technical Data Sheet

BRADY B-410 LASER PRINTABLE TAMPER EVIDENT POLYOLEFIN

TDS No. B-410
Effective Date: 12/17/2018

Description:

GENERAL

Print Technology: Laser and Dot Matrix
Material Type: Tamper Evident Polyolefin
Finish: Matte
Adhesive: Permanent Acrylic

APPLICATIONS

Labeling applications requiring evidence of tampering.

RECOMMENDED RIBBONS

Dot Matrix Ribbons
Brady Series R2000 and R5000

REGULATORY/AGENCY 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

SPECIAL FEATURES

B-410 provides outstanding performance in laser and xerographic printing processes. B-410 also provides permanency and smudge resistance with dot-matrix printing, however, printing of barcodes is not recommended. B-410 irreversibly stretches when removed from a variety of surface types and textures.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	 0.007 inch (0.177 mm) 0.002 inch (0.051 mm) 0.009 inch (0.228 mm)
Adhesion to: * -Stainless Steel	ASTM D 1000 20 minute dwell 24 hour dwell	 164 oz/inch (180 N/100 mm) 164 oz/inch (180 N/100 mm)
-Polypropylene	20 minute dwell 24 hour dwell	90 oz/inch (99 N/100 mm) 120 oz/inch (131 N/100 mm)
-Textured ABS	20 minute dwell 24 hour dwell	36 oz/inch (39 N/100 mm) 39 oz/inch (43 N/100 mm)
-Smooth ABS	20 minute dwell 24 hour dwell	126 oz/inch (138 N/100 mm) 145 oz/inch (159 N/100 mm)
Tack*	ASTM D 2979 Polyken™ Probe Tack 0.5 second dwell	35.2 oz (1000 g)
Drop Shear*	PSTC-7 (except use 1/2" x 1" sample)	10+ hours
Tensile Strength and Elongation	ASTM D 1000 -Machine -Cross	10 lbs/inch (175 N/100 mm), 290% 6 lbs/inch (105 N/100 mm), 20%

*B-410 material supported with B-632 for adhesion, tack and drop shear values. Without support, the B-410 material will irreversibly stretch and distort when removed from adhesion surfaces.

Performance properties tested on B-410 with the Brady R5000 and R2000 Series ribbons. Results the same for all printing unless noted otherwise.

PERFORMANCE PROPERTIES	TEST METHOD	TYPICAL RESULTS
High Service Temperature (long term)	30 days at 212°F (100°C)	Slight label discoloration, no visible effect to print
Low Service Temperature (long term)	30 days at -94°F (-70°C)	No visible effect
High Service Temperature (short term)	15 minutes at 320°F (160°C)	No visible effect at 90°C, slight adhesive ooze and label discoloration at 160°C, no visible effect to print
Humidity Resistance	30 days at 100°F (37°C), 95% R.H.	Very slight label discoloration, no visible effect to print
UV Light Resistance	30 days in UV Sunlighter™ 100	Very slight label discoloration, no visible effect to print with laser and R2000 ribbon, slight print fade on R5000
Weatherability*	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Material cracked and brittle
Salt Fog Resistance	1000 hours at 5% salt spray	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306)	Print legible to: Laser: 500 cycles Dot Matrix: 500 cycles

* B-410 is not recommended for outdoor applications.

PERFORMANCE PROPERTIES	CHEMICAL RESISTANCE

Samples printed with an HP LaserJet 6P printer. Samples laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Test conducted at room temperature. Testing consisted of 5 cycles of 10 minute immersions in the specified test fluid followed by a 30 minute recovery period. After final immersion, samples rubbed 10 times with cotton swab saturated with test fluid.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL STOCK	EFFECT TO PRINT	EFFECT TO PRINT WITH RUB
Isopropyl Alcohol	No visible effect	No visible effect	No visible effect
SAE 20 WT Oil	Slight stain	No visible effect	No visible effect
Gasoline	Sample fell off panel	Moderate print fade	Toner completely removed
Deionized Water	No visible effect	No visible effect	No visible effect
3% Alconox® Detergent	No visible effect	No visible effect	No visible effect
Northwoods™ Buzz Saw	Slight stain	No visible effect	No visible effect
Mineral Spirits	Sample fell off panel	No visible effect	Slight print fade

PERFORMANCE PROPERTIES	CHEMICAL RESISTANCE

Samples printed with the Brady R5000 and R2000 Series ribbons. Samples laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Test conducted at room temperature. Testing consisted of 5 cycles of 10 minute immersions in the specified test fluid followed by a 30 minute recovery period. After final immersion, samples rubbed 10 times with cotton swab saturated with test fluid. Results the same for all printing unless noted otherwise.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL STOCK	EFFECT TO PRINT	EFFECT TO PRINT WITH RUB
Isopropyl Alcohol	No visible effect	Slight bleed	No visible effect
SAE 20 WT Oil	Slight stain	No visible effect	No visible effect
Gasoline	Sample fell off panel	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
Northwoods™ Buzz Saw	Slight stain	No visible effect	No visible effect
Mineral Spirits	Sample fell off panel	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:

Alconox® is a registered trademark of Alconox Co.
Northwoods™ is a trademark of the Superior Chemical Corporation
Polyken™ is a trademark of Testing Machines Inc.
Sunlighter™ is a trademark of the Test Lab Apparatus Company
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.)
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.

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Brady North America | 6555 W. Good Hope Rd | Milwaukee, WI 53223 | USA | Tel: 414-358-6600 | Fax: 800-292-2289