

BRADY B-410 LASER PRINTABLE TAMPER EVIDENT POLYOLEFIN

TDS No. B-410
Effective Date: 03/25/2019

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

Brady Series R5000

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

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 (excluding liner) | 0.007 inch (0.177 mm) 0.002 inch (0.051 mm) 0.009 inch (0.228 mm) |
| Adhesion to: * | ASTM D 1000 | |
| -Stainless Steel | 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 printed with the Brady Series R5000 ribbon on a dot matrix printer and on a laser printer. Results are 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, 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 |
|------------------------|---------------------|
|------------------------|---------------------|

Performance properties tested on samples printed on a laser 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 Series R5000 ribbon. 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 | 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:

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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