

**BRADY B-420 MATTE WHITE LASER MARKABLE POLYESTER LABEL STOCK**

TDS No B-420  
Effective Date: 04/19/2019

**Description:**

**GENERAL**

**Print Technology:** Laser Markable

**Material Type:** Polyester

**Finish:** Matte

**Adhesive:** Permanent Acrylic

**APPLICATIONS**

B-420 is designed for use in labeling electronic PCB's, component identification, bar coding, and rating plates when marked with a standard IR laser. The product can be used for auto-dispensing applications and can meet small font requirements when used with a high resolution laser marking system.

**RECOMMENDED LASER SPECIFICATIONS**

IR Laser systems operating at 20 W or greater are recommended for this product when operating at near to mid IR regions. Typical systems are classified as Class IV lasers and include CO<sub>2</sub> lasers operating between 9.6 and 10.6µm. These systems will all produce strong contrasting marks when using appropriate power and writing speeds.

**REGULATORY/AGENCY APPROVALS**

Brady B-420 is UL Recognized to UL969 Labeling and Marking Standard when marked with an IR Laser. See UL file MH17154 for specific details. UL information can be accessed on line at UL.com in the UL Product iQ area.

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](http://www.bradycanada.ca/weee-rohs)

In Europe: [www.bradyeurope.com/rohs](http://www.bradyeurope.com/rohs)

In Japan: [www.brady.co.jp/products/labelsuse/rohs](http://www.brady.co.jp/products/labelsuse/rohs)

All other regions: [www.bradyid.com/weee-rohs](http://www.bradyid.com/weee-rohs)

**Details:**

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
Thickness	ASTM D1000 -Substrate (topcoated film) -Adhesive -Total (excluding liner)	0.0050 inch (0.127 mm) 0.0008 inch (0.020 mm) 0.0058 inch (0.147 mm)
Adhesion to:	ASTM D1000	
-Stainless Steel	20 minute dwell 24 hour dwell	44 oz/in (48 N/100 mm) 47 oz/in (51 N/100 mm)
-Painted Enamel	20 minute dwell 24 hour dwell	19 oz/in (21 N/100 mm) 26 oz/in (28 N/100 mm)
-Polypropylene	20 minute dwell 24 hour dwell	10 oz/in (11 N/100mm) 29 oz/in (32 N/100mm)
-Powder Coated Aluminum	20 minute dwell 24 hour dwell	22 oz/in (24 N/100mm) 24 oz/in (26 N/100mm)

Tack	ASTM D 2979 Polyken™ Probe Tack 1 second dwell	37 oz (1048 g)
Dielectric Strength	ASTM D1000	12,700 volts

Performance properties were tested on B-420 samples that were laser marked using a 20 W CO<sub>2</sub> laser marking system. Laser marked B-420 samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
Short Term High Service Temperature	5 minutes at various temperatures	No visible effect to label or printed image at 356°F (180°C); no visible effect to label or printed image, very slight label shrinkage at 392°F (200°C); at 410°F (210°C) no visible effect to label or printed image, slight label shrinkage.
Long Term High Service Temperature	1000 hours at various temperatures	Very slight discoloration of label, no visible effect to printed image at 212°F (100°C); Slight discoloration of label, no visible effect to printed image at 266°F (130°C); at 320°F (160°C) label is moderately discolored with no visible effect to printed image, label remains functional.
Low Service Temperature	1000 hours at -94°F (-70°C)	No visible effect to label or printed image
Humidity Resistance	1000 hours at 100°F (38°C)/95%RH	No visible effect to label or printed image
UV Light Resistance	ASTM G155, cycle 1, Dry 1000 hours in Q-Sun Xenon Test Chamber	No visible effect to label or printed image
Weatherability	ASTM G155, Cycle 1 1000 hours in Xenon arc Weather-Ometer®	No visible effect to label or printed image
Salt Fog Resistance	ASTM B117 1000 hours in 5% salt fog solution chamber	No visible effect to label or printed image
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306)	Printed image legible after 1500 cycles

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE
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B-420 samples were laser marked using a 20 W CO<sub>2</sub> laser marking system, then laminated to aluminum panels. After 24 hr dwell, test samples were immersed in the test fluids for 30 minutes at room temperature, then rubbed 10 times with a cotton swab saturated with the test fluid.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL	LASER MARKED IMAGE	
		WITHOUT RUB	WITH RUB
Acetone	No visible effect	1	1
Toluene	No visible effect	1	2
Isopropyl Alcohol	No visible effect	1	1
Mineral Spirits	No visible effect	1	2

Gasoline	No visible effect	1	1
JP-8 Jet Fuel	No visible effect	1	1
Brake Fluid - DOT 3	No visible effect	1	1
Skydrol® 500B-4	No visible effect	1	2
SAE 20 WT Oil, 70°C	No visible effect	1	1
MIL 5606 Oil	No visible effect	1	1
Formula 409® Cleanser	No visible effect	1	1
Northwoods™ Buzz Saw Citrus Degreaser	No visible effect	1	1
Deionized Water	No visible effect	1	1
Skydrol® LD4	No visible effect	1	1
Kerosene	No visible effect	1	1
MIL 7808 Oil	No visible effect	1	1
Methyl Ethyl Ketone	No visible effect	1	1
Alpine RF-11	No visible effect	1	1
Cryotech Polar Guard Advance Type IV	No visible effect	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 removal

#### 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:

ANSI: American National Standards Institute (U.S.A.)

ASTM: American Society for Testing and Materials (U.S.A.)

PSTC: Pressure Sensitive Tape Council (U.S.A.)

Polyken™ is a trademark of Testing Machines Inc.

Skydrol® is a registered trademark of the Monsanto Company

Formula 409® is a registered trademark of the Clorox Company

Northwoods™ is a trademark of the Superior Chemical Corporation

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.

#### 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.

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