

**BRADY B-481 StainerBondz (TM)**

TDS No. B-481  
Effective Date: 02/28/2011

**Description:**

**GENERAL**

**Print Technology:** Thermal transfer

**Material Type:** Polyester

**Finish:** Matte white

**Adhesive:** Permanent acrylic

**APPLICATIONS**

Slide labeling and other lab identification

**RECOMMENDED RIBBONS**

Brady Series R6400

**REGULATORY**

Brady B-481 is RoHS compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

**SPECIAL FEATURES**

B-481, when printed with the R6400 thermal transfer ribbon, is designed for use in the slide staining process and other laboratory identification which requires superior chemical resistance. B-481 performs well in the commonly used H & E (hematoxilin and eosin) slide staining process.

**Details:**

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Total (excluding liner)	0.0033 inches (0.0838 mm)
Adhesion to:	20 minute dwell 24 hour dwell	74 oz/inch (81.4 N/100mm) 77 oz/inch (84.7 N/100mm)
-Glass		
-Polypropylene	20 minute dwell 24 hour dwell	73 oz/inch (80.3 N/100mm) 77 oz/inch (84.7 N/100mm)
-Stainless steel	20 minute dwell 24 hour dwell	76 oz/inch (83.6 N/100mm) 78 oz/inch (85.8 N/100mm)
Tack	ASTM D 2979 Polyken™ Probe Tack 1 second dwell	37oz (1060 grams)
Tensile strength and Elongation	ASTM D 1000 -Machine direction	40 lbs/inch (704 N/100mm), 75%

**PERFORMANCE PROPERTIES-ENVIRONMENTAL RESISTANCE**

B-481 samples were printed with the R6400 Series ribbon on Bradyprinter™ THT Model 300X-Plus thermal transfer printer. Printed samples were laminated to glass microscope slides and then exposed to the indicated environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	EFFECT TO LABEL	EFFECT TO PRINT IMAGE
High Service Temperature	30 days at 266°F (130°C)	Slight yellowing at 130°C, moderate yellowing at 145°C	No visible effect
Low Service Temperature	30 days at -112°F (-80°C)	No visible effect	No visible effect
Humidity Resistance*	30 days at 100°F (37°C), 80% relative humidity	No visible effect	No visible effect
Sterilizer resistance (autoclave resistance)	Ramp time 28-30 minutes, peak temperature 125°C , peak pressure 21psi and peak duration 5 minutes, Sterilemax Table Top Steam Sterilizer,	No visible effect if slides were placed on the rack flat. Slight water mark at the bottom edge if slides were placed on the rack vertically	No visible effect

	Series 1277		
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm, 150 cycles	No visible effect	Print still legible after 150 cycles

\*B-481 is not recommended for use in conditions where both high temperature and high humidity greater than 95°F (35°C) and 80% relative humidity are present.

#### PERFORMANCE PROPERTIES-CHEMICAL RESISTANCE

B-481 samples were printed with R6400 Series ribbon on Bradyprinter™ THT Model 300X-Plus thermal transfer printer. Printed samples were laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Testing consisted of 5 cycles of 10 minute immersions in the specified chemical followed by 30 minute recovery periods. After the final immersion the printed image was rubbed 10 times with a cotton swab saturated with the test fluid. Testing was conducted at room temperature.

CHEMICAL REAGENT	EFFECT TO PRINT/TOPCOAT WITHOUT RUB	EFFECT TO PRINT/TOPCOAT WITH RUB	EFFECT TO ADHESIVE
Acetone	1	1	1
Ethanol	1	1	1
Toluene	1	1	2
Isopropanol	1	1	1
Xylene	1	1	2
MEK	1	1	1
Deionized Water	1	1	1
Dimethylsulfoxide (DMSO)	1	1	1
3% Alconox® Detergent	1	1	1
50% Acetic Acid	1	1	1
10% Sulfuric Acid	1	1	1
10% Clorox® Bleach Solution	1	1	1
10% Sodium Hydroxide	5, topcoat delamination	5	1

Rating scale:

1=no visible effect

2=slight smear or print removal or adhesive oozing, detectable but minimal

3=moderate smear or print removal or adhesive oozing

4=severe smear or print removal or adhesive oozing

5=complete smear, print removal or topcoat removal (delamination) or adhesive oozing

#### PERFORMANCE PROPERTIES-Slide Staining Test

Samples of B-481 printed with R6400 Series ribbon were laminated to glass microscope slides. These slides were placed in the Leica AutoStainer XL automated slide stainer. The slides were processed using the H&E (hematoxiniln and eosin) staining process.

Labels were adhered to the following brands of slides:

Cole-Parmer® - precleaned frosted, precleaned Superfrost® and plain precleaned Superfrost®

Fisher Scientific – precleaned frosted beveled

Erie Scientific - precleaned Superfrost® plus

Mercedes Medical - (precleaned, beveled edge, double frost)

Gold Seal Products® - Gold Seal® precleaned

REAGENT	STATION	STEP	DURATION (minutes)
None	Oven	1	10:00
Xylene	1	2	2:00
Xylene	2	3	2:00
100% denatured ethanol	3	4	2:00
100% denatured ethanol	4	5	2:00
70% denatured ethanol	5	6	1:00
Wash (tap water)	Wash 1	7	2:00
Hematoxiniln stain (Harris formula modified, supplied by Ricca Chemical Company)	6	8	5:00
Wash (tap water)	Wash 2	9	2:00
Acid Alcohol (mixture of 1.25% of concentrated HCl, 69.26% of ethanol and 29.49% of DI H2O)	7	10	0.02
Wash (tap water)	Wash 3	11	3:00
Scott's bluing reagent (supplied by Fisher Scientific)	8	12	3:00
Wash (tap water)	Wash 4	13	3:00
Eosin Y stain (Stock formula, 1% alcoholic solution supplied by Ricca Chemical Company)	14	14	2:00

95% denatured ethanol	15	15	0:30
100% denatured ethanol	16	16	2:00
100% denatured ethanol	17	17	2:00
100% denatured ethanol	18	18	2:00
Xylene	Exit	19	30:00

**Test results: All the labels remained adhered to all types of slides through the process. Print was not affected. Label surface was slightly pink after the process.**

Product testing, customer feedback, and history of similar products, support a customer performance 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°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.

Processed slides labeled with B-481 should be stored in an environment below 80°F (27°C) and 60% RH.

**Trademarks:**

- ASTM: American Society for Testing and Materials (U.S.A.)
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- BradyPrinter™ is a trademark of Brady Worldwide, Inc.
- Clorox® is a registered trademark of The Clorox Company
- Cole-Parmer® is a registered trademark of the Cole-Parmer Instrument Company
- Gold Seal® is a registered trademark of Erie Scientific Company
- Polyken™ is a trademark of Testing Machines Inc.
- Superfrost® is a registered trademark of Erie Scientific Company

**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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