

**Product Information Sheet**  
**B-449 Lab**  
**Effective Date: 1/28/19**

**B-449 THERMAL TRANSFER PRINTABLE REMOVABLE POLYPROPYLENE LABEL STOCK**

This Product Information Sheet is focused on the suitability of B-449 for laboratory applications. For additional data regarding B-449 performance please refer to B-449 Technical Data Sheet.

**Description:**

**GENERAL**

**Print Technology:** Thermal transfer

**Material Type:** White polypropylene

**Finish:** Matte white

**Adhesive:** Removable acrylic

**APPLICATIONS**

Laboratory identification such as slides, well plates, bottles and general laboratory applications requiring a removable label

**RECOMMENDED RIBBONS**

Brady Series R4300

Brady Series R6200

**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](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:**

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.

<b>PHYSICAL PROPERTIES</b>	<b>TEST METHODS</b>	<b>AVERAGE RESULTS</b>
Thickness	ASTM D1000 -Total (excluding liner)	0.112 mm (0.0044 inch)
Adhesion to:	ASTM D1000	
-Stainless Steel	20 minute dwell 24 hour dwell	27 oz/inch (30 N/100 mm) 28 oz/inch (31 N/100 mm)
-Polypropylene	20 minute dwell 24 hour dwell	27 oz/inch (30 N/100 mm) 29 oz/inch (32 N/100 mm)
-Glass	20 minute dwell 24 hour dwell	23 oz/inch (25 N/100 mm) 25 oz/inch (31 N/100 mm)

<b>PERFORMANCE PROPERTIES</b>	<b>LAB SIMULATED ENVIRONMENT</b>
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Performance properties tested on B-449 printed with the Brady Series R4300 and the Brady Series R6200 ribbons. Printed samples were laminated to glass vials (2.8 cm outer diameter), polypropylene centrifuge tubes (3.5 cm outer diameter, 50 ml capacity) and glass microscope slides and allowed to dwell 24 hours before exposure to the indicated environments.

ENVIRONMENT	TEST METHOD		TYPICAL RESULTS
High Service Temperature**	30 days at various temperatures		No visible effect at 90°C (194°F), surface cracks in label at 100°C (212°F), slight discoloration at 110°C (230°F), severe discoloration at 120°C (248°F).
Freezer	3 cycles of 16 hours at -70°C (-94°F)/ 8 hours at room temperature	✓ ✓ ✓ ✓	Glass vial Polypropylene centrifuge tube Glass microscope slide Flat polypropylene
Pressure Cooker (simulate autoclave)	3 cycles of 1 hour in 121°C (250°F) 15 psi pressure cooker/23 hours room temperature	✓ ✓ ✓ ✓	Glass vial Polypropylene centrifuge tube Glass microscope slide Flat polypropylene
Liquid Nitrogen	3 cycles of 4 hours at -196°C (-320°F)/20 hours at room temperature	✗ ✗ ✓ ✓	Glass vial Polypropylene centrifuge tube Glass microscope slide Flat polypropylene
Freezer to boiling water	1 hour at -70°C (-94°F) then placed in boiling water 100°C (212°F)	◆ ◆ ◆ ◆	Glass vial Polypropylene centrifuge tube Glass microscope slide Flat polypropylene
Liquid Nitrogen to boiling water	1 hour at -196°C (-320°F) then placed in boiling water 100°C (212°F) for 10 minutes	✗ ✗ ✗ ◆	Glass vial Polypropylene centrifuge tube Glass microscope slide Flat polypropylene

\*\* Samples for this testing were placed on glass microscope slides

✓ Label suitable for application; no visible effect, label remains adhered to test surface

◆ Label may work in application; test results were mixed

✗ Label not recommended for application; label came off either during testing or after test surface was removed from environment.

<b>PERFORMANCE PROPERTIES</b>	<b>CHEMICAL RESISTANCE</b>
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Samples of B-449 were printed with the Brady Series R4300 and the Brady Series R6200 ribbon. Printed samples were laminated to glass microscope slides and allowed to dwell 24 hours prior to



testing. Test conducted at room temperature. Samples were immersed in the test solvent for 15 minutes. The samples were removed and rubbed 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of the print for each sample.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE				
	EFFECTS TO LABEL STOCK	EFFECTS TO PRINTED IMAGE – R4300		EFFECTS TO PRINTED IMAGE – R6200	
		WITHOUT RUB	WITH RUB	WITHOUT RUB	WITH RUB
Ethanol	No visible effect	1	1	1	1
Toluene	No visible effect	1	2-3	1	4
Isopropanol	No visible effect	1	1	1	1
Xylene	No visible effect	1	2-3	1	4
Dimethylsulfoxide (DMSO)	No visible effect	1	1	1	4-5
Methylene Chloride	No visible effect	1	1	1	4
50% Acetic Acid	No visible effect	1	1	1	5
10% Hydrochloric Acid	No visible effect	1	1	1	1
10% Sodium Hydroxide	No visible effect	1	1	1	1
10% Chlorox Solution	No visible effect	1	1	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 and/or topcoat removal
- NP=print removed prior to rub

**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.

**References:**

- ASTM: American Society for Testing and Materials (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.

**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.

