



## Technical Data Sheet

### BRADY B-439 THERMAL TRANSFER PRINTABLE COLORED VINYL LABEL STOCK

TDS No. B-439

Effective Date: 16-Dec-1999

#### Description:

B-439 is a colored vinyl film with an acrylic pressure sensitive adhesive and a topcoat specifically formulated for thermal transfer printing. Vinyl colors include the following: Silver, Gold, Red, Purple, Yellow, Orange, Green, Light Blue, Black, and White.

B-439 is designed for applications requiring various colors such as finished product identification, rating plates and general purpose identification.

B-439 is designed for use in ambient conditions with limited solvent exposure.

Recommended ribbons are Brady Series R4900 and R6000 black ribbons and R4400W white ribbon.

#### Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	0.0035 inch (0.0889 mm) 0.0010 inch (0.0254 mm) 0.0045 inch (0.1143 mm)
Adhesion to: -Stainless Steel	ASTM D 1000 20 minute dwell 24 hour dwell	62 oz/in (68 N/100 mm) 95 oz/in (103 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack 1 second dwell	34 oz (953 g)
Tensile Strength and Elongation	ASTM D 1000 -Machine Direction -Cross Direction	14 lbs/in (245 N/100 mm), 130% 11 lbs/in (196 N/100 mm), 181%

The following testing was performed with B-439 printed on a BradyPrinter™ THT 300X using Brady Series R4900, and R6000 ribbons. Samples laminated to aluminum panels. All samples allowed to dwell 24 hours prior to testing. Unless noted, results the same for both ribbons.

PERFORMANCE PROPERTIES	TEST METHODS	EFFECT TO TAPE	EFFECT TO PRINT
High Service Temperature	30 days at 104 °F (40 °C)	No visible effect	No visible effect
Low Service Temperature	30 days at -94 °F (-70 °C)	No visible effect	No visible effect
Humidity Resistance	30 days at 100 °F (37 °C), 95% R.H.	No visible effect	No visible effect
UV Light Resistance	30 days in UV Sunlighter™ 100	Slight material shrinkage	No visible effect

Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Slight material shrinkage and color loss	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306)	No visible effect	Print legible up to: R4900 50 cycles R6000 280 cycles

Samples printed with Series R4900 and R6000 ribbons using a BradyPrinter™ THT Model 300X Thermal Transfer Printer. Labels printed using a 3:1 ratio barcode with a 5 mil narrow X dimension bar. Test was conducted at room temperature after 24 hour dwell. Testing consisted of 5 cycles of 10 minute immersions in the specified chemical reagent followed by 30 minute recovery period. Samples rubbed 10 times with cotton swab immersed in test fluid after final immersion.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE			
	EFFECT TO LABEL STOCK	PRINTING IMMERSIONS ONLY <sup>1</sup>	R4900 PRINT WITH COTTON SWAB RUB	R6000 PRINT WITH COTTON SWAB RUB
Isopropyl Alcohol	NVE	NVE	NVE	NVE
Mineral Spirits	NVE	NVE	NVE	NVE
JP-4 Jet Fuel	NVE	NVE	NVE	NVE
ASTM #3 Oil	NVE	NVE	NVE	NVE
Mil 5606 Oil	NVE	NVE	NVE	NVE
Super Agitene®	NVE	NVE	NVE	NVE
Alphametals BIOACT® EC-7R™	NVE	NVE	NVE	NVE
Deionized Water	NVE	NVE	NVE	NVE
3% Alconox® Detergent	NVE	NVE	NVE	NVE
10% Sodium Hydroxide Solution	NVE <sup>2</sup>	NVE	NVE	NVE
10% Sulfuric Acid Solution	NVE	NVE	NVE	NVE

<sup>1</sup>Results the same for R4900 and R6000 ribbons.

<sup>2</sup>NVE = No Visible Effect

B-439 is not recommended for use in harsh solvents such as 1,1,1 -Trichloroethane, Methyl Ethyl Ketone or Toluene.

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.

#### Trademarks:

Alconox® is a registered trademark of Alconox Co.

BIOACT® is a registered trademark of Petroferm, Inc.

BradyPrinter™ is a trademark of Brady Worldwide, Inc.

Polyken™ is a trademark of Testing Machines Inc.

Sunlighter™ is a trademark of the Test Lab Apparatus Company

Super Agitene® is a registered trademark of Graymills Corporation

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.

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.

Product compliance information is based upon information provided by suppliers of the raw materials used by Brady to manufacture this product or based on results of testing using recognized analytical methods performed by a third party, independent laboratory. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this 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.

## Specification Of LAB PAL™ & ID PAL™ Label Printer Labels

**Application(s):** General Identification, Laboratory Identification, Panel Identification, Well Plate

**Size:** 0.500" W x 21' H (12.700 mm W x 6.400 m H)

**Printable Area:** 0.500" W x 21' H (12.700 mm W x 6.400 m H)

**Label Type/Style:** Label

**Color:** Black on Yellow

**Finish:** Matte

**Qty Per Row:** 1

**Material Type:** Vinyl

**Material Description:** Permanent Vinyl

**Brady Material #:** [B-439](#)

**Environment:** Freezer

**Printer Compatibility:** ID PAL, LABPAL

**Surface:** Smooth, Textured/Rough

**Special Properties:** Various colors available

**RoHS Compatibility:** Compliant with RoHS Directive. NOTE: All statements concerning RoHS Directive compliance refer to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC. Product compliance is based upon information provided by suppliers of the raw materials used by Brady to manufacture these products, or by independent laboratory testing of these products. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this information.

**QTY/UOM:** 1/Roll