



## Technical Data Sheet

### **BRADY B-533 THERMAL TRANSFER PRINTABLE GLOSSY WHITE POLYESTER LABEL STOCK**

TDS No. B-533

Effective Date: 01/21/2019

#### **Description:**

#### **GENERAL**

**Print Technology:** Thermal Transfer

**Material Type:** White Polyester

**Finish:** Glossy

**Adhesive:** Removable Acrylic

#### **APPLICATION**

Alphanumeric and barcode applications such as electronic component marking and general purpose applications that require good solvent resistance, heat resistance and clean removability.

#### **RECOMMENDED RIBBONS**

Brady Series R6000 Halogen Free

Brady Series R4900 (alternate)

Brady Series R6200 (alternate)

Brady Series R4400 (colors – red, blue, green, white)

#### **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:**

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D1000 -Substrate -Adhesive -Total (excluding liner)	0.0020 inch (0.0506 mm) 0.0010 inch (0.0254 mm) 0.0030 inch (0.0708 mm)
Adhesion to:	ASTM D1000	
-Stainless Steel	20 minute dwell 24 hour dwell	26 oz/in (28 N/100 mm) 31 oz/in (34 N/100 mm)
-Aluminum	20 minute dwell 24 hour dwell	15 oz/in (16 N/100 mm) 18 oz/in (20 N/100 mm)
-Polypropylene	20 minute dwell 24 hour dwell	11 oz/in (12 N/100 mm) 12 oz/in (13 N/100 mm)
-Alkyd Enamel	20 minute dwell 24 hour dwell	20 oz/in (22 N/100 mm) 23 oz/in (25 N/100 mm)
-Glass	20 minute dwell 24 hour dwell	25 oz/in (27 N/100 mm) 25 oz/in (27 N/100 mm)
Tack	ASTM D2979 Polyken™ Probe Tack 0.5 second dwell	22 oz (630 g)
Dielectric Strength	ASTM D1000	8500 volts

\*B-533 removes cleanly from the surfaces listed above.

Performance properties tested on B-533 were printed with the Brady Series R6000 Halogen Free ribbon. Printed samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions. Labels were tested for removability after exposure to environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
Short Term High Service Temperature	5 minutes at various temperatures	No visible effect and cleanly removable at 200°C. At 210°C label is slightly discolored but remains cleanly removable from test panel. At 220°C label has shrunk to the extent that it is non-functional.
Long Term High Service Temperature	30 days at various temperatures	No visible effect and cleanly removable at 100°C. At 130°C label is slightly discolored and remains cleanly removable from test panel. At 160°C label non-removable and moderately discolored.
Low Service Temperature	30 days at -70°C (-94°F)	No visible effect, cleanly removable
Humidity Resistance	30 days at 37°C/95% RH	No visible effect, cleanly removable
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weather- Ometer®	No visible effect, cleanly removable
Salt Fog Resistance	ASTM B117 30 days in 5% salt fog solution chamber	No visible effect, cleanly removable

Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 250 g/arm (Fed. Std. 191A, Method 5306)	R6000 Halogen Free: print legible after 100 cycles
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PERFORMANCE PROPERTY	CHEMICAL RESISTANCE
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Samples printed with the Brady Series R6000 Halogen Free ribbon. Samples were laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Test was conducted at room temperature except where noted. Testing consisted of five cycles of a 10 minute immersion in the specified test fluid followed by a 30 minute recovery period. After the final immersion, print was rubbed 10 times with a cotton swab saturated with test fluid. Samples were also tested for removability.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL STOCK	EFFECT TO PRINTED IMAGE	
		R6000 HALOGEN FREE	
		WITHOUT RUB	WITH RUB
Acetone	No visible effect	1	5
Methyl Ethyl Ketone	No visible effect	1	5
Toluene	No visible effect	1	5
Isopropyl Alcohol	No visible effect	1	1
Mineral Spirits	No visible effect	1	1
Gasoline	No visible effect	1	1
JP-8 Jet Fuel	No visible effect	1	1
Brake Fluid – DOT 3	No visible effect	1	4-5
Skydrol® 500 B-4	No visible effect	1	5
BIO-ACT® EC-7R™	No visible effect	1	1
MIL-5606 Oil	No visible effect	1	1
SAE 20 wt oil @ 70C	No visible effect	1	1
Formula 409® Cleaner	No visible effect	1	1
Northwoods™ Buzz Saw Citrus degreaser	No visible effect	1	1
Deionized Water	No visible effect	1	1
3% Alconox® Detergent	No visible effect	1	1
10% Sodium Hydroxide solution	No visible effect	1	1
10% Sulfuric Acid solution	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 is still legible)

4=severe smear or print removal (print illegible or just barely legible)  
5=complete print and/or topcoat removal

\* B-533 removed cleanly from aluminum after tested in the solvents listed above.

#### 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:**

ASTM: American Society for Testing and Materials (U.S.A.) Alconox® is a registered trademark of Alconox Co.

All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units BIOACT® is a registered trademark of Petroferm, Inc.

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Formula 409® is a registered trademark of the Clorox Company Northwoods™ is a trademark of the Superior Chemical Corporation.

Polyken™ is a trademark of Testing Machines Inc. SAE: Society of Automotive Engineers (U.S.A.)

Skydrol® is a registered trademark of Solutia Inc.

Weather-Ometer® is a registered trademark of Atlas Material Testing Technology LLC

**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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Brady North America | 6555 W. Good Hope Rd | Milwaukee, WI 53223 | USA |  
Tel: 414-358-6600 | Fax: 800-292-2289