BRADY
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**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
In Europe: www.bradyeurope.com/rohs
In Japan: www.brady.co.jp/products/labelsuse/rohs
All other regions: www.bradyid.com/weee-rohs

**Details:**

| PHYSICAL PROPERTIES | TEST METHODS | AVERAGE RESULTS |
|---|---|---|
| Thickness | ASTM D1000<br>-Substrate<br>-Adhesive<br>-Total (excluding liner) | <br>0.0020 inch (0.0506 mm)<br>0.0010 inch (0.0254 mm)<br>0.0030 inch (0.0708 mm) |
| Adhesion to:<br>-Stainless Steel | ASTM D1000<br>20 minute dwell<br>24 hour dwell | <br>26 oz/in (28 N/100 mm)<br>31 oz/in (34 N/100 mm) |
| -Aluminum | 20 minute dwell<br>24 hour dwell | 15 oz/in (16 N/100 mm)<br>18 oz/in (20 N/100 mm) |
| -Polypropylene | 20 minute dwell<br>24 hour dwell | 11 oz/in (12 N/100 mm)<br>12 oz/in (13 N/100 mm) |
| -Alkyd Enamel | 20 minute dwell<br>24 hour dwell | 20 oz/in (22 N/100 mm)<br>23 oz/in (25 N/100 mm) |
| -Glass | 20 minute dwell<br>24 hour dwell | 25 oz/in (27 N/100 mm)<br>25 oz/in (27 N/100 mm) |
| Tack | ASTM D2979<br>Polyken™ Probe Tack<br>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<br>30 days in Xenon Arc Weather-Ometer® | No visible effect, cleanly removable |
| Salt Fog Resistance | ASTM B117<br>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 |

| PERFORMANCE PROPERTY | CHEMICAL RESISTANCE |
|---|---|

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.
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SAE: Society of Automotive Engineers (U.S.A.)
Skydrol® is a registered trademark of Solutia Inc.
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**Note:** All values shown are averages and should not be used for specification purposes.
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