

**B-521 THERMAL TRANSFER PRINTABLE GLOSSY CLEAR POLYPROPYLENE LABEL STOCK**

TDS No. B-521  
 Effective Date: 08/12/2020

**Description:**

**GENERAL**

**Print Technology:** Thermal Transfer

**Materials Type:** Clear polypropylene

**Finish:** Semi-Gloss

**Adhesive:** Removable

**APPLICATIONS**

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 R6200 (alternate)
- Brady Series R4400 (White and Red) (alternate)

**REGULATORY**

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:**

PERFORMANCE PROPERTIES	TEST METHOD	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total (excluding liner)	0.002 inch (0.0508 mm) 0.0009 inch (0.0229 mm) 0.0029 inch (0.0737 mm)
Adhesion to: -Stainless Steel	ASTM D 1000 20 minutes dwell 24 hour dwell	6 oz/inch (6.6 N/100 mm) 6 oz/inch (6.6 N/100 mm)
-Aluminum	20 minutes dwell 24 hour dwell	5 oz /inch (4.5 N/100 mm) 8 oz/inch (8.7 N/100 mm)
-Polypropylene	20 minutes dwell 24 hour dwell	8 oz/inch (8.7 N/100 mm) 10 oz/inch (10.9 N/100mm)
-Glass	20 minutes dwell 24 hour dwell	4 oz/inch (4.4 N/100 mm) 6 oz/inch (6.6 N/100 mm)
Dielectric Strength	ASTM D 1000	9625 volts
Drop Shear, hours	TM-10048	1 hour

\*B- 521 removes cleanly from the surfaces listed above.

Performance properties tested on B-521 printed with the Brady Series R6000 Halogen Free Series ribbons. Printed samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environments. Labels were tested for removability after exposure to environmental conditions.

PERFORMANCE PROPERTIES	TEST METHOD	TYPICAL RESULTS
Long Term High Service Temperature	30 days at various Temperatures	No visible effect to label at 90°C. At 100°C label curls and is no longer removable.
Low Service Temperature	30 days at -70°C	No visible effect, cleanly removable
Short Term High Service Temperature	5 minutes at various Temperatures	No visible effect and cleanly removable at 145°C. At 160°C label shrinkage beyond functionality.
Humidity Resistance	30 days at 100°F (38°C) and 95% relative humidity.	Removable with minor adhesive residue, slight label discoloration
UV Light Resistance	ASTM G155 Cycle 1( no spray) 30 days in Xenon test chamber	Not suited for outdoor use, non-removable
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weather-Ometer®	Not suited for outdoor use, non-removable
Salt Fog Resistance	ASTM B 117 30 days in 5% salt fog solution chamber	No visible effect on label, cleanly removable
Abrasion Resistance	Taber Abraser, CS10 grinding wheels, 250 g/arm (Fed. Std. 191A, Method 5306)	Print legible after 100 cycles

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE
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Samples were printed with the Brady Series R6000 Halogen Free ribbon. Samples were laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Testing was conducted at room temperature and consisted of 30 minute immersions in the specified test fluid. After immersion, the samples were removed from the test fluid and the printed image 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. 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
10% Sodium Hydroxide Solution	No visible effect	1	1
10% Sulfuric Acid solution	No visible effect	1	1
BIO- ACT® EC -7R™	Severe edge lift	1	5
Acetone	Slight edge lift	1	5
Methyl Ethyl Ketone (MEK)	Moderate edge lift	1	5
3% Alconox® Detergent Solution	No visible effect	1	1

Windex®	No visible effect	1	1
Toluene	Complete label removal	1	5
Isopropyl Alcohol	No visible effect	1	1
Mineral Spirits	Moderate edge lift	1	1
Gasoline	Severe edge lift	1	5
JP-8 Jet Fuel	Slight edge lift	1	1
Brake Fluid DOT 3	No visible effect	1	5
Skydrol® 500B-4	No visible effect	1	5
SAE 20 WT Oil at 70°C	No visible effect	1	1
MIL 5606A Oil	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

**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

\* B- 521 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:**

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EC -7R™ is a trademark of Petroferm Inc.  
Formula 409® is a registered trademark of the Clorox Company  
Northwoods™ is a trademark of the Superior Chemical Corporation.  
SAE: Society of Automotive Engineers (U.S.A.)  
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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.

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