Technical Data Sheet

GLOSSY WEATHER RESISTANT LABEL STOCK

TDS No. B-8591
Effective Date: 02/05/2020

Description:
GENERAL
Print Technology: Thermal Transfer
Material Type: Polyester
Finish: Gloss
Adhesive: Permanent acrylic

DESCRIPTION
B-8591 is a glossy topcoated film coated with an acrylic pressure sensitive adhesive, laminated to a silicone release liner.

STANDARD MATERIAL COLORS
White, Silver, Black, Yellow

RECOMMENDED RIBBONS
Brady RR122
Brady Series R6600
Brady Series R4400W
Brady Series R6000 Halogen Free (Alternate Ribbon)

REGULATORY/AGENCY APPROVALS
UL: B-8591 (White, Silver & Yellow) is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with the Brady Series R6600 ribbon. B-8591 (Black) is a UL Recognized Component to UL969 Labeling and Marking Standard when printed with the Brady Series R4400W ribbon. See UL file MH17154 for specific details. UL information can be accessed online at UL.com in the UL Product iQ area.

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

SPECIAL FEATURES
B-8591 is a weather resistant label designed for long term outdoor UV exposure applications.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness (White)	ASTM D1000 Substrate Adhesive Total (excluding liner)	 0.0023 inch (0.0584 mm) 0.0020 inch (0.0508 mm) 0.0043 inch (0.1092 mm)
Thickness (Colors)	ASTM D1000 Substrate Adhesive	 0.0028 inch (0.0711 mm) 0.0020 inch (0.0508 mm)

	Total (excluding liner)	0.0048 inch (0.1219 mm)
Adhesion to: -Stainless Steel	ASTM D1000 20 minute dwell 24 hour dwell	 55 oz/in (15.3 N/25mm) 67 oz/in (18.6 N/25mm)
Tack	ASTM D2979 Polyken™ Probe tack 1 second dwell	52 oz (1481g)
Dielectric Strength	ASTM D1000 0.25” probe; 500V/s	7046 Volts

B-8591 is not recommended for low surface energy surfaces such as polyethylene and polypropylene.

Performance properties were tested on B-8591 (white, silver and yellow) printed with the Brady Series R6600 series ribbon and B-8591 black printed with the Brady Series R4400W ribbon. Printed samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environments.

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
High Service Temperature	30 days at various temperatures	No visible effect to label at 110°C. Slight discoloration at 120°C; moderate discoloration at 145°C. Cracking on the print block started at 130°C but label is still functional
Short Term High Service Temperature	5 minutes at various temperatures	No visible effect to label at 180°C. Slight label shrinkage at 200°C; label is functional. Label becomes nonfunctional at 230°C due to label shrinkage
Low Service Temperature	30 days at -70°C	No Visible Effect
Humidity Resistance	30 days at 100°F (37°C) and 95% relative humidity	No Visible Effect
Weatherability	ASTM G155, Cycle 1 in Xenon Arc Weatherometer, 12,500 hours	No Visible Effect R6600 Ribbon
Weatherability	ASTM G155, Cycle 1 in Xenon Arc Weatherometer, 7000 hours	No Visible Effect R6000 Halogen Free Ribbon
Salt Fog Resistance	ASTM B 117 30 days in 5% salt fog solution chamber	No Visible Effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 250 g/arm, 100 cycles (Fed. Std. 191A, Method 5306)	Image faded, but functional after 50 revolutions

B-8591 white, silver and yellow samples were printed with the Brady Series R6600 ribbon. B-8591 black was printed with the Brady Series R4400W 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.

CHEMICAL REAGENT	Effect to Label Stock	EFFECTS TO PRINTED IMAGE R6600 Ribbon		EFFECTS TO PRINTED IMAGE R4400W Ribbon	
		WITHOUT RUB	WITH RUB	WITHOUT RUB	WITH RUB
Acetone	Label removed from panel	5	NP	5	NP
Toluene	No visible effect	5	NP	1	5
Isopropyl Alcohol	No visible effect	1	2	1	1
Mineral Spirits	No visible effect	1	5	1	1
Gasoline	No visible effect	4	5	1	4
JP-8 Jet Fuel	No visible effect	1	5	1	1
Brake Fluid - DOT 3	No visible effect	1	3	1	3
Skydrol® 500B-4	No visible effect	4	5	3	5
SAE 20 WT Oil at 70°C	No visible effect	1	1	1	1
MIL 5606 Oil	No visible effect	1	5	1	1
Formula 409® Cleaner	No visible effect	1	1	1	1
Northwoods™ Buzz Saw Citrus Degreaser	No visible effect	1	1	1	1
Deionized Water	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.

Trademarks:
ASTM: American Society for Testing and Materials (U.S.A.)
Formula 409® is a registered trademark of the Clorox Company
Northwoods™ is trademark of the Superior Chemical Corporation
Polyken™ is a trademark of Testing Machines Inc.
S.I.: International System of Units
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 Road | Milwaukee, WI 53223 | USA | Tel: 414-358-6600 | Fax: 800-292-2289