Technical Data Sheet

BRADY B-459 THERMAL TRANSFER PRINTABLE MATTE WHITE POLYESTER LABEL STOCK

TDS No. B-459
Effective Date: 11/17/2020

Description:

GENERAL

Print Technology: Thermal Transfer
Material Type: White Polyester
Finish: Matte
Adhesive: Permanent Acrylic

APPLICATIONS

Designed for applications such as topside of printed circuit boards and rating plates that utilize high quality/density alphanumerics, barcodes and graphics.

RECOMMENDED RIBBONS

Brady Series R4900
Brady Series R6000 Halogen Free
Brady Series R4400 colored (red, green, blue) ribbons

REGULATORY/AGENCY APPROVALS

UL: B-459 is UL Recognized to UL969 Labeling and Marking Standard when printed with the Brady Series R4900 and the Brady Series R6000 Halogen Free black and R4400 colored ribbons. See UL file MH17154 for specific details. UL information can be accessed on-line 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

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total (excluding liner)	 0.0023 inch (0.0584 mm) 0.0008 inch (0.0203 mm) 0.0031 inch (0.0787 mm)
Adhesion to: -Stainless Steel -Polypropylene	ASTM D 1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 44 oz/in (48 N/100 mm) 49 oz/in (54 N/100 mm) 31 oz/in (34 N/100 mm) 43 oz/in (47 N/100 mm)
Tensile Strength and Elongation	ASTM D 100 -Machine	 44 lbs/in (765 N/100 mm), 90%

Performance properties tested on B-459 printed with the Brady Series R4900, the Brady Series R6000 Halogen Free and the Brady Series R4400 colored ribbons. Printed samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environments. Unless noted, results are the same for all ribbons.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
Short Term High Service Temperature	5 minutes at various Temperatures	No visible effect at 180°C Label shrinkage at 210°C
Long Term High Service Temperature	30 days at various Temperatures	No visible effect at 100°C Label yellowed at 120°C
Low Service Temperature	30 days at -40°F (-40°C)	No visible effect
Humidity Resistance	30 days at 100°F (37°C), 95% R.H.	No visible effect
UV Light Resistance	30 days in UV Sunlighter™ 100	Severe yellowing of topcoat
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Slight topcoat discoloration and chalking. R4400 red print removed.

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, 500 g/arm (Fed. Std. 191A, Method 5306)	Print legible to: R4900= 150 cycles R6000 Halogen Free= 300 cycles R4400= 100 cycles

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples printed with the Brady Series R4900 and the Brady Series R6000 Halogen Free ribbons. Samples laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Test conducted at room temperature. Testing consisted of 5 cycles of 10 minute immersions in the specified test fluid followed by a 30 minute recovery period. After final immersion, samples rubbed 10 times with cotton swab saturated with test fluid.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL STOCK	R4900	R6000 Halogen Free
Methyl Ethyl Ketone	Topcoat degraded	Print removed when immersed	Print removed when immersed
Isopropyl Alcohol	No visible effect	No visible effect	No visible effect
Mineral Spirits	No visible effect	No visible effect	No visible effect
SAE 20 WT Oil @ 70°C	No visible effect	No visible effect	No visible effect
Mil 5606 Oil	No visible effect	No visible effect	No visible effect
Speedi Kut Cutting Oil 332	No visible effect	No visible effect	No visible effect
Gasoline	Slight yellowing	No visible effect w/o rub, slight print removal after rub	No visible effect, slight print removal after rub
Rust Veto® 342	Slight yellowing	No visible effect	No visible effect
Northwoods™ Buzz Saw Degreaser	No visible effect	No visible effect	No visible effect
Deionized Water	No visible effect	No visible effect	No visible effect
5% Salt Solution	No visible effect	No visible effect	No visible effect
3% Alconox® Detergent	No visible effect	No visible effect	No visible effect
10% Sodium Hydroxide Solution	No visible effect	No visible effect	No visible effect
10% Sulfuric Acid Solution	No visible effect	No visible effect	No visible effect

Solvent resistance results for R4400 colored ribbons not reported.

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:
Alconox® is a registered trademark of Alconox Co.
Northwoods™ is a trademark of the Superior Chemical Corporation
Polyken™ is a trademark of Testing Machines Inc.
Rust Veto® is a registered trademark of the E.F. Houghton & Co.
Sunlighter™ is a trademark of the Test Lab Apparatus Company
ASTM: American Society for Testing and Materials (U.S.A.)
CSA: Canadian Standards Association
SAE: Society of Automotive Engineers (U.S.A.)
UL: Underwriters Laboratories Inc. (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.

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