BRADY
WHEN PERFORMANCE MATTERS MOST™

Technical Data Sheet

BRADY B-499 THERMAL TRANSFER / DOT MATRIX PRINTABLE NYLON CLOTH LABEL

TDS No. B-499
Effective Date: 06/27/2012

Description:
GENERAL
Print Technology: Thermal transfer
Material Type: Polyamide coated nylon cloth
Finish: Matte white
Adhesive: Permanent acrylic

APPLICATIONS
Wiremarking and general labeling applications
B-499 is not recommended for outdoor use.

RECOMMENDED RIBBONS
Thermal Transfer Ribbons
Brady Series R4300
Brady Series R4900
Brady Series R6000
Brady Series R6000 Halogen Free (previously known as R6000HF)
Brady Series R6200
Brady Series R4500 colored (red, blue and green)

Dot Matrix Ribbons
Brady Series R2000 and Brady Series R5000

REGULATORY/AGENCY APPROVALS
UL: B-499 is a UL Recognized Component to UL969 Labelling and Marking Standard when printed with Brady Series R4300, R4900, R6000, R6000 Halogen Free thermal transfer ribbons and R2000 and R5000 dot matrix ribbons. See UL file MH17154 for specific details. UL information can be accessed online at UL.com. Search in Certifications area.
CSA: B-499 is CSA Accepted to C22.2 No.0.15-95 Adhesive Labels Standard when printed with Brady Series R4300 thermal transfer ribbon. See CSA file 041833 for specific details. CSA information can be accessed online at directories.csa-international.org.
DIN VDE 0472 Part 815: Brady B-499 meets requirements of a halogen-free material per DIN VDE 0472 part 815. (Statement based on review of product construction and confirmation halogen content test run at an independent test laboratory.)

Brady B-499 is RoHS compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	 0.0045 inch (0.115 mm) 0.0020 inch (0.051 mm) 0.0065 inch (0.166 mm)
Adhesion to: -Stainless Steel -Textured ABS -Polypropylene	ASTM D 1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 45 oz/inch (50 N/100 mm) 80 oz/inch (88 N/100 mm) 35 oz/inch (39 N/100 mm) 40 oz/inch (44 N/100 mm) 24 oz/inch (26 N/100 mm) 24 oz/inch (26 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack (1 second dwell, 1cm/sec separation)	29 oz (900 grams)
Drop Shear	PSTC-7 (except use 1/2" x 1" sample)	9 hours
Tensile Strength and Elongation	ASTM D 1000 -Machine	 80 lb/in (1400 N/100 mm), 50%

Performance properties tested on B-499 printed with Series R4300, R4900, R6000, R6000 Halogen Free and R6200 thermal transfer ribbons and R2000 and R5000 dot matrix ribbons. Printed samples of B-499 were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions. Unless noted, results are the same for all ribbons tested.

PERFORMANCE PROPERTIES	TEST METHOD	TYPICAL RESULTS
Short Term High Service Temperature	5 minutes at 293°F (145°C)	No visible effect to label at 145°C, slight shrinkage at 180°C but label still functional
Long Term High Service Temperature	30 days at 193°F (90°C)	No visible effect to label at 90°C, slight discoloration at 110°C but label still functional, at 120°C label is severely discolored
Low Service Temperature	30 days at -40°F (-40°C)	No visible effect
Weatherability*	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Material wrinkled and embrittled
Humidity Resistance	30 days at 100°F, 95% R.H.	No visible effect
UV Light Resistance	30 days in UV Sunlighter™ 100	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306)	Print still legible at: 150 cycles with R4300, R4900, R6000, R6000 Halogen Free, R6200, R2000 and R5000 ribbons

*B-499 is not recommended for long-term outdoor use.

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

Samples printed with Series R2000 and R5000 ribbons using the I.D.Pro® Plus Wire Marker Printer and IBM Typewriter. Samples wrapped around a 12 AWG, TFE jacketed wire and allowed to dwell 24 hours prior to test. Test was conducted at room temperature except where noted. 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	R2000 DOT MATRIX RIBBON	R5000 DOT MATRIX RIBBON
Methyl Ethyl Ketone	Complete unwrap	No visible effect	No visible effect
1,1,1-Trichloroethane	Complete unwrap	No visible effect	No visible effect
Isopropyl Alcohol	Complete unwrap	No visible effect	No visible effect
Mineral Spirits	Complete unwrap	No visible effect	No visible effect
SAE 20 WT Oil at 70°C	No unwrap, label stained tan	No visible effect	No visible effect
Mil 5606 Oil	Slight unwrap, label stained red	No visible effect	No visible effect
Gasoline	Adhesive failure, label discoloration	No visible effect	No visible effect
Rust Veto® 342	Moderate unwrap, label discoloration	No visible effect	No visible effect
Deionized Water	No visible effect	No visible effect	No visible effect
3% Alconox® Detergent	No visible effect	No visible effect w/o rub, moderate print removal after rub	No visible effect w/o rub, moderate print removal after rub
10% Sodium Hydroxide Solution	Complete unwrap	No visible effect	No visible effect
10% Sulfuric Acid Solution	No visible effect	No visible effect	No visible effect
Northwoods™ Buzz Saw Degreaser	Complete unwrap	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, slight print removal after rub
Speedi Kut Cutting Oil 332	No unwrap, label stained red	No visible effect	No visible effect
5% Salt Solution	No visible effect	No visible effect	No visible effect

Samples printed with Series R4300, R4900, R6000, R6000 Halogen Free and R6200 thermal transfer ribbons. Samples laminated to aluminum panels and allowed to dwell 24 hours prior to test. Test performed at room temperature except where noted. 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				
	R4300 THERMAL	R4900 THERMAL	R6000 THERMAL	R6000 Halogen Free	R6200 THERMAL

	TRANSFER RIBBON	TRANSFER RIBBON	TRANSFER RIBBON	THERMAL TRANSFER RIBBON	TRANSFER RIBBON
Methyl Ethyl Ketone	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, slight print removal after rub	No visible effect, moderate print smear after rub	No visible effect w/o rub, moderate print smear after rub	No visible effect w/o rub, slight print smear after rub
1,1,1-Trichloroethane	No visible effect	No visible effect	No visible effect	Obsolete	No visible effect
Isopropyl Alcohol	No visible effect w/o rub, moderate print removal after rub	No visible effect w/o rub, complete print removal after rub	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, moderate print removal after rub
Mineral Spirits	No visible effect w/o rub, slight print removal after rub	No visible effect	No visible effect	No visible effect	No visible effect
SAE 20 WT Oil at 70°C	No visible effect w/o rub, severe print removal after rub	No visible effect	No visible effect	No visible effect	No visible effect
Mil 5606 Oil	No visible effect w/o rub, slight print removal after rub	No visible effect	No visible effect	No visible effect	No visible effect
Gasoline	No visible effect	No visible effect	No visible effect	No visible effect	No visible effect w/o rub, slight print smear after rub
Rust Veto® 342	No visible effect w/o rub, severe print removal after rub	No visible effect w/o rub, moderate print removal after rub	No visible effect	No visible effect	No visible effect
Deionized Water	No visible effect w/o rub, moderate print smear after rub	No visible effect w/o rub, severe print removal after rub	No visible effect	No visible effect	No visible effect w/o rub, slight print removal after rub
3% Alconox® Detergent	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, severe print removal after rub	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, slight print removal after rub
10% Sodium Hydroxide Solution	No visible effect	No visible effect	No visible effect w/o rub, slight print smear after rub	No visible effect w/o rub, slight print smear after rub	No visible effect
10% Sulfuric Acid Solution	No visible effect w/o rub, moderate smear after rub	No visible effect w/o rub, moderate print removal after rub	No visible effect w/o rub, sight print removal after rub	No visible effect w/o rub, slight print removal after rub	No visible effect w/o rub, slight print removal after rub
Northwoods™ Buzz Saw Degreaser	No visible effect w/o rub, moderate print removal after rub	No visible effect w/o rub, print illegible after rub	No visible effect w/o rub, moderate print removal after rub	No visible effect w/o rub, moderate print removal after rub	No visible effect w/o rub, slight print removal after rub
Speedi Kut Cutting Oil 332	No visible effect	No visible effect	No visible effect	No visible effect	No visible effect
5% Salt Solution	No visible effect	No visible effect	No visible effect	No visible effect	No visible effect w/o rub, slight print removal after rub

Product testing, customer feedback, and history of similar products, support a customer performance expectation of at least ***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 degrees F (27°C) and 60% RH* . We are confident that our product will perform well beyond this time frame. However, it remains the responsibility of the user to assess the risk of using such product. We encourage customers to develop functional testing protocols that will qualify a product's fitness for use, in their actual applications.

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Sunlighter™ is a trademark of the Test Lab Apparatus Company
ASTM: American Society for Testing and Materials (U.S.A.)
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.
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