

**BRADY B-472 MATTE TOPCOATED POLYIMIDE WIREWRAP LABEL STOCK**

TDS No. B-472  
Effective Date: 06/11/2012

**Description:**

**GENERAL**

**Print Technology:** Thermal transfer and dot matrix

**Material Type:** Topcoated 1 mil polyimide

**Finish:** Matte

**Adhesive:** Permanent acrylic

**APPLICATIONS**

Cable and wire bundle applications and label applications where self-extinguishing properties are required

**RECOMMENDED RIBBONS**

Brady Series R4300 thermal transfer

Brady Series R6200 thermal transfer

Brady Series R2000 dot matrix

**REGULATORY APPROVALS**

Brady B-472 is RoHS compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

**SPECIAL FEATURES**

B-472 is available in white, yellow, gray, violet, green, blue, red, pink, and orange.

**Details:**

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total	0.0022 inch (0.056 mm) 0.0010 inch (0.025 mm) 0.0032 inch (0.081 mm)
Adhesion to: -Stainless Steel	ASTM D 1000 20 minute dwell 24 hour dwell	36 oz/inch (39 N/100 mm) 46 oz/inch (50 N/100 mm)
Tack	ASTM D 2979 Polyken™ Probe Tack 1 second dwell	39 oz (1100 g)
Tensile Strength and Elongation	ASTM D 1000 -Machine direction	36 lbs/inch (630 N/100 mm), 62%
Dielectric Strength	ASTM D 1000	8000 Volts
Flammability	ASTM D 1000 Average Burn Time	Less than 5 seconds
Surface Flammability of Materials Using a Radiant Heat Energy Source Tested at an outside laboratory	ASTM E162 Common Maximum - 35	Flame Spread Index (Is) (rounded average result of 4 tests) White – 0 Yellow – 0
Specific Optical Density of Smoke (Ds) Tested at an outside laboratory	ASTM E662 Common Maximum Flaming Mode at 1.5 minutes – 100 Flaming Mode at 4.0 minutes – 200	Specific Optical Density (Ds) (average of 3 tests) <i>White:</i> Flaming mode at 1.5 minutes – 4 Flaming mode at 4.0 minutes – 10 Non-Flaming mode at 1.5 minutes – 1 Non-Flaming mode at 4.0 minutes – 5 <i>Yellow:</i> Flaming mode at 1.5 minutes – 4 Flaming mode at 4.0 minutes – 11 Non-Flaming mode at 1.5 minutes – 1 Non-Flaming mode at 4.0 minutes – 5

Performance properties tested on B-472 white and yellow printed with Series R4300 and R6200 ribbons using the BradyPrinter™ THT PR 300 Plus thermal transfer printer and with Series R2000 ribbon using Brady SLV-DAT-PTR dot matrix

printer. Performance properties tested on all additional colors of B-472 printed with Series R4300 using the BradyPrinter™ THT PR 300 Plus thermal transfer printer. 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 METHOD	TYPICAL RESULTS
High Service Temperature	Samples exposed 30 days at various temperatures ranging from 100°C (212°F) to 160°C (320°F)	No visible effect at 100°C Moderate topcoat discoloration at 135°C Severe discoloration at 160°C, but labels still functional No effect to print at all test temperatures
Low Service Temperature	Samples exposed 30 days at -40°C (-40°F) and -70°C (-94°F)	No visible effect
Humidity Resistance	30 days at 37°C (100°F) and 95% R.H.	No visible effect
UV Light Resistance	ASTM G 155, Cycle 1 Dry 30 days in Xenon Arc Fadeometer	No visible effect
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Slight discoloration on white, gray, green, violet, pink, red, and orange. No visible effect on yellow and blue No visible effect to print.
Salt Fog Resistance	ASTM B 117 30 days in 5% salt fog solution chamber	No visible effect
Print Adherence per SAE-AS81531 (Sec 3.4.2)	20 eraser rubs with hard hand pressure	Pass - Print still easily legible*
Solvent/Abrasion Resistance per SAE-AS81531 (Sec 3.4.3) Solution A Solution C Solution D	MIL-STD-202, Method 215K 3 cycles of 3 minute immersions in specified fluids followed by toothbrush rub after each immersion	Pass - Print still easily legible*

\*White, yellow, gray, green and blue tested only

Solution A: 1 part isopropyl alcohol, 3 parts mineral spirits

Solution B: deleted from MIL-STD-202, Method 215J

Solution C: BIOACT® EC-7R™ terpene defluxer

Solution D: 42 parts water, 1 part propylene glycol monomethyl ether, 1 part monoethanolamine at 70°C

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE
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Chemical Resistance tested on B-472 white and yellow printed with Series R4300 and R6200 ribbons using the BradyPrinter™ THT PR 300 Plus thermal transfer printer and with Series R2000 ribbon using Brady SLV-DAT-PTR dot matrix printer. Chemical Resistance tested on B-472 gray, green and blue with Series R4300 ribbon using the BradyPrinter™ THT PR 300 Plus thermal transfer printer. Samples laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Test conducted at room temperature. Testing consisted of 15 minute and 24 hour immersions in the specified test fluid followed by rubbing on print 10 times with cotton swab saturated with test fluid. Results are the same without and with rub unless stated otherwise.

#### 15 MINUTE IMMERSION

CHEMICAL REAGENT	EFFECT TO LABEL STOCK	EFFECT TO R4300 PRINT	EFFECT TO R6200 PRINT	EFFECT TO R2000 PRINT
MEK	Slight yellow and green color fade	NVE without rub, print and topcoat removed with rub	NVE without rub, print and topcoat removed with rub	NVE without rub, print and topcoat removed with rub
IPA	No visible effect	NVE without rub, moderate print smear with rub	No visible effect	NVE without rub, Slight print smear with rub
Methyl Alcohol	No visible effect	NVE without rub, slight print smear with rub	No visible effect	NVE without rub, slight print smear with rub
Gasoline	No visible effect	NVE without rub, severe print smear with rub	NVE without rub, slight print smear with rub	NVE without rub, slight print smear with rub
JP-8 Jet Fuel	No visible effect	NVE without rub, moderate print smear with rub	No visible effect	No visible effect
Mineral Spirits	No visible effect	NVE without rub, moderate print smear with rub	No visible effect	No visible effect
Skydrol® LD4	Slight adhesive ooze, slight yellow color fade	NVE without rub, severe print smear with rub	NVE without rub, print illegible with rub	NVE without rub, severe print smear with rub
MIL-H-5606 Oil	No visible effect	NVE without rub, severe	No visible effect	No visible effect

		print smear with rub		
DI water	No visible effect	No visible effect	No visible effect	No visible effect
5% Alconox® Detergent	No visible effect	No visible effect	No visible effect	No visible effect
10% NaOH	No visible effect	No visible effect	No visible effect	No visible effect
10% H <sub>2</sub> SO <sub>4</sub>	No visible effect	No visible effect	No visible effect	No visible effect

NVE = no visible effect

#### 24 HOUR IMMERSION

CHEMICAL REAGENT	EFFECT TO LABEL STOCK	EFFECT TO R4300 PRINT	EFFECT TO R6200 PRINT	EFFECT TO R2000 PRINT
MEK	Adhesive softening, yellow and green topcoat fade	NVE without rub, print and topcoat removed with rub	NVE without rub, print and topcoat removed with rub	Slight print smear without rub, print and topcoat removed with rub
IPA	No visible effect	NVE without rub, moderate print smear with rub	No visible effect	NVE without rub, Slight print smear with rub
Methyl Alcohol	Label lifting slightly at edges	NVE without rub, slight print smear with rub	No visible effect	NVE without rub, slight print smear with rub
Gasoline	Slight label edge lift	NVE without rub, severe print smear with rub	NVE without rub, slight print smear with rub	NVE without rub, slight print smear with rub
JP-8 Jet Fuel	No visible effect	NVE without rub, moderate print smear with rub	No visible effect	No visible effect
Mineral Spirits	No visible effect	NVE without rub, moderate print smear with rub	No visible effect	No visible effect
Skydrol® LD4	Slight adhesive ooze, slight yellow color fade	NVE without rub, print and topcoat removed with rub	NVE without rub, print and topcoat removed with rub	NVE without rub, print and topcoat removed with rub
MIL-H-5606 Oil	Slight topcoat staining red	NVE without rub, severe print smear with rub	No visible effect	No visible effect
DI water	No visible effect	No visible effect	No visible effect	No visible effect
5% Alconox® Detergent	No visible effect	No visible effect	No visible effect	No visible effect
10% NaOH	No visible effect	No visible effect	No visible effect	No visible effect
10% H <sub>2</sub> SO <sub>4</sub>	No visible effect	No visible effect	No visible effect	No visible effect

NVE = no visible effect

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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**Note:** All values shown are averages and should not be used for specification purposes.

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