

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

TDS No. B-472  
Effective Date: 03/25/2019

**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

Brady Series R6200

Brady Series R5000

**REGULATORY APPROVALS**

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)

**SPECIAL FEATURES**

B-472 is available in white and yellow.

**Details:**

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Substrate -Adhesive -Total (excluding liner)	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
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Performance properties tested on B-472 white and yellow printed with the Brady Series R4300 and the Brady Series R6200 ribbons and with the Brady Series R5000 ribbon. 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 No visible effect on yellow 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

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 and with the Brady Series R5000 ribbon. 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 R5000 PRINT
MEK	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
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	NVE without rub, slight	NVE without rub, slight

		print smear with rub	print smear with rub	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 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

#### 24 HOUR IMMERSION

CHEMICAL REAGENT	EFFECT TO LABEL STOCK	EFFECT TO R4300 PRINT	EFFECT TO R6200 PRINT	EFFECT TO R5000 PRINT
MEK	Adhesive softening, yellow 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

#### 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.)  
Alconox® is a registered trademark of Alconox Co.  
BIOACT® is a registered trademark of Petroferm, Inc.  
EC-7R™ is a trademark of Petroferm Inc.  
Polyken™ is a trademark of Testing Machines Inc.  
SAE: Society of Automotive Engineers (U.S.A.)  
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**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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