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TECHNICAL I

BRADY B-451 TRANSLUCENT VINYL TAPETDS No. B-451
Effective Date: 12-Oct-2005**Description:****GENERAL****Print Technology:** Thermal Transfer or Dot Matrix**Material Type:** Translucent vinyl**Finish:** Provided in a self-laminated format with a white printable zone and a translucent overlaminating area.**Adhesive:** Permanent acrylic**APPLICATIONS**

B-451 is an excellent material for wire and cable identification. This material has good conformability and is self-extinguishing. B-451 has outstanding water and oil resistance.

RECOMMENDED RIBBONS

Brady Series R2000, R5000 and R7300 black for dot matrix printing

Brady Series R4300 black and R4500 colored (red, blue, green) for thermal transfer printing

REGULATORY/AGENCY APPROVALS

B-451 is UL Recognized to UL969 Labeling and Marking Standard when printed with R4300 and R6200 ribbons. See UL files MH17154 for specific details.

B-451 is UL Recognized to UL969 Labeling and Marking Standard when printed with R2000, R5000, and R7300 dot matrix ribbons. See UL files MH10939 for specific details.

Based on the results of testing using recognized analytical methods performed by a third party independent laboratory, B-451 with a white printable zone is RoHS compliant to the current proposal to the EU Commission Directive 2002/95/(RoHS) for cadmium (<100 ppm), lead (<1000 ppm), hexavalent chromium (<1000 ppm), mercury (<1000 ppm), polybrominated biphenyls (<1000 ppm), and polybrominated diphenyl ethers (PBDE's <1000 ppm).

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE
Thickness	ASTM D 1000 -Total Thickness	0.0040 inch
Adhesion to:	ASTM D 1000	38 oz/in (4.2 oz/in)
-Stainless Steel	20 minute dwell 24 hour dwell	25 oz/in (2.8 oz/in) 33 oz/in (3.7 oz/in)
-Polypropylene	20 minute dwell 24 hour dwell	
Tack	ASTM D 2979 Polyken™ Probe Tack	13.3 oz

	(1 second dwell, 1 cm/sec separation)	
Drop Shear	PSTC-7 (except use 1/2" x 1" sample)	3.3 l
Tensile Strength and Elongation	ASTM D 1000 -Machine -Cross	12 lbs/in (210 N) 11 lbs/in (193 N)
Flammability	ASTM D 1000 Average Burn Time	ABT less tha

Performance properties tested with white printable zone of B-451 printed with Brady S R5000 dot matrix ribbon inks and Brady Series R4300 black thermal transfer ribbon. S around 0.080" OD TFE wire in a self-laminating format.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL
High Service Temperature	30 days at 158° F (70° C)	No visible effect
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
Weatherability	ASTM G 26 30 days in Xenon Arc Weatherometer	No visible effect

PERFORMANCE PROPERTIES	CHEMICAL RESISTA
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White printable zone of B-451 was printed with Brady Series R2000 and R5000 dot m and Brady Series R4300 black thermal transfer ribbon. Samples wrapped around 0.08 wire in a self-laminating format. Except where noted, testing was conducted at room t 24 hour dwell. Testing consisted of 5 cycles of a 10 minute immersion in the specified followed by a 30 minute recovery period.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CH/		
	SUBSTRATE/ADHESIVE	SERIES R2000 INK SERIES R5000 INK	SE
Cleaners and Solvents			
Isopropyl Alcohol	No visible effect	No visible effect	No visib
Mineral Spirits	No visible effect	No visible effect	No visib
Northwoods™ Buzz Saw Terpene Cleaner	No visible effect	No visible effect	No visib
Formula 409®	No visible effect	No visible effect	No visib
Deionized Water	No visible effect	No visible effect	No visib
Fuels, Oils and Lubricants			
Gasoline	Moderate unwrap	No visible effect	No visib
Brake Fluid	No visible effect	No visible effect	No visib
SAE 30 WT Oil at 70° C	No visible effect	No visible effect	No visib
Yellow 77® Wire Pulling Lubricant	No visible effect	No visible effect	No visib
Aerospace Related Fluids			
JP-8 Jet Fuel	No visible effect	No visible effect	No visib
Skydrol® 500B-4	Material destroyed	NA	NA
MIL-H- 5606 Oil	No visible effect	No visible effect	No visib

B-451 is not recommended for use in harsh organic solvents such as methyl ethyl ket 1,1,1-trichloroethane.

Product testing, customer feedback, and history of similar products, support a custom expectation of at least **two years from the date of receipt** for this product as long as stored in its original packaging in an environment *below 80 degrees F and 60% RH*. that our product will perform well beyond this time frame. However, it remains the res user to assess the risk of using such product. We encourage customers to develop fu protocols that will qualify a product's fitness for use, in their actual applications.

Trademarks:

Formula 409® is a registered trademark of the Clorox Company.
Northwoods™ is a trademark of the Superior Chemical Corporation.
Polyken™ is a trademark of Testing Machines Inc.
Skydrol® is a registered trademark of the Mansanto Company.
Yellow 77® is a registered trademark of Ideal Industries, Inc.
ASTM: American Society for Testing and Materials (U.S.A.)
PSTC: Pressure Sensitive Tape Council (U.S.A.)
SAE: Society of Automotive Engineers (U.S.A.)
UL: Underwriters Laboratories Inc. (U.S.A.)

Note: 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 should not be relied upon by Brady customers for designs and specifications, or be relied on as meeting performance criteria. Customers desiring to develop specifications or performance criteria for product applications should contact Brady for further information.

WARRANTY

Brady products are sold with the understanding that the buyers will test them in actual use to determine for themselves their adaptability to their intended uses. Brady warrants that its products are free from defects in material and workmanship, but limits its obligation under warranty to replacement of the product shown to Brady's satisfaction to have been defective at the time Brady sold it. This warranty does not extend to any persons obtaining the products from other than Brady buyers. This warranty is in lieu of any other warranty, express or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, and of any other liability on Brady's part. Under no circumstances will Brady be liable for any loss, damage, or consequential damages of any kind arising in connection with the use, or inability to use, of its products.

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Brady North America | 6555 W. Good Hope Rd | Milwaukee, WI 53223 | USA | Tel: 800-292-2289
Fax: 800-292-2289

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