Technical Data Sheet

BRADY B-508 BRADYTAG® COMPUTER PRINTABLE TAG

TDS No. B-508
Effective Date: 11/22/2011

Description:

GENERAL

Print Technology: Dot Matrix or Thermal Transfer
Material Type: Nomex® Tag
Available Colors: White, Yellow and Green

APPLICATIONS

Designed as a high performance wire bundle and cable identification tag for use in harsh environments.

RECOMMENDED RIBBONS

Dot Matrix
Brady Series R2000
Brady Series R5000
Thermal Transfer
Brady Series R4300
Brady 356126

REGULATORY/AGENCY APPROVALS

Brady B-508 is RoHS compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

SPECIAL FEATURES

B-508 has excellent tear, solvent, and heat resistance properties.

The service temperature range is -70°C (-94°F) to +130°C (266°F)

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000	0.012 inch (0.305 mm)
Hole Tear Strength	LTP 1412* -Machine -Cross	 16 lb (7.3 kg) 21 lb (9.5 kg)
Tensile Strength and Elongation	ASTM D 1000 -Machine direction	 191 lbs/inch (3.4 kg/mm), 22%
Dielectric Strength	ASTM D1000	14,000 Volts
Vacuum Outgassing Tested at an outside laboratory Test samples printed with R4300 Series ribbon	ASTM E595 Specification Limits %Total Mass Loss (TML) – 1.0% maximum %Collected Volatile Condensable Material (CVCM) – 0.10 maximum % Water Vapor Recovered - Report	*White/R4300:* % TML – 1.53 % CVCM – 0.10 % WVR – 1.13 *Yellow/R4300:* % TML – 1.7 % CVCM – 0.10 %WVR – 1.45 *Green/R4300:* % TML – 1.77 % CVCM – 0.09 % WVR – 1.47
Surface Flammability of Materials Using a Radiant Heat Energy Source Tested at an outside laboratory Test samples printed with R4300 Series ribbon	ASTM E162 Common Maximum - 35	Flame Spread Index (Is) (rounded average result of 4 tests) White/R4300 – 15 Yellow/R4300 – 15 Green/R4300 – 5
Specific Optical Density of Smoke (Ds) Tested at an outside laboratory Test samples printed with R4300 Series ribbon	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) *White/R4300:* Flaming mode at 1.5 minutes – 14 Flaming mode at 4.0 minutes – 54 Non-Flaming mode at 1.5 minutes – 1 Non-Flaming mode at 4.0 minutes – 3

		Yellow/R4300 Flaming mode at 1.5 minutes – 24 Flaming mode at 4.0 minutes – 48 Non-Flaming mode at 1.5 minutes – 6 Non-Flaming mode at 4.0 minutes – 9 *Green/R4300* Flaming mode at 1.5 minutes – 14 Flaming mode at 4.0 minutes – 39 Non-Flaming mode at 1.5 minutes – 2 Non-Flaming mode at 4.0 minutes – 4

* Brady Corporation Lab Test Procedure

Performance properties tested on B-508 printed with Series R2000 and R5000 dot matrix ribbons and with Series R4300 and Brady 356126 thermal transfer ribbons. B-508 printed samples were tested on white, yellow and green topcoats. Unless noted, results are the same for all colors of topcoat and all ribbons.

PERFORMANCE PROPERTIES	TEST METHOD	TYPICAL RESULTS
Long Term High Service Temperature	30 days at 266°F (130°C)	Slight discoloring on face and moderate discoloration on back of tag. No visible effect to print.
Long Term High Service Temperature	30 days at 302°F (150°C)	White tag exhibits slight discoloriation on face and back of tag. Yellow tag exhibits severe fade in that yellow color has almost disappeared. Tag exhibits slight fading of the yellow color after 14 days at 150°C. Green tag exhibits moderate discoloration on the face and back of tag. Tag still looks green. Print is legible on all tag colors.
Short Term Service Temperature	7 days at 175°C	White tag exhibits moderate discoloration on the face and back of the tag. Yellow tag exhibits severe fade in that the yellow color has disappeared. Green tag exhibits slight to moderate discoloration; tag still looks green Print is legible on all tag colors.
Short Term Service Temperature	30 minutes at 356°F (180°C)	Slight discoloration and slight warping of tag. No visible effect to print.
Low Service Temperature	30 days at -94°F (-70°C)	No visible effect
Humidity Resistance	30 days at 100°F, 95% R.H.	No visible effect
UV Light Resistance	30 days in UV Sunlighter™ 100	Very slight discoloration to white topcoat. No effect to yellow topcoat. Slight discoloration to green topcoat. Slight discoloration on back of tag. Slight R5000 print fade. No visible effect to R2000, R4300 or 356126 print.
Weatherability	ASTM G155, Cycle 1 30 days in Xenon Arc Weatherometer	Slight print fade with R2000 and R5000. No visible effect to R4300 and 356126 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)	SAE-AS81531 (Sec 4.6.2) 20 eraser rubs with hard hand pressure	Pass - Print still legible with all ribbons.
Solvent Resistance per SAE-AS81531 (Sec 3.4.3) Solution A Solution C Solution D JP-8 Jet Fuel**	MIL-STD-202, Method 215K 3 cycles of 3 minute immersions in specified fluids followed by toothbrush rub after each immersion	Pass - Print still legible with all ribbons in all test fluids.

Solution A: 1 part isopropyl alcohol, 3 parts mineral spirits
Solution B: deleted from MIL-STD-202, Method 215K
Solution C: BIOACT® EC-7R™ terpene defluxer
Solution D: 42 parts water, 1 part propylene glycol monomethyl ether, 1 part monoethanolamine at 70°C
**JP-8 is an additional chemical tested; it is not specified in MIL-STD-202, Method 215K

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

B-508 samples printed with Series R5000 and R2000 dot matrix ribbons and with Series R4300 and Brady 356126 thermal

transfer ribbons. Samples dwelled a minimum of 24 hours before testing. Test conducted at room temperature on B-508 white, yellow and green. Testing consisted of 30 minute fluid immersion. After immersion, the printed image was rubbed on 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of the print and topcoat, if applicable, for each sample. Unless noted, results are the same for the white, yellow and green topcoats.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	WITHOUT RUB	DOT MATRIX WITH RUB R2000 and R5000	THERMAL TRANSFER WITH RUB R4300 and 356126
Methyl Ethyl Ketone	white - 2 print and topcoat yellow - 2 print, 3 topcoat green - 2 print, 3 topcoat	5	5
Propylene Glycol	1	1	1
5% Salt Solution	1	1	1
Isopropyl Alcohol	1	1	2
JP-8 Jet Fuel	1	1	2
Mil 5606 Oil	1, tag slightly stained red	1	2
Gasoline	1	1	3
Skydrol® 500B-4	1	2	3
BIOACT® EC-7R™ Terpene Cleaner	1	1	2
Deionized Water	1	1	1
3% Alconox® Detergent	1	1	1
10% Sodium Hydroxide Solution	1	1	1
10% Sulfuric Acid Solution	2	1	1

Rating scale:
1= no visible effect
2= slight smear, bleed or print removal
3= moderate smear, bleed or print removal (print still legible)
4= severe smear, bleed or print removal (print illegible or just barely legible)
5= complete print and/or topcoat removal
NP= print removed prior to 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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ASTM: American Society for Testing and Materials (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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Brady North America | 6555 W. Good Hope Rd | Milwaukee, WI 53223 | USA | Tel: 414-358-6600 | Fax: 800-292-2289