Close | Print TDS

Technical Data Sheet

BRADY B-7641 ZERO-HALOGEN HEATEX MARKER

TDS No. B-7641
Effective Date: 10/24/2006

Description:

GENERAL
Print Technology: Thermal transfer
Material Type: Heat shrinkable (2:1), halogen free flame retardant polyolefin sleeves

APPLICATIONS
Wire identification and insulation purposes

RECOMMENDED RIBBONS
Brady R4300 Series
Brady R6000 Series
Brady 356126

SPECIAL FEATURES
B-7641 Heatex™ Markers are supplied roll form in a flattened format on a carrier designed for use with computer driven printers. B-7641 is available in white and yellow.

REGULATORY/AGENCY APPROVALS
Brady B-7641 Heatex™ meets the requirments of a halogen-free material per DIN VDE 0472 part 815 (statement based on review of product construction and confirmatory halogen content test run at an independent test laboratory.)

Brady B-7641 is compliant to 2005/618/EC MCV amendment to RoHS Directive 2002/95/EC.

Details:

B-7641 is available in following dimensions

Sizes Inches	Size mm	Minimum ID Supplied (mm)	Maximum ID Recovered (mm)	Recovered Wall Thickness (mm)
3/32	2.4	2.4	1.2	0,43-0,60
1/8	3.2	3.2	1.6	0,55-0,72
3/16	4.8	4.8	2.4	0,55-0,72
¼	6.4	6.4	3.2	0,65-0,80
3/8	9.5	9.5	4.7	0,65-0,75
½	12.7	12.7	6.4	0,65-0,75
¾	19.1	19.1	9.5	0,70-0,85
1	25.4	25.4	12.7	0,85-1,00
1 1/2	38.1	38.1	19.1	0,90-1,05
2	50.8	50.8	25.4	0,90-1,05

Shrink method: Any industrial grade heat gun may be used to shrink B-7641 Heatex™ Markers

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Tensile Strength	ASTM D 638	10 N/mm²
Elongation at break	ASTM D 638	200%
Longitudinal Change	ASTM D2671	+5%, - 10%
Specific gravity	ASTM D 792	1.35 g/cm³
Water absorption	ASTM D 570	0.15%

ELECTRICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Dielectrical strength	ASTM D 2671	20 kV/mm
Volume Resistivity	ASTM D 257	10Ω14 ohm.cm

TEMPERATURE PROPERTIES	TEST METHODS	AVERAGE RESULTS
Heat shock 4 hours at 150°C	ASTM D 2671	No dripping, cracking of flowing
Heat aging 168 hours 150°C	ASTM D 638	160 to 180%
Low temperature Flexibility –30°C	ASTM D2671C	No cracking
Flammability	ASTM D 635	Pass
Continuous operation temperature		-30°C to 105°C
Minimum shrink temperature		> 90°C

Performance properties were tested on B-7641 white and yellow sleeves printed with the R6000 Series, R4300 Series and Brady 356126 thermal transfer ribbons. The results are the same for both colors and ribbons unless noted. Sleeves were tested shrunk on the appropriate sized wires.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
UV Light Resistance	1000 hours in UV Lightchamber and Q-Sun Xenon Test Chamber	No visible effect
Weatherability	1000 hours in QUV weatherometer and Xenon Arc Weatherometer	No visible effect
Humidity resistance	1000 hours at 37°C/95% Relative humidity	No visible effect
Print Adherence per SAE-AS81531 (sec. 3.4.2)	SAE-AS81531 (Sec 4.6.2)Samples tested after unrestricted shrink at 200°C for 3 minutes 20 eraser rubs with hard hand pressure	Pass
Solvent Resistance per SAE-AS81531 (3.4.3) Solution A Solution C Solution D	Samples tested after unrestricted shrink at 200°C for 3 minutes MIL-STD-202, Method 215K 3 cycles of 3 minute immersions in specified fluids followed by toothbrush rub after each immersion	Pass

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 polypropylene glycol monomethyl ether, 1 part monoethanolamine at 70°C

PERFORMANCE PROPERTIES	TEST METHOD
CHEMICAL RESISTANCE	SEE BELOW

Sleeves were printed with R6000 Series, R4300 Series and Brady 356126 thermal transfer ribbons, allowed to dwell 24 hours prior shrinking on appropriate sized wires and testing. Testing was conducted at room temperature and consisted of five cycles of 10 minute immersions in the specified chemicals followed by 30 minute recovery periods. After the final immersion, the samples were removed from the test fluid and the printed image rubbed 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of print for each sample.

Unless otherwise noted, there was no visible effect to the printed image prior to rubbing for the above ribbons.

CHEMICAL REAGENT	APPEARANCE WITHOUT RUB	APPEARANCE OF PRINT AFTER RUB	
		R6000	R4300 and 356126 Ribbon
Isopropyl Alcohol	1	4	1-2
JP-4 Jet Fuel	1	5	3-4*
Diesel (gasoil)	1	5	3-4
Mil 5606 Oil	1	5	3
De-ionized Water	1	1	1
MEK	1	5	3
Gasoline	1	4	4
Motoroil SAE 15W20	1	2	4
Skydrol® 500B-4	1	4	3
10% Salt water solution	1	1	1
Acetone	1	4	4
Toluene	1	4	5
Mineral Spirits	1	5	5
Brake fluid – DOT 4	1	4	4

Rating Scale:

1=no visible effect
2=slight fading or print removal
3=moderate fading or print removal (print still legible)
4=severe fading or print removal (print illegible or just barely legible)
5=complete print removal
NP=print removed prior to rub

*tested in JP-8 Jet fuel

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 27°C (80°F) 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.

Trademarks:
ASTM: American Society for Testing and Materials (U.S.A.)
BIOACT® is a registered trademark of Petroferm, Inc.
DIN: Deutsche Industry Norm
EC-7R™ is a trademark of Petroferm, Inc.
EC-7™ is a trademark of Petroferm Inc.
S. I.: International System of Units
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Note: All values shown are averages and should not be used for specification purposes.
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Brady Europe | Industriepark C3 Lindestraat 20 | B9240 Zele | Belgium | Tel: 52.45.7811 | Fax: 52.45.7812