Technical Data Sheet

Panduit Raised Panel Label

This specification is intended to outline the physical and chemical properties of *PANDUIT*'s GMH3-A material and include the following printable material identifiers:

Printable Material Suffixes		
AQT	A0T	
A8T	AMT	
AST	AUT	
AWT	*-30-ES	

PRODUCT SPECIFICATIONS:

Description:	Material is RoHS compliant (European Union directive 2002/95/EC). GMH3-A consists of a polyester film laminated to a microcellular foam backed high tack adhesive.
Print Methods:	This material is recommended for thermal transfer printing.
Standard Colors:	Blue, black, yellow, green, red, silver and orange.
Thickness:	27 - 32 mils (ASTM D3652)
Recommended Ribbons:	RMR4BL-A, RMR4WH
Service Temperature Range:	-40°F to 212°F (-40°C to 100°C)
Minimum Application Temperature:	50°F (10°C)
Storage Conditions:	Store at 70°F (21°C) and 50% Relative Humidity.

PROPERTIES:	PERFORMANCE:
Peel Adhesion to:	
-Stainless Steel	100 oz/in (PSTC-101, 20 min dwell) 150 oz/in (PSTC-101, 24 hour dwell)
-Smooth ABS	100 oz/in (PSTC-101, 20 min dwell) 150 oz/in (PSTC-101, 24 hour dwell)
-Powdercoated surface	100 oz/in (PSTC-101, 20 min dwell) 150 oz/in (PSTC-101, 24 hour dwell)
-Polycarbonate	Tears (PSTC-101, 20 min dwell) Tears (PSTC-101, 24 hour dwell)
Shear Test	24+ hours (PSTC-107)
Tack	72.0 oz/in (PSTC-16)

Samples were thermal transfer printed with RMR4BL-A, RMER*BL black resin ribbon and RMR*WH, RMER*WH white resin ribbon on the Panduit TDP43MY AND TDP43ME printer. Thermal transfer printed samples were tested as follows:

UV Resistance:	12000 hours* no change observed (ASTM G154)
Humidity Resistance:	1000 hours at 100F(37C) and 95% R.H, no visible change observed

*Test conducted in the QUV Weatherometer to assimilate 20 years of expected outdoor exposure under normal conditions.

Long Term High Service Temperature:	1000 hours at 212F(100C), no visible change observed
Long Term Low Service Temperature:	1000 hours at –40F(-40C), no visible change observed
Abrasion Resistance:	Taber abraser, CS-10 wheels/500 gm wt/175 cycles, no visible change observed (ASTM D3389).

PROPERTIES FOR SOLAR APPLICATION:	**PERFORMANCE:**
Short term low temperature exposure:	30 days at -51C, no visible change observed
Relative Lightfastness and weatherability:	1000 hours, no change observed (ASTM D3424, Method 4)
Tensile Strength:	MD: 3985 PSI (ASTM D3759)
Elongation:	MD: 150% (ASTM D3759)
Tack:	9.2N (ASTM D2979)
Flammability:	230 seconds (ASTM D1000)
Adhesion:	44.7 oz/in (ASTM D3330)

CHEMICAL/SOLVENT RESISTANCE: Thermal Transfer Print with Black Ribbon

The testing was conducted at room temperature. Samples were thermal transfer printed with RMR4BL-A, RMER*BL black resin ribbon on the Panduit TDP43MY AND TDP43ME printer. Separate sets were conditioned for 24 hours before being immersed in the following solvents. Testing consisted of 5 cycles of 10 minute immersions in the specified chemical reagent followed by a 30 minute recovery period. After final immersion, samples were rubbed 10 times with a cotton swab saturated with the test fluid. Visual observations were noted for any smear or loss of legibility.

Chemical/Solvent	**Visual Observation of Print without rub**	**Visual Observation of print with rub**
Isopropyl alcohol	No change	No change
Methyl Ethyl Ketone	No change	Loss of print legibility
Alcohol mix*	No change	No change
Gasoline	No change	No change
Diesel	No change	No change
Skydrol	No change	No change
Mil 5606 oil	No change	No change
1,1,1-Trichloroethane	No change	No change
5% Sodium Hydroxide	No change	No change
10% Sulfuric acid solution	No change	No change
Deionized water	No change	No change
10% Salt water solution	No change	No change
n-Hexane	No change	No change
Iso-octane	No change	No change
Ethanol	No change	No change
ASTM#3 oil	No change	No change
Acetone	No change	No change
Bleach	No change	No change

*Alcohol mix is 50% ethanol, 30% methanol, and 20% water by volume.

MIL-STD-202G, Method 215K, Solution A, C and D:
3 cycles of three minute immersions in specified fluids followed by toothbrush rub after each immersion. Print remains legible in all three fluids.

CHEMICAL/SOLVENT RESISTANCE – Thermal Transfer Print with White Ribbon

The testing was conducted at room temperature. Samples were thermal transfer printed with RMR*WH, RMER*WH white resin ribbon on the Panduit TDP43MY and TDP43ME printer. Separate sets were conditioned for 24 hours before being immersed in the following solvents. Testing consisted of 5 cycles of 10 minute immersions in the specified chemical reagent followed by a 30 minute recovery period. After final immersion, samples were rubbed 10 times with a cotton swab saturated with the test fluid. Visual observations were noted for any smear or loss of legibility.

Chemical/Solvent	Visual Observation of Print without rub	Visual Observation of print with rub
Isopropyl alcohol	No change	No change
Methyl Ethyl Ketone	Loss of print legibility	Loss of print legibility
Alcohol mix*	No change	Loss of print legibility
Gasoline	No change	No change
Diesel	No change	No change
Skydrol	No change	Loss of print legibility
Mil 5606 oil	No change	No change
1,1,1-Trichloroethane	No change	Loss of print legibility
5% Sodium Hydroxide	No change	No change
10% Sulfuric acid solution	No change	No change
Deionized water	No change	No change
10% Salt water solution	No change	No change
n-Hexane	No change	No change
Iso-octane	No change	No change
Ethanol	No change	Loss of print legibility
ASTM#3 oil	No change	No change
Acetone	Loss of print legibility	Loss of print legibility

*Alcohol mix is 50% ethanol, 30% methanol, and 20% water by volume.

MIL-STD-202G, Method 215K, Solution A, C and D:
3 cycles of three minute immersions in specified fluids followed by toothbrush rub after each immersion. Print remains legible in solution D but is illegible in solutions A and C.

Approvals:
UL Recognized: UL969 File Number: MH14979
CUL Recognized: C22.2 No. 0.15-01 File Number: MH14979

LIMITED WARRANTY

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