

TECHNICAL DATA SHEET

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Document number: TTDS-076
Issue: 2
Date: November 2002

HW high tack white polyester

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|-------------------------------------|--|
| MATERIAL DESCRIPTION: | Tyco "HW" is a thermal transfer printable white polyester film with a high tack permanent acrylic adhesive. |
| USE: | Designed for application to rough surfaces or where increased adhesion is required. "HW" is also excellent for bar-coding, electronic PCB, component and general labeling applications. The high tack adhesive of "HW" will bond to the most demanding surfaces, including textured and contoured surfaces. For guaranteed print performance and durability, use with Tyco's RHD series ribbon. |
| PRINT METHOD/RIBBON: | Preferred Printer/Ribbon combination: Thermal Transfer: Tyco T308S-PRINTER, Tyco 1330-0607-10 Ribbon Alternative Printer/Ribbon combinations: Thermal Transfer: T312M-PRINTER, Tyco 1330-0607-10 Ribbon Thermal Transfer: T312S-PRINTER, Tyco 1330-0607-10 Ribbon Thermal Transfer: T200 Series, Tyco 1330-3300-101TT Ribbon Thermal Transfer: T400 Series, Tyco 1330-0607-10 Ribbon |
| SHELF LIFE: | 2 years when stored at 21°C (70°F) at 50% R.H. |
| ADHESIVE: | 'High-tack' permanent acrylic |
| COLOR: | White |
| APPROXIMATE TOTAL THICKNESS: | Facestock: 0.051mm (0.0020 in) Adhesive: 0.046mm (0.0018 in) Liner: 0.081mm (0.0032 in) |

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| ADHESION: | ASTM-D-3330 (180° peel direction), 10minute dwell at 21°C (70°F): Stainless Steel: typical failure at 96N/100mm (88oz/in) Polycarbonate: typical failure at 98N/100mm (90oz/in) Polypropylene: typical failure at 80N/100mm (73oz/in) HDPE: typical failure at 59N/100mm (54oz/in) Smooth Powder coating: typical failure at 93N/100mm (85oz/in) Finely Textured Powder coating: typical failure at 54N/100mm (49oz/in) Glass: typical failure at 102N/100mm (93oz/in) |
| DIMENSIONAL STABILITY: | <1% shrinkage of 6"x6" sample when exposed to 71°C (160°F) for 42 hours |
| SERVICE TEMPERATURE: | -40° C to 150° C (-40° F to 302° F) |
| MINIMUM APPLICATION TEMPERATURE: | 10°C (50°F) |
| SOLDER IMMERSION: | After 10-second immersion at 250°C (480°F) in molten solder: slight yellowing, print remains legible. |
| FLAMMABILITY: | UL94 rating 94VTM-2, slow to self extinguish |
| UV TRANSMISSIBILITY: | < 0.01% |
| ABRASION RESISTANCE: | Printing (text and graphics) remain legible for 100 revolutions of CS-10 wheels with 500 gram load (Taber-Abraser Model 5130) Print remains legible after repeated rub testing as per AS-81531 |
| CHEMICAL SOAK RESISTANCE: | Excellent resitance Samples soaked in fluids for four hours at room temperature, unless otherwise stated. Samples applied to stainless steel panels 24 hours prior to immersion and evaluated one hour after removal from the fluids. Adhesion measured at 180° |

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peel angle per ASTM D3330- typical results are shown:

| <u>Chemical</u> | <u>Adhesion</u> | <u>Effect</u> | <u>Edge Penetration</u> |
|-------------------|-----------------|---------------|-------------------------|
| Isopropyl alcohol | 96N/100mm | No change | 0.6mm |
| Detergent | 101N/100mm | No change | 1.3mm |
| Engine Oil | 112N/100mm | No change | 0.6mm |
| Water (48 hours) | 73N/100mm | No change | 0.1mm |
| Toluene | 55N/100mm | No change | 5.2mm |
| Acetone | 65N/100mm | No change | 4.9mm |
| Brake Fluid | 107N/100mm | No change | 0.1mm |
| Gasoline | 61N/100mm | No change | 4.6mm |
| Diesel Fuel | 102N/100mm | No change | 0.7mm |
| Hydraulic Fluid | 105N/100mm | No change | 0.0mm |

PRINT PERFORMANCE:

Good resistance to fluids- see below. Samples printed using Tyco recommended ribbons. All tests conducted at room temperature unless otherwise stated

| <u>FLUID</u> | <u>EFFECT</u> |
|--|-------------------------------|
| <u>MIL 202F</u> | |
| IPA/Mineral spirits | Print remains clearly legible |
| Bioact | Print remains clearly legible |
| Butyl Cellusolve | No visual effect |
| IPA (Continued wipe testing - 50 wipes) | No visual effect |
| Water (7 day immersion) | No visual effect |
| Engine Oil at 250°F (121°C) (48 hour soak) | No visual effect |
| Engine Coolant at 200°F (93°C) (4 hour soak) | No visual effect |

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