MATERIAL DESCRIPTION: Thin wall flame retarded radiation cross-linked modified polyolefin heat-shrinkable tubing, assembled as organized cut sleeves in a “ladder” configuration. 3:1 and 2:1 shrink ratio products available.

USE: Identification of wires and cables by computer-based printing onto sleeves. Sleeves can also provide terminal insulation and strain relief. Suitable for a wide variety of applications, including aerospace, military and rail applications.

PRINT METHOD/RIBBON: Thermal transfer: Tyco T312M-PRINTER, Tyco TMS-RJS-RIBBON-4RPSCE (black), Tyco 1330-3102-10 (white)
Thermal transfer: Tyco T200 Series, Tyco TMS-101-RIBBON-4RPSCE (black), Tyco TMS-101-RIBBON-WH-4RPSCE (white)
Thermal transfer: Tyco T408M-PRINTER, Tyco TMS-RJS-RIBBON-4RPSCE
Thermal transfer: QLS-2001, Tyco TMS-RJS-RIBBON-4RPSCE
Dot matrix: Epson LQ870 printer, Tyco TMS-SYSTEM-SIX-RIBBON-A ribbon.
Dot matrix: AM6310, Tyco 1892BK04-RIBBON

SERVICE TEMPERATURE: -55°C to +135°C (-67°F to +275°F).

MAXIMUM STORAGE TEMPERATURE: 40°C (104°F).

COLORS: White and yellow. Nine other colors available on request. TMS-SCE-2X sleeves meet the requirements of MIL-STD-104 Class 1.

SHELF LIFE Sleeves meet the material and performance requirements of SAE-AMS-DTL-23053/5 Classes 1 & 3.
TMS-SCE HEAT SHRINK SLEEVE

AGENCY APPROVALS:
- UL recognised Standard 224 (File E35586).
- CSA certified (File 31929).

TENSILE STRENGTH:
- 10.3MPa minimum (SAE-AMS-DTL-23053/5).

ULTIMATE ELONGATION:
- 200% minimum (SAE-AMS-DTL-23053/5).

2% SECANT MODULUS:
- 172.4MPa maximum (SAE-AMS-DTL-23053/5).

LONGITUDINAL CHANGE:
- -20% maximum (-5% maximum for TMS-SCE-2X products) (SAE-AMS-DTL-23053/5).

HEAT AGEING:
- 100% UE retained and print legible after 168 hours at 175°C (347°F).

HEAT SHOCK:
- No cracking, dripping or flowing and print legible after 4 hours at 250°C (482°F).

LOW TEMPERATURE FLEXIBILITY:
- No cracking after 4 hours at -55°C (-67°F), 11mm (7/16 inch) mandrel bend.

MOLD GROWTH:
- Print legible after 56 day incubation (ISO 846B)- tensile strength and ultimate elongation maintained after testing.

FLAMMABILITY:
- TMS-SCE 2X is UL224-VW-1 rated.
- TMS-SCE is UL224-all tube flame test rated
  - Burn time 60 seconds maximum (ASTM D2671 Procedure B).
  - No flag burn; no burning of cotton or dripping (ASTM D2671 Procedure C).

WATER ABSORPTION:
- 0.5% maximum (ASTM D570).
- 19.7MV/m minimum (ASTM D2671).

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TMS-SCE HEAT SHRINK SLEEVE

DIELECTRIC STRENGTH:

PRINT PERMANENCE:
Print legible after 50 rubs (SAE AS81531, 4.6.2).


FLUID RESISTANCE:

<table>
<thead>
<tr>
<th>THREAT</th>
<th>TEST</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL-L-7808 lubricating oil</td>
<td>24 hours at 24°C (75°F), SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>MIL-L-23699 lubricating oil</td>
<td>24 hours at 24°C (75°F), SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>MIL-H-5606 hydraulic fluid</td>
<td>24 hours at 24°C (75°F); SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>MIL-T-83133 aircraft fuel (JP-8)</td>
<td>24 hours at 24°C (75°F); SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>Aviation gasoline (100/130)</td>
<td>24 hours at 24°C (75°F); SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>Skydrol™ 500 hydraulic fluid</td>
<td>24 hours at 24°C (75°F); SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>5% salt water (A-A-694)</td>
<td>24 hours at 24°C (75°F); SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
<tr>
<td>MIL-A-8243 anti-icing fluid</td>
<td>24 hours at 24°C (75°F); SAE AS81531 4.6.2 (20 rubs)</td>
<td>Print legible</td>
</tr>
</tbody>
</table>

Notes: See Tyco specification RT 1805 for full TMS-SCE performance & dimensional details.

Some types of neoprene insulation used in jackets contain additives that can migrate to the surface and discolor the polyolefin TMS-SCE sleeves. Any discoloration is dependent on the composition of the neoprene, combined with application conditions. Users should independently evaluate the suitability of TMS-SCE sleeves for applications involving neoprene-jacketed cables.

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