

TECHNICAL DATA SHEET

Document number: TTDS-023

Issue: 3

Date: August 2005

TMS-SCE Heat shrinkable sleeves

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. Sleeves meet the material and performance requirements of SAE-AMS-DTL-23053/5 Class 1.
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-4SCE (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.

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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:	UL rated, all tubing flame test. Burn time 60 seconds maximum (ASTM D2671 Procedure B).
WATER ABSORPTION:	0.5% maximum (ASTM D570).
COPPER MIRROR CORROSION:	Non-corrosive; no pitting or blackening of mirror after 16 hours at 175°C (347°F) (SAE-AMS-MIL-23053/5).

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DIELECTRIC STRENGTH: 19.7MV/m minimum (ASTM D2671).

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

Print legible after 30 strokes (MIL-STD-202F, method 215J).

FLUID RESISTANCE:

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

Notes: See Tyco specification RW -2511 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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