# TECHNICAL DATA SHEET

## HT-SCE Heat shrinkable sleeves

Document number: TTDS-020
Issue: 4
Date: January 2013

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| **MATERIAL DESCRIPTION:** | Thin wall, flame retarded radiation cross-linked fluoropolymer heat-shrinkable sleeve, assembled as organized cut sleeves in a “ladder” configuration. 2:1 shrink ratio. |
| **USE:** | Identification of wires and cables by computer-based printing onto sleeves. Sleeves can also provide terminal insulation and strain relief. Suitable for many high temperature applications, especially military and aerospace applications. Can be used in space applications where low vacuum outgassing is required. |
| **PRINTING SYSTEM:** | Refer to TE document 411-121005 IDENTIFICATION PRINTER PRODUCT RIBBON MATRIX for the recommended printer/product/ribbon combination |
| **SERVICE TEMPERATURE:** | -55°C to +225°C (-67°F to +437°F). |
| **MINIMUM RECOVERY TEMPERATURE:** | 135°C (275°F). |
| **MAXIMUM STORAGE TEMPERATURE:** | 40°C (104°F). |
| **COLORS:** | White or black. |
| **HEAT AGEING:** | No cracking and print legible after 168 hours at 225°C (437°F). |
| **HEAT SHOCK:** | No cracking, dripping or flowing and print legible after 4 hours at 275°C (527°F). |
| **TEMPERATURE CYCLING:** | No cracking, dripping or flowing and print legible after 6 cycles from -196°C (-320°F) to +200°C (+392°F). |
| **ULTIMATE ELONGATION:** | 200% minimum (ASTM D2671). |
| **TENSILE STRENGTH:** | 24MPa minimum (ASTM D2671). |
| **MOLD GROWTH:** | Rating 1 maximum (ASTM G21). |
| **FLAMMABILITY:** | UL 224 VW-1 rated |



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| **VACUUM OUTGASSING:** | 1% maximum Total Mass Loss (TML) after 24 hours at 130°C (266°F); pressure <10-5 Torr. (ASTM-E595)<br>0.1% maximum Vacuum Condensable Material (VCM) after 24 hours at 130°C (266°F); pressure <10-5 Torr; condensing surface at 18°C (64°F). |
| **CORROSIVE EFFECT (COPPER MIRROR):** | Non corrosive, 16 hours at 200°C (392°F), ASTM D2671 Procedure A. |
| **DIELECTRIC STRENGTH:** | 20MV/m minimum (ASTM D2671). |
| **VOLUME RESISTIVITY:** | $10^{12}$ Ωcm minimum (ASTM D2671). |
| **PRINT PERMANENCE AFTER RECOVERY:** | Print legible after 100 rubs (SAE AS59421, Print Adherence).<br>Print legible after 100 strokes (MIL-STD-202G, Method 215). |
| **FLUID RESISTANCE:** | Fluid immersion for 24 hours at 23 ± 2°C (73°F) followed by SAE AS 5942, 1kg load, 20 rubs. |
| Sodium chloride (5% by weight in water) | Print legible |
| MIL-T-83133 Aircraft fuel (JP-8) | Print legible |
| MIL-L-23699 Lubricating oil | Print legible |
| Propylene glycol de-icing fluid (50% solution in water) | Print legible |
| Aviation gasoline (100/130) | Print legible |
| Skydrol™ 500[2] hydraulic fluid | Print legible |

See TE specification RW-2512 for full HT-SCE performance & dimensional details.

[1] SAE AS 5942 supersedes SAE AS81531 Print Adherence. Product performance has not changed.
[2] Skydrol is a registered trade mark of Solutia



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