

TECHNICAL DATA SHEET

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Document number: TTDS-108
Issue: 4
Date: May 2007

HX-SCE Heat shrinkable sleeves

MATERIAL DESCRIPTION:	Thin wall, zero-halogen, low smoke, low toxicity, radiation cross-linked, UV stabilised polyolefin heat-shrinkable tubing, assembled as cut sleeves organized in a ladder format.
USE:	Identification of wires and cables by computer-based printing onto sleeves. Ideal for applications where limited fire hazard characteristics are critical. The zero halogen material coupled with low smoke and low toxic fume emissions make this product ideal for use in enclosed spaces such as mass transit, marine and industrial installations. This product is not recommended where strain relief properties are required.
PRINT METHOD/RIBBON:	Thermal transfer: T312M-PRINTER, 1966-RIBBON T212M-PRINTER, T200-RIBBON-1966
SERVICE TEMPERATURE:	-40°C to +105°C (-22°F to +221°F).
MINIMUM SHINK TEMPERATURE:	135°C (275°F).
COLORS:	White or yellow. Other colors available on request.
FLAMMABILITY:	Self-extinguishing (ASTM D2671 Procedure B).
OXYGEN INDEX:	34% minimum (BS EN ISO 4589-2 [1996]).
SMOKE EMISSION A₀	0.017 maximum (BS 6853 [1999] Annex D.8.3).
TOXIC FUME R:	< 1 (BS 6853 [1999] Annex B – Mass based test method - NF X 70-100)
LUL TOXIC FUME:	No Halogens, no P, S, or N sources above trace level (LUL E1042:A6 [2002]).
DIELECTRIC STRENGTH:	15kV/mm minimum.
WATER ABSORPTION:	1% maximum after 24 hours at 23°C (73°F).

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COPPER MIRROR CORROSION:	8% maximum after 16 hours at 150°C (302°F).
LONGITUDINAL CHANGE:	+5% to -10%.
TENSILE STRENGTH:	7MPa minimum.
ULTIMATE ELONGATION:	80% minimum.
SECANT MODULUS:	200MPa maximum at 2% elongation.
UV RESISTANCE: (base polymer)	Tensile strength > 90% & Ultimate elongation > 40% of original value after 1000 hours (ASTM G53: UVA [100% dry cycle]; UVB [8 hours dry/4 hours wet cycle]).
PRINT PERMANENCE:	
- ADHERENCE	Meets the requirements of SAE AS81531 4.6.2 (50 rubs).
- FLUID RESISTANCE	Meets the requirements of MIL-STD-202F method 215J.

**FLUID RESISTANCE,
Additional:**

THREAT (*indicates thermal transfer printing with 1966 ribbon only)	TEST	EFFECT
Xylene/butylacetate/cyclohexan one mix (Paint stripper)	10 wipes dry tissue	Print legible
Locomotive diesel	10 wipes dry tissue	Print legible

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Tunnel dust/white spirits	LUL C3349 (72 hours, 20 strokes dry tissue)	Print legible
Water	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Tunnel Dust and Oil (50%/50%)*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Tunnel Dust and Water (50%/50%)*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
White Spirits*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Diesel*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Grease*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Glycol rail de-icer (50% glycol/50% water)	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Cleaning solvent*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Surface Cleaner (PGP500)*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
Multi-Purpose Graffiti remover gel*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible
CGR gel (Chewing gum remover)*	LUL C3349 (72hours, 20 strokes dry tissue)	Print legible

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IRM 902 oil	EN50343 (24 hours at 50C(122F) 10 wipes)	Print legible
Hydrochloric acid 5% solution	EN50343 (1 minute at 23C(73F) 10 wipes)	Print legible
Sodium Hydroxide 5% solution	EN50343 (1 minute at 23C(73F) 10 wipes)	Print legible
Heat Aging	EN50343 (240hrs 120C, 10 wipes)	Print legible
Wash cycle test*	25 cycles at 75C, 25 wipes	Print legible
Aircraft fuel (ISO 1817 Liquid B)	24 hours at 40°C (104°F) then 25 strokes dry tissue; IEC 60684-2	Print legible; 4MPa TS & 90% UE retained
Silicone fluid (S1714)	24 hours at 50°C (122°F) then 25 strokes dry tissue; IEC 60684-2	Print legible; 4MPa TS & 90% UE retained
Propan-2-ol	24 hours at 23°C (73°F) then 25 strokes dry tissue; IEC 60684-2	Print legible; 4MPa TS & 90% UE retained
De-icing fluid (50% ethylene glycol)	24 hours at 23°C (73°F) then 25 strokes dry tissue; IEC 60684-2	Print legible; 4MPa TS & 90% UE retained
Sullage fluid (formaldehyde/cresol)	24 hours at 23°C (73°F) then 25 strokes dry tissue; IEC 60684-2	Print legible; 4MPa TS & 90% UE retained

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