

TECHNICAL DATA SHEET

Document number: TTDS 122 Issue: 1

Date: July 2005

SMS-TMS Heat Shrink Tubing

MATERIAL DESCRIPTION: Flame retarded, radiation cross-linked 3:1 shrink ratio polyolefin heat-shrinkable tubing. USE: The tubing meets the performance requirements of MIL-DTL-23053/5 classes 1. The identification marks are permanent immediately after printing and remain legible even when exposed to solvents, fuels and oils. The printed tubing meets the mark permanence requirements of MIL-M81531 and MIL-STD-202 both before and after shrinking. The sleeves are low profile and lightweight. They may be used to provide strain relief and insulation in addition to identification. They are available in 4 widths (6, 9, 12 and 19 mm) ... PRINT METHOD: Thermal transfer: Tyco T107M-SMS-PRINTER, SERVICE TEMPERATURE: -55°C to +135°C

COLORS:

White or Yellow.

Property		Value	Test Method
1.	General		
-	Total thickness Shrink ratio	Maximum 0.5 mm 3:1	Micrometer
2.	Physical properties		
-	Tensile strength	10.3 MPa (1500 psi) minimum	MIL-DTL-23053, section 4.6.13
-	Ultimate elongation	200 % minimum	MIL-DTL-23053, section 4.6.13
-	Heat aging 168 hours at 175°C	minimum 100% ultimate elongation	MIL-DTL-23053, section 4.6.9
-	Heat shock 4 hours at 250°C	no cracking, dripping or flowing	MIL-DTL-23053, section 4.6.8

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3.	Electrical properties		
-	Dielectric strength	19.7 kV/mm (500V/mil) minimum	ASTM D 2671
4.	Chemical properties		
-	Flammability	No flaming or glowing after 1 minute	ASTM D 2671, procedure B
-	Corrosive effect 16 hours at 175°C	Non-corrosive (copper contact)	MIL-DTL-23053, section 4.6.10.1
		No pitting or blackening (copper mirror)	MIL-DTL-23053, section 4.6.10.2
5.	Chemical resistance of text printed in T107M	Flat samples	Shrunk samples
-		Flat samples	Shrunk samples
	text printed in T107M Mil-Std-202F Method 215J 3 cycles of 3 minutes immersion in specified fluids, followed by 10 rubs with a toothbrush after	Flat samples	Shrunk samples
	text printed in T107M Mil-Std-202F Method 215J 3 cycles of 3 minutes immersion in specified fluids, followed by 10 rubs with a toothbrush after each immersion		

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Water	No smearing. Print easily legible	Little smearing but print easily legible.
Eurosuper	Smearing but print easily legible	Little smearing but print easily legible.
Ethanol	Little smearing but print easily legible.	Little smearing but print easily legible
Ethylacetate	Smearing but print easily legible	Little smearing but print easily legible
Sabesto oil**	Smearing but print easily legible	Little smearing but print easily legible
 Mil-M81531 24 hours immersion in specific fluids, followed by 20 rubs with a pencil erasure 	Flat samples	Shrunk samples
Skydrol*	Little smearing but print easily legible	Severe smearing but print legible
Isopropylalcohol	No smearing. Print easily legible	Little smearing but print easily legible
Diesel	Little smearing but print easily legible	Severe smearing but print legible.
Water	No smearing. Print easily legible	Little smearing but print easily legible.
Eurosuper	Severe smearing but print legible	Little smearing but print easily legible.
Ethanol	No smearing. Print easily legible.	No smearing. Print easily legible.
Ethylacetate	Smearing but print legible	No smearing. Print still legible.
Sabesto oil**	Severe smearing but print legible	Little smearing but print easily legible

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	Flat samples	Shrunk samples
6. UV light stability - UV		
filter	<u>White</u>	White
	Moderate discoloration of the tube	Moderate discoloration of the tube
30 days in Suntester	(yellowing). No visible effect on text.	(yellowing). No visible effect on text.
(simulates 1 year outdoor		
exposure)	Yellow	Yellow
	Severe discoloration of the tube	Severe discoloration of the tube
	(yellow color disappears). No visible	(yellow color disappears). No visible
	effect on text.	effect on text.
	Flat samples	Shrunk samples
7. UV light stability - glass		
filter	<u>White</u>	<u>White</u>
	Moderate discoloration of the tube	Moderate discoloration of the tube
30 days in Suntester	(yellowing). No visible effect on text.	(yellowing). No visible effect on text.
(simulates 1 year exposure		
behind window glass)	<u>Yellow</u>	Yellow
	Severe discoloration of the tube	Severe discoloration of the tube
	(yellow color disappears). No visible	(yellow color disappears). No visible
	effect on text.	effect on text.
8. Temperature stability		
o. Temperature stability	85°C	
- Minimum recovery	88.0	
temperature		
temperature	40°C	
- Maximum storage		
temperature		
9. Humidity resistance	Flat samples	Shrunk samples
- 30 days at 45°C, 85 % R.H	No visible effect	No visible effect

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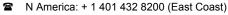
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* Skydrol is a registered trademark from Solutia

** Sabesto is a registered trademark from Würth

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