

## HIGH TEMPERATURE FLUROELASTOMER HEAT – SHRINKABLE MARKER SLEEVE FOR USE WITH SUMIMARK III & IV MARKING SYSTEMS 2 : 1 Shrink Ratio

### MILITARY SPECIFICATION



### TYPICAL FEATURES

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| <p>1) SUMIMARK SM3 - 60 is a highly fluid resistant, flame retarded fluoroelastomer heat-shrinkable marker sleeve tubing that meets all of the material and functional requirements of military specification AMS-DTL-23053/13.</p> <p>2) SUMIMARK SM3 - 60 is specifically designed for use with the SUMIMARK III or IV Marking System. It is <i>not</i> compatible with earlier Sumimark Model 1 and Model 2 systems.</p> <p>3) Shrink temperature is 120° C, considerably lower than other fluoroelastomer shrink tubings available on the market.</p> <p>4) SUMIMARK SM3 - 60 when used in conjunction with the SUMIMARK III or IV Marking System, produces marked</p> | <p>sleeves that meet or exceed the print adherence requirements of SAE-AS5942. Sumimark SM3 - 60 also meets the stringent outgassing requirements of NASA SP-R-0022A.</p> <p>5) SUMIMARK SM3 - 60 tubing, when used in conjunction with the SUMIMARK III or IV Marking Systems, produces marked sleeves that remain legible after prolonged UV exposure (720 hrs. xenon-arc lamp).</p> <p>6) Operating temperature range is -40° C to +200° C and up to 300° C for short periods.</p> <p>7) SUMIMARK SM3 - 60 is recommended for applications where resistance to aggressive solvents and high temperatures is required. SM3 - 60 is ideally suited for high temperature wire and cable markers and identification in applications such as aircraft engine environments.</p> |
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### STANDARD SIZES

SIZE	INSIDE DIAMETER AS SUPPLIED (MIN)		INSIDE DIAMETER AFTER RECOVERY (MAX)		WALL THICKNESS AFTER RECOVERY (NOM)	
	INCH	(MM)	INCH	(MM)	INCH	(MM)
1/8	.125	(3.2)	.062	(1.6)	.031	(0.80)
3/16	.187	(4.8)	.093	(2.4)	.035	(0.90)
1/4	.250	(6.4)	.125	(3.2)	.035	(0.90)
3/8	.375	(9.5)	.187	(4.8)	.035	(0.90)
1/2	.500	(12.7)	.250	(6.4)	.035	(0.90)
3/4	.750	(19.1)	.375	(9.5)	.042	(1.10)
1	1.000	(25.4)	.500	(12.7)	.049	(1.20)
1½	1.500	(38.1)	.750	(19.1)	.055	(1.40)

**Standard Colors:** White & black (other colors available per factory acceptance and quote)

**Standard Package:** Spooled (S)

**How to Order:** (Type of material) (Size) (Color) (Packaging)

**Example:** SM3 - 60 1/4 Black S

# SM3 - 60 SPECIFICATION VALUES

PROPERTY (UNITS)	TEST METHOD	REQUIREMENT
<b>Physical:</b> Tensile strength (psi) Elongation (%) Tensile Stress @ 200% elongation (psi) Low temperature flex. (-40° C) Heat shock (300° C, 4 hrs.) Heat resistance (250° C, 168 hrs.) Elongation (%) Tensile strength (psi) Longitudinal change (%)	ASTM D638 ASTM D638 ASTM D412 AMS-DTL-23053 AMS-DTL-23053  ASTM D638 ASTM D638 AMS-DTL-23053	1200 min. 250 min. 2000 max. no cracking no cracking  200 min. 1200 min. -20 max.
<b>Electrical:</b> Dielectric strength (volts/mil) Volume resistivity (ohm-cm)	ASTM D876 ASTM D876	200 min. 1.0 X 10 <sup>11</sup> min.
<b>Print Adherence:</b> Abrasion (eraser method) Fluid resistance Isopropyl Alcohol/Mineral Spirits Blend Terpene Defluxer H <sub>2</sub> O/PGME/Monoethanolamine <b>UV resistance:</b>	SAE-AS5942 MIL-STD-202G Method 215J  720 hrs. xenon-arc lamp exposure	20 rubs  10 rubs (x3) 10 rubs (x3) 10 rubs (x3) marks legible
<b>Chemical:</b> Copper mirror corrosion (175° C, 16 hrs.) Water absorption (%) Fluid resistance (23° C, 24 hrs.) Tensile strength (psi) Elongation (%) Flammability Shrink temperature, nominal Vacuum Outgassing TML, % CVCM, %	AMS-DTL-23053 ASTM D570  AMS-DTL-23053 AMS-DTL-23053 AMS-DTL-23053  ASTM-E-595 ASTM-E-595	no corrosion 0.5 max.  1200 min. 250 min. 15 sec. max. 120° C  1.0 max. 0.1 max.

**Specification references:** SAE-AS5942  
 AMS-DTL-23053/13  
 NASA SP-R-0022A


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Rev. 6/20/12