

## OVEREXPANDED FLEXIBLE POLYOLEFIN MARKER SLEEVES

### 3 : 1 Shrink Ratio

**UL RECOGNIZED 125°C 600V (VW-1)**



**RoHS Compliant**

### TYPICAL FEATURES

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| <p>1) SUMIMARK SM23 tubing is a very flexible, flame retarded, heat-shrinkable polyolefin tubing that is recognized by Underwriters' Laboratories (UL) Subject 224 as 125°C, 600V (VW-1) rated. SM23 has a 3 to 1 expansion ratio, as opposed to the normal 2 to 1 ratio. SUMIMARK SM23 also meets the material requirements of AMS-DTL-23053 / 5.</p> <p>2) SUMIMARK SM23 tubing, when used in conjunction with the SUMIMARK marking machine, provides marked sleeves that meet or exceed the print permanence requirements of SAE-AS81531.</p> <p>3) Shrink temperature is 90°C.</p> | <p>4) Operating temperature range is -55°C to +135°C and up to 200°C for short durations.</p> <p>5) SM23 is recommended for use in general purpose applications such as wire marking, identification and electrical insulation of light wire harness assemblies. It can also provide the user with better economies, as one size tubing can often replace two standard 2:1 expanded tubing sizes, thereby reducing inventories.</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)
1/16	.063	(1.6)	.021	(0.5)	.020	(.50)
1/8	.125	(3.2)	.043	(1.1)	.024	(.60)
3/16	.188	(4.8)	.063	(1.6)	.026	(.65)
1/4	.250	(6.4)	.083	(2.1)	.028	(.70)
3/8	.375	(9.5)	.122	(3.1)	.031	(.80)
1/2	.500	(12.7)	.165	(4.2)	.033	(.85)
3/4	.750	(19.1)	.248	(6.3)	.039	(1.0)
1	1.000	(25.4)	.327	(8.3)	.048	(1.2)
1 1/2	1.500	(38.1)	.500	(12.7)	.050	(1.3)

**Standard Colors:** White, (Other colors are available upon request)

**Standard Package:** Spooled (S)

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

**Example:** SM23 1/4 White S

# SM23 SPECIFICATION VALUES

PROPERTY (UNITS)	TEST METHOD	REQUIREMENT
<b>Physical:</b> Tensile strength (psi) Elongation (%) Specific gravity Low temperature flex (-55° C) Heat shock (250° C, 4 hrs.) Heat resistance (175° C, 168 hrs.) Elongation (%) Secant modulus (psi) Longitudinal change (%)	ASTM D638 ASTM D638 ASTM D792 AMS-DTL-23053 AMS-DTL-23053  ASTM D638 ASTM D882 AMS-DTL-23053	1500 min. 200 min. 1.35 max. no cracking no cracking  100 min. 2.5 X 10 <sup>4</sup> max. +5, -15
<b>Electrical:</b> Dielectric strength (volts/mil) Volume resistivity (ohm-cm)	ASTM D876 ASTM D876	500 min. 1.0 X 10 <sup>14</sup> min.
<b>Mark Permanence:</b> Abrasion Fluid Resistance Isopropyl Alcohol/Mineral Spirits Terpene Defluxer H2O/PGME/Monoethanolamine	SAE-AS81531  MIL-STD-202F Method 215J	20 rubs  10 rubs (x3) 10 rubs (x3) 10 rubs (x3)
<b>Chemical:</b> Corrosion (175° C, 16 hrs.) Water absorption (%) Fluid resistance (23° C, 24 hrs.) Tensile strength (psi) Flammability Shrink temperature, nominal	AMS-DTL-23053 ASTM D570  AMS-DTL-23053 UL 224 VW-1	no corrosion 0.5 max.  1000 min. pass 90° C

**Specification reference:** SAE-AS81531  
 UL-224 125° C, 600V, VW-1  
 File E48762 YDPU2, Cat. No. 963 or SM23  
 CSA



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