

## FLEXIBLE POLYOLEFIN MARKER SLEEVES 2 : 1 Shrink Ratio

### MILITARY SPECIFICATION



**RoHS Compliant**

### TYPICAL FEATURES

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| <p>1) SUMIMARK SM12 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>2) SUMIMARK SM12 is a very flexible, flame retarded, heat shrinkable polyolefin tubing that meets all the requirements of Military Specification AMS-DTL-23053/5C, Class 1 and Class 3 and is recognized by Underwriters' Laboratories (UL) Subject 224 as 125°C, 600V (VW-1) rated.</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) SM12 is recommended for use in general purpose applications such as wire marking, identification and electrical insulation of light wire harness assemblies.</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)
3/64	.046	(1.2)	.023	(0.6)	.016	(0.40)
1/16	.063	(1.6)	.031	(0.8)	.017	(0.43)
3/32	.093	(2.4)	.046	(1.2)	.020	(0.51)
1/8	.125	(3.2)	.062	(1.6)	.020	(0.51)
3/16	.187	(4.8)	.093	(2.4)	.020	(0.51)
1/4	.250	(6.4)	.125	(3.2)	.025	(0.64)
3/8	.375	(9.5)	.187	(4.8)	.025	(0.64)
1/2	.500	(12.7)	.250	(6.4)	.025	(0.64)
3/4	.750	(19.1)	.375	(9.5)	.030	(0.76)
1	1.000	(25.4)	.500	(12.7)	.035	(0.89)
1 1/2	1.500	(38.1)	.750	(19.1)	.040	(1.02)
2	2.000	(50.8)	1.000	(25.4)	.045	(1.14)

**Standard Colors:** White, black, yellow, red, blue, green, gray, orange, violet, brown

**Standard Package:** Spooled (S)

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

**Example:**                      SM12                      1/4                      Black                      S

## SM12 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
<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(AS) 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:** MIL-S-85848/1  
 AMS-DTL-23053/5C, Class 1 and Class 3.  
 SAE-AS81531  
 UL / CSA, 125° C, 600


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