

# 3M™ Heat Shrink Tubing MFP

## Modified Polyvinylidene Fluoride

Data Sheet

September 2013

<b>Description</b>	<p>3M™ Heat Shrink Tubing MFP is a cross-linked, thin-walled, heat-shrinkable tubing offering a high degree of mechanical strength and high-temperature resistance. Fabricated from polyvinylidene fluoride, the tubing has outstanding abrasion resistance and cut-through properties in combination with high dielectric strength. It is inherently flame retardant, semi-rigid and highly resistant to most industrial fuels, chemicals and solvents. When heated in excess of 347°F (175°C), MFP tubing rapidly shrinks to a skintight fit.</p>
<b>Agency Approvals &amp; Self Certifications</b>	<p>Meets requirements of:</p> <ul style="list-style-type: none"><li>• SAE-AMS-DTL-23053/8 and functional requirements of 23053/18, Class 1*</li><li>• AMS-3632</li><li>• UL Listed, UL File E-39100, VW-1</li><li>• CSA LR38227, OFT</li></ul> <p><b>*Formerly: MIL-I-23053/8 and MIL-DTL-23053/8 MIL-I-23053/18 and MIL-DTL-23053/18</b></p>
<b>Applications</b>	<p>MFP tubing is typically used for shrink-fit protection and strain relief of wires, solder joints, terminals and connections. Suggested applications include automotive wiring, jackets, fuse coverings and military wire markers. Because the tubing is transparent, it allows see-through inspection and identification, and is ideal for use as a jacketing for components such as resistors and capacitors. The tubing is readily marked by hot-stamp and print-wheel equipment.</p>
<b>Shrink Ratio</b>	<p>MFP tubing has a 2:1 shrink ratio. When freely recovered, the tubing will shrink to 50% of its as-supplied internal diameter. The recovered wall thickness is proportional to the degree of recovery.</p> <p>The operating temperature range is from -55°C (-67°F) to 175°C (347°F), with a shrinking temperature minimum of 175°C (347°F)</p>

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## Standard Sizes and Dimensions

Ordering Size (Nominal)	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Total Recovered Wall Thickness (Nominal)	
	In.	(mm)	In.	(mm)	In.	(mm)
3/64	.046	(1,17)	.023	(0,58)	.010	(0,25)
1/16	.063	(1,60)	.031	(0,79)	.010	(0,25)
3/32	.093	(2,36)	.046	(1,17)	.010	(0,25)
1/8	.125	(3,18)	.062	(1,57)	.010	(0,25)
3/16	.187	(4,75)	.093	(2,36)	.010	(0,25)
1/4	.250	(6,35)	.125	(3,18)	.012	(0,30)
3/8	.375	(9,53)	.187	(4,75)	.012	(0,30)
1/2	.500	(12,70)	.250	(6,35)	.012	(0,30)
5/8	.625	(15,88)	.313	(7,94)	.014	(0,36)
3/4	.750	(19,05)	.375	(9,53)	.017	(0,43)
1	1.000	(25,40)	.500	(12,70)	.019	(0,48)

## Typical Properties

Not for specifications. Values are typical, not to be considered minimum or maximum. Properties measured at room temperature 73°F (23°C) unless otherwise stated.

Physical Property	Typical Value
Tensile Strength	5500 PSI
Ultimate Elongation	350%
Longitudinal Change	+1, -10%
Secant Modulus (2%)	123,000 PSI
Specific Gravity	1.7
Low Temperature Flexibility (outer wall only) 4 hrs @ -55 °C	No cracking
Flammability Self-extinguishing, UL24 VW-1 Test	Pass

Electrical Property (Test Method)	Typical Value US units (metric)
Dielectric Strength	900 V/mil
Volume Resistivity	10 <sup>14</sup> ohm/cm

Chemical Property (Test Method)	Typical Value
Corrosion Resistance	Non-corrosive
Fuel & Oil Resistance	Excellent
Solvent Absorption	Excellent
Abrasion Resistance	Excellent
Acid & alkalis Resistance	Excellent

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## Standard Colors

Clear

Also available in Black. Price, MOQ and Lead Time will vary for these colors. Please contact Local Sales Representative or Customer Service Representative for more information.

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## Shelf Life & Storage

3M™ Heat Shrink Tubing MFP has a 10-year shelf life from date of manufacture when stored in a humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity).

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## Availability

### Standard Packaging

Four-foot lengths. Colors available are subject to factory quotation.

Please contact your local distributor; available from [3M.com/oem](http://3M.com/oem) [Where to Buy] or call 1-800-676-8381.

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