

# 3M™ Heat Shrink Tubing MFP

## Modified Polyvinylidene Fluoride

Data Sheet

November 2018

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|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Description | 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 excellent 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. |
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### Agency Approvals & Self-Certifications

Meets requirements of:

- AS23053/8\*
- UL Recognized, File E-39100, VW-1
- CSA Certified, CSA LR38277, OFT
- For RoHS and REACH information, please visit [www.3M.com/regs](http://www.3M.com/regs)

**\*Formerly:** MIL-I-23053/8, MIL-DTL-23053/8 and SAE-AMS-DTL-23053/8

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### Applications

3M 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.

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### Shrink Ratio

3M 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.

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)

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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)<br>4 hrs @ -55 °C | No cracking   |
| Flammability<br>Self-extinguishing, UL24 VW-1 Test              | Pass          |

| Electrical Property (Test Method) | Typical Value<br>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     |

# 3M™ Heat Shrink Tubing MFP

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|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard Colors      | Clear<br><br>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.                         |
| 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).                                        |
| Availability         | <b>Standard Packaging</b><br><br>Four-foot lengths. Colors available are subject to factory quotation.<br><br>Please contact your local distributor; available from 3M.com/oem [Where to Buy] or call 1-800-676-8381. |

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