



# MW Tubing

Adhesive-Lined, 2.5:1, Semi-Rigid, Polyolefin

## Data Sheet

### Product Description

3M™ MW Tubing is a semi-rigid, 110°C heat-shrinkable polyolefin tubing that is co-extruded and selectively cross-linked to provide an integral, meltable inner wall.

When heated in excess of 135°C (275°F), the inner meltable wall of the tubing is simultaneously softened and forced by the shrink action into intimate contact with all underlying surfaces, interstices and small voids. Upon cooling, the MW Tubing provides a tough protective and insulating barrier, highly resistant to penetration by moisture and the attack of chemicals and solvents.

MW Tubing is rated for continuous operation at temperatures from -55°C (-67°F) to 110°C (230°F) and will withstand higher operating temperatures for brief periods. Adhesive reflow will occur at temperatures above 80°C (176°F).

### Typical Applications

Applications for MW Tubing include braided-shield pigtailed, electrical wiring, mechanical assemblies, electronic components, electrical wire splices, breakouts, connections, solder joints, delicate wire terminations, end-sealing of electrical cables and rigid tubings.

For installations that may require rework, retrofit or repair in the field, MW Tubing offers the extra advantage of easy removability. For circuit and component identification purposes, the tubings readily accept marking by means of print-wheel or hot-stamp techniques.

### Shrink Ratio

MW Tubing has a 2.5:1 shrink ratio. When fully recovered, the tubing will shrink to 40% of its original diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery.

### Standard Colors

Black. MW Tubing is also available color-coded as follows: 1/8 – brown, 3/16 – gray, 1/4 – white, 3/8 – red, 1/2 – blue, 3/4 – yellow.

### Standard Packaging

Four-foot lengths. Cut pieces and other lengths (including spooled) are available subject to factory quotation.

### Ordering Information

Order MW Tubing by product name, size equivalent to the expanded inside diameter, package type and color. Other sizes are available subject to factory quotation. Always order the largest size that will shrink snugly over the item to be covered.

Example: MW, 1/4", 4 ft., black.

### Standard Sizes and Dimensions

Ordering Size (Nominal)	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Total Recovered Wall Thickness (Nominal)	Meltable Recovered Wall Thickness
	in.	(mm)	in.	(mm)	in. (mm)	in. (mm)
1/8	.125	(3,18)	.023	(0,58)	.038 (0,97)	.020 (0,51)
3/16	.187	(4,75)	.060	(1,52)	.043 (1,09)	.025 (0,64)
1/4	.250	(6,35)	.080	(2,03)	.047 (1,19)	.027 (0,69)
3/8	.375	(9,53)	.13	(3,43)	.050 (1,27)	.030 (0,76)
1/2	.500	(12,70)	.195	(4,95)	.055 (1,40)	.035 (0,89)
3/4	.750	(19,05)	.313	(7,95)	.065 (1,65)	.040 (1,02)
1	1.000	(25,40)	.400	(10,16)	.075 (1,91)	.040 (1,02)

### Typical Properties

#### Applicable Specification

MIL-DTL-23053/4, Class 1; AMS-3634; UL File E-157227

#### Physical

Tensile Strength 2200 PSI  
 Ultimate Elongation 400%  
 Longitudinal Change +1, -10%  
 Secant Modulus (2%) 27,000 PSI  
 Specific Gravity 1.0  
 \*Heat Aging Elongation 175% (168 hrs. @ 175°C)  
 \*Heat Shock No dripping, (4 hrs. @ 250°C) flowing, cracking  
 \*Low Temperature Flexibility (4 hrs. @ -55°C) No cracking

#### Electrical

Dielectric Strength 900 V/mil  
 Volume Resistivity 10<sup>15</sup> ohm-cm

#### Chemical

Corrosion Resistance Non-corrosive  
 Fungus Resistance Non-nutrient  
 Water Absorption 0.1%  
 Fluid Resistance JR4 Skydrol 600  
 Solution Gasoline > 1500 PSI  
 Hydraulic Fluid @ 600 V/mil

Technical information provided consists of typical product data and should not be used for specification purposes. Unless otherwise noted, all tests are performed at room temperature.

\* Outer wall only.