



# MT-LWA

## MODIFIED POLYOLEFIN HEAT SHRINK TUBING

### PROFILE

- Shrink ratio  $\leq$  4:1
- Full recovery at 110oC (230°F) minimum
- Manufactured to ISO 10993 standards
- Custom sizing, finishing options available
- Radiopacity can be customized
- Adhesive-layer option available
- Translucent for high optical clarity

### ABOUT

- MT-LWA is a crosslinked modified polyolefin heat shrink tubing designed for use as a process aid in minimally invasive applications
- Its homogeneous structure (properties evenly distributed) contributes to its consistency and high performance, making our MT-LWA essentially free from flaws, defects, pinholes, seams, cracks or inclusions
- MT-LWA offers customizable compressions strengths, shrink ratios  $\leq$  4:1, is peelable with axial tear propagation and you can remove it while its warm, making it an excellent choice for reflowing catheter shafts when FEP isn't suitable

## HEAT SHRINK TUBING — MT-LWA

**TABLE 1: 2:1 EXPANSION RATIO DIMENSIONS (±)**

Standard Sizes	As Supplied		Recovered			
	Inside Diameter Minimum (D)		Inside Diameter Maximum (d)		Wall Thickness (W)	
Size	in.	mm.	in.	mm.	in.	mm.
1/32	0.040 ± 0.005	1.02 ± 0.13	0.013 ± 0.002	0.33 ± 0.05	0.010 ± 0.002	0.25 ± 0.05
3/64	0.055 ± 0.005	1.40 ± 0.13	0.020 ± 0.003	0.51 ± 0.08	0.016 ± 0.003	0.41 ± 0.08
1/16	0.072 ± 0.005	1.83 ± 0.13	0.027 ± 0.004	0.69 ± 0.10	0.017 ± 0.003	0.43 ± 0.08
3/32	0.107 ± 0.008	2.72 ± 0.20	0.042 ± 0.004	1.07 ± 0.10	0.020 ± 0.003	0.51 ± 0.08
1/8	0.140 ± 0.010	3.56 ± 0.25	0.057 ± 0.005	1.45 ± 0.13	0.020 ± 0.003	0.51 ± 0.08
3/16	0.205 ± 0.010	5.21 ± 0.25	0.086 ± 0.007	2.18 ± 0.18	0.020 ± 0.003	0.51 ± 0.08
1/4	0.275 ± 0.015	6.99 ± 0.38	0.117 ± 0.008	2.97 ± 0.20	0.025 ± 0.003	0.64 ± 0.08
3/8	0.415 ± 0.020	10.54 ± 0.51	0.171 ± 0.016	4.34 ± 0.41	0.025 ± 0.003	0.64 ± 0.08

**TABLE 2: 3:1 EXPANSION RATIO DIMENSIONS (MIN./MAX)**

Standard Sizes	As Supplied		Recovered			
	Inside Diameter Minimum (D)		Inside Diameter Maximum (d)		Wall Thickness (W)	
Size	in.	mm.	in.	mm.	in.	mm.
.032	0.032	0.81	0.011	0.28	0.010 ± 0.002	0.25 ± 0.05
.047	0.047	1.19	0.013	0.33	0.012 ± 0.002	0.31 ± 0.05
.063	0.063	1.60	0.021	0.53	0.016 ± 0.002	0.41 ± 0.05
.078	0.078	1.98	0.025	0.64	0.016 ± 0.002	0.41 ± 0.05
.094	0.094	2.39	0.031	0.79	0.020 ± 0.003	0.51 ± 0.08
.110	0.110	2.79	0.034	0.86	0.020 ± 0.003	0.51 ± 0.08
.125	0.125	3.18	0.042	1.07	0.020 ± 0.003	0.51 ± 0.08
.188	0.188	4.78	0.063	1.60	0.020 ± 0.003	0.51 ± 0.08
.250	0.250	6.35	0.083	2.11	0.025 ± 0.003	0.64 ± 0.08
.375	0.375	9.53	0.125	3.18	0.025 ± 0.003	0.64 ± 0.08

# HEAT SHRINK TUBING — MT-LWA

**TABLE 3: PROPERTIES**

Property	Unit	Requirement	Test Method
<b>Physical</b>			
Dimensions*	inches (mm)	In accordance with Table 1	
Longitudinal change*	percent	+0, -10 maximum	ASTM D 2671
Concentricity as supplied*	percent	70 minimum (2:1 Exp. ratio) 60 minimum (3:1 Exp. ratio)	ASTM D 2671
Tensile strength*	psi (MPa)	1500 minimum (10:3)	ASTM D 2671, 20"/minute
Ultimate elongation*	percent	200 minimum	
Secant modulus* (expanded)	psi (MPa)	2.5 x 10 <sup>4</sup> maximum (172)	ASTM D 2671
Heat resistance 168 hours at 175°C (347°F) Followed by test for: Ultimate elongation	percent	100 minimum	ASTM D 2671, 20"/minute
<b>Electrical</b>			
Dielectric strength	kV/mm	500 minimum (19.7)	ASTM D 2671
<b>Dielectric</b>			
withstand 3000V, 60Hz	sec	60 minimum	ASTM D 2671
<b>Chemical</b>			
Fluid resistance 24 hours at 23 ± 3°C (77 ± 5°F) Isopropyl alcohol 5% saline solution Disinfectant			ASTM D 2671
Followed by tests for: Dielectric strength	kV/mm	400 minimum (15.7)	ASTM D 2671
Tensile strength	psi (MPa)	1000 minimum (6.9)	ASTM D 2671
Heavy metals analysis Cadmium, Mercury, Lead, Bismuth, Antimony	ppm	1 maximum (total of all metals)	USP XXII Physiochemical tests-plastic (Note 1)

\*Denotes lot acceptance test

Note 1: Sample preparation and extraction is per USP XXII. Metals analysis may be colorimetric as described in USP XXII or by equivalent quantitative analytical method.

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