



MT1000 PVDF HEAT SHRINK TUBING

APPLICATIONS

- Abrasion protection for laparoscopic and in-vivo instruments
- High performance insulation for electrosurgical devices
- Strain relief applications

PROFILE

- Shrink ratio $\leq 2:1$
- Full recovery at 175°C (347°F) minimum
- Supports sterilization environments: gamma, ethylene oxide (ETO), steam, dry heat and autoclave
- Manufactured to ISO 10993 standards
- Registered with the FDA: MAF-444
- Custom sizing, colors, finishing and value-add options available
- Radiopacity can be customized

ABOUT

- MT1000 is a crosslinked polyvinylidene fluoride (PVDF) heat shrink tubing. PVDF offers excellent chemical and abrasion resistance, high dielectric strength and superior tensile strength. Its homogeneous structure (properties evenly distributed) contributes to its consistency and high performance, making our MT1000 tubing essentially free from flaws, defects, pinholes, seams, cracks or inclusions
- MT1000 is rigid and highly-lubricious, and works very well at providing abrasion protection for rigid laparoscopic and in-vivo instruments

HEAT SHRINK TUBING — MT1000

TABLE 1: DIMENSIONS

Standard Sizes	As Supplied		Recovered							
	Inside Diameter Minimum (D)		Inside Diameter Maximum (d)		Wall Thickness (in., mm.) (W)					
Size	in.	mm.	in.	mm.	Minimum	Maximum	Normal			
3/64	0.046	1.17	0.023	0.58	.008	0.20	0.012	0.31	.010	0.25
1/16	0.063	1.60	0.031	0.79	.008	0.20	0.012	0.31	.010	0.25
3/32	0.093	2.36	0.046	1.17	.009	0.20	0.012	0.31	.010	0.25
1/8	0.125	3.18	0.062	1.58	.009	0.20	0.012	0.31	.010	0.25
3/16	0.187	4.75	0.093	2.36	.009	0.20	0.012	0.31	.010	0.25
1/4	0.250	6.35	0.125	3.18	.011	0.28	0.015	0.38	.013	0.33
3/8	0.375	9.53	0.187	4.75	.011	0.28	0.015	0.38	.013	0.33
1/2	0.500	12.70	0.250	6.35	.011	0.28	0.015	0.38	.013	0.33

TABLE 2: PROPERTIES

Property	Unit	Requirement	Test Method
Physical			
Dimensions*	inches (mm)	In accordance with Table 1	
Longitudinal change*	percent	+0, -10 maximum	ASTM D 2671
Concentricity as supplied*	percent	70 minimum	ASTM D 2671
Tensile strength*	psi (MPa)	5000 minimum (34.5)	ASTM D 2671, 20"/minute
Ultimate elongation*	percent	150 minimum	
Secant modulus* (expanded)	psi (MPa)	1 x 105 minimum (690)	ASTM D 2671
Heat resistance 168 hours at 250 ± 5°C (482°F) Followed by test for: Ultimate elongation	percent	50 minimum	ASTM D 2671, 20"/minute
Electrical			
Dielectric strength: Sizes 3/64 through 1/2	volts/mil	800 minimum (31.500)	ASTM D 2671
Dielectric strength: Sizes 3/4 through 2	kV/mm	600 minimum (23.600)	
Dielectric withstand 3000V, 60Hz	sec	60 minimum	ASTM D 2671
Chemical			
Fluid resistance 24 hours at 23 ± 3°C (73 ± 5°F) Isopropyl alcohol 5% saline solution Disinfectant			ASTM D 2671
Followed by tests for: Dielectric strength Sizes 3/64 through 1/2 Sizes 3/4 through 2	kV/mm	700 minimum (27.600) 500 minimum (19.700)	
Tensile strength	psi (MPa)	5000 minimum (34.5)	ASTM D 2671, 2"/minute
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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