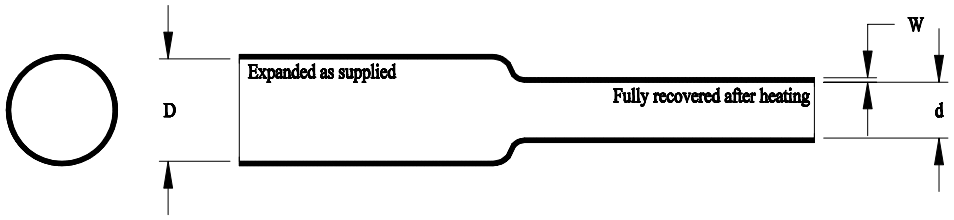
Altera™
MT2000
Modified, Medical Grade, Polyolefin, Heat - Shrinkable Tubing



This specification covers the requirements for one type of single wall, electrical insulating, extruded tubing whose diameter will reduce to a predetermined size upon application of heat in excess of 140°C (284°F).

The tubing is fabricated from modified polyolefin crosslinked by irradiation. It shall be homogenous and essentially free from flaws, defects, pinholes, seams, cracks or inclusions.

The tubing is fabricated from materials which meet the requirements of U.S. Pharmacopeia Class VI Plastics. Color shall be black or clear unless otherwise specified.

Table 1: Dimensions

Size	As Supplied		Recovered							
	Inside Diameter Minimum (D)		Inside Diameter Maximum (d)		Wall Thickness(Inches, *Millimeters)* (W*)*					
	mm.	in.	*mm.*	in.	Minimum		Maximum		Nominal	
1mm	*1.0*	.040	*0.45*	.018	.008	*0.20*	.012	*0.30*	.010	*.25*
2mm	*2.0*	.080	*0.80*	.032	.008	*0.20*	.012	*0.30*	.010	*.25*
3mm	*3.0*	.120	*1.20*	.048	.008	*0.20*	.012	*0.30*	.010	*.25*
6mm	*6.0*	.240	*2.4*	.096	.008	*0.20*	.012	*0.30*	.010	*.25*
10mm	*10.0*	.400	*4.0*	.160	.012	*0.30*	.016	*0.41*	.014	*.36*

Table 2: Properties

Property	Unit	Requirement	Test Method
PHYSICAL * Dimensions	Inches *(mm)*	In accordance with Table 1	
* Longitudinal Change	Percent	0, -10	ASTM D 2671
* Concentricity as supplied	Percent	60 minimum	ASTM D 2671
Tensile Strength	PSI *(MPa)*	3000 minimum *(20.7)*	ASTM D 2671, 2"/minute
Ultimate Elongation	Percent	200 minimum	
Secant Modulus	PSI *(MPa)*	5.0×10^4 minimum *(344)*	ASTM D 2671
Heat Resistance 168 hours at 125°C (257 °F) Followed by test for:			ASTM D 2671, 2"/minute
Ultimate Elongation	Percent	200 minimum	
ELECTRICAL Dielectric Strength	Volts/mil *(volts/mm)*	1000 minimum *(39.36)*	ASTM D 2671
Dielectric Withstand 3000V, 60 Hz	sec	60 minimum	ASTM D 2671
CHEMICAL Fluid Resistance 24 hours at 23 ± 3°C *(77 ± 5°F)* Isopropyl Alcohol 5% Saline Solution Cidex** Followed by tests for:			ASTM D 2671
Dielectric Strength	Volts/mil *(volts/mm)*	1000 minimum *(39.36)*	ASTM D 2671
Tensile Strength	PSI *(MPa)*	3000 minimum *(20.7)*	ASTM D 2671
Heavy Metals Analysis Cadmium Mercury Lead Bismuth Antimony	ppm	1 maximum (total of all metals)	USP XXII Physicochemical Tests-Plastics (Note 1)

* Denotes lot acceptance test
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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.