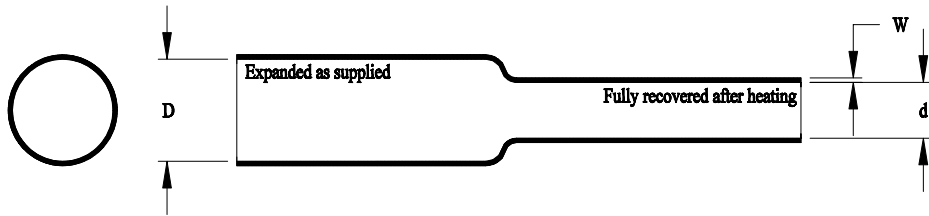


**Altera™
MT-PBX72
Polyether Block Amide
Heat-Shrinkable Tubing**



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 200°C (392°F).

The tubing is fabricated from polyether block amide copolymer, with a nominal Shore D Durometer of 72, 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 clear unless otherwise specified.

Table 1: Dimensions 2:1 Shrink Ratio

Size	As Supplied		Recovered							
	Inside Diameter (D) Minimum		Inside Diameter (d) Maximum		Wall Thickness (W)					
	in.	mm.	in.	mm.	Minimum		Maximum		Nominal	
					in.	mm.	in.	mm.	in.	mm.
014	0.014	0.36	0.007	0.17	0.0015	0.04	0.0025	0.06	0.002	0.051
024	0.024	0.60	0.012	0.30	0.0015	0.04	0.0025	0.06	0.002	0.051
040	0.040	1.00	0.020	0.50	0.003	0.08	0.005	0.13	0.004	0.102
060	0.060	1.52	0.030	0.89	0.003	0.08	0.005	0.13	0.004	0.102
100	0.100	2.54	0.050	1.27	0.003	0.08	0.005	0.13	0.004	0.102
120	0.120	3.04	0.060	1.52	0.003	0.08	0.005	0.13	0.004	0.102

Table 2: Dimensions Custom Sizes

Size	As Supplied		Recovered							
	Inside Diameter (D) Minimum		Inside Diameter (d) Maximum		Wall Thickness (W)					
	in.	mm.	in.	mm.	Minimum		Maximum		Nominal	
					in.	mm.	in.	mm.	in.	mm.
040-010	0.040	1.02	0.010	0.25	0.003	0.08	0.005	0.13	0.004	0.102
080-020	0.080	2.03	0.020	0.51	0.003	0.08	0.005	0.13	0.004	0.102
120-030	0.120	3.05	0.030	0.76	0.003	0.08	0.005	0.13	0.004	0.102
130-075	0.130	3.30	0.075	1.90	0.005	0.13	0.007	0.18	0.006	0.153
240-060	0.240	6.10	0.060	1.52	0.003	0.08	0.005	0.13	0.004	0.102

© 2008 Tyco Electronics Corporation. All rights reserved

CUSTOMER DRAWING

	Tyco Electronics Corporation 300 Constitution Drive Menlo Park, CA 94025 USA	Raychem Tubing	Title: Altera™ MT-PBX72 Polyether Block Amide Heat - Shrinkable Tubing			
Tyco Electronics reserves the right to amend this drawing at any time. Users should evaluate the suitability of the product for their application			Document No : MT-PBX72			
Cage Code: 06090	Scale: None	Size: A	Rev. Date: 29-Dec-08	Rev.:	A	Sheet: 1 of 2

If this document is printed it becomes uncontrolled. Check for the latest revision.

Table 3: Properties

Property	Unit	Requirement	Test Method
Physical * Dimensions	Inches (<i>mm</i>)	In accordance with Table 1 or Table 2 (as appropriate)	ASTM D 2671
* Longitudinal Change	Percent	+0, -10 maximum	
* Concentricity (as supplied)	Percent	70 minimum	ASTM D 2671
* Tensile Strength	psi (<i>MPa</i>)	5000 minimum (<i>34.5</i>)	ASTM D 2671, 2"/minute
* Ultimate Elongation	Percent	200 minimum	
Hardness**	Shore D	72 ± 5	ASTM D 2240
2% Secant Modulus (as supplied)	psi (<i>MPa</i>)	1.0 x 10 ⁵ maximum (<i>690</i>)	ASTM D 2671
Heat Resistance 168 h at 125 ± 2°C (<i>257 ± °F</i>) Followed by test for: Ultimate Elongation	Percent	100 minimum	ASTM D 2671, 2"/minute
Electrical Dielectric Strength	Volts/mil (<i>Volts/mm</i>)	500 minimum (<i>19.7</i>)	ASTM D 2671
Dielectric Withstand, 3000V	sec	60 minimum	ASTM D 2671
Chemical Fluid Resistance 24 h at 23 ± 3°C (<i>73 ± 5°F</i>) Isopropyl Alcohol 5% Saline Solution Cidex*** Followed by tests for: Dielectric Strength			ASTM D 2671
Tensile Strength	Volts/mil (<i>Volts/mm</i>)	500 minimum (<i>19,7</i>)	
Heavy Metals Analysis Cadmium Mercury Lead Bismuth Antimony	psi (<i>MPa</i>)	1800 minimum (<i>12.4</i>)	ASTM D 2671
	ppm	1 maximum (total of all metals)	USP XXII Physicochemical Tests-Plastics (Note 1)

* Denotes lot acceptance test

** Tested on a cross-linked slab at least 250 mils thick per ASTM D 2240.

*** Trademark of Johnson & Johnson Company

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.

CUSTOMER DRAWING

Rev. Date: 29-Dec-08	Rev.: A	Document No. MT-PBX72	Sheet: 2 of 2
-------------------------	------------	---------------------------------	------------------