

Altera medical-grade, thin wall, flexible, fluoropolymer heat-shrinkable tubing

Altera MT3000 heat-shrinkable tubing is tough, flexible tubing with a very thin wall construction. It is especially suitable for applications requiring high temperature performance and resistance to abrasion, cut-through, and a variety of fluids. In polar media, such as aqueous systems and alcohols, property retention and dimensional stability are exceptional.

Altera MT3000 tubing provides electrical insulation and strain relief for components that are exposed to high temperatures - either during operation or during sterilization. With its exceptional flexibility and thin-wall construction, Altera MT3000 tubing is ideal for applications where pliancy coupled with small overall bundle size is desired.

Altera MT3000 tubing may be sterilized by radiation, ethylene oxide, and dry heat with no significant change in properties. It is fabricated from materials that meet the requirements of U.S. Pharmacopeia (USP) Class VI plastics (contact with injectables and body fluids or tissue).

Temperature rating

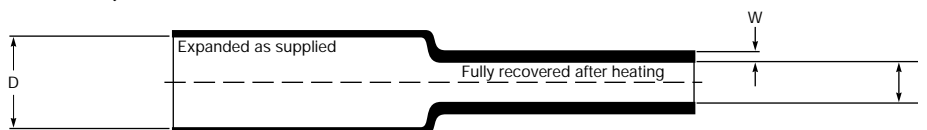
| | |
|-----------------------------------------------------------------|----------------|
| Full recovery temperature: | 150°C |
| Continuous operating temperature: | -55°C to 150°C |
| Recommended maximum temperature for use as a primary insulator: | 135°C |

Specifications*

| Type | Raychem | Material | Master File Number |
|--------|------------|--------------|--------------------|
| MT3000 | MT3000 SCD | USP Class VI | MAF-472 |

*When ordering, always specify latest issue.

Dimensions (millimeters/inches)



| Size | Inside diameter | | Wall thickness | |
|---------|----------------------------------|-------------------------------------|--------------------------------|---------------|
| | D (min.) Expanded as supplied | d (max.) Recovered after heating | W Recovered after heating** | |
| 3/64*** | 1.2 0.046 | 0.6 0.023 | 0.25 ± 0.05 | 0.010 ± 0.002 |
| 1/16 | 1.6 0.063 | 0.8 0.031 | 0.25 ± 0.05 | 0.010 ± 0.002 |
| 3/32 | 2.4 0.093 | 1.2 0.046 | 0.25 ± 0.05 | 0.010 ± 0.002 |
| 1/8 | 3.2 0.125 | 1.6 0.062 | 0.25 ± 0.05 | 0.010 ± 0.002 |
| 3/16 | 4.8 0.187 | 2.4 0.093 | 0.25 ± 0.05 | 0.010 ± 0.002 |
| 1/4 | 6.4 0.250 | 3.2 0.125 | 0.30 ± 0.05 | 0.012 ± 0.003 |
| 3/8 | 9.5 0.375 | 4.8 0.187 | 0.30 ± 0.05 | 0.012 ± 0.003 |
| 1/2 | 12.7 0.500 | 6.4 0.250 | 0.30 ± 0.05 | 0.012 ± 0.003 |
| 3/4*** | 19.1 0.750 | 9.5 0.375 | 0.43 ± 0.08 | 0.017 ± 0.003 |
| 1*** | 25.4 1.000 | 12.7 0.500 | 0.48 ± 0.08 | 0.019 ± 0.003 |

Wall thickness will be less if tubing recovery is restricted during shrinkage. *Nonstandard size; available by special order only.

Ordering information

| | | |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Colors | Standard Nonstandard | Black White |
| Size selection | Always order the largest size that will shrink snugly over the component being covered. A variety of special order sizes may be made available upon request. | |
| Standard packaging | On plastic spools, double-bagged | |
| Ordering description | Specify product name, size, and color, for example MT3000 1/4-0 (0=Black). | |

Specification values

| | Property | Unit | Requirement | Method of test |
|------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|------------------------------------------------|
| Physical | Dimensions | mm (<i>inches</i>) | See reverse | ASTM D 2671 |
| | Longitudinal change | percent | +0, -10 | ASTM D 2671 |
| | Concentricity as supplied | percent | 70 minimum | ASTM D 2671 |
| | Tensile strength | psi (<i>Mpa</i>) | 4000 (<i>27.6</i>) minimum | ASTM D 2671 |
| | Ultimate elongation | percent | 300 minimum | ASTM D 2671 |
| | Secant modulus (recovered) | psi (<i>Mpa</i>) | 50,000 (<i>345</i>) maximum | ASTM D 2671 |
| | Heat resistance (336 hours at 225°C/437°F) Followed by test for: | | | ASTM D 2671 |
| | Ultimate Elongation | percent | 250 minimum | ASTM D 2671 |
| Electrical | Dielectric strength | volts/mil (<i>volts/mm</i>) | 500 (<i>19,680</i>) minimum | ASTM D 2671 |
| | Dielectric withstand 3000 V, 60 Hz | seconds | 60 minimum | ASTM D 2671 |
| Chemical | Fluid resistance (24 hours at 23°C/73°F) in: Isopropyl Alcohol 5% Saline Solution Cidex*† Followed by tests for: | | | ASTM D 2671 |
| | Dielectric strength | volts/mil (<i>volts/mm</i>) | 400 (<i>15,760</i>) minimum | ASTM D 2671 |
| | Tensile strength | psi (<i>Mpa</i>) | 3500 (<i>24.1</i>) minimum | ASTM D 2671 |
| | Heavy metals analysis Cadmium Mercury Lead Bismuth Antimony | ppm | 1 maximum (total of all metals) | USP XXII Physiochemical Tests - Plastics |
| | | | | |
| | | | | |
| | | | | |

Typical performance values

| | Property | Unit | Performance | Method of Test |
|------------|-----------------------|-------------------------------|------------------------|----------------|
| Electrical | Dielectric strength** | volts/mil (<i>volts/mm</i>) | | ASTM D 2671 |
| | 0.005" < IWT ≤ 0.010" | | 1200 (<i>47,244</i>) | |
| | 0.010" < IWT ≤ 0.015" | | 1000 (<i>39,370</i>) | |
| | 0.015" < IWT ≤ 0.020" | | 700 (<i>27,559</i>) | |

*Trademark of Johnson & Johnson Company **IWT = Installed wall thickness.

†Or equivalent dilute glutaraldehyde sterilizing solution.

Note: Consult the MT3000 SCD for specific details about test procedures.

Altera and Raychem are trademarks of Tyco Electronics Corporation.

Users should independently evaluate the suitability of the product for their application.

Tyco Electronics Corporation

300 Constitution Drive
Menlo Park, CA 94025-1164
USA
Tel: (800) 926-2425 (US & Canada)
Tel: +1 (650) 361-3860 (All other countries)

Faraday Road
Dorcan, Swindon, SN3 5HH
United Kingdom
Tel: +44 1793 528171

3816 Noborito, Tama-ku
Kawasaki, Kanagawa 214-8533
Japan
Tel: +81 44 900 5102

Asia Pacific Headquarters
26 Ang Mo Kio, Industrial Park 2
Singapore 569507
Tel: +65 4866 151

All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Tyco Electronics Corporation makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Electronics Corporation's only obligations are those in the Standard Terms and Conditions of Sale for these products and in no case will Tyco Electronics Corporation be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Tyco Electronics Corporation's Specifications are subject to change without notice. In addition, Tyco Electronics Corporation reserves the right to make changes in materials or processing without notification to the Buyer which do not affect compliance with any applicable specification.

For more information about this product visit www.tycoelectronics.com

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Heat Shrink Tubing and Sleeves](#) category:

Click to view products by [TE Connectivity](#) manufacturer:

Other Similar products are found below :

[770-006S102](#) [5685710001](#) [CR6145-000](#) [CR8248-000](#) [CR9960-000](#) [603312-4](#) [607381P039](#) [611112-000](#) [617867N001](#) [6500750004](#) [CZ1420-000](#) [D-306-38](#) [770-003S106W2](#) [770-005S105W1](#) [770-005S106W1](#) [770-007A303](#) [770-010Y106W1](#) [770-010Y706W1](#) [7771210001](#) [MFP-1/4"-Clear](#) [MFP-3/64"-Clear](#) [790-3012](#) [MFT-MT2000-NO.14-0-SP](#) [MHHT-4-15K2-G-104](#) [MIL-LT-1-1/2-4-SP](#) [MIL-LT-1-1/2-9-STK](#) [MIL-LT-1/2-2-STK](#) [MIL-LT-3-0-SP](#) [MIL-LT-3/32-0-SP](#) [MIL-LT-3/32-6-SP](#) [MIL-LT-3/4-6-SP](#) [MIL-LT-3/8-0-SP](#) [8159270001](#) [839602-000](#) [8423-6](#) [FP301-116-6"-Black](#) [FP301-1/2-48"-Black](#) [FP301-12-48"-Black-Hdr](#) [FP301-1/4-48"-Black](#) [FP301-1/4-48"-White-Hdr](#) [FP301-18-48"-Black-Hdr](#) [FP301-1/8-6"-Black](#) [FP301-18-6"-Black-Bulk](#) [FP301-316-48"-Blue-Hdr](#) [FP301-316-6"-Clear](#) [FP301-332-6"-Black](#) [912229N002](#) [120-126-16BL](#) [121-001-09](#) [121-018-32](#)