

# Raychem Medical Tubing Solutions

MT-LWA, Laser Welding Application  
Single-Wall Heat-Shrinkable Tubing

# Medical Tubing

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# Global Medical Tubing, Overview

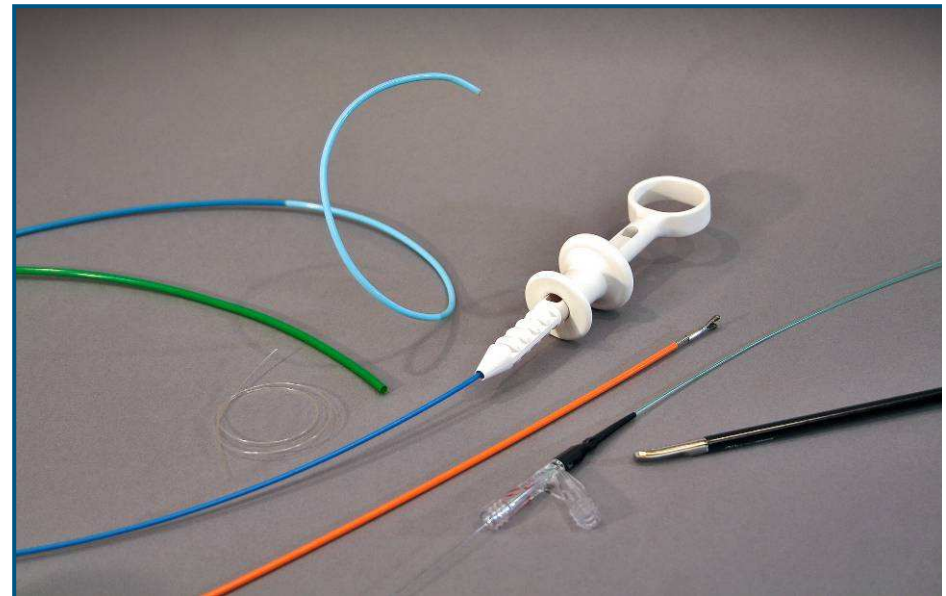
# Medical Tubing

## Raychem Tubing Products

Tyco Electronics has over 50 years of proven expertise in the material formulation, extrusion, irradiation and expansion of high performance heat-shrink tubing. From our core strength in material science, design engineering, and in-house compounding, Tyco Electronics has emerged as an essential partner in the design and manufacture of USP Class VI certified medical heat-shrink tubing. Continuous improvement and unrivaled process technology complement our vast capabilities which include application specific custom formulations (color concentrates, radiopaque additives, conductive polymeric materials, reactive compounding, and adhesives) and polymer cross-linking.

### ***Innovative Solutions for the Medical Market:***

- **Thin-wall polyolefins**
- **High temperature, flexible and semi-rigid fluoropolymers**
- **Nylons and polyether block amides (PEBA)**
- **Dual-wall constructions**
- **Controlled longitudinal shrinkage**
- **Clear and color constructions**
- **Radiopaque**



# Medical Heat-Shrink Tubing

## Altera Tubing Line

	MT 1000	MT 2000	MT 3000	MT 5000	MT 5500	MT 6000
<b>Shrink Ratio</b>	2:1	2.5:1	2:1	2:1	2:1	4:1
<b>Material</b>	Fluoropolymer	Polyolefin	Fluoropolymer	Polyolefin	Polyolefin	Polyolefin
<b>Flexibility</b>	Semi-Rigid	Semi-Rigid	Flexible	Flexible	Very Flexible	Flexible
<b>Temperature (Full Rec)</b>	175° C	110° C	150° C	105° C	100° C	125° C
<b>Sterilization</b>	1,2,3,4,5	2,3	1,2,3,5	2,3	2,3	2,3
<b>Adhesive Layer</b>	Optional	Optional	Optional	Optional	Optional	Optional

	MT-PBX (D*)	MT-PBX (D*D*)	MT-FEP	MT-LWA
<b>Shrink Ratio</b>	2:1	2:	1.3:1 or 1.6:1	2:1 or 3:1
<b>Material</b>	PEBA	PEBA	Fluoropolymer	Polyolefin
<b>Flexibility</b>	Flex-Rigid*	Flex-Rigid*	Semi-Rigid	Flexible
<b>Temperature (Full Rec)</b>	190° C*	190° C*	210° C	121° C
<b>Sterilization</b>	1,2,3,4,5	1,2,3,4,5	1,3,4,5	N/A
<b>Adhesive Layer</b>	Optional	No	No	No

**Sterilization**

1. Autoclave
2. Gama
3. Ethylene Oxide
4. Steam
5. Dry-Heat

\* = Shore D Durometer dependent

# Medical Heat-Shrink Tubing

## Common Applications

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- Abrasion protection for laparoscopic instruments and in-vivo diagnostic probes (MT1000, MT3000, MT-PBX)
  - Protection and Insulation of electrosurgical and laparoscopic instruments (MT2000, MT5000, MT5500, MT6000, MT-FEP)
  - Protection and insulation of highly flexible joint (MT5500)
  - Protection of delicate high value devices (MT-PBX, MT2000)
  - Catheter shafts (MT2000, MT-PBX)
  - Process Aid/Fusing Sleeves (MT-FEP, MT2000)
  - **Bonding of dissimilar materials (MT-FEP, MT-PBX, MT-LWA)**
  - Strain Relief (MT1000, MT3000, MT5000, MT5500, MT-PBX)
  - Identification and color coding of electrosurgical devices (MT5000)
  - Suture assemblies (MicroFit)
  - **Process Aid for Laser Welding (MT-LWA)**
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# Global Medical Tubing, What Is MT-LWA and How Do I Order it?

# Medical Heat-Shrink Tubing

## MT-LWA Overview

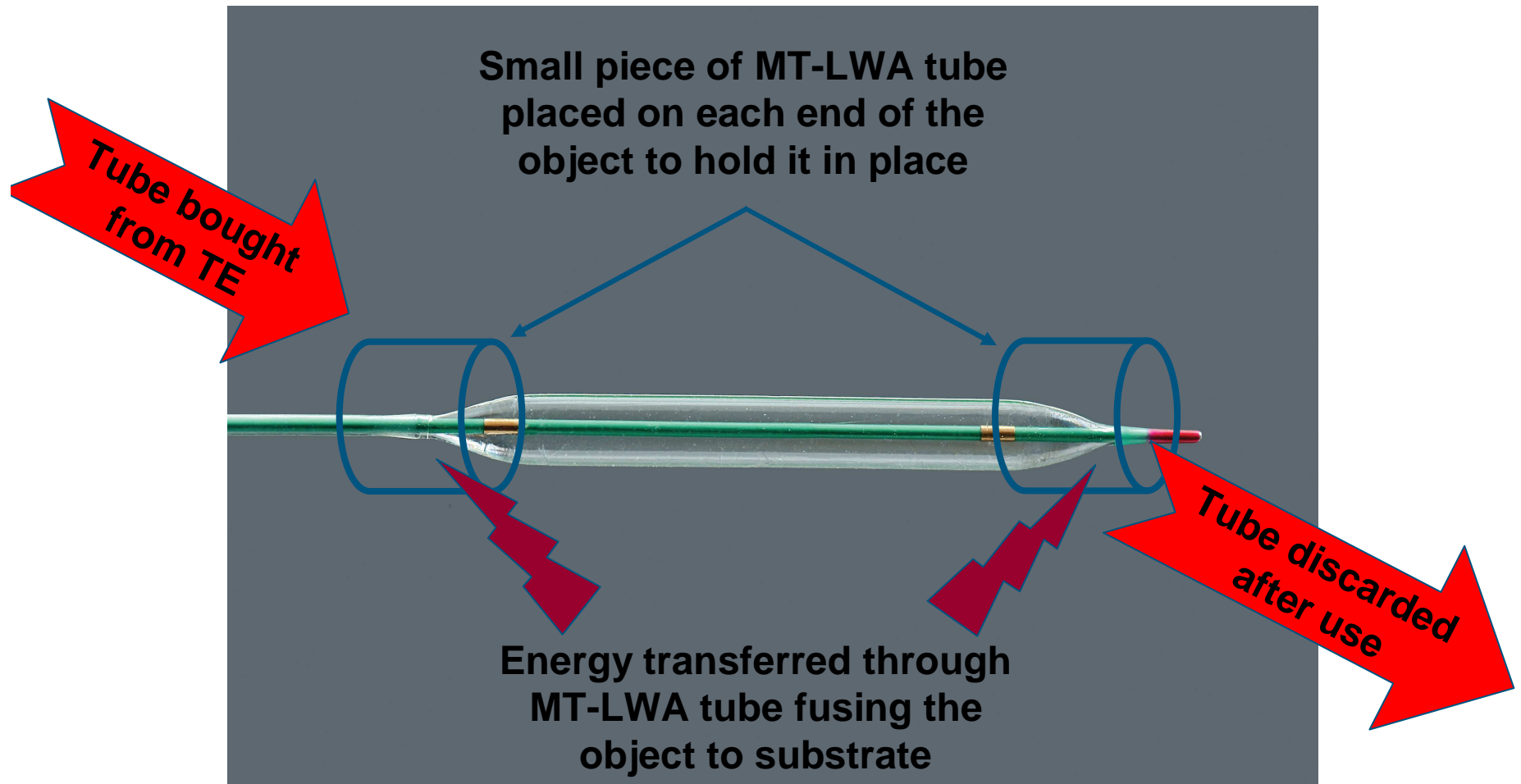
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- **MT-LWA is a single wall heat-shrinkable tube useful for laser-welding operations of stents and balloons, hot jaw bonding or other secondary value-added processes. Heat-shrinkable product helps hold joints in place during operation and removes easily without residue or damage to the end product.**
- The tubing is fabricated from materials which meet the requirements of U.S. Pharmacopeia Class VI Plastics. Color shall be clear only.
- Useful in the medical device industry, specifically the catheter manufacturing industry, angioplasty devices, or OEMs performing hot jaw bonding.



# Medical Heat-Shrink Tubing

## How It Works



# Medical Heat-Shrink Tubing

## 2:1 Expansion Ratio Standard Products

RPN	Description	Size	As Supplied		Recovered			
			Inside Diameter Minimum		Inside Diameter Maximum		Wall Thickness Nominal	
			in.	mm.	in.	mm.	in.	mm.
CP5066-000	MT-LWA-1/32-X-SP	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
CP5067-000	MT-LWA-3/64-X-SP	3/64	0.055 +/- 0.005	1.40 +/- 0.13	0.020 +/- 0.003	0.51 +/- 0.08	0.012 +/- 0.002	0.31 +/- 0.05
CP5068-000	MT-LWA-1/16-X-SP	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
CP5069-000	MT-LWA-3/32-X-SP	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
CP5070-000	MT-LWA-1/8-X-SP	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
CP5071-000	MT-LWA-3/16-X-SP	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
CP5072-000	MT-LWA-1/4-X-SP	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
CP5073-000	MT-LWA-3/8-X-SP	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

# Medical Heat-Shrink Tubing

## 3:1 Expansion Ratio Standard Products

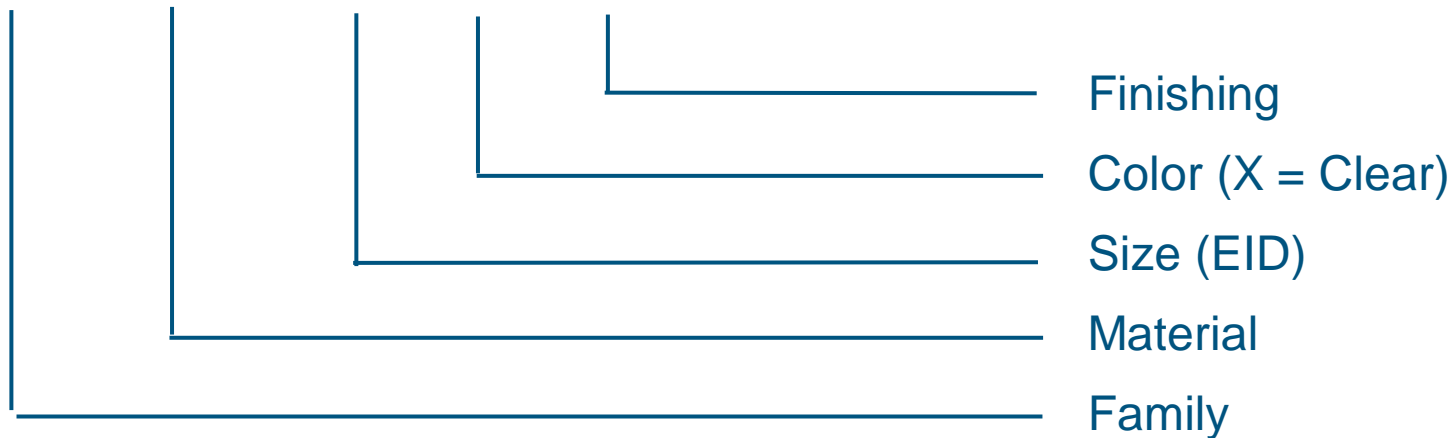
RPN	Description	Size	As Supplied		Recovered			
			Inside Diameter Minimum		Inside Diameter Maximum		Wall Thickness Nominal	
			in.	mm.	in.	mm.	in.	mm.
CM9835-000	MT-LWA-.032-X-SP	32	0.032	0.81	0.011	0.28	0.010 +/- 0.002	0.25 +/- 0.05
CM9834-000	MT-LWA-.047-X-SP	47	0.047	1.19	0.015	0.38	0.012 +/- 0.002	0.33 +/- 0.05
CM9833-000	MT-LWA-.063-X-SP	63	0.063	1.6	0.021	0.53	0.016 +/- 0.002	0.41 +/- 0.05
CM9832-000	MT-LWA-.078-X-SP	78	0.078	1.98	0.025	0.64	0.016 +/- 0.002	0.41 +/- 0.05
CM9831-000	MT-LWA-.094-X-SP	94	0.094	2.39	0.031	0.79	0.020 +/- 0.003	0.51 +/- 0.08
CM9824-000	MT-LWA-.110-X-SP	110	0.11	2.79	0.034	0.86	0.020 +/- 0.003	0.51 +/- 0.08
CP5062-000	MT-LWA-.125-X-SP	125	0.125	3.18	0.042	1.07	0.020 +/- 0.003	0.51 +/- 0.08
CP5063-000	MT-LWA-.188-X-SP	188	0.188	4.78	0.063	1.6	0.020 +/- 0.003	0.51 +/- 0.08
CP5064-000	MT-LWA-.250-X-SP	250	0.25	6.35	0.083	2.11	0.025 +/- 0.003	0.64 +/- 0.08
CP5065-000	MT-LWA-.375-X-SP	375	0.375	9.53	0.125	3.18	0.025 +/- 0.003	0.64 +/- 0.08

# Medical Heat-Shrink Tubing

## MT-LWA Part Numbering System

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MT-LWA-\_\_-X-\_\_



Example: **MT-LWA-3/32-X-SP** = Medical Tubing, LWA, 3/32 EID Size, Clear, Spooled

Standard expansion ratio 2:1 for fractional sizes, 3:1 for numbered sizes

**To Quote or Order Send E-Mail to [Sales@Brandsma-BV.nl](mailto:Sales@Brandsma-BV.nl)**

# Medical Heat-Shrink Tubing

## MT-LWA Tyco Electronics Advantages

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MT-LWA will primarily target the medical device market as:

- Process aid for laser welding of stents and/or balloons primarily in the angioplasty marketplace
- Process aid for holding together dissimilar materials during hot jaw bonding operations
- Low cost controlled disposable process aid

Currently available through direct sell and soon through a number of Tyco Electronics preferred distributors.

**Removes easily after use without damage or residue!**

# Medical Heat-Shrink Tubing

## Key Contacts

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