

Coatings

Merit Medical OEM offers PTFE and hydrophilic coatings, as well as further manufacturing and finishing services, for medical tubes and wires used in medical devices. The Merit Hypotube *Center of Excellence* in Galway, Ireland, is equipped with the most advanced tube processing technologies for the highest quality hypotubes in the world.

The Merit Medical spool-to-spool precoating process was established more than 20 years ago and continues to provide coatings that are thinner and more consistent in diameter and smoothness over the length of tubes and wires. This consistency is important for our customers as you design your finished medical devices.

The Merit Hypotube™

Coated Guide Wire Components

Coated Mandrels & Stylets

Coated Needles

Coating Services & Capabilities

RELATED PRODUCTS



Catheters



Guide Wires

The Merit Hypotube™



Capabilities

Finishes: Square cut; Spiral cut; Skive cut; Slot cut single or double, end or mid-tube; Seam-weld stylet; Spot-weld stylet; Notch cut; Visual markers; Ablated, roughened ends; Any combination

Processes: Laser cutting; Laser ablation; Welding; Surface Roughening; Straightening; Cut-To-Length; Hub design, molding, attachment (molded and /or adhesive); Grinding; ID/OD Cleaning; Passivation; Leak test; Auto-inspection; Spool-to-spool precoating

All of the above listed Finishes and Process are completed in The Merit Hypotube *Center of Excellence* in Galway, Ireland.

Tube Diameter Range

- OD from 0.30mm – 0.90mm (0.012" - 0.035")
- Walls as thin as 0.05mm (0.002"). ID can vary

Coating Options, Thicknesses & Colors

- PFOA-free PTFE LubriSkin™, DuraSkin™, HardSkin™
- Hydrophilic SlipSkin™ (Available only on spool)
- 4.0µm - 10.0µm (0.00016" - 0.0004") per side (other thicknesses upon request)
- Black, Blue, Green

Base Materials

- Stainless Steel Tube (304, 304L)
- Nitinol Tube
- Other materials upon request

Delivery Options

- Coated tube on spool
- Straightened and cut-to-length coated tubes
- Straightened and cut-to-length coated hypotube shaft with further manufacturing

Applications

- PTCA and PTA Balloon Catheters
- Functional Guide Wires

Each Merit Hypotube order is entirely customized. The images below are examples of available finishing options.



Stylet Point Weld



Double Slot, Seam Welded Stylet



Spiral Skive Stylet



Skive



Spiral Skive

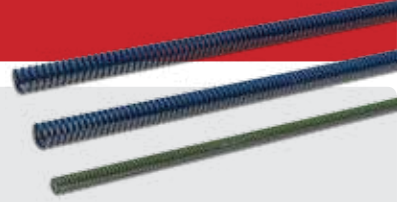


Square Cut Ablated



Single Slot Roughened Surface

Coated Guide Wire Components



Capabilities

Processes: Laser cutting; Laser ablation; Coiling; Straightening; Precoating; Cut-to-length; Grinding; Flattening; Rounded ends; Cleaning; Packaging

Coil Finishes: OD/ID coil; Pitch; Length

Core Wire Finishes: Single taper; Multiple taper; Length; Uncoated

Wire Diameter Range

- Round - 0.038mm - 1.0mm (0.0015" - 0.0400")
- Flat - Available Upon Request

Coating Options, Thicknesses & Colors

- PFOA-free PTFE LubriSkin™ and DuraSkin™
- Hydrophilic SlipSkin™
- For wire diameter $\leq 0.254\text{mm}$, $2.0\mu\text{m}$ - $7.0\mu\text{m}$ (0.00008" - 0.0003") per side
- For wire diameter $\geq 0.254\text{mm}$, $4.0\mu\text{m}$ - $10.0\mu\text{m}$ (0.00016" - 0.0004") per side (other thicknesses upon request)
- Black, Blue, Green, Gray, Clear

Base Materials

- Stainless Steel Round Wire (304 or 304V)
- Stainless Steel Flat Wire SS304V
- 35NLT®*
- SS304V SLT®*
- Pt/Ir
- Titanium
- Tungsten
- Nitinol
- Other materials upon request

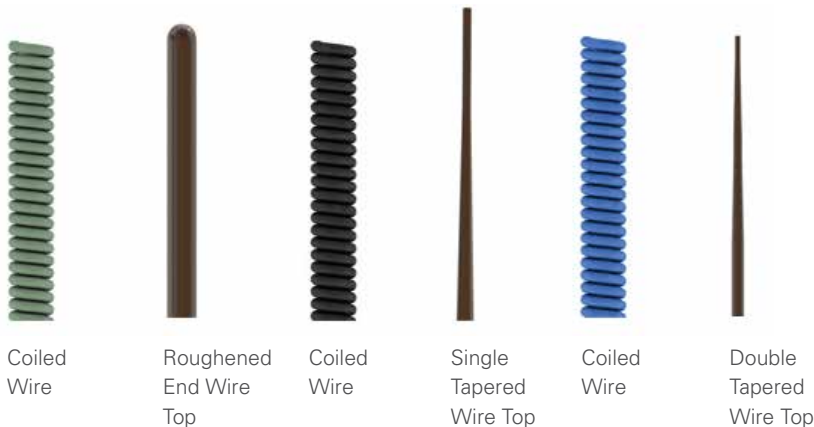
Delivery Options

- Prestraightened or unstraightened and coated on spools (DIN standards available)
- Straightened and cut-to-length
- Coiled
- Custom tapered profile

Applications

- Cardiovascular Diagnostic / Interventional Guide Wires
- Neurovascular Interventional Guide Wires
- Peripheral vascular guide wires
- Endoscopy coils

Guide Wire components are entirely customized. The images below are examples of available finishing options.



* 35NLT® and SS304V SLT® are registered trademarks of Fort Wayne Metals Research Products Corp. All rights reserved.

Coated Mandrels & Stylets



Capabilities

Finishes: Rounded ends; Square cut ends; Taper; J Tip

Processes: Grinding; Laser ablation; Cut-to-length; Spool-to-spool precoating

Wire Diameter Range

- 0.127mm - 1.0mm (0.005" - 0.039")
- 0.254mm - 1.4mm (0.01" - 0.055") for Copper

Coating Options, Thicknesses & Colors

- PFOE-free PTFE LubriSkin™, DuraSkin™, HardSkin™
- 4.0µm - 10.0µm (0.00016" - 0.0004") per side
- Other coating thicknesses upon request

Base Materials

- Stainless Steel Wire (304, 304V, 304LVM, SS302, SS304V SLT*)
- Nitinol
- Copper
- Other materials upon request

Delivery Options

- On spool
- Straightened and cut-to-length

Applications

- Release and bonding mandrels
- Coated extrusion mandrels
- Neuro-probes
- Neurological delivery stylets



Rounded Ends

Square Cut

Tapered

Bended End

* SS304V SLT® is a registered trademark of Fort Wayne Metals Research Products Corp. All rights reserved.

Coated Needles

Capabilities

Finishes: Laser ablation

Processes: Laser cutting; Laser ablation; Surface roughening; Straightening; Cut-to-length; Cleaning; Passivation; Leak test; Auto-inspection

Diameter Range

- Tube: OD 0.30mm - 0.90mm (0.012" - 0.035"). Wall as thin as 0.05mm (0.002")
- Wire: 0.127mm - 1.0mm (0.005" - 0.039")

Coating Options, Thicknesses & Colors

- PFOA-free PTFE LubriSkin™, DuraSkin™ or ShieldSkin™
- 4.0µm - 20.0µm (0.00016" - 0.0008") per side
- Green, Blue, Black, Gray

Base Materials

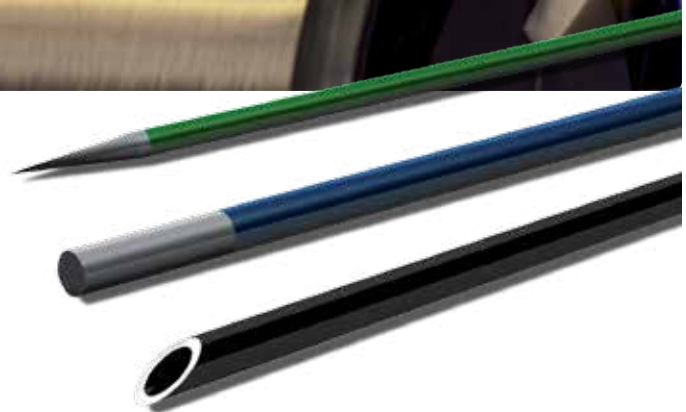
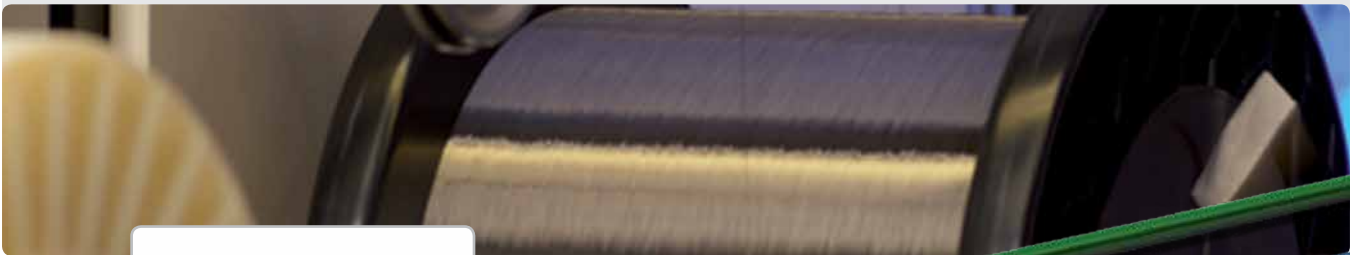
- Stainless Steel Tube (304 and 304L)
- Stainless Steel Wire (304V)
- Other materials on request

Delivery Options

- Coated tube on spool
- Straight and cut-to-length coated tube
- Straight, cut-to-length coated tube, distal end shaped

Applications

- Hypodermic needles used for i.e. neuro-stimulation
- EMG Needles
- Neuro-Probes



Needle Detail

The Merit proprietary spool-to-spool precoating process makes it possible to apply superior uniform coating to needles in a cost-effective manner.

Coating Services & Capabilities

Merit Medical applies PFOA-free PTFE (polytetrafluoroethylene) and hydrophilic coatings as well as hydrophilic coating to medical tubes and round or flat wires. We offer coating options that vary in lubricity and texture and can meet the requirements of nearly any medical device tubing or wire. Coatings are applied using our world-renowned spool-to-spool process prior to further processing for consistently smooth surfaces with tight tolerances. We supply coated wire and tubes on spool or we can provide further manufacturing.

Coating Capabilities

Bare Wire Diameter

- Stainless steel, Nitinol, platinum, etc - 0.038mm - 1.0mm (0.0015" - 0.039")
- Copper - 0.254mm - 1.4mm (0.010" - 0.055")
- Round and flat wire

Bare Tube Diameter

- Stainless steel, Nitinol - OD 0.30mm - 0.90mm (0.012" - 0.035")
- Walls as thin as 0.05mm (0.002")
- ID can vary

Coating Thickness

- Wires: 2 microns thickness per side to 20 microns thickness per side (0.00008" - 0.0008")
- Tubes: 4 microns thickness per side to 10 microns thickness per side (0.00016" - 0.0004")

Coating Options

PTFE LubriSkin™

- Three-coat system with pure PTFE topcoat
- Best lubricity, smooth surface
- Ideal for hypotubes, guide wires, stylets/mandrels
- Base Materials: Stainless steel, Nitinol, other alloys

PTFE DuraSkin™

- Two-coat system combining PTFE and polyethersulfone (PES)
- Lubricious and durable, smooth surface
- Ideal for hypotubes, stylets/mandrels
- Base Materials: Stainless steel, Nitinol, copper, other alloys

PTFE ShieldSkin™

- PES is used on its own or in combination with LubriSkin™ or DuraSkin™ finishing
- Customized build for electrical insulation
- Ideal for needles
- Base Materials: Stainless steel, Nitinol, other alloys

PTFE HardSkin™

- One-coat system
- Hard, thin, textured surface
- Ideal for hypotubes
- Base Materials: Stainless steel, Nitinol, other alloys

Hydrophilic SlipSkin™

- Coating consisting of an N-vinyl-2-pyrrolidinone and butyl methacrylate random copolymer
- Slippery when wet, excellent crossability
- Ideal for guide wires
- Base Materials: Stainless steel, Nitinol, other metal alloys