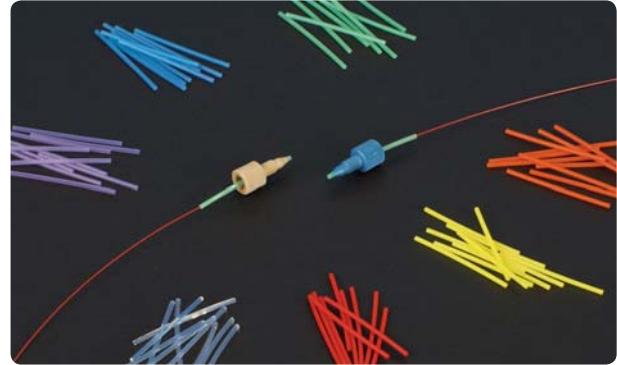


## MicroTight® Tubing Sleeves

- ▶ Manufactured from PEEK polymer
- ▶ Pressure rated to 4,000 psi (276 bar)
- ▶ Color-coded for easy inner diameter identification

Upchurch Scientific® MicroTight Tubing Sleeves feature an outer diameter of 0.025" and offer a wide assortment of inner diameters to help facilitate capillary tubing connections with our MicroTight accessories. Because the sleeves are manufactured from PEEK polymer, they carry an upper temperature threshold of 125 °C.

To use these sleeves properly, choose a sleeve with an inner diameter 0.001"–0.002" (25–50 µm) larger than the outer diameter of your capillary tubing. Then, slip the sleeve over your flow path tubing, such that your tubing extends all the way through the sleeve, but not beyond the end of the sleeve. Choose the correct fitting that corresponds with your receiving port, slide it over the sleeved flow path tubing and connect as normal.



## NanoTight™ Tubing Sleeves

- ▶ Manufactured from FEP fluoropolymer
- ▶ Pressure rated to 4,000 psi (276 bar)
- ▶ Outer diameter of 1/16" — the most popular size used on most instrumentation

Upchurch Scientific NanoTight Tubing Sleeves are manufactured using FEP fluoropolymer and precisely cut to a 1.6" length. A wide assortment of sleeves is available, ensuring the availability of a NanoTight sleeve for most applications. Many of the sleeves feature a light color tint that can help more easily identify the inner diameter for future orders. Because FEP is the base polymer for these sleeves, there is a maximum recommended continuous operating temperature of 50 °C.

Upchurch Scientific NanoTight sleeves were designed primarily for use with the NanoTight fittings, found on page 17 and also work well with the Super Flangeless™ fittings for 1/16" OD tubing on pages 21. For tubing sleeves that can be used effectively with stainless steel fittings and at higher temperatures, consider using the Upchurch Scientific PEEK Tubing Sleeves, found on the next page.

## APPLICATION NOTE

### Why use Sleeves?

Because most capillary tubing connections are made into coned receiving ports, where the port is not designed to be used with capillary tubing directly, special care must be used to ensure a good connection. While custom ferrules can help make these connections, they only offer a fixed-length nose — and because most tubing pockets will vary slightly in length, this can lead to leaking or dead volume.

To help save overall expense while maintaining a concentric connection with minimal dead volume, IDEX Health & Science recommends the use of sleeves. Because sleeves are not permanently attached to a ferrule, they can easily adapt to varying tubing pocket depths. Additionally, because they are manufactured using Upchurch Scientific extruded polymer tubing, you are assured of the concentricity of the resultant connection.

Part No.	ID	For Tubing OD Size	Color	Qty.
<b>MICROTIGHT PEEK TUBING SLEEVES AND KITS, 0.025" OD</b>				
F-180x	125 µm (0.005")	70–110 µm	Red	10-pk
F-181x	180 µm (0.007")	125–165 µm	Yellow	10-pk
F-182x	230 µm (0.009")	175–215 µm	Natural	10-pk
F-183x	280 µm (0.011")	225–265 µm	Blue	10-pk
F-184x	330 µm (0.013")	275–315 µm	Orange	10-pk
★ F-185x	395 µm (0.0155")	340–380 µm	Green	10-pk
F-186x	455 µm (0.018")	400–440 µm	Black	10-pk
F-187x	535 µm (0.021")	480–520 µm	Natural	10-pk
F-188x	152 µm (0.006")	95–135 µm	Purple	10-pk
1328	MicroTight Tubing Sleeve Kit contains (6) each of the sleeve sizes listed above			
1356	MicroTight Connector Kit Kit contains: a 10-pack of each MicroTight Tubing Sleeve (F-180–F-187); (2) P-770 MicroTight Adapters; and (2) MicroTight P-720 Unions			
<b>NANOTIGHT FEP TUBING SLEEVES, 1/16" OD</b>				
F-237x	125 µm (0.005")	70–110 µm	Red	10-pk
F-238x	180 µm (0.007")	125–165 µm	Yellow	10-pk
F-239x	215 µm (0.0085")	160–200 µm	Natural	10-pk
F-240x	280 µm (0.011")	225–265 µm	Blue	10-pk
F-241x	330 µm (0.013")	275–315 µm	Orange	10-pk
★ F-242x	395 µm (0.0155")	340–380 µm	Green	10-pk
F-243x	455 µm (0.018")	400–440 µm	Black	10-pk
F-244x	535 µm (0.021")	480–520 µm	Natural	10-pk
F-245x	610 µm (0.024")	555–595 µm	Red	10-pk
F-246x	685 µm (0.027")	630–670 µm	Yellow	10-pk
F-247x	840 µm (0.033")	785–825 µm	Green	10-pk
F-252x	1.07 mm (0.042")	1 mm	Purple	10-pk

## 1/16" OD PEEK Tubing Sleeves

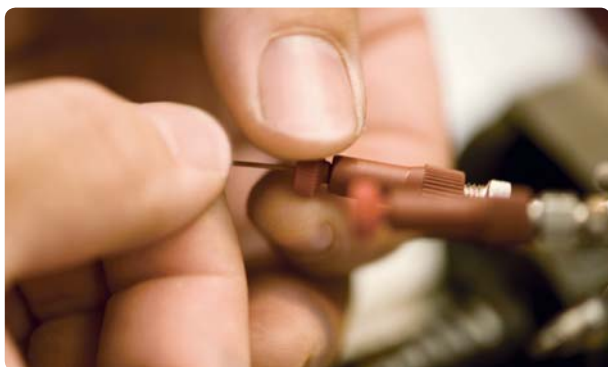
- ▶ For connecting capillary tubing to standard 10-32 ports
- ▶ Require the use of wrench tightened stainless steel nuts
- ▶ Pressure rated to 6,000 psi (414 bar)

Like the NanoTight™ FEP Sleeves on the previous page, these PEEK Tubing Sleeves are designed to be used with 1/16" OD, 10-32 threaded fittings to adapt capillary tubing to standard coned ports. Made of PEEK polymer, these 1.3" long sleeves can be used up to 125 °C.

These sleeves require a wrench tightened nut to achieve proper sealing. We recommend the F-140 Two-Piece Fingertight Fitting (page 15), which includes a PEEK ferrule or the hex-head SealTight™ fittings on page 14. Many researchers also use a stainless steel nut and ferrule with these sleeves, such as our U-400 and U-401 (page 10).

## 1/32" OD PEEK Tubing Sleeves

These 1.6" long Upchurch Scientific® 1/32" OD PEEK Tubing Sleeves can be used with any fitting designed for 1/32" OD tubing when smaller tubing must be connected. Select the appropriate sleeve from the product listing for your capillary tubing OD size. The 1/32" OD PEEK Tubing Sleeves have a maximum recommended temperature of 125 °C and have a pressure rating of 5,000 psi (345 bar).



## RELATED PRODUCTS

Use 1/32" OD PEEK or FEP Sleeves to connect capillary tubing with the following:

- ▶ The F-113 Ferrule and Two-Piece Fingertight Fittings for 10-32 ports (page 15).
- ▶ The F-112 and P-416BLK MicroTight® Fittings (page 18) — 1/32" OD PEEK Tubing Sleeves only.
- ▶ The 1/32" OD MicroTight Fittings on page 18.
- ▶ The Rheodyne® RheFlex M4 Fitting (page 12) for MX Module applications; the M-645 Valco®-Compatible Fitting (page 11) for Valco Nanovolume® valve applications.

## 1/32" OD FEP Tubing Sleeves

These 1.6" long sleeves facilitate connecting capillary tubing into ports designed for 1/32" OD tubing. Please refer to the product listing below to select the appropriate sleeve for your capillary OD size. These sleeves can be used at up to 50 °C and have a pressure rating of 1,750 psi (121 bar).



Clockwise, starting at top:

- ▶ 1/16" OD PEEK Tubing Sleeves, shown with F-140 Fitting
- ▶ 1/32" OD PEEK Tubing Sleeves, shown with F-126H Fitting
- ▶ 1/32" OD FEP Tubing Sleeves, shown with F-126S Fitting
- ▶ Fittings and tubing only shown to highlight how sleeves are designed to be used; they are not included with the sleeves

Part No.	ID	For Tubing OD Size	Color	Qty.
<b>PEEK TUBING SLEEVES FOR 1/16" OD FITTINGS</b>				
F-225	125 µm (0.005")	70–110 µm	Red	ea.
F-226	180 µm (0.007")	125–165 µm	Yellow	ea.
F-227	230 µm (0.009")	175–215 µm	Yellow	ea.
F-228	250 µm (0.011")	225–265 µm	Blue	ea.
F-229	330 µm (0.013")	275–315 µm	Natural	ea.
★ F-230	405 µm (0.016")	350–390 µm	Orange	ea.
F-231	560 µm (0.022")	505–545 µm	Natural	ea.
F-232	785 µm (0.031")	730–770 µm	Natural	ea.
F-233	865 µm (0.034")	785–825 µm	Blue	ea.
F-234	685 µm (0.027")	630–670 µm	Yellow	ea.
<b>PEEK TUBING SLEEVES FOR 1/32" OD FITTINGS</b>				
F-381x	180 µm (0.007")	125–165 µm	Yellow	10-pk
F-382x	205 µm (0.008")	150–190 µm	Natural	10-pk
F-384x	255 µm (0.010")	200–240 µm	Blue	10-pk
★ F-385x	380 µm (0.015")	325–365 µm	Natural	10-pk
F-386x	510 µm (0.020")	455–495 µm	Orange	10-pk
F-387x	250 µm (0.011")	225–265 µm	Red	10-pk
F-388x	330 µm (0.013")	275–315 µm	Black	10-pk
<b>FEP TUBING SLEEVES FOR 1/32" OD FITTINGS</b>				
F-374x	280 µm (0.011")	225–265 µm	Blue	10-pk
F-375x	330 µm (0.013")	275–315 µm	Orange	10-pk
★ F-376x	395 µm (0.0155")	340–380 µm	Green	10-pk