

# Polymicro Technologies™

## UV Transparent Fused Silica Capillary Tubing

**molex®**

**Utilizing a UV-Vis transparent and ultra-low fluorescence background coating, TSH and TSU Capillary Tubing couples unique optical characteristics with the benefits of synthetic fused silica capillary**

### Features and Benefits

Pure synthetic fused silica capillary

- Mirror-smooth interior surfaces provide stable flow of liquids and gases
- Low metal ion content creates an inert inner surface
- Facilitates efficient cleaving or cutting for custom lengths of tubing

Range of internal diameters with tight dimensional control

- Enables design flexibility and operational efficiency
- Superior dimensional stability over long lengths of tubing allows for different illumination volumes and flow rates
- External diameters mate with existing fluidic connector technologies

UV transparent external coatings  
(when comparing to polyimide coated capillary tubing)

- Transparency into the deep-UV wavelength range
- On-column monitoring within UV-Vis wavelengths without removing the coating
- Transparent coating allows for photo-initiation within the capillary ID

Minimal fluorescence background

- On-column LIF monitoring within UV-Vis wavelengths without removing the coating

Low refractive index of external coatings

- Allows capillary to have light-guiding capabilities
- Light transmits through an annular core; high effective NA
- Provides for evanescent sensing of fluids within the capillary ID

Custom options available

- Boost design efficiency
- Provide small production values at reasonable costs
- Ensure prototype methodology is directly scalable to high volume with minimal design costs

### Applications

#### Scientific

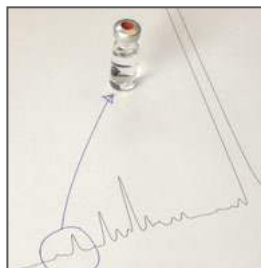
Analytical Chemistry  
Chromatographic Techniques  
Micro- and Nano-Fluidics  
On-Column Monitoring  
Evanescent Based Sensing  
Coaxial Light and Fluidic Devices

#### Medical

Precision Drug Delivery  
Flow Control Systems  
Clinical and Diagnostics Devices  
Wearable Drug Delivery Devices



Monolithic LC Columns



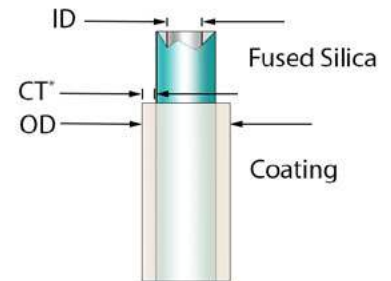
Human Identification



Fluidics



Polymicro Technologies™ UV  
Transparent Capillary Spool



Polymicro Technologies™ UV  
Transparent Capillary Tubing

**Product Overview**

Product and Technical Comparison		
Attribute	TSH	TSU
Coating	UV Transparent Coating	Deep-UV Transparent Coating
Glass Material	Synthetic Fused Silica	Synthetic Fused Silica
Inner Diameter (µm)	50, 75 and 100µm	50, 75 and 100µm
Outer Diameter (µm)	363 ± 10	363 ± 10
Coating Thickness (µm)	20	15
Operating Temperature	-65 to +125°C	-65 to +125°C
Radial Transmission	> 10% @ 310nm	> 90% @ 214nm
Abrasion Resistance Strength*	Medium to High	Low to Medium

\* When compared to Polymicro's standard Polyimide coating (Highest)

**Ordering information and Specifications**

Material Number	Product Description	Material	Inner Diameter (µm)	Outer Diameter (µm)	Coating Thickness (µm)
106816-2093	TSH050375	TSH UV Transparent Coating	050 ± 03	363 ± 10	20
106816-2094	TSH075375		075 ± 03		
106816-2095	TSH100375		100 ± 04		

Material Number	Product Description	Material	Inner Diameter (µm)	Outer Diameter (µm)	Coating Thickness (µm)
106815-0137	TSU050375	TSU Deep-UV Transparent Coating	050 ± 03	363 ± 10	15
106815-0160	TSU075375		075 ± 03		
106815-0140	TSU100375		100 ± 04		

**Additional Capabilities**

- Custom inner diameter and outer diameter sizes and tolerances
- Internal and external coatings
- Shaped cross-sectional geometries
- Precision cleaving
- Laser cutting
- Windowing
- Custom arrays and assemblies