

# Polymicro Technologies™

## Polyimide Coated Fused Silica Capillary Tubing

**molex®**

**Delivering industry-leading performance including tight ID and OD tolerances, Polymicro Technologies™ polyimide coated TSP and high-temperature TSG capillary tubing ensures precise flow-rate control of liquids and gases for Scientific, Industrial and Medical applications**

### Features and Benefits

Pure synthetic fused silica capillary

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

Wide range of internal and external diameters with tight dimensional control

Enables design flexibility and operation efficiency. Superior dimensional stability over long lengths of tubing. External diameters mate with existing industry equipment connector technologies

TSP and TSG polyimide coatings

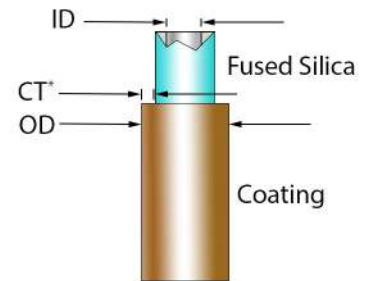
Offer excellent abrasion resistance during handling and usage. Resist temperatures up to +350°C for TSP; up to +400°C for TSG. Allow product flexure with superior bend radius

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



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Fused Silica Capillary Diagram

### Applications

#### Scientific

- Analytical Chemistry
- Chromatographic Techniques
- Micro- and Nano-Fluidics
- Mass Spectroscopy Interfaces

#### Industrial

- Package Leak Testing
- Evaporative Cooling Systems
- Petroleum Analysis
- Catalytic Research

#### Medical

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

### Product Overview

| POLYIMIDE COATED CAPILLARY TUBING COMPARISON |               |               |                |                  |               |
|--|---------------|---------------|----------------|------------------|---------------|
| Attribute                                    | TSP           | TSP 1/32"     | TSP Thick Wall | TSG              | WWP           |
| Geometry                                     | Circular      | Circular      | Circular       | Circular         | Square        |
| Operating Temp                               | -65 to +350°C | -65 to +350°C | -65 to +350°C  | -65 to +400°C    | -65 to +350°C |
| Outer Diameter Dimensions                    | Varied        | Fixed         | Fixed          | Varied           | Fixed         |
| Proof Tested                                 | 100%          | 100%          | 100%           | 100%             | N/A           |
| Polyimide Coating Type                       | Standard      | Standard      | Standard       | High-Temperature | Standard      |

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### Ordering Information and Specifications

| Material Number | Product Description | Material                       | Inner Diameter (µm) | Outer Diameter (µm) | Coating Thickness (µm) | Material Number | Product Description | Material                             | Inner Diameter (µm)                       | Outer Diameter (µm) | Coating Thickness (µm) |    |
|-----------------|---------------------|--------------------------------|---------------------|---------------------|------------------------|-----------------|---------------------|--------------------------------------|---|---------------------|------------------------|----|
| 106815-0001     | TSP002150           | TSP Standard Polyimide Coating | 2 ± 1               | 150 ± 6             | 12                     | 106815-0024     | TSP150375           | TSP Standard Polyimide Coating       | 150 ± 4                                   | 363 ± 10            | 20                     |    |
| 106815-0002     | TSP005150           |                                | 5 ± 2               | 150 ± 6             | 12                     | 106815-0025     | TSP180350           |                                      | 180 ± 6                                   | 360 ± 10            | 18                     |    |
| 106815-0003     | TSP005375           |                                | 5 ± 2               | 363 ± 10            | 20                     | 106815-0204     | TSP200350           |                                      | 200 ± 6                                   | 360 ± 10            | 18                     |    |
| 106815-0004     | TSP010150           |                                | 10 ± 2              | 150 ± 6             | 12                     | 106815-0026     | TSP250350           |                                      | 250 ± 6                                   | 360 ± 10            | 18                     |    |
| 106815-0005     | TSP010375           |                                | 10 ± 2              | 363 ± 10            | 20                     | 106815-0027     | TSP320450           |                                      | 320 ± 6                                   | 435 ± 10            | 18                     |    |
| 106815-0006     | TSP015150           |                                | 15 ± 2              | 150 ± 6             | 12                     | 106815-0625     | TSP450670           |                                      | 450 ± 6                                   | 673 ± 15            | 24                     |    |
| 106815-0007     | TSP015375           |                                | 15 ± 2              | 363 ± 10            | 20                     | 106815-0476     | TSP530660           |                                      | 536 ± 6                                   | 665 ± 15            | 24                     |    |
| 106815-0381     | TSP020090           |                                | 20 ± 2              | 90 ± 6              | 12                     | 106815-0028     | TSP530700           |                                      | 530 ± 10                                  | 700 ± 20            | 24                     |    |
| 106815-0008     | TSP020150           |                                | 20 ± 2              | 150 ± 6             | 12                     | 106815-0029     | TSP700850           |                                      | 700 ± 10                                  | 850 ± 20            | 24                     |    |
| 106815-0009     | TSP020375           |                                | 20 ± 2              | 363 ± 10            | 20                     | 106815-0030     | TSG250350           |                                      | TSG High-Temperature Polyimide Coating    | 250 ± 6             | 350 ± 15               | 20 |
| 106815-1145     | TSP025150           |                                | 25 ± 2              | 150 ± 6             | 12                     | 106815-0031     | TSG320450           |                                      |   | 320 ± 6             | 435 ± 15               | 18 |
| 106815-0011     | TSP025375           |                                | 25 ± 2              | 363 ± 10            | 20                     | 106815-0032     | TSG530660           |                                      |   | 536 ± 6             | 673 ± 25               | 30 |
| 106815-0012     | TSP030150           |                                | 30 ± 2              | 150 ± 6             | 12                     | 106816-0099     | TSP050794           | TSP 1/32" Standard Polyimide Coating | 50 ± 3                                    | 794 ± 12            | 24                     |    |
| 106815-0013     | TSP030375           |                                | 30 ± 2              | 363 ± 10            | 20                     | 106815-0065     | TSP075794           |                                      | 75 ± 3                                    | 794 ± 12            | 24                     |    |
| 106815-0596     | TSP040105           |                                | 40 ± 3              | 105 ± 6             | 12                     | 106815-0066     | TSP100794           |                                      | 100 ± 4                                   | 794 ± 12            | 24                     |    |
| 106815-0014     | TSP040150           |                                | 40 ± 3              | 150 ± 6             | 12                     | 106815-0067     | TSP200794           |                                      | 200 ± 6                                   | 794 ± 12            | 24                     |    |
| 106815-0383     | TSP040375           |                                | 40 ± 3              | 363 ± 10            | 20                     | 106815-0068     | TSP250794           |                                      | 250 ± 6                                   | 794 ± 12            | 24                     |    |
| 106815-0015     | TSP050150           |                                | 50 ± 3              | 150 ± 6             | 12                     | 106815-0069     | TSP300794           |                                      | 300 ± 6                                   | 794 ± 12            | 24                     |    |
| 106815-0016     | TSP050192           |                                | 50 ± 3              | 186 ± 6             | 16                     | 106815-0070     | TSP400794           |                                      | 400 ± 6                                   | 794 ± 12            | 24                     |    |
| 106815-0017     | TSP050375           |                                | 50 ± 3              | 363 ± 10            | 20                     | 106815-0071     | TSP500794           |                                      | 500 ± 6                                   | 794 ± 12            | 24                     |    |
| 106815-0018     | TSP075150           |                                | 75 ± 3              | 150 ± 6             | 12                     | 106815-1815     | TSP150665           |                                      | TSP Thick Wall Standard Polyimide Coating | 150 ± 6             | 665 ± 15               | 24 |
| 106815-0133     | TSP075200           |                                | 75 ± 3              | 193 ± 7             | 12                     | 106815-1816     | TSP200665           |                                      |   | 200 ± 6             | 665 ± 15               | 24 |
| 106815-0019     | TSP075375           |                                | 75 ± 3              | 363 ± 10            | 20                     | 106815-1817     | TSP250665           | 250 ± 6                              |   | 665 ± 15            | 24                     |    |
| 106815-0020     | TSP100170           |                                | 100 ± 4             | 164 ± 6             | 12                     | 106815-1818     | TSP300665           | 300 ± 6                              |   | 665 ± 15            | 24                     |    |
| 106815-0021     | TSP100200           |                                | 100 ± 4             | 193 ± 7             | 12                     | 106815-1513     | WWP050375           | WWP* Square-Square Polyimide Coating | 50 ± 5                                    | 363 ± 15            | N/A**                  |    |
| 106815-0022     | TSP100245           |                                | 100 ± 4             | 238 ± 7             | 16                     | 106815-1514     | WWP075375           |                                      | 75 ± 5                                    | 363 ± 15            | N/A**                  |    |
| 106815-0023     | TSP100375           |                                | 100 ± 4             | 363 ± 10            | 20                     | 106815-1515     | WWP100375           |                                      | 100 ± 5                                   | 363 ± 15            | N/A**                  |    |

\* All WWP materials have an ID measured flat-to-flat and a glass OD dimension of nominally 300µm flat-to-flat

\*\* Polyimide coating provides near-circular geometry over square glass material

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