Argonne NATIONAL LABORATORY

Advanced Photon Source
Beamline 11-BM
High Resolution Powder Diffraction

# 11-BM Capillary & Tubing Stock

Vendor Codes
CP = Cole Parmer, ML = MicroLumen
HR = Hampton Research , CS = Charles Supper,
St G = St Gobain, FD = Friedrich & Dimmock

**Kapton (polyimide): Temp range -273 to +400 °C (0 – 673 K)**

| vendor | notes | OD (mm) | ID (mm) | wall (mm) | Wire # | OD (in) | ID (in) | wall (in) |
|---|---|---|---|---|---|---|---|---|
| CP | | 0.36 | 0.31 | 0.03 | -- | 0.0142 | 0.0122 | 0.0010 |
| CP | purple base | 0.69 | 0.64 | 0.03 | 78-79 | 0.0270 | 0.0250 | 0.0010 |
| ML | stnd mail-in (red) | 0.86 | 0.81 | 0.03 | 68 | 0.0340 | 0.0320 | 0.0010 |
| ML | big mail-in (blue) | 1.17 | 0.89 | 0.14 | -- | 0.0462 | 0.0350 | 0.0056 |
| CP | green base | 1.10 | 1.00 | 0.05 | 61 | 0.0435 | 0.0395 | 0.0020 |
| ML | ID->BM | 1.21 | 1.13 | 0.04 | -- | 0.0478 | 0.0446 | 0.0016 |
| CP | 1/8" pins (teal) | 1.37 | 1.27 | 0.05 | 56 | 0.0540 | 0.0500 | 0.0020 |
| CP | black base | 1.56 | 1.46 | 0.05 | 54 | 0.0615 | 0.0575 | 0.0020 |
| CP | orange base | 1.90 | 1.80 | 0.05 | 50 | 0.0750 | 0.0710 | 0.002 |

**Borosilicate glass (GS): Temp range up to 500 °C (0 – 773 K)**

**Fused quartz (QZ): Temp range up to 900 °C (0 – 1073 K)**

OBE = Open Both Ends SOE = Sealed One End

| vendor | notes | OD (mm) | ID (mm) | wall (mm) | OD (in) | ID (in) | wall (in) |
|---|---|---|---|---|---|---|---|
| CS/HR | GS + QZ SOE | 0.1 | 0.28 | 0.01 | 0.0118 | 0.0110 | 0.0004 |
| CS/HR | GS + QZ SOE | 0.2 | 0.28 | 0.01 | 0.0118 | 0.0110 | 0.0004 |
| CS/HR | GS + QZ SOE | 0.3 | 0.28 | 0.01 | 0.0118 | 0.0110 | 0.0004 |
| CS/HR | GS + QZ SOE | 0.4 | 0.28 | 0.01 | 0.0118 | 0.0110 | 0.0004 |
| CS/HR | GS + QZ SOE | 0.5 | 0.48 | 0.01 | 0.0197 | 0.0189 | 0.0004 |
| CS/HR | GS SOE | 0.7 | 0.68 | 0.01 | 0.0276 | 0.0268 | 0.0004 |
| CS/HR | GS SOE | 1.0 | 0.98 | 0.01 | 0.0394 | 0.0386 | 0.0004 |
| CS/HR | GS SOE | 1.5 | 0.98 | 0.01 | 0.0394 | 0.0386 | 0.0004 |
| CS/HR | GS SOE | 2.0 | 0.98 | 0.01 | 0.0394 | 0.0386 | 0.0004 |
| | | | | | | | |
| FD | QZ **OBE** | 0.7 | 0.6 | 0.05 | 0.0276 | 0.0236 | 0.0020 |
| FD | QZ **OBE** | 1.0 | 0.9 | 0.05 | 0.0394 | 0.0354 | 0.0020 |

**Sapphire: Temp range > 900 °C**

| vendor | notes | OD (mm) | ID (mm) | wall (mm) | OD (in) | ID (in) | wall (in) |
|---|---|---|---|---|---|---|---|
| St G | special request | 0.89 | 0.58 | 0.15 | 0.035 | 0.023 | 0.006 |
| | | | | | | | |

**Magnetic Bases**

| notes | Base color | ID (mm) | (in) |
|---|---|---|---|
| 0.6 mm tube | purple | 0.70 | 0.028 |
| Standard Mail-In | red | 0.89 | 0.035 |
| Large Mail-In | blue | 1.22 | 0.048 |
| 1.0 mm tube | green | 1.13 | 0.045 |
| 1.5 mm tube | black | 1.60 | 0.063 |
| 1.8 mm tube | orange | 1.92 | 0.076 |

**Ferrules (Supltex)**

| notes | ID (mm) | ID (in) |
|---|---|---|
| TC wire | 0.40 | 0.016 |
| for 0.7 mm cap. | 0.80 | 0.031 |
| for 1.0 mm cap. | 1.20 | 0.047 |