

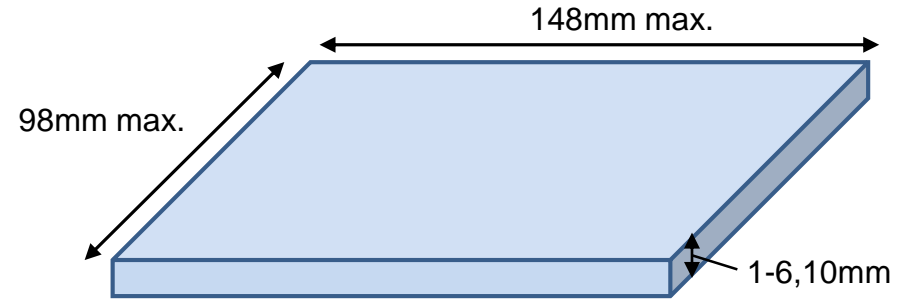
Microfluidic Prototyping Service Using Cyclo Olefin Polymer (COP) Technical Data

ZEON

March/2020

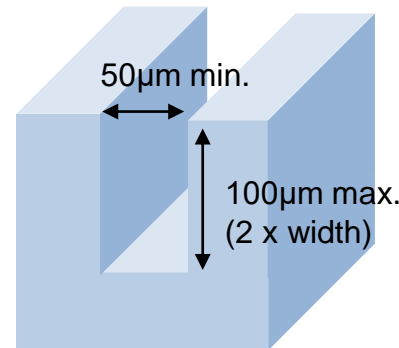
Chip Size

Maximum size :148mm × 98mm
Thickness:1,2,3,4,5,6,10mm



Channel Size

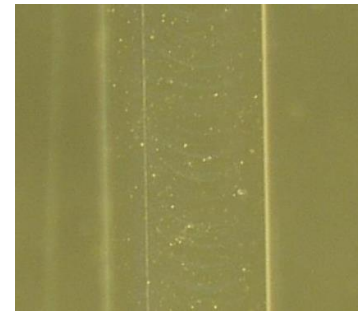
Minimum channel width: $50\mu\text{m} \pm 15\mu\text{m}$
Maximum channel depth : (2 x width)



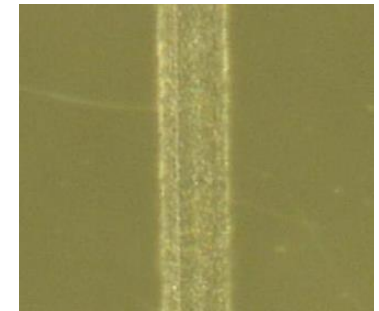
Surface Roughness

Ra: 0.03 - 0.3µm (Carbide end mill)

Diamond end mill can achieve lower surface roughness, however carbide end mill is required to achieve minimum channel width of 50µm



End Mill: Diamond
Ra: 0.017µm
Width: 200µm **Depth:** 100µm

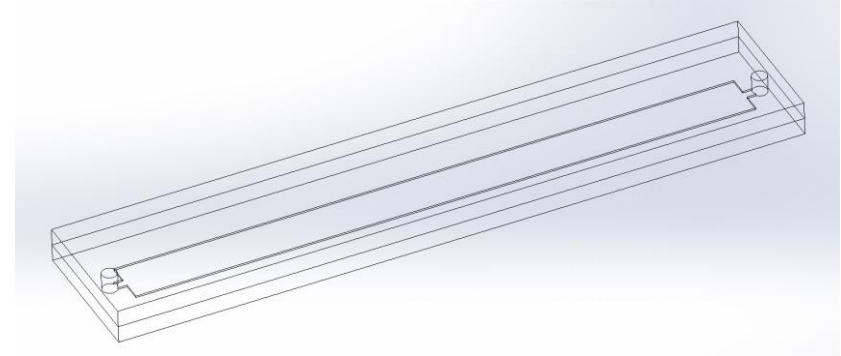


End Mill: Cemented Carbide
Ra: 0.048µm
Width: 50µm **Depth:** 50µm

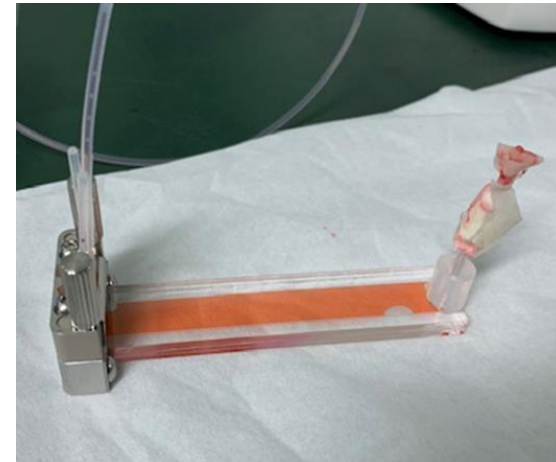
Zeon's bonding withstand the pump pressure of 500kPa under the following conditions

Testing Condition

- Chip Size: 70mm × 15mm
- Channel Profile
 - Width: 5mm
 - Depth: 0.2mm
 - Length: 60mm
- Plate Thickness
 - Upper plate: 2mm
 - Lower plate: 2mm
- Test Liquid:
 - Distilled water (food coloring agent)
- Pump : P-Pump (Dolomite)



Test Chip Design



Test Chip During Experiment