

Rheodyne Tech Tip 2: Burst Pressure of PEEK Tubing

PEEK tubing can be used instead of stainless steel tubing in most applications. PEEK is inert to almost all organic solvents and is biocompatible. Unlike metals, plastics are viscoelastic and, therefore, the yield strengths are not well defined. Many factors affect the burst pressure of PEEK tubing. PEEK tubing will burst at a lower pressure when you:

- Increase the inside diameter.
- Increase the temperature.
- Increase the time of exposure.
- Increase the concentration of organic solvents.
- Expose tubing to specific solvents. DMSO, THF, and methylene chloride cause the PEEK tubing to swell. Concentrated nitric acid and sulfuric acid weakens the tubing.

Suggested Maximum Pressure for PEEK Sample Loops.

Tube OD	Tube ID	Sample Loop	Water (1)	1:1 ACN/Water	100% ACN	100% THF	100% IPA
1/16"	0.007"	5 µL	>5500	>5500	4000	2500	>5000
1/16"	0.010"	10, 20 µL	5500	5500	3500	2500	5000
1/16"	0.020"	50, 100, 200 µL	4500	4500	3000	1500	4000
1/16"	0.030"	0.5, 1.0, 2.0, 5.0, 10 mL	3500	3500	3000	1500	4000
1/8"	0.062"	2.0, 5.0 mL	4500	4500	4000	2500	3000
1/8"	0.080"	10, 20 mL	>5000	>5000	2000	1000	2500