

Maximum Pressure Specifications for PEEK Column Hardware - Tech Information

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Our ARE-Applied Research Brand™ of PEEK HPLC Column Hardware can be used with short-term packing pressures up to a maximum of 500 bar.

MICROSOLV's ARE-Applied Research Brand™ PEEK HPLC column hardware is engineered for robust performance under both packing and long-term analytical conditions.

However, because PEEK is a high-performance polymer with pressure and temperature limits that differ significantly from stainless steel, it is important to follow the recommended operating ranges to ensure stability, reproducibility, and hardware longevity.

Short-Term Packing Pressure Limits

PEEK column hardware can be used with short-term packing pressures up to 500 bar when following the recommended MICROSOLV packing protocol.

This maximum applies only during column packing, not during routine HPLC operation.

Exceeding this limit may permanently deform or compromise the structural integrity of the PEEK hardware.

Long-Term Operating Pressure Limits

For normal analytical use (long-term, repeated operation), the maximum recommended operating pressures are:

- 250 bar for 2.1 mm ID columns and reservoirs
- 250 bar for 7.2 mm ID columns and reservoirs
- 350 bar for 4.6 mm ID columns

These long-term limits reflect the continuous-use mechanical stability of PEEK under typical room-temperature analytical conditions.

Temperature-Dependent Pressure Reduction

While the hardware can be used at 150–200 °C, the pressure capability decreases significantly as temperature increases.

- At elevated temperatures in this range, do not exceed 50–75 bar.
 - High temperatures soften PEEK and reduce its strength.
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Important caution: Extended use of PEEK at high temperatures may permanently alter the polymer, making it less pressure-stable even after cooling. Conservative pressure limits help prevent long-term material degradation.

Solvent Compatibility Requirements

Only solvents known to be PEEK-compatible should be used.

- Avoid solvents that can extract, swell, or soften the polymer.
- Using incompatible solvents—even temporarily—can weaken fittings, threads, and frit seats, ultimately reducing maximum allowable pressure.

If you are uncertain whether a solvent is PEEK-safe, consult MICROSOLV technical support or review solvent compatibility charts before use.

Ordering Information

For ordering PEEK column hardware, frits, sealing rings, and packing accessories, visit: [PEEK Column Hardware Ordering Information](#)

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