7.5 mm is Largest ID for PEEK Columns Offered - Tech Information

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Short Answer: Largest ID PEEK Slurry Reservoir and Columns is **7.5 mm ID**

Packing 7.5 mm ID All-PEEK HPLC columns requires a reservoir and fittings that preserve a metal-free flow path while supporting reliable, void-free bed formation.

Our documented configuration for this size uses a 7.5 mm ID slurry reservoir, PEEK sealing ring/frit spacer, PEEK frit (5 µm) for the column, end fitting for 7.5 mm ID, and an adapter from the 7.5 mm reservoir to the 7.5 mm column body.

Reservoir Sizing (Rule of Thumb)

Choose a reservoir volume of ~3× the packed column volume. This headspace ensures adequate slurry mobility, uniform particle distribution, and consistent packing density—minimizing voids and rework.

What the 7.5 mm PEEK Slurry Reservoir Setup Includes

- Slurry reservoir (7.5 mm ID)
  A PEEK reservoir tube matched in length to the column you're packing is recommended to maintain consistent hydraulic behavior during packing.
- PEEK sealing ring / frit spacer
  Used to seal junctions and maintain alignment under pressure; prevents leaks and protects interfaces.
- PEEK frit (5 µm) for the column
  The column itself is assembled with a 5 µm PEEK frit at the end fitting to retain the stationary phase once the bed is formed (do not put a frit in the top of the reservoir).
- End fitting for 7.5 mm ID
  The standard 7.5 mm PEEK end fitting closes the column after packing; external outlet ports are 10-32 UNF for 1/16" OD tubing, while the column-to-end-fitting thread for 7.5 mm bodies is 5/8-18.
- Adapter: 7.5 mm reservoir → 7.5 mm column
  Allows direct coupling between the reservoir body and the 7.5 mm ID column body during packing; assemble with the specified sealing rings.

Note on thread standards: ARE All-PEEK column sets use 5/8-18 at the tube-to-end-fitting interface for 7.5 mm ID, with universal 10-32 outlet threading at the external end-fittings for tubing connections.

Assembly & Packing Workflow (7.5 mm ID)

1. Assemble the reservoir (7.5 mm ID) and match its length to the target 7.5 mm column if possible for smoother packing dynamics.
2. Install the 5 µm PEEK frit in the column end fitting; leave the reservoir top without a frit so slurry can flow freely.
3. Connect the reservoir to the column using the 7.5 → 7.5 mm adapter and PEEK sealing rings, ensuring square, leak-free joints.
4. Fill the reservoir with slurry (≥ 3× column volume) and begin packing with your HPLC packing pump, maintaining stable pressure and flow.
5. After achieving the target bed height and density, disconnect the reservoir, install final end fittings, and perform post-pack conditioning.

Pressure & Temperature Guidance (All-PEEK)

- Packing pressure: All-PEEK packing components are designed around a ~300 bar packing limit, which is sufficient for most silica-based methods at this diameter.
- Elevated temperature: Using PEEK hardware at higher temperatures reduces pressure stability; operate conservatively and avoid simultaneous extremes of temperature and pressure.

Why All-PEEK for 7.5 mm?

- Fully metal-free flow path: Prevents metal-analyte interactions during and after packing.
- Biocompatibility: Beneficial for biomolecules and metal-sensitive phases.
- Matched mechanics: PEEK-to-PEEK interfaces help maintain bed integrity and consistent compression behavior during packing and use.

Ordering & Related References

- Packing – Slurry Reservoir Kits (All-PEEK): product line overview and pressure guidance; select kits sized for 7.5 mm ID workflows.
- All-PEEK Column Hardware: thread standards, frit options (including PEEK and Ti), and temperature cautions for ongoing use.

PEEK Hardware Product Page

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