



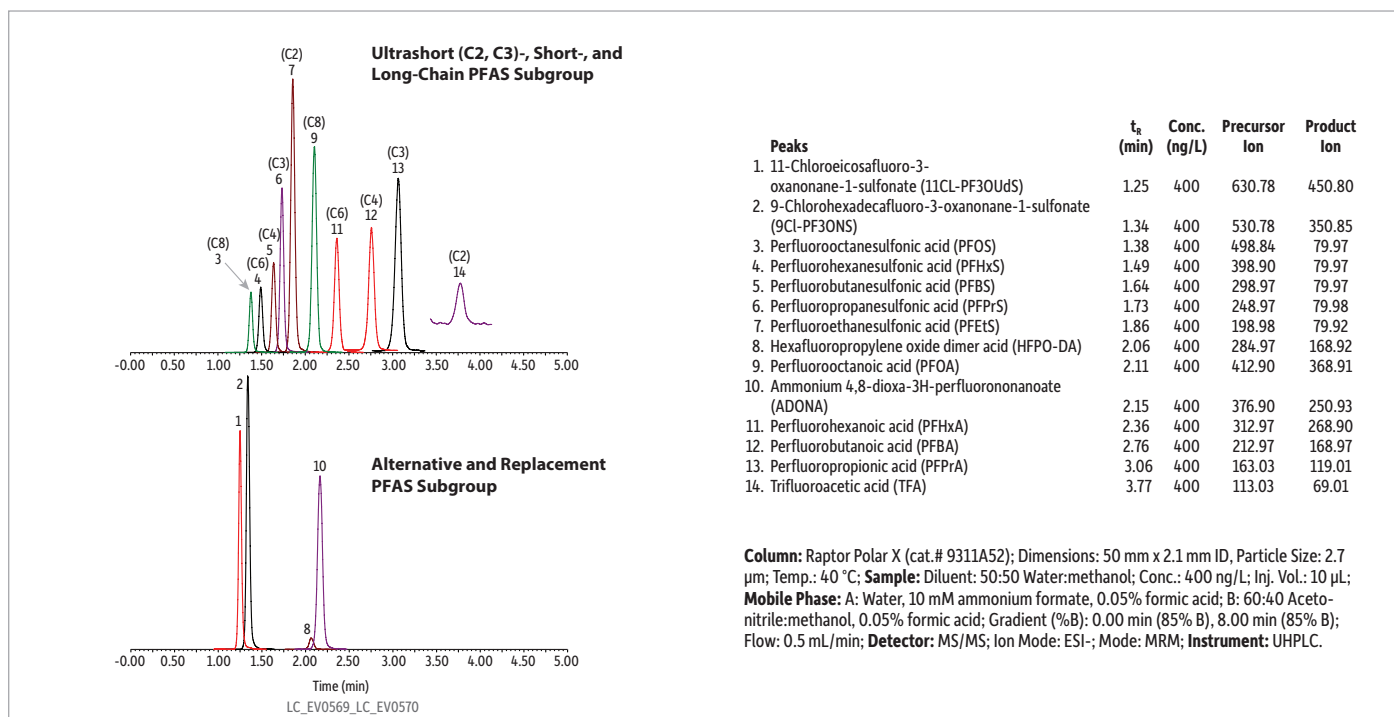
**Featured Application:** Ultrashort-Chain (C2, C3), Alternative, and Legacy PFAS on Raptor Polar X

## Novel Stationary Phase for Comprehensive PFAS Analysis: Ultrashort-Chain (C2, C3), Alternative, and Legacy Compounds



- Unique stationary phase provides proper chromatographic retention of small, polar ultrashort-chain PFAS as well as short- and long-chain PFAS.
- Fast and simple isocratic LC-MS/MS method allows high-throughput PFAS analysis.
- Consistent column performance ensures accurate results.

Current LC-MS/MS methods for per- and polyfluoroalkyl substances (PFAS) analysis are focused on short-chain (C4-C6), long-chain (C8 and up), and alternative or replacement compounds and do not include newly trending ultrashort-chain (C2 and C3) compounds. The ultrashort-chain PFAS are growing in importance because they are ubiquitous in environmental waters (e.g., rain, river, and groundwaters) and have been reported as being at least 40% of the total PFAS in water samples. Ultrashort-chain PFAS include trifluoroacetic acid (TFA), perfluoropropanoic acid (PFPrA), perfluoroethane sulfonate (PFETs), and perfluoropropane sulfonate (PFPrS), with TFA being the most abundant as well as one of the most difficult to analyze. True comprehensive PFAS analysis methods that provide reliable results for ultrashort-chain compounds (including TFA) as well as alternative and legacy PFAS are essential for water monitoring programs.

The critical challenge encountered with TFA analysis is that it exhibits limited retention and/or poor chromatography on reversed-phase columns and HILIC columns. Other columns that emphasize strong ion-exchange mechanisms can pose the opposite problem: too much retention and poor peak shapes. In contrast, TFA can be reliably retained and analyzed on Raptor Polar X columns because they contain a unique hybrid ligand that blends HILIC and ion-exchange retention mechanisms. As demonstrated here, a fast and simple LC-MS/MS method was established for comprehensive PFAS analysis that includes C2, C3, C4, C6, C8, and alternative PFAS. Even longer-chain PFAS are possible, too. This method can be applied to both potable and non-potable water analysis and provides convenient setup and high throughput for labs interested in adding ultrashort-chain compounds to an existing PFAS assay.



## Featured Products

Analytical Column	Maintenance & Accessories
	
<b>Raptor Polar X column</b> cat.# 9311A52	<b>Slip-on inlet filter</b> cat. # 25008



### Raptor Polar X LC Columns

- Reliably analyze a wide variety of polar analytes (acidic, basic, and neutral) without time-consuming derivatization or complex ion pairing.
- Switch between HILIC and ion-exchange retention modes with simple mobile phase changes and short equilibration times.

ID	Length	qty.	cat.#
<b>2.7 <math>\mu</math>m Particles</b>			
	30 mm	ea.	9311A32
2.1 mm	50 mm	ea.	9311A52
	100 mm	ea.	9311A12



25008

### Low-Pressure Slip-On Inlet Filter for Mobile Phase Reservoir

A 316 stainless steel tip with a Tefzel collar seals to a corrosion-resistant 316 stainless steel filter element. The slip-on filter easily attaches to the pump inlet line, without the use of wrenches. The universal 1/8" OD tip accommodates standard PTFE tubing inner diameters. The cylindrical filter is standard 10  $\mu$ m porosity. Fits Altex, ISCO, LDC, Varian, Waters, PerkinElmer, and other pumps.

Description	qty.	cat.#
Slip-On Inlet Filter	ea.	25008

## Related Products

### Survival Kit for HPLC, Stainless Steel

For start-up and maintenance in all HPLC systems.

The stainless-steel survival kit contains a wide range of tubing, fittings, and tools necessary to set up and maintain your HPLC system: a selection of lengths and IDs of 1/16-inch tubing, nuts, ferrules, a ValvTool wrench, and a zero-dead-volume union.

Description	qty.	cat.#
Survival Kit for HPLC	kit	25097



25097

### Limited-Volume 2.0 mL, 9 mm Screw-Thread Polypropylene Vials

- Available in 1.5 mL or 700 µL volumes.
- Limited-volume design fits all 2.0 mL, 12 x 32 mm, vial-based autosamplers.
- Compatible with all 9 mm screw-thread caps.
- PTFE-free—ideal for PFAS analysis (e.g., EPA 537) and other PFAS-sensitive methods.

Note: Polypropylene vials and caps prevent sample contamination from PTFE-coated septa. However, since polypropylene caps do not reseal, evaporation occurs after injection. Multiple injections from the same vial are therefore not possible.

Type	Volume	Color	Size	qty.	Similar to Part #	cat.#
9 mm Screw-Thread	1.5 mL	Clear	12 x 32 mm	100-pk.	Thermo Fisher Scientific C4000-14	23242
9 mm Screw-Thread	1.5 mL	Clear	12 x 32 mm	1000-pk.	Thermo Fisher Scientific C4000-14	23245
9 mm Screw-Thread	700 µL	Clear	12 x 32 mm	100-pk.	Waters 186005230	23243
9 mm Screw-Thread	700 µL	Clear	12 x 32 mm	1000-pk.	Waters 186005230	23246



23242

### 2.0 mL, 9 mm Solid-Top Polyethylene Caps

- Compatible with all 9 mm screw-thread vials.
- Molded, 10 mil, solid, pierceable cap.
- PTFE-free—ideal for PFAS analysis (e.g., EPA 537) and other PFAS-sensitive methods.

Note: Polypropylene vials and caps prevent sample contamination from PTFE-coated septa. However, since polypropylene caps do not reseal, evaporation occurs after injection. Multiple injections from the same vial are therefore not possible.

Type	Cap Size	Color	qty.	Similar to Part #	cat.#
Screw-Thread	9 mm	Clear	100-pk.	Waters 186004169	23244
Screw-Thread	9 mm	Clear	1000-pk.	Waters 186004169	23247



23244