


PFAS Analytical Workflow Solutions

Complete portfolio of solutions for PFAS analysis. From sample preparation to calibration to analysis:

- Solid Phase Extraction Products (SPE)
- Certified Reference Materials (CRMs)
- High Performance Analytical Columns

www.phenomenex.com/pfas

phenomenex

EPA 533 and 537.1

strata™
Solid Phase Extraction

EPA 533

Strata X-AW

EPA 537.1

Strata SDBL

Q: How can we simplify SPE and sample cleanup to save time and possible errors?

A: Develop a cartridge with ***both*** phases!

Quality systems manual for environmental laboratories (Guidance Document) solid samples, soils, biota, sediments, or non-drinking water samples.

Step 1: SPE sorbent

Step 2: Sample cleanup with graphitized carbon black (GCB)

Strata X-AW **Strata GCB** **Strata PFAS**

Strata PFAS 200 mg WAX/50 mg GCB
Strata PFAS 500 mg WAX/50 mg GCB

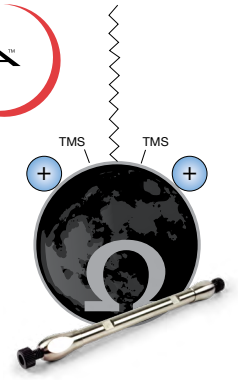
Have questions about PFAS analysis? Contact our experts
https://www.phenomenex.com/chat

PFAS Certified Reference Materials for EPA Methods 533 and 537.1

Phenova native PFAS CRMs eliminate the need for tedious calculations reducing calibration errors and improving lab throughput.

Part Number		AL0-101839	AL0-101838	AL0-101840
		CRMs are 2µg / mL in Methanol ea. In 1mL volume		
	CAS RN	EPA 537.1	EPA 533	EPA 533 + 537.1
Perfluoroalkyl carboxylic acid (PFCA)				
Perfluorobutanoic acid (PFBA)	375-22-4	NA	✓	✓
Perfluoropentanoic acid (PFPeA)	2706-90-3	NA	✓	✓
Perfluorohexanoic acid (PFHxA)	307-24-4	✓	✓	✓
Perfluoroheptanoic acid (PFHpA)	375-85-9	✓	✓	✓
Perfluorooctanoic acid (PFOA)	335-67-1	✓	✓	✓
Perfluorononanoic acid (PFNA)	375-95-1	✓	✓	✓
Perfluorodecanoic acid (PFDA)	335-76-2	✓	✓	✓
Perfluoroundecanoic acid (PFUnA)	2058-94-8	✓	✓	✓
Perfluorododecanoic acid (PFDoA)	307-55-1	✓	✓	✓
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	✓	NA	✓
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	✓	NA	✓
Perfluoroalkane sulfonic acid (PFSA)				
Perfluorobutanesulfonic acid (PFBS)	375-73-5	✓	✓	✓
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	NA	✓	✓
Perfluorohexanesulfonic acid - br/lin (PFHxS)	355-46-4	✓	✓	✓
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	NA	✓	✓
Perfluorooctanesulfonic acid - br/lin (PFOS)	1763-23-1	✓	✓	✓
Perfluoroalkane sulfonamides (FASA) and derivatives				
N-methyl perfluorooctanesulfonamidoacetic acid - br/lin (NMeFOSAA)	2355-31-9	✓	NA	✓
N-ethyl perfluorooctanesulfonamidoacetic acid - br/lin (NEtFOSAA)	2991-50-6	✓	NA	✓
Fluorotelomer sulfonic acid (FTSA)				
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	NA	✓	✓
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	NA	✓	✓
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	NA	✓	✓
Perfluoroalkyl ether carboxylic acid (PFECA)				
Perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	NA	✓	✓
Perfluoro-4-methoxybutanoic acid (PFMBA)	863090-89-5	NA	✓	✓
Hexafluoropropylene oxide dimer acid (HFPO-DA/GenX)	13252-13-6	✓	✓	✓
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	NA	✓	✓
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	✓	✓	✓
Polyfluoroalkyl ether sulfonic acid (PFESA)				
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7	NA	✓	✓
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	✓	✓	✓
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	✓	✓	✓

HPLC and UHPLC Columns



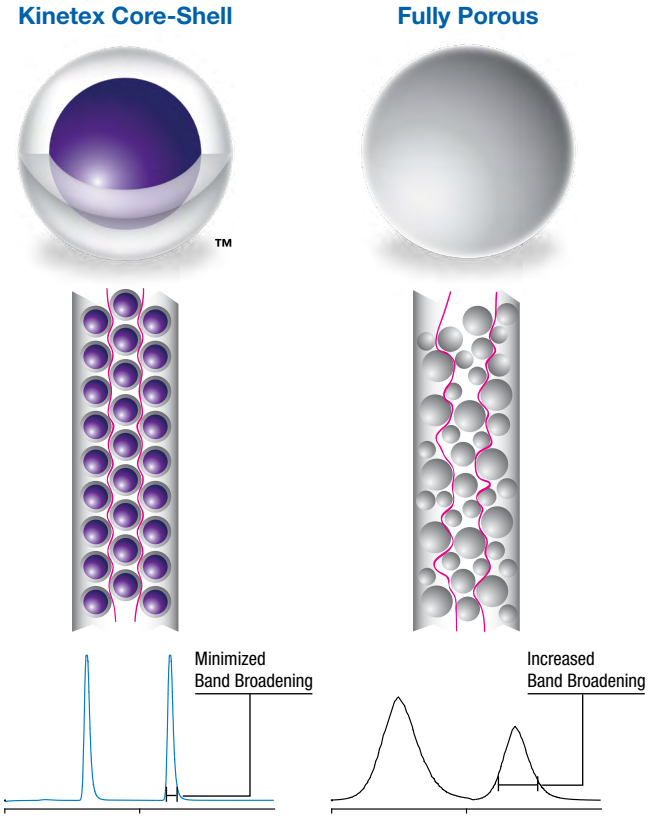
Luna Omega

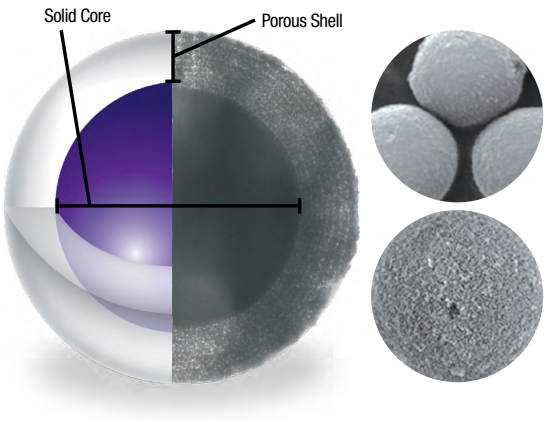
Luna Omega Polar C18 is a novel UHPLC/HPLC column stationary phase capable of providing a unique selectivity within a wide elution window and increased retention for both polar and non-polar analytes. The all-purpose C18 ligand provides hydrophobic interactions while a polar modified particle surface provides enhanced polar retention and also aqueous stability. These attributes make the Luna Omega Polar C18 an excellent choice for balanced retention of polar and hydrophobic compounds as well as to solely enhance retention of highly polar compounds.

Kinetex Core-Shell Technology Columns

Kinetex HPLC columns are packed with core-shell particles, particles that have a uniform porous shell grown on a silica core. The result is a versatile HPLC column that gives extremely high efficiencies on any UHPLC, HPLC, and Preparative LC system.

Kinetex 5 µm HPLC columns have been shown to dramatically improve standard 3 and 5 µm Methods while Kinetex 1.3, 1.7, and 2.6 µm columns offer un-paralleled HPLC performance for HPLC and UHPLC systems alike.



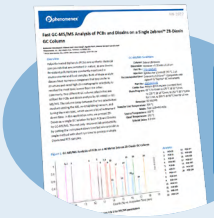


For more information about HPLC and UHPLC Columns for PFAS analysis, visit **https://www.phenomenex.com**

PFAS Applications: Explore the following Analytical Resources for PFAS Analysis

LC Column Chemistries for Full Coverage of PFAS Analyte Ranges. A comprehensive comparative analysis of more than 10 different column chemistries for PFAS analysis.

USA | Other Countries



Rapid Analysis of 23 PFAS in a Short 4-minute Run by UHPLC-MS/MS using Luna Omega 1.6 µm PS C18

USA | Other Countries

Analysis of PFAS in Drinking Water by EPA Method 533: A Direct Comparison of the Accuracy and Precision of Manual and Automated SPE Sample Preparation done in collaboration with Promochrom and Alfa Analytical

USA | Other Countries

Analysis of PFAS in Drinking Water by EPA Method 537.1: A Direct Comparison of the Accuracy and Precision of Manual and Automated SPE Sample Preparation

USA | Other Countries

Comparison of PFAS Recoveries Between Cartridge Format WAX/GCB vs. Dispersive GCB

USA | Other Countries

PFAS Testing Guide: PFAS in Food and Food Packaging

USA | Other Countries

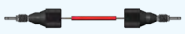
Q&A PFAS Non-Regulated Contaminants (UCMR 5)

USA | Other Countries

Select Your PFAS Product by Method

EPA 533 Specific	Description	Part Number	Feature and Benefit
PFAS CRM 	EPA 533 mix 2 µg / mL in methanol	AL0-101838	Complete native PFAS standards per EPA Method 533 in one vial. All analytes at 2 ppm in Methanol as acids for easy calculation and dilution.
SPE Cartridge (EPA 533) 	Strata™ X-AW 33 µm Polymeric Weak Anion, 500 mg / 6 mL tubes , 30/pk	8B-S038-HCH	A weak anion-exchange functionalized polymeric sorbent that allows for complete retention of acidic compounds with a pK_a less than 5, making 100 % organic wash conditions possible. A 100 % organic wash ensures that the maximum amount of interferences are removed from the target compound.
EPA 537.1 Specific			
PFAS CRM 	EPA 537.1 mix 2 µg / mL in methanol	AL0-101839	Complete native PFAS standards per EPA Method 537.1 in one vial. All analytes at 2 ppm in Methanol as acids for easy calculation and dilution.
PFAS CRM 	EPA 537.1 + EPA 533 mix 2 µg / mL in methanol	AL0-101840	Complete native PFAS standards for both EPA Method 533 and 537.1 in one vial. All analytes at 2 ppm in Methanol as acids for easy calculation and dilution.
SPE Cartridge (EPA 537.1) 	Strata SDB-L 500 mg/6 mL tubes	8B-S014-HCH	A rugged polymer sorbent that is pH stable from 1-14 and offers hydrophobic and aromatic selectivity for reversed phase applications.
Additional PFAS Methods			
From its primary sources in fire suppression foams, industrial discharges and consumer products, PFAS is also widely found to occur in soils, sediments, surface water, groundwater and wastewater discharges, illustrating the widespread dispersion and persistence of this unique class of compounds. Initially many labs have used the DOD QSM 5.3 as guidance for PFAS in non-drinking water matrices. Most recently, EPA 1633 has been published to address these complex matrices.			
Water Matrices 	Strata PFAS (WAX/GCB) 200 mg, 50 mg, 6 mL tubes, 30/pk	CS0-9207	Strata PFAS is a stacked (WAX/GCB) solid phase extraction cartridge for DOD QSM 5.1/5.3 applications. Reproducible extraction. 2x gains in productivity for sample throughput.
Soils/Sediments/ Biota 	Strata PFAS (GCB/WAX) 50mg, 200 mg, 6 mL tubes, 30pk	CS0-9214	Strata PFAS (GCB/WAX) solid phase extraction cartridge that can be used in soils and sediment matrices that offers: • Reliable SPE with 2x gains in productivity • Reduced need for multiple tubes, transfer steps, and wasted time • Reproducible extraction for Per- and Polyfluoroalkyl Substances (PFAS)
Acidic Compounds  	Strata-X-AW 33 µm Polymeric Weak Anion, 150 mg/6 mL Tubes, 30/pk	8B-S038-SCH	A weak anion-exchange functionalized polymeric sorbent that allows for complete retention of acidic compounds with a pK_a less than 5, making 100 % organic wash conditions possible. A 100 % organic wash ensures that the maximum amount of interferences are removed from the target compound.
	Strata GCB, 250 mg/6 mL, 30/pk	8B-S528-FCH	

PFAS Products and Accessories

Product	Description	Part No.	Description / Benefit
Delay Column 	Luna™ 5 µm C18(2) 30 x 3 mm	00A-4252-Y0	Luna C18(2) phase is an octadecyl silane with ligands bound to the silica surface, resulting in a very hydrophobic stationary phase that offers great methylene selectivity. The non-polar endcapping virtually eliminates silanol interactions.
Analytical Column(s) 	Luna Omega 3 µm, PS C18 50 x 3 mm	00B-4758-Y0	A multi-modal, 100 % aqueous stable C18 column with a positive surface modification offers a unique selectivity and provides valuable increase in retention of acids through ionic/polar interactions. The C18 ligand stimulates hydrophobic retention that greatly promotes increased resolution between analytes of interest. Available in several formats.
	Kinetex™ EVO 5 µm, C18 100 x 2.1 mm	00D-4633-AN	A durable, homogeneous porous shell is grown on a solid silica core to create a core-shell particle resulting in less band broadening when compared to fully porous particles. Kinetex Evo delivers extremely high efficiencies. Available in several formats.
	Gemini™ 3 µm, 50 x 2 mm	00B-4439-B0	A rugged reversed phase HPLC column that offers extended lifetime under extreme pH conditions and excellent stability for reproducible, high efficiency separations. Ideal for analytical and preparative separations of basic and acidic compounds; high and low pH conditions (pH 1-12). Available in several formats.
Column Security 	SecurityGuard™ ULTRA Holder, for UHPLC Columns 2.1 to 4.6 mm ID, Ea	AJ0-9000	SecurityGuard features a standard guard cartridge system that is guaranteed to extend the lifetime of your column by capturing sample contaminants and improve selectivity for early eluting PFAS compounds.
	SecurityGuard Cartridges, PS C18, 4 x 2.0 mm ID, 10/pk	AJ0-7605	
	SecurityGuard ULTRA cartridges for EV0-C18 UHPLC, sub-2 µm and core-shell columns with 2.1 mm internal diameters (ID), 3/pk	AJ0-9298	SecurityGuard ULTRA prevents contamination of analytical column.
Security Link 	The SecurityLINK™ SS 150 x 125 µm length with 10-32 Fittings, Ea	AJ1-1521	A finger-tight fitting system simplifies column connections. Torque limiting technology prevents column and port damage from over tightening. Easy to install. Fitting self-adjusts at column inlet to ensure zero dead volume. UHPLC and HPLC compatibility: pressure rated to 19,000 psi (1,310 bar)
Vial Caps 	Verex™ Cert+ Cap (one-piece), 9 mm, PE w/ Starburst pre-Slit, 2 mL, 1000/pk	AR0-89P6-13-C	Starburst pre-slit
Polypropylene Vials 	Verex Vial, 9 mm Screw, PP, 1.7 mL	AR0-39P0-13	Verex and autosampler vials offer the lowest ion content possible to reduce sample loss and contamination. Tested and certified for cleanliness, performance, and consistency.
	Verex Vial, 9 mm Screw, PP, 300 µL	AR0-39P2-13	
	Verex Vial, 9 mm Screw, PP, 700 µL	AR0-39P1-13	
SPE cartridge Graphitized Carbon Black 	Strata™ GCB 250 mg/6 cc tubes	8B-S528-FCH	Strata GCB is a graphitized carbon black SPE sorbent that offers a better retention of polar compounds compared to C8 and C18 silica products.
	Strata GCB 25 mg pass-through cartridges	8B-S528-CAJ	
Large Volume SPE	Adaptor Cap for 1,3 and 6 mL SPE tubes, w/ luer tip, polypropylene	AH0-7191	Adaptor to interface between 6 mL SPE cartridges and large volume holder AH0-7005
SPE Sample Reservoir	Empty SPE tubes, 60 cc, polypropylene, 16/pk	AH0-7005	Large volume tube that mounts onto 6 mL SPE cartridges. Used for loading large sample volumes.

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