

Chromatography consumables

Protecting from PFAS – together, we can do it

Chromatography and consumables for routine testing

thermo scientific

Setting a new horizon for PFAS workflow solutions

The detection and quantification of known PFAS and the discovery of unknown PFAS has never been more important. Determining the best workflow for your PFAS analysis can be challenging. Optimal methods will vary depending on the matrix you are working with and goals of your analysis. There are strategies to help you with either targeted analysis of known PFAS compounds or the discovery of unknowns, from a variety of matrices.

Whether you need just a single item to complete an analysis or everything from sample preparation to chromatography and mass spectrometry to data analysis software, we have you covered. We offer solutions for problems at any step of your analytical process, no matter the size or scope of your PFAS project.





Download application note

Learn about a reliable, sensitive method using a PFAS-safe sample preparation system and LC-MS/MS.



Download application note

Read about a method for determining 24 PFAS compounds from ground, surface, and wastewaters using LC-MS/MS.



Download application note

Learn more about determination of per- and polyfluorinated alkyl substances (PFAS) in drinking water.

Minimize risks of contamination with consumables

Due to the increased use of PFAS, there are many different risks of contamination to the analysis. Care must be taken during sample preparation, sample handling and analysis, particularly as detection limits are in the low to sub-ppt range. It is not only recommended to ensure risks of contamination is minimized in the laboratory but also with your chromatography solution. You can minimize the risk of contamination to your chromatographic equipment by using our PFAS kit (includes PFAS-free tubing, fittings), solvent filter inlets and our isolator column. Changing the tubing and using an isolator column as part of the solution, to separate out the analytical PFAS from the system PFAS, will result in more accurate quantitation.



PFAS columns overview

Isolator columns

The use of an isolator column is necessary when analysing PFAS, as it helps to separate background contaminates from sample analytes, allowing for a more accurate sample result. For this we recommend Thermo Scientific™ Accucore™ C18 column.

Analytical columns

For high retentivity and large volume direct injections a fully porous column such as Thermo Scientific™ Acclaim™ C18 column has excellent peak shape for PFAS analyses. A fully porous column with larger surface volume has more stationary phase to appropriately separate the analytes. For methods where smaller sample injection volumes are employed, Accucore RP-MS column is recommended. The Accucore column is a solid-core that provides excellent chromatographic separation and maintains robustness in challenging water matrices.

Guard columns

Use a guard column to prolong the lifetime of your analytical column. A guard column is a protective column installed between the injector and the analytical column. It serves to remove the impurities, particulate contaminants, suspended solids and highly absorptive compounds from samples from reaching the analytical column. Read more about prolonging the lifetime of analytical column **here**. The Acclaim and Accucore guard columns are used for PFAS within the industry.

GC columns

For neutral (or volatile) PFAS, such as fluorotelomer alcohols (FTOHs), N-substituted fluoroalkylsulfonamides (FOSAs), the trifluoropropylmethly polysiloxane mid-polarity phase of Thermo Scientific™ TraceGOLD™ TG-200MS provides a unique selectivity for fluorinated compounds for an adequate chromatographic separation of the targets combined with Gaussian peak shapes. Additionally, it also showed excellent peak shapes for ionic perfluoroalkylcarboxylic acids (PFCAs) and fluorotelomer carboxylic acids (FTCAs). The low polarity, arylene content of TraceGOLD TG-5SilMS phase improves thermal stability and provides the lowest bleed, making it ideal for screening and unknown identification.

Recommended columns

Isolation columns
Accucore C18 column
Analytical columns
Acclaim C18 column
Accucore RP-MS column
Guard columns
Acclaim guard column
Accucore guard column
GC columns
TraceGOLD TG-5SilMS column
TraceGOLD TG-200MS column

Columns solutions

Choose from one of the below products for your PFAS applications

Analytical and guard columns for in-house/EU method, U.S. EPA method 1633, 533 and 537

Group	Description	Quantity	Cat. no
PFAS kit	PFAS-free tubing, isolator column, fittings, solvent filter inlets	Each	80100-62142
Column	Acclaim 120 C18 Column, 2.2 µm, 2.1 mm × 100 mm	Each	068982
Column	Acclaim Polar Advantage HPLC Column, 2.2 µm, 2.1 mm × 100 mm	Each	072623
Guard cartridges	Acclaim 120 C18 Guard Cartridge Column, 5 µm, 2.1 mm × 10 mm	Pack of 2	069689
Guard holder	Acclaim Guard Holder and Coupler	Each	069707
Column	Accucore RP-MS Column, 2.6 µm, 2.1 mm × 100 mm	Each	17626-102130
Column	Accucore RP-MS Column, 2.6 µm, 2.1 mm × 150 mm	Each	17626-152130
Guard cartridge	Accucore RP-MS, 2.1 mm × 10 mm, Guard Cartridges	Pack of 4	17626-012105
Guard holder	Thermo Scientific Universal Uniguard Holder for 2.1/3.0 mm ID	Each	852-00

Analytical and guard columns for U.S. EPA method 8327

Group	Description	Quantity	Cat. no
Column	Accucore RP-MS Column, 2.6 µm, 2.1 mm × 100 mm	Each	17626-102130

Analytical GC columns for volatile PFAS

Group	Description	Quantity	Cat. no
GC Column	TraceGOLD TG-200MS Column, 30 m, 0.25 mm, 1.0 µm Recommended for neutral or volatile PFAS analysis	Each	26084-2960
GC Column	TraceGOLD TG-5SilMS Column, 30 m, 0.25 mm, 0.25 µm Recommended for suspect screening and non-targeted analysis	Each	26096-1420
GC liner	Thermo Scientific™ LinerGOLD™ SSL Liner, single taper, wool, 4 × 6.5 × 78.5 mm Recommended for splitless injection on S/SL inlet	Pack of 5	453A1925-UI
GC liner	Thermo Scientific™ LinerGOLD™ Liner, concentric baffles, 2 × 2.75 × 120 mm Recommended for splitless injection on PTV inlet for Thermo Scientific branded GC	Pack of 5	453T2845-UI
Gas filter	Thermo Scientific™ Super Clean™ Gas Cartridge Filter Recommended for removing moisture, oxygen, and contaminants from gas sources	Each	60180-825

SSL liner can be used for Thermo Scientific, Agilent, and PE branded GC. Gas cartridge is universal. More options and accessories are available.







Sample handling solutions

PFAS sample handling solutions overview

Vials, caps, well plates and mats

To assure a robust method with accurate results use an absolute halogen free polypropylene vial or well plate, especially for the analysis of low concentrations of PFAS.

Caps and septa

To assure no contamination or background corruption for PFAS analysis, we have more than one recommended closure. You are able to use one piece polypropylene snap ring caps or polypropylene 9 mm screw thread caps with a thinned penetration area. When resealing for multiple injections is important, we offer snap ring and screw thread caps with a silicone/polyimide septum for trouble free analysis.



SureSTART vials and caps shown below are in 100 pack, but are also available in 5,000 and 10,000 pack options.

Vials and caps for EU methods

Group	Description	Quantity	Cat. no
Vials	Thermo Scientific™ SureSTART™ 0.4 mL clear PP 9 mm screw microvial, conical insert, Level 1	100/pack	6ESV9-04PP
Vials	SureSTART 1.5 mL clear PP 9 mm screw microvial, conical insert, Level 1	100/pack	6ESV9-1PP
Caps	SureSTART clear PP 9 mm screw cap, integral PP membrane, Level 1	100/pack	6ESC9-50
Caps	SureSTART 9 mm screw blue PP cap, white silicone/red polyimide septa, Level 1	100/pack	6ASC9SPI1
PFAS kit: vials/closures	SureSTART kit: 1.5. mL clear PP 9 mm screw vial, blue PP cap, white silicone/red polyimide septa 1.0 mm, specification certified, Level 2	100/pack	6AKSV9PP-15PI
PFAS kit: vials/closures	SureSTART kit: 1.5. mL clear PP 9 mm screw vial, clear short thread PP AVCS™ cap, clear polypropylene integral PP septum thinned penetration area, specification certified, Level 1	100/pack	6EKSV9PP-15
Vials	SureSTART 0.8 mL PP snap top microvials, flat bottom, Level 1	100/pack	6ERV11-08PPFB
Vials	SureSTART 0.8 mL PP snap top microvials, conical insert, Level 1	100/pack	6ERV11-08PPC
Vials	SureSTART 0.3 mL PP snap top microvials, conical insert, Level 1	100/pack	6ERV11-03PPC
Caps	SureSTART blue PE 11 mm snap caps with blue PP septa, Level 1	100/pack	6ERC11PE
Caps	SureSTART kit: 0.8 mL blue polyethylene 11 mm snap cap, white silicone/red polyimide 1.0 mm septa, Level 2	100/pack	6ARC11SPI1
PFAS kit: vials/closures	SureSTART kit: 0.8 mL clear PP snap vial 11 mm flat bottom insert, blue 11 mm blue polyethylene snap cap, white silicone/red polyimide 1.0 mm septa, specification certified, Level 2	100/pack	6AKRV11PP-08PI
PFAS kit: vials/closures	SureSTART kit: 0.8 mL clear PP snap vial 11 mm flat bottom insert, blue 11 mm blue polyethylene integral PE septum thinned penetration area, specification certified, Level 1	100/pack	6EKRV11PP-08

Sample handling solutions (continued)

Vials and caps for U.S. EPA method 1633

Group	Description	Quantity	Cat. no
Vials	SureSTART 0.4 mL clear PP, 9 mm screw microvial, conical insert, Level 1	100/pack	6ESV9-04PP
Vials	SureSTART 1.5 mL clear PP, 9 mm screw microvial, conical insert, Level 1	100/pack	6ESV9-1PP
Caps	SureSTART clear PP, 9 mm screw caps with integral PP membrane, Level 1	100/pack	6ESC9-50
Caps	SureSTART 9 mm screw blue PP cap, white silicone/red polyimide septa, Level 1	100/pack	6ASC9SPI1
PFAS kit: vials/closures	SureSTART kit: 1.5. mL clear PP 9 mm screw vial, blue PP cap, white silicone/red polyimide septa 1.0 mm, specification certified, Level 2	100/pack	6AKSV9PP-15PI
PFAS kit: vials/closures	SureSTART kit: 1.5. mL clear PP 9 mm screw vial, clear short thread PP AVCS cap, clear polypropylene integral PP septum thinned penetration area, specification certified, Level 1	100/pack	6EKSV9PP-15

Vials and caps for U.S. EPA method 533 and 537

Group	Description	Quantity	Cat. no
Vials	SureSTART 0.4 mL clear PP 9 mm screw microvial, conical insert, Level 1	100/pack	6ESV9-04PP
Vials	SureSTART 1.5 mL clear PP 9 mm screw microvial, conical insert, Level 1	100/pack	6ESV9-1PP
Caps	SureSTART clear PP 9 mm screw caps with integral PP membrane, Level 1	100/pack	6ESC9-50
Caps	SureSTART 9 mm screw blue PP cap, white silicone/red polyimide septa, Level 1	100/pack	6ASC9SPI1
PFAS kit: vials/closures	SureSTART kit: 1.5. mL clear PP 9 mm screw vial, blue PP cap, white silicone/red polyimide septa 1.0 mm, specification certified, Level 2	100/pack	6AKSV9PP-15PI
PFAS kit: vials/closures	SureSTART kit: 1.5. mL clear PP 9 mm screw vial, clear short thread PP AVCS cap, clear polypropylene integral PP septum thinned penetration area, specification certified, Level 1	100/pack	6EKSV9PP-15
Vials	SureSTART 0.8 mL PP snap top microvials, flat bottom, Level 1 Everyday Analysis	100/pack	6ERV11-08PPFB
Vials	SureSTART 0.8 mL PP snap top microvials, conical insert, Level 1	100/pack	6ERV11-08PPC
Vials	SureSTART 0.3 mL PP snap top microvials, conical insert, Level 1	100/pack	6ERV11-03PPC
Caps	SureSTART blue PE 11 mm snap caps with blue PP septa, Level 1	100/pack	6ERC11PE
Caps	SureSTART kit: 0.8 mL blue polyethylene 11 mm snap cap, white silicone/red polyimide 1.0 mm septa, Level 2	100/pack	6ARC11SPI1
PFAS kit: vials/closures	SureSTART kit: 0.8 mL clear PP snap vial 11 mm flat bottom insert, blue 11 mm blue polyethylene snap cap, white silicone/red polyimide 1.0 mm septa, specification certified, Level 2	100/pack	6AKRV11PP-08PI
PFAS kit: vials/closures	SureSTART kit: 0.8 mL clear PP snap vial 11 mm flat bottom insert, blue 11 mm blue polyethylene integral PE septum thinned penetration area, specification certified, Level 1	100/pack	6EKRV11PP-08

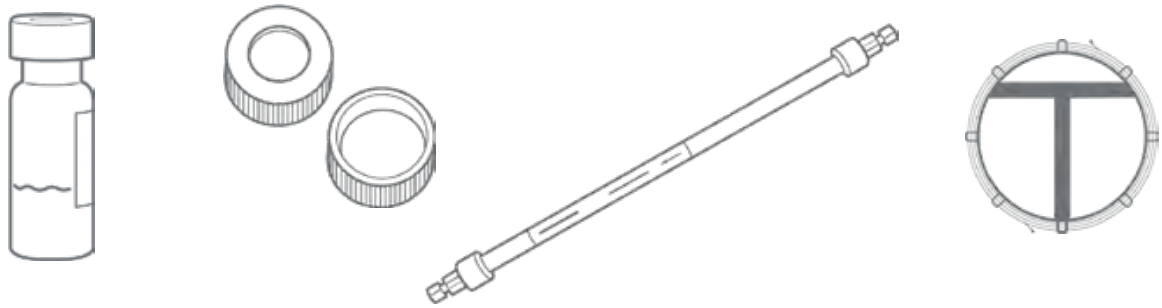
Sample handling solutions (continued)

Vials and caps for U.S. EPA method 8327

Group	Description	Quantity	Cat. no
Vials	SureSTART 0.8 mL PP snap top microvials, flat bottom, Level 1	100/pack	6ERV11-08PPFB
Vials	SureSTART 0.8 mL PP snap top microvials, conical insert, Level 1	100/pack	6ERV11-08PPC
Vials	SureSTART 0.3 mL PP snap top microvials, conical insert, Level 1	100/pack	6ERV11-03PPC
Caps	SureSTART blue PE 11 mm snap caps with blue PP septa, Level 1	100/pack	6ERC11PE
Caps	SureSTART kit: 0.8 mL blue polyethylene 11 mm snap cap, white silicone/red polyimide 1.0 mm septa, Level 2	100/pack	6ARC11SPI1
PFAS kit: vials/closures	SureSTART kit: 0.8 mL clear PP snap vial 11 mm flat bottom insert, blue 11 mm blue polyethylene snap cap, white silicone/red polyimide 1.0 mm septa, specification certified, Level 2	100/pack	6AKRV11PP-08PI
PFAS kit: vials/closures	SureSTART kit: 0.8 mL clear PP snap vial 11 mm flat bottom insert, blue 11 mm blue polyethylene integral PE septum thinned penetration area, specification certified, Level 1	100/pack	6EKRV11PP-08

Well plates and mats

Group	Description	Quantity	Cat. no
Well plate	Thermo Scientific™ WebSeal™ 96-Well Deep Well Plates, non-coated plastic, round U-bottom, 1000 µL, Level 2	50/pack	60180-P201
Well plate mat	WebSeal 96-Well Plate Sealing Mat, 7 mm diameter, round, Level 2	100/pack	60180-M179
Well plate	WebSeal 96-Well Deep Well Plates, non-coated plastic, square V-bottom, 2000 µL, Level 2	50/pack	60180-P202
Well plate mat	WebSeal 96-Well Plate Sealing Mat, 8 mm diameter, square, Level 2	100/pack	60180-M121



Complete environmental workflow solutions

For environmental scientists pursuing lower detection limits and higher robustness in their analysis, selecting the correct workflow is imperative for success in delivering high-quality results.

We strive to create a better understanding of how to compose an optimal workflow allowing scientists to improve their throughput and provide imperative environmental data faster and more consistently. The workflows in this brochure offer a sampling from Thermo Fisher Scientific.

For more information or other workflows, please contact us.

Pesticides and Per-and polyfluoroalkyl substances (PFAS)

- Thermo Scientific™ HyperSep™ SPE products
- Thermo Scientific™ Accucore™ (U)HPLC columns
- Thermo Scientific™ Hypersil GOLD™ (U)HPLC columns
- Thermo Scientific™ Acclaim™ (U)HPLC columns
- Thermo Scientific™ TraceGOLD™ GC columns
- Gas chromatography (GC) parts and accessories
- Thermo Scientific™ SureSTART™ vials and caps

Volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC)

- Solid-phase extraction products
- TraceGOLD GC columns
- GC parts and accessories
- SureSTART vials and caps

Persistent organic pollutants (POP)

- Solid-phase extraction products
- Accucore (U)HPLC columns
- TraceGOLD GC columns
- GC parts and accessories
- SureSTART vials and caps



Learn more at **thermofisher.com/chromatographyconsumables**

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