Per- and Polyfluoroalkyl Substances (PFAS)

AccuStandard®

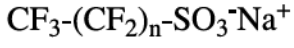
Per- and Polyfluoroalkyl Substances (PFAS)

Per- and polyfluoroalkyl substances (PFAS) belong to a continuously expanding family of over 4000 man-made chemical pollutants. The amphiphilic ability of PFAS has led to the manufacturing of PFAS in oils and water-resistant industrial and consumer products such as firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. However, environmental chemists and biologists have uncovered that PFAS have harmful toxicological effects and pose a significant risk to the public. The high thermal and chemical stability of PFAS make them persistent in the environment and nearly non-biodegradable, necessitating chemical reference standards to test the validity and concentration of PFAS in drinking water, burn sites and teflon products.

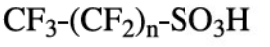
Perfluorinated Compounds (PFCs)

Perfluoroalkylsulfonates	CAS No.	Conc.	Matrix	Cat. No.	Unit
Potassium perfluoro-1-octanesulfonate	2795-39-3	100 µg/mL	MeOH	PFOS-002S	1 mL
Potassium perfluoro-1-butanesulfonate	29420-49-3	50 µg/mL	MeOH	PFOS-005S	1 mL
Sodium perfluoro-1-pentanesulfonate		50 µg/mL	MeOH	PFOS-006S	1 mL
Potassium perfluoro-1-hexanesulfonate	3871-99-6	50 µg/mL	MeOH	PFOS-007S	1 mL
Perfluoroalkylsulfonic acid					
Perfluoro-n-octane sulfonic acid	1763-23-1	100 µg/mL	MeOH	PFOS-001S	1 mL
Perfluoroalkylcarboxylic acids					
Perfluoro-n-octanoic acid	335-67-1	100 µg/mL	MeOH	PFOA-001S	1 mL
Perfluoro-n-butanoic acid	375-22-4	100 µg/mL	MeOH	PFOA-002S	1 mL
Perfluoro-n-decanoic acid	335-76-2	100 µg/mL	MeOH	PFOA-003S	1 mL
Perfluoro-n-dodecanoic acid	307-55-1	100 µg/mL	MeOH	PFOA-004S	1 mL
Perfluoro-n-heptanoic acid	375-85-9	100 µg/mL	MeOH	PFOA-005S	1 mL
Perfluoro-n-hexanoic acid	307-24-4	100 µg/mL	MeOH	PFOA-006S	1 mL
Perfluoro-n-nonanoic acid	375-95-1	100 µg/mL	MeOH	PFOA-007S	1 mL
Perfluoro-n-pentanoic acid	2706-90-3	100 µg/mL	MeOH	PFOA-008S	1 mL
Perfluoro-n-undecanoic acid	2058-94-8	100 µg/mL	MeOH	PFOA-009S	1 mL
Perfluorooctylsulfonamidoacetic acids					
N-ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	100 µg/mL	MeOH	PFOS-003S	1 mL
N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	100 µg/mL	MeOH	PFOS-004S	1 mL
Telomer sulfonates					
Sodium 1H,1H,2H,2H-perfluoro-1-hexanesulfonate		100 µg/mL	MeOH	PFOS-011S	1 mL
Sodium 1H,1H,2H,2H-perfluoro-1-octanesulfonate		100 µg/mL	MeOH	PFOS-012S	1 mL
Sodium 1H,1H,2H,2H-perfluoro1-decanesulfonate		100 µg/mL	MeOH	PFOS-013S	1 mL
Polyfluoroalkyl					
2H,2H,3H,3H-Perfluoroundecanoic acid	34598-33-9	100 µg/mL	MeOH	PFOA-010S	1 mL
Commericial / Technical grades					
Ammonium perfluoro(2-methyl-3-oxahexanoate) (GenX)	62037-80-3	100 µg/mL	MeOH	PFOS-019S	1 mL
Scotchgard™ Pre-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-001S	1 mL
Scotchgard™ Post-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-002S	1 mL

Registered Trademark
Scotchgard 3M

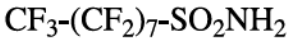


Perfluoroalkylsulfonates

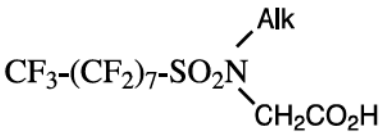


Perfluoroalkylsulfonic acids

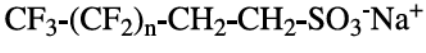
Perfluoroalkylcarboxylic acids



Perfluorooctylsulfonamides



Perfluorooctylsulfonamidoacetic acids



Telomer sulfonates

EPA Method 537 Native Compound Standard

This 14 component standard mixture is associated with EPA method 537 (Determination of selected perfluorinated alkyl acids in drinking water analyzed by LC/MS/MS). The **extended 24 component mix is on the next page**.

Method 537 Native Compound Standard

M-537 **1 mL**

50 µg/mL each in AcCN:Water (95:5) 14 comps.

Perfluoro-n-hexanoic acid
Perfluoro-n-heptanoic acid
Perfluoro-n-octanoic acid
Perfluoro-n-nonanoic acid
Perfluoro-n-decanoic acid
Perfluoro-n-undecanoic acid
Perfluoro-n-dodecanoic acid
Perfluoro-n-tridecanoic acid
Perfluoro-n-tetradecanoic acid
N-Methylperfluorooctanesulfonamidoacetic acid
N-Ethylperfluorooctanesulfonamidoacetic acid
Perfluoro-n-butane sulfonic acid
Perfluoro-n-hexane sulfonic acid
Perfluoro-n-octane sulfonic acid

Technical Notes

LC/MS is an excellent screening tool to determine all of the components in a sample.

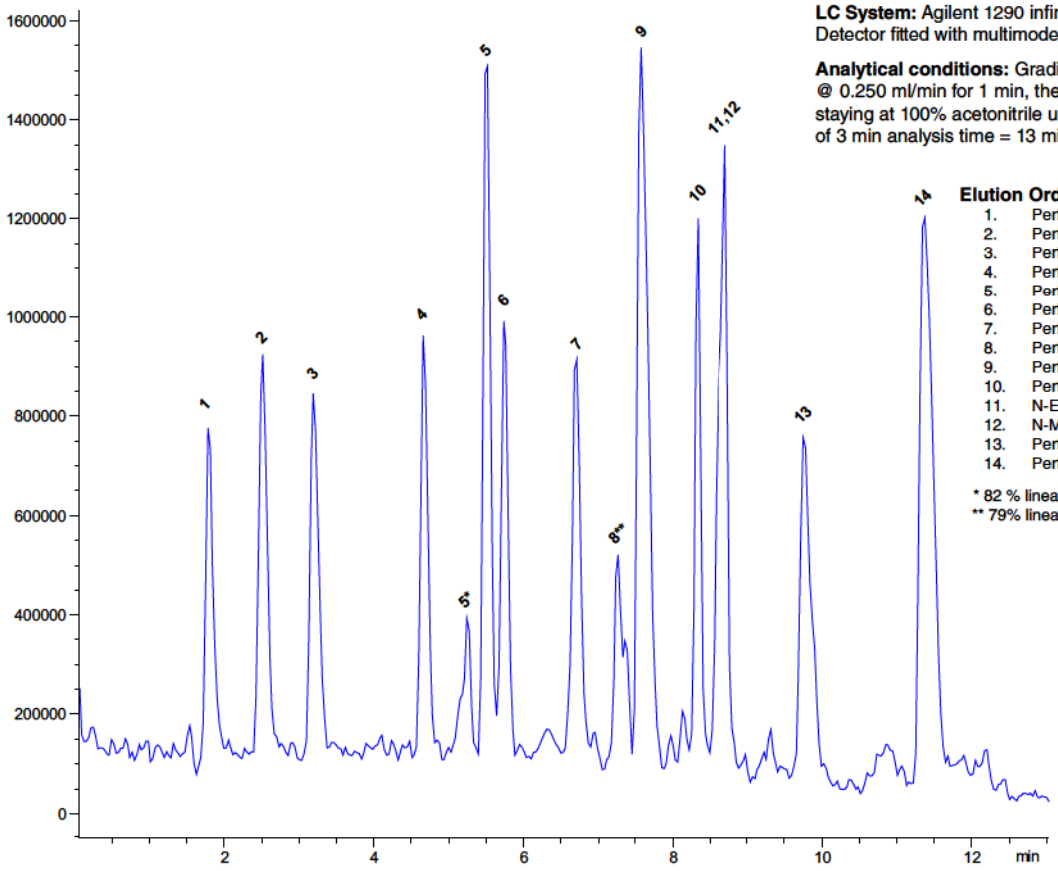
LC/MS/MS is preferable for low detection limit analysis, and for regulatory compliance for EPA, ASTM D7979 or other methods.

Analytical Conditions:

Analytical column: Zorbax Eclipse plus C18 RRHD 23.1 x 50 mm, 1.8 micron particule size.

LC System: Agilent 1290 infinity II, HP Infinty Lab G6152B MS Detector fitted with multimode (ESI+APCI) source.

Analytical conditions: Gradient start @ 35% H_2O, 65% acetonitrile @ 0.250 ml/min for 1 min, then 0% H_2O, 100% acetonitrile in 10 min, staying at 100% acetonitrile until 13 min, followed by a post-run time of 3 min analysis time = 13 min.



Elution Order

1. Perfluoro-n-hexanoic acid
2. Perfluoro-n-butane sulfonic acid
3. Perfluoro-n-heptanoic acid
4. Perfluoro-n-octanoic acid
5. Perfluoro-n-hexane sulfonic acid *
6. Perfluoro-n-nonanoic acid
7. Perfluoro-n-decanoic acid
8. Perfluoro-n-octane sulfonic acid **
9. Perfluoro-n-undecanoic acid
10. Perfluoro-n-dodecanoic acid
11. N-Ethylperfluorooctanesulfonamidoacetic acid
12. N-Methylperfluorooctanesulfonamidoacetic acid
13. Perfluoro-n-tridecanoic acid
14. Perfluoro-n-tetradecanoic acid

* 82 % linear, 18 % branched
** 79% linear, 21% branched

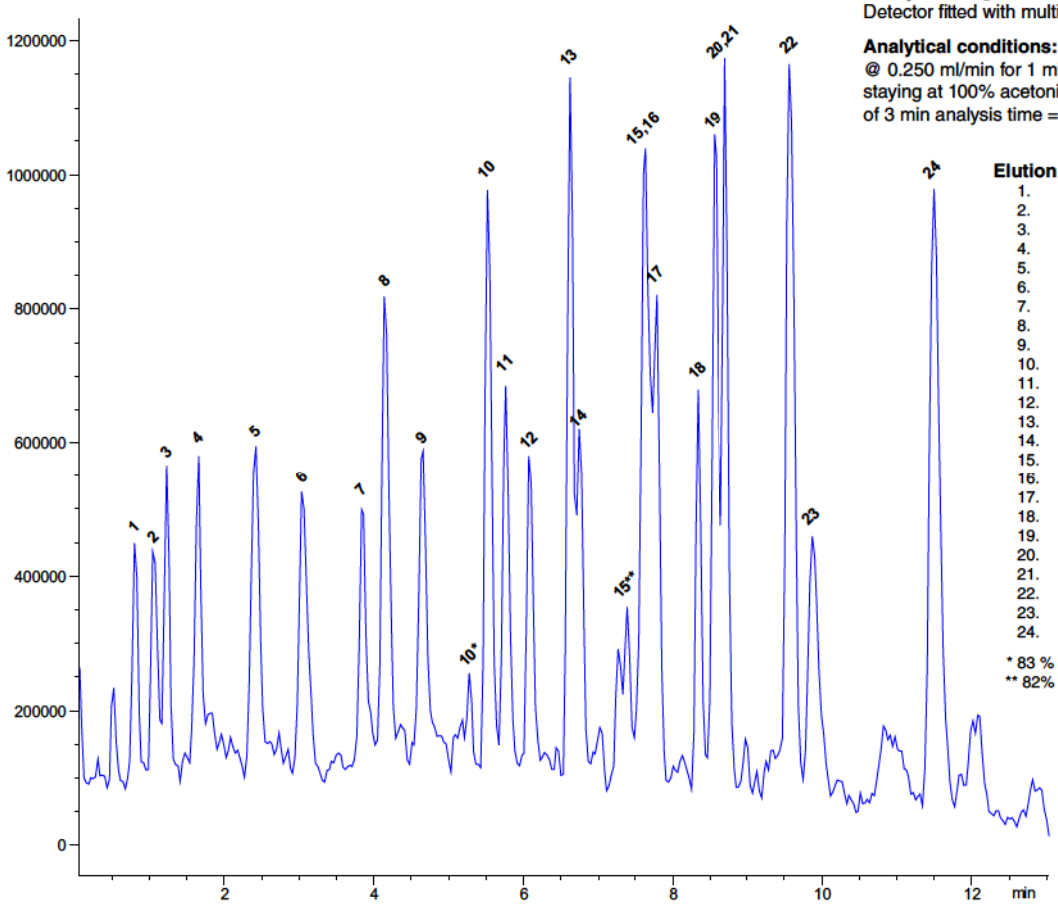
Extension of EPA Method 537 Standard

Extension of Method 537 Standard

PFC-24 **1 mL**

2 µg/mL each in MeOH:Water (80:20) 24 comps.

- Perfluoro-n-butanioc acid
- Perfluoro-n-pentanoic acid
- Perfluoro-n-hexanoic acid
- Perfluoro-n-heptanoic acid
- Perfluoro-n-octanoic acid
- Perfluoro-n-nonanoic acid
- Perfluoro-n-decanoic acid
- Perfluoro-n-undecanoic acid
- Perfluoro-n-dodecanoic acid
- Perfluoro-n-tridecanoic acid
- Perfluoro-n-tetradecanoic acid
- N-Methylperfluorooctanesulfonamidoacetic acid
- N-Ethylperfluorooctanesulfonamidoacetic acid
- Potassium perfluoro-1-butanesulfonate
- Sodium perfluoro-1-pentanesulfonate
- Potassium perfluoro-1-hexanesulfonate
- Sodium perfluoro-1-heptanesulfonate
- Potassium perfluoro-1-octanesulfonate
- Sodium perfluoro-1-nonanesulfonate
- Sodium perfluoro-1-decanesulfonate
- Sodium 1H,1H,2H,2H-perfluoro-1-hexanesulfonate
- Sodium 1H,1H,2H,2H-perfluoro-1-octanesulfonate
- Sodium 1H,1H,2H,2H-perfluoro-1-decanesulfonate
- Perfluorooctane sulfonamide



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Elution Order

1. Perfluoro-n-butanioc acid
2. Perfluoro-n-pentanoic acid
3. Sodium 1H,1H,2H,2H-perfluoro-1-hexanesulfonate
4. Perfluoro-n-hexanoic acid
5. Potassium perfluoro-1-butanesulfonate
6. Perfluoro-n-heptanoic acid
7. Sodium perfluoro-1-pentanesulfonate
8. Sodium 1H,1H,2H,2H-perfluoro-1-octanesulfonate
9. Perfluoro-n-octanoic acid
10. Potassium perfluoro-1-hexanesulfonate *
11. Perfluoro-n-nonanoic acid
12. Sodium 1H,1H,2H,2H-perfluoro-1-decanesulfonate
13. Sodium perfluoro-1-heptanesulfonate
14. Perfluoro-n-decanoic acid
15. Potassium perfluoro-1-octanesulfonate **
16. Perfluorooctane sulfonamide
17. Perfluoro-n-undecanoic acid
18. N-Methylperfluorooctanesulfonamidoacetic acid
19. Sodium perfluoro-1-nonanesulfonate
20. N-Ethylperfluorooctanesulfonamidoacetic acid
21. Perfluoro-n-dodecanoic acid
22. Sodium perfluoro-1-decanesulfonate
23. Perfluoro-n-tridecanoic acid
24. Perfluoro-n-tetradecanoic acid

* 83 % linear, 17 % branched
** 82% linear, 18% branched

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