



Polyfluoroalkyl Substances (PFASs) and Related Compounds

TestAmerica has 20 years' experience analyzing samples for polyfluorinated chemicals. With multiple laboratories within the TestAmerica network performing emerging contaminant testing, our PFAS offerings provide the scalability you need to meet your unique project requirements.

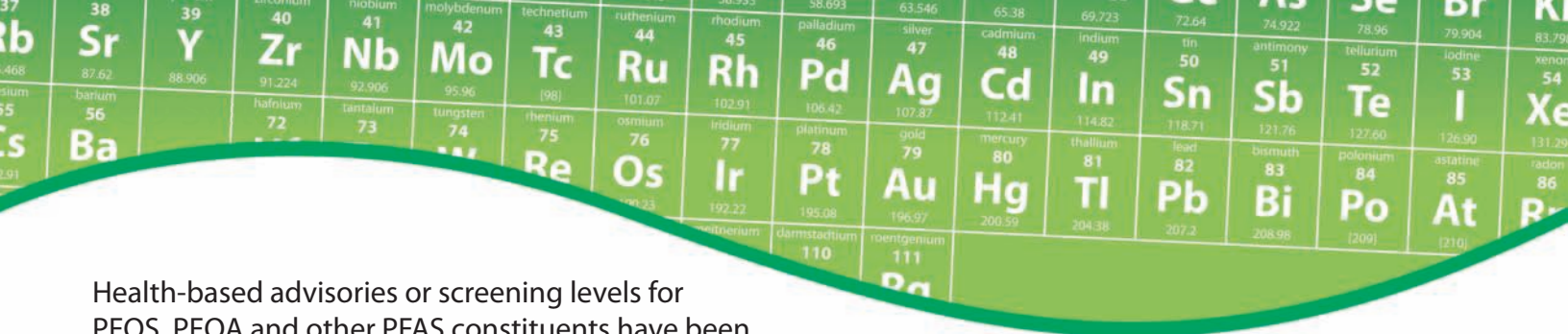
PFASs are a family of synthetic compounds containing thousands of chemicals formed from carbon (C) chains with fluorine (F) attached to these chains. The C-F bond is the shortest and strongest bond in nature, and is responsible for most of the unique and useful characteristics of these compounds. Perfluorooctane sulfonate (PFOS) and Perfluorooctanoic acid (PFOA) are fully fluorinated organic compounds and were the most common PFASs produced in the United States. PFOS and PFOA are used in a wide variety of industrial and commercial products such as textiles, leathers, aqueous film forming foams (AFFF), metal plating, photo lithography, semi-conductors, paper and food packaging, coating additives, cleaning products and pesticides.

PFOS and PFOA are persistent in the environment and resistant to typical environmental degradation processes. As a result, they are widely distributed and are found in soil, sediments, groundwater, air and tissue across the United States. According to U.S. EPA, PFOA and PFOS pose potential adverse

impacts to the environment and human health due to the bioaccumulative and mobile nature of the compounds.

Total Oxidizable Precursor (TOP) Assay

Polyfluorinated compounds are often referred to as "precursors" to the perfluoroalkyl acids (PFAAs), as they biotransform to PFAAs. TestAmerica Sacramento implemented the TOP assay as a solution to this complex problem. The TOP assay rapidly converts PFAA precursors into PFAAs including PFOA, using a hydroxyl radical-based chemical oxidation method. The TOP assay replicates what micro-organisms in the environment would achieve after many years and allows us to quantify the sum of PFAS that could be converted to PFAAs in the environment.



Health-based advisories or screening levels for PFOS, PFOA and other PFAS constituents have been developed by EPA and many state agencies.

TestAmerica offers a total of 26 PFAS related compounds in the following categories: Perfluoroalkylcarboxylic acids [PFCAs], Perfluorinated sulfonic acids [PFSAs], Perfluorinated sulfonamides [FOSA], Perfluorinated sulfonamidoacetic acids [FOSAA], Perfluoroalkyl-sulfonamidoethanols [PFOSEs] and Fluorotelomer sulfonates [FTS].

TestAmerica offers PFAS LCMSMS methods modeled after SW 846 Method 8321 and EPA Method 537. In addition to these methods, TestAmerica has successfully modified Method 537 for use on more complex matrices, such as groundwater, soil, tissue and sediment.

Compound Name	CAS #
Perfluoroalkylcarboxylic acids (PFCAs)	
Perfluoro-n-butanoic acid (PFBA)	375-22-4
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9
Perfluoro-n-octanoic acid (PFOA)	335-67-1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1
Perfluoro-n-decanoic acid (PFDA)	375-76-2
Perfluoro-n-undecanoic acid (PFUnA)	2058-94-8
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1
Perfluoro-n-tridecanoic acid (PFTriA)	72629-94-8
Perfluoro-n-tetradecanoic acid (PFTeA)	376-06-7
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6
Perfluorinated sulfonic acids (PFSAs)	
Perfluoro-1-butanefulfonic acid (PFBS)	375-73-5
Perfluoro-1-hexanesulfonic acid (PFHxS)	355-46-4
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8
Perfluoro-1-octanesulfonic acid (PFOS)	1763-23-1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3
Perfluorinated sulfonamides (FOSA)	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8
Perfluorinated sulfonamidoacetic acids (FOSAA)	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9
Fluorotelomer sulfonates (FTS)	
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
Perfluoroalkylsulfonamidoethanols (PFOSEs)	
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (Et-FOSE)	1691-99-2
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (Me-FOSE)	24448-09-7

AskTheExpert

Have a Question About PFAS?



Karla Buechler
Corporate Technical
Director, TestAmerica

Ms. Buechler has more than 30 years of hands-on experience with chromatography and would be happy to discuss PFAS methodologies. You may contact Ms. Buechler directly through the TestAmerica website at:

<http://www.testamericainc.com/services-we-offer/ask-the-expert/karla-buechler/>

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