



PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Analytical support for PFAS/PFC single substances and for the sum parameter AOF

AGROLAB has extended its comprehensive range of single-substance analysis of PFAS/PFC by the sum parameter AOF (adsorbable organic fluorine). This parameter can be determined in wastewater, ground and surface water as well as in solid eluates.

PFAS consist of a per- (fully) or poly- (partially) fluorinated carbon chain (alkyl substance). They have been used since the 1950's for their long-lasting water and oil repellent properties. There are both short-chain and long-chain PFAS, the best known long-chain representatives being PFOA (a perfluoro carboxylic acid) and PFOS (a perfluoro sulfonic acid).

As there are more than 4000 known individual substances, a single-substance analysis is not always effective, as not all components can be detected by single-substance chromatography. This also applies in particular to the fluorinated precursors and metabolites (degradation products). By measuring the sum parameter AOF the total adsorbable organic fluorine from aqueous media is determined, thus offering the possibility to complete the single-substance determination.

YOUR PLUS:

- + Sum parameter AOF
- + Standardized packages
- + for single-substance analysis
- + Large analytical capacity
- + Short processing times

TESTING PACKAGES OF THE AGROLAB GROUP

AOF

There is no standardized method for AOF required by authorities; therefore we offer you all analyses according to our in-house method MP-02348-DE.



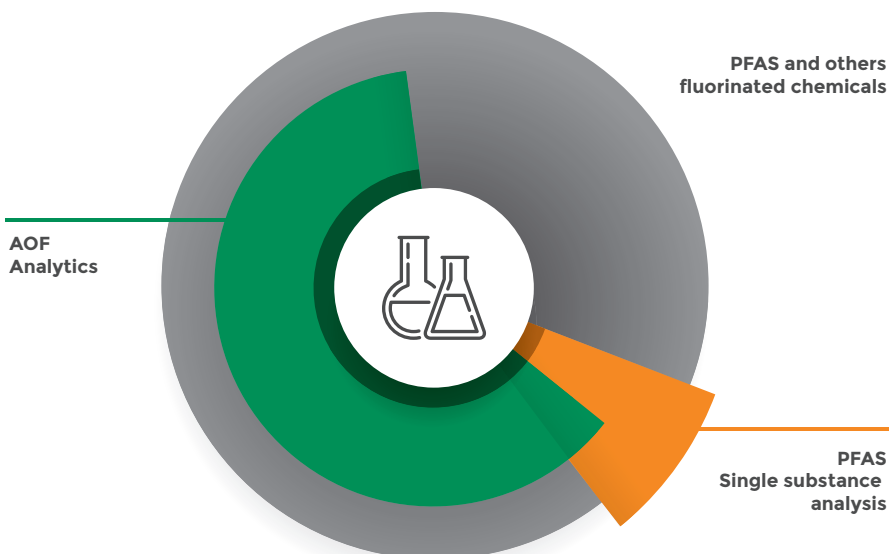
AOF in wastewater
Parameters E87471
Limit of quantification 5 µg/L



AOF in ground or surface water
Parameters E86508
Limit of quantification 1 µg/L



AOF in solid eluates
Parameters E87472
Limit of quantification 1 µg/L



PFAS / PFC Single substance analysis

For the analysis of individual substances, a large number of packages with limits of quantification in line with current requirements and regulations as well as accredited analytical procedures are available for drinking water, ground water, seepage, surface and waste water, sewage sludge, solids and solid eluate. We currently offer a total of up to 31 individual compounds in accordance with DIN 38407-42 for aqueous samples and DIN 38414-14 for sewage sludge and solids.

Name	Abb.	Affiliation	Precursor
Perfluorooctanesulfonamide (PFOSA)	PFOSA	Perfluoroalkylsulfonamide	✓
Perfluoro-3,7-dimethyloctanoic acid (3,7-DMPFOA)	3,7-DMPFOA	PFCA (PerFluoro Carboxyl Acid)	
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2FTS)	4:2FTS	PFCA (PerFluoro Carboxyl Acid)	✓
1H,1H,2H,2H-Perfluorooctanesulfonic acid (H4PFOS)	6:2FTS	PFCA (PerFluoro Carboxyl Acid)	✓
1H,1H,2H,2H- Perfluorodecanesulfonic acid (8:2 FTS)	8:2FTS	PFCA (PerFluoro Carboxyl Acid)	✓
2H,2H-Perfluorodecanoic acid (H2PFDA)	H2PFDA	PFCA (PerFluoro Carboxyl Acid)	
2H,2H,3H,3H- Perfluoroundecanoic acid (H4PFUnA)	H4PFUnA	PFCA (PerFluoro Carboxyl Acid)	
7H- Dodecafluoroheptanoic acid (HPFHpA)	HPFHpA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorobutanoic acid (PFBA)	PFBA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorodecanoic acid (PFDA)	PFDA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorododecanoic acid (PFDoA)	PFDoA	PFCA (PerFluoro Carboxyl Acid)	
Perfluoroheptanoic acid (PFHpA)	PFHpA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorohexanoic acid (PFHxA)	PFHxA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorononanoic acid (PFNA)	PFNA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorooctanoic acid (PFOA)	PFOA	PFCA (PerFluoro Carboxyl Acid)	
Perfluoropentanoic acid (PFPeA)	PFPeA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorotetradecanoic acid (PFTeA)	PFTeDA	PFCA (PerFluoro Carboxyl Acid)	
Perfluorotridecanoic acid (PFTrDA)	PFTrDA	PFCA (PerFluoro Carboxyl Acid)	
Perfluoroundecanoic acid (PFUnA)	PFUnA	PFCA (PerFluoro Carboxyl Acid)	
ADONA/DONA	(A)DONA	PFECAs (PerFluoro Ether Carboxyl Acid)	✓
Hexafluoropropylene oxide-dimer acid (HFPO-DA)	PFHPO-DA	PFECAs (PerFluoro Ether Carboxyl Acid)	✓
11Cl-PF3OUdS	11Cl-PF3OUdS	PFESAs (PerFluoroalkyl Ether Sulfonic Acid)	✓
9Cl-PF3ONS	9Cl-PF3ONS	PFESAs (PerFluoroalkyl Ether Sulfonic Acid)	✓
Perfluorobutane sulfonic acid (PFBS)	PFBS	PFSA (PerFluoro Sulfonic Acid)	
Perfluorodecanesulfonic acid (PFDS)	PFDS	PFSA (PerFluoro Sulfonic Acid)	
Perfluoroheptanesulfonic acid (PFHpS)	PFHpS	PFSA (PerFluoro Sulfonic Acid)	
Perfluorohexane sulfonic acid (PFHxS)	PFHxS	PFSA (PerFluoro Sulfonic Acid)	
Perfluorooctane sulfonic acid (PFOS)	PFOS	PFSA (PerFluoro Sulfonic Acid)	
Perfluoropentanesulfonic acid (PFPeS)	PFPeS	PFSA (PerFluoro Sulfonic Acid)	
CDPOS (Capstone B)	CDPOS	polyfluorierte Alkylverbindungen	
DPOSA (Capstone A)	DPOSA	polyfluorierte Alkylverbindungen	

If you have any questions regarding these analyses, our Sales Representatives and Customer Relationship Managers will be pleased to prove further advice!

The chemical authorities of Germany, Denmark, the Netherlands, Norway and Sweden are currently working on a proposal for a comprehensive ban on per- and polyfluorinated chemicals (PFAS). This is being done within the framework of the European chemicals regulation REACH. All uses of these substances that are not considered „essential to society as a whole“ are to be banned in future.

Chemical details and further information on the PFAS can be found at
<https://www.umweltbundesamt.de/pfc-portal-regelungen-empfehlungen>
<https://www.bmu.de/faqs/per-und-polyfluorierte-chemikalien-pfas/>
<https://www.lgl.bayern.de/lebensmittel/chemie/kontaminanten/pfas/index.htm>
<https://pfas-1.itrcweb.org/2-2-chemistry-terminology-and-acronyms/>