

# PFAS ANALYSES BY LC/MS/MS

FACT SHEET - 2019

## WHAT ARE PFAS?

Per- and Polyfluoroalkyl Substances (PFAS) are classified as contaminants of emerging concern (CECs) based on increasing environmental and health concerns and consequent developing regulatory standards. Comprising a class of over 3,000 identified fluorinated compounds; they are used in the manufacture of many products such as PTFE (polytetrafluorethylene), textile coatings, firefighting foams, semi-conductors, paper and packaging coating additives, cleaning products, pesticides and metal plating process agents. The C-F bond is the strongest known in organic chemistry, making PFAS persistent in the environment. Longer chain PFAS are bioaccumulative as well. Key PFAS classes of concern include perfluoroalkyl carboxylic acids (PFCAs) such as PFOA, and perfluoroalkyl sulfonic acids (PFSA) such as PFOS. Many PFAS will transform in the environment or via biological processes to form PFCAs or PFSA.

## SCREENING LEVELS

EPA's Office of Water established a provisional health advisory (PHA) of 0.07 µg/L for PFOS and PFOA to protect against the potential risk from exposure of these chemicals through drinking water (EPA 2016).

EPA Region 4 recommended a residential soil screening level of 6 mg/kg for PFOS and 16 mg/kg for PFOA (EPA 2009c).

The State of New Jersey has established a preliminary drinking water guidance value of 0.04 µg/L for PFOA (NJDEP 2007).



The State of New Jersey has established an Interim GWQ Criterion of 0.01 ug/l for PFNA (NJDEP 2016).

## SGS OPERATIONS PERFORMING PFAS

SGS currently analyzes PFOA and PFOS in our Orlando, FL, Wilmington, NC and SGS Axys laboratories. Parameters reported include PFOA/PFOS, as well as 24 additional PFAS.

## SAMPLE CONTAINERS/PRESERVATIVE/HOLDING TIME

### SAMPLE CONTAINER:

Samples should be collected in either 125ml or 250ml wide mouth polyethylene (HDPE) bottles fitted with an unlined (no Teflon), polyethylene screw cap.

### PRESERVATIVE:

Sample must be shipped at <10°C.

### HOLDING TIME:

14 days collection to extraction and 28 days from extraction to analysis.

### ADDITIONAL INFO:

All sources of Teflon should be avoided during collection and storage. These are potential sources of PFC interference. Glass containers should also be avoided due to potential loss of analyte through adsorption.

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## CURRENT LIST OF REPORTABLE ANALYTES

| ANALYTE   | ACRONYM         | CAS #       |
|---|-----------------|-------------|
| <b>PERFLUOROALKYL CARBOXYLIC ACIDS</b>                            |                 |             |
| Perfluorobutanoic acid  | PFBA            | 375-22-4    |
| Perfluoropentanoic acid   | PFPeA           | 2706-90-3   |
| 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  | PFUnDA or PFUnA | 2058-94-8   |
| Perfluorododecanoic acid  | PFDoDA or PFDoA | 307-55-1    |
| Perfluorotridecanoic acid   | PFTrDA          | 72629-94-8  |
| Perfluorotetradecanoic acid                                       | PFTeDA          | 376-06-7    |
| <b>PERFLUOROALKYL SULFONIC ACIDS</b>                              |                 |             |
| Perfluorobutanesulfonic acid                                      | PFBS            | 375-73-5    |
| Perfluoropentanesulfonic acid                                     | PFPeS           | 2706-91-4   |
| Perfluorohexanesulfonic acid                                      | PFHxS           | 355-46-4    |
| Perfluoroheptanesulfonic acid                                     | PFHpS           | 375-92-8    |
| Perfluorooctanesulfonic acid                                      | PFOS            | 1763-23-1   |
| Perfluorononanesulfonic acid                                      | PFNS            | 474511-07-4 |
| Perfluorodecanesulfonic acid                                      | PFDS            | 335-77-3    |
| <b>PERFLUOROCTANE SULFONAMIDES</b>                                |                 |             |
| Perfluorooctane sulfonamide                                       | FOSA or PFOSA   | 754-91-6    |
| N-Methyl perfluorooctane sulfonamide                              | N-MeFOSA        | 31506-32-8  |
| N-Ethyl perfluorooctane sulfonamide                               | N-EtFOSA        | 4151-50-2   |
| <b>PERFLUOROCTANE SULFONAMIDO ACETIC ACIDS</b>                    |                 |             |
| N-Methyl perfluorooctanesulfonamidoacetic acid                    | N-MeFOSAA       | 2355-31-9   |
| N-Ethyl perfluorooctanesulfonamidoacetic acid                     | N-EtFOSAA       | 2991-50-6   |
| <b>PERFLUOROCTANE SULFONAMIDO ETHANOLS</b>                        |                 |             |
| N-Methyl perfluorooctane sulfonamidoethanol                       | N-MeFOSE        | 24448-09-7  |
| N-Ethyl perfluorooctane sulfonamidoethanol                        | N-EtFOSE        | 1691-99-2   |
| <b>FLUOROTELOMER SULFONATES</b>                                   |                 |             |
| 4:2 Fluorotelomer sulfonate                                       | 4:2 FTS         | 757124-72-4 |
| 6:2 Fluorotelomer sulfonate                                       | 6:2 FTS         | 27619-97-2  |
| 8:2 Fluorotelomer sulfonate                                       | 8:2 FTS         | 39108-34-4  |
| <b>PERFLUOROETHER CARBOXYLIC/SULFONIC ACIDS (PFECA/PFESA)</b>     |                 |             |
| Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (GenX)*         | HFPO-DA         | 13252-13-6  |
| 4,8-dioxa-3H-perfluorononanoic acid                               | ADONA           | 919005-14-4 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (F-53B Major)    | 9CI-PF3ONS      | 756426-58-1 |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) | 11CI-PF3OUdS    | 763051-92-9 |



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**FOR ADDITIONAL INFORMATION PLEASE CONTACT YOUR LOCAL SGS REPRESENTATIVE AT +1 800 329 0204, [PFAS.EXPERT@SGS.COM](mailto:PFAS.EXPERT@SGS.COM) OR VISIT [WWW.SGS-EHSUSA.COM/PFAS](http://WWW.SGS-EHSUSA.COM/PFAS)**