Guide to PFAS Testing Methods

A Global Survey of PFAS Testing Methods and Guidelines

Early movements in establishing PFAS testing methods began in 2009 with U.S. EPA Method 537 and ISO 25101:2009 methods targeting select compounds in water—the most common and direct exposure pathway for humans. Since then, as the number of PFAS and their prevalence have grown, government agencies and scientific communities around the world have developed newer PFAS testing methods and guidance documents for a wider range of compounds and sample matrices. The following tables, organized by region, provide an overview of the scope of current PFAS testing methods and guidelines.

For labs starting PFAS analysis or adding new compounds or matrices to their testing program, this summary of PFAS testing methods and guidelines can help you compare methods and select an appropriate workflow. If you have questions or want to further explore PFAS analysis, visit **www.restek.com/PFAS** for additional resources or contact your local Restek representative for assistance.

UNITED STATES PFAS TESTING METHODS & GUIDELINES

Acronym*	PFAS Name*	CAS*	**Pro *EZ*LC**† *Online chromatogram modeler*	**EPA 537.1** *Drinking water*	**EPA 533** *Drinking water*	**EPA 1633** †† *Aqueous, solids, biosolids, tissue*	**EPA OTM-45** *Emissions*	**EPA UCMR 5** *Drinking water*	**EPA 8327** *Waters*	**USDA CLG-PFAS 2.04** *Bovine, porcine, poultry, and Siluriformes muscle and bovine plasma*	**CDC 6304.09** *Serum*	**US FDA C-010.03** *Lettuce, chocolate milk, salmon, bread, eggs, clams, blueberries, silage, corn, snaplage*
NEtFOSAA	*N*-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	X	X	-	X	X	X	X	-	X	-
NMeFOSAA	*N*-Methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	X	X	-	X	X	X	X	-	X	-
PFBS	Perfluoro-1-butanesulfonic acid	375-73-5	X	X	X	X	X	X	X	X	-	X
PFDA	Perfluorodecanoic acid	335-76-2	X	X	X	X	X	X	X	X	X	X
PFDoA	Perfluorododecanoic acid	307-55-1	X	X	X	X	X	X	X	X	-	X
PFHpA	Perfluoroheptanoic acid	375-85-9	X	X	X	X	X	X	X	X	X	X
PFHxS	Perfluoro-1-hexanesulfonic acid	355-46-4	X	X	X	X	X	X	X	X	X	X
PFHxA	Perfluorohexanoic acid	307-24-4	X	X	X	X	X	X	X	X	X	X
PFNA	Perfluorononanoic acid	375-95-1	X	X	X	X	X	X	X	X	X	X
PFOS	Perfluorooctanesulfonic acid	1763-23-1	X	X	X	X	X	X	X	X	X	X
PFOSF	Heptadecafluorooctanesulfonyl fluoride	307-35-7	-	-	-	-	-	-	-	-	-	-
PFOA	Perfluorooctanoic acid	335-67-1	X	X	X	X	X	X	X	X	X	X
Me-PFOA	Methyl perfluorooctanoate	376-27-2	-	-	-	-	-	-	-	-	-	-
Et-PFOA	Ethyl perfluorooctanoate	3108-24-5	-	-	-	-	-	-	-	-	-	-
PF-3,7-DMOA	Perfluoro(3,7-dimethyloctanoic acid)	172155-07-6	-	-	-	-	-	-	-	-	-	-
PFTeDA	Perfluorotetradecanoic acid	376-06-7	X	X	-	X	X	X	X	X	-	X
PFTrDA	Perfluorotridecanoic acid	72629-94-8	X	X	-	X	X	X	X	X	-	X
PFUnA	Perfluoroundecanoic acid	2058-94-8	X	X	X	X	X	X	X	X	X	X
HFPO-DA, GenX	Hexafluoropropylene oxide dimer acid	13252-13-6	X	X	X	X	X	X	-	-	X	X
PFBA	Perfluorobutanoic acid	375-22-4	X	-	X	X	X	X	X	-	-	X
PFPeA	Perfluoropentanoic acid	2706-90-3	X	-	X	X	X	X	X	X	-	X
PFDS	Perfluoro-1-decanesulfonic acid	335-77-3	X	-	-	X	X	-	X	X	-	X
PFHpS	Perfluoro-1-heptanesulfonic acid	375-92-8	X	-	X	X	X	X	X	-	X	X
PFPeS	Perfluoro-1-pentanesulfonic acid	2706-91-4	X	-	X	X	X	X	X	-	-	X
FOSA	Perfluoro-1-octanesulfonamide	754-91-6	X	-		X	X	-	X	-	X	X
4:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorohexane sulfonic acid	757124-72-4	X	-	X	X	X	X	X	-	-	X
4:2 FTSA	(Sodium) 1*H*,1*H*,2*H*,2*H*-Perfluoro-1-hexanesulfonate	27619-93-8	-	-	-	-	-	-	-	-	-	-
6:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorooctane sulfonic acid	27619-97-2	X	-	X	X	X	X	X	-	-	X
8:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorodecane sulfonic acid	39108-34-4	X	-	X	X	X	X	X	-	-	X
10:2 FTS	1*H*,1*H*,2*H*,2*H*-perfluorododecane sulfonate (10:2)	120226-60-0	X	-	-	-	X	-	-	-	-	X
8:2 FTUCA, FOUEA	2*H*-Perfluoro-2-decenoic acid (8:2)	70887-84-2	X	-	-	-	X	-	-	-	-	-
6:2PAP	6:2 Fluorotelomer phosphate monoester	57678-01-0	-	-	-	-		-	-	-	-	-
6:2diPAP	Sodium bis(1*H*,1*H*,2*H*,2*H*-perfluorooctyl)phosphate	57677-95-9	X	-	-	-	-	-	-	-	-	-
8:2PAP	8:2 Fluorotelomer phosphate monoester	57678-03-2	-	-	-	-	-	-	-	-	-	-
8:2 diPAP	8:2 Polyfluoroalkyl phosphate diester	678-41-1	X	-	-	-	-	-	-	-	-	-
NMeFOSA	*N*-Methylperfluorooctanesulfonamide	31506-32-8	X	-	-	X	X	-	-	-	-	-
NEtFOSA	*N*-Ethylperfluorooctanesulfonamide	4151-50-2	X	-	-	X	X	-	-	-	-	-
PFHxDA	Perfluoro-*n*-hexadecanoic acid	67905-19-5	X	-	-	-	X	-	-	X	-	-
PFODA	Perfluoro-*n*-octadecanoic acid	16517-11-6	X	-	-	-	X	-	-	X	-	-
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	756426-58-1	X	X	X	X	X	X	-	-	X	X
11Cl-PF3OUdS	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	763051-92-9	X	X	X	X	X	X	-	-	-	X
ADONA	4,8-Dioxa-3*H*-perfluorononanoic acid	919005-14-4	X	X	X	X	X	X	-	-	X	X
PFNS	Perfluoro-1-nonanesulfonic acid	68259-12-1	X	-	-	X	X	-	X	-	-	X
PFecHS	Decafluoro-4-(pentafluoroethyl)cyclohexanesulfonate	646-83-3 (67584-42-3)	X	-	-	-	X	-	-	-	-	-
6:2FTCA, 6:2 FHEA	2-Perfluorohexyl ethanoic acid	53826-12-3	X	-	-	-	X	-	-	-	-	-
8:2 FOEA	2-Perfluorooctyl ethanoic acid	27854-31-5	X	-	-	-	X	-	-	-	-	-
10:2 FDEA	2-Perfluorodecyl ethanoic acid	53826-13-4	X	-	-	-	X	-	-	-	-	-
6:2 FHUEA	2H-Perfluoro-2-octenoic acid	70887-88-6	X	-	-	-	X	-	-	-	-	-
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid	113507-82-7	X	-	X	X	X	X	-	-	-	-
NFDHA	Nonafluoro-3,6-dioxaheptanoic acid	151772-58-6	X	-	X	X	X	X	-	-	-	-
PFMPA	Perfluoro-3-methoxypropanoic acid	377-73-1	X	-	X	X	X	X	-	-	-	-
PFMBA	Perfluoro-4-methoxybutanoic acid	863090-89-5	X	-	X	X	X	X	-	-	-	-
NMeFOSE	2-(*N*-methylperfluoro-1-octanesulfonamido)-ethanol	24448-09-7	X	-	-	X	X	-	-	-	-	-
NEtFOSE	2-(*N*-ethylperfluoro-1-octanesulfonamido)-ethanol	1691-99-2	X	-	-	X	X	-	-	-	-	-
PFDoS	Perfluorododecane sulfonate	79780-39-5	X	-	-	X	X	-	-	-	-	X
PFDoS	Sodium perfluoro-1-dodecanesulfonate	1260224-54-1	-	-	-		X	-	-	-	-	-
3:3 FTCA	3:3 Fluorotelomer carboxylic acid	356-02-5	X	-	-	X	X	-	-	-	-	-
5:3 FTCA	5:3 Fluorotelomer carboxylic acid	914637-49-3	X	-	-	X	X	-	-	-	-	-
7:3 FTCA, FHpPA	7:3 Fluorotelomer carboxylic acid or 3-perfluoroheptyl propanoic acid	812-70-4	X	-	-	X	X	-	-	-	-	-

(Continued on page 2)

UNITED STATES PFAS TESTING METHODS & GUIDELINES *(Cont.)*

Acronym*	PFAS Name*	CAS*	Pro *EZ*LC† *Online chromatogram modeler*	EPA 537.1 *Drinking water*	EPA 533 *Drinking water*	EPA 1633†† *Aqueous, solids, biosolids, tisssue*	EPA OTM-45 *Emissions*	EPA UCMR 5 *Drinking water*	EPA 8327 *Waters*	USDA CLG-PFAS 2.04 *Bovine, porcine, poultry, and Siluriformes muscle and bovine plasma*	CDC 6304.09 *Serum*	US FDA C-010.03 *Lettuce, chocolate milk, salmon, bread, eggs, clams, blueberries, silage, corn, snaplage*
8:3 FTCA	2*H*,2*H*,3*H*,3*H*-Heptadecafluoroundecanoic acid	34598-33-9	-	-	-	-	-	-	-	-	-	-
PFUnDS	Perfluoroundecane sulfonic acid	749786-16-1	X	-	-	-	-	-	-	-	-	X
PFTrDS	*Perfluorotridecane sulfonic acid*	791563-89-8	X	-	-	-	-	-	-	-	-	X
LiTFSI (LiTFSA, HQ-115)	*Lithium bis(trifluoromethane)sulfonimide*	90076-65-6	X	-	-	-	-	-	-	-	-	-
PFPrA	Pentafluoropropanoic acid	422-64-0	-	-	-	-	-	-	-	-	-	-
FHxSA	Perfluorohexanesulfonamide	41997-13-1	-	-	-	-	-	-	-	-	-	-
FBSA	Perfluobutylsufonamide	30334-69-1	-	-	-	-	-	-	-	-	-	-
PFMOAA	2,2-Difluoro-2-(trifluoromethoxy)acetic acid	674-13-5	-	-	-	-	-	-	-	-	-	-
Capstone A (DPOSA)	*N*-(Oxido)-*N*,*N*-dimethyl-3-{[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluo-roctyl)sulfonyl]amino}-1-propanamin	80475-32-7	X	-	-	-	-	-	-	-	-	-
Capstone B (CDPOS)	*N*-(Carboxymethyl)-*N*,*N*-dimethyl-3-{[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluor-octyl)sulfonyl]amino}-1-propanaminium	34455-29-3	X	-	-	-	-	-	-	-	-	-
R-PSDCA	Perfluoro-4-(2-sulfoethoxy)pentanoic acid	2416366-21-5	-	-	-	-	-	-	-	-	-	-
10:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluorododecan-1-ol or 2-(Perfluorodecyl)ethanol	865-86-1	-	-	-	-	-	-	-	-	-	-
8:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluoro-1-decanol	678-39-7	-	-	-	-	-	-	-	-	-	-
7:2 FTOH	3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Pentadecafluorononan-2-ol	24015-83-6	-	-	-	-	-	-	-	-	-	-
6:2 FTOH	3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctan-1-ol or 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluoro-1-octanol	647-42-7	-	-	-	-	-	-	-	-	-	-
4:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluorohexan-1-ol or 1-Hexanol	2043-47-2	-	-	-	-	-	-	-	-	-	-
6:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorooctyl acrylate	17527-29-6	-	-	-	-	-	-	-	-	-	-
8:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorodecyl acrylate	27905-45-9	-	-	-	-	-	-	-	-	-	-
10:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorododecyl acrylate	17741-60-5	-	-	-	-	-	-	-	-	-	-
6:2 FTMA	1*H*,1*H*,2*H*,2*H*-heptadecafluorooctylmethacrylate	2144-53-8	-	-	-	-	-	-	-	-	-	-
8:2 FTMA	1*H*,1*H*,2*H*,2*H*-heptadecafluorodecylmethacrylate	1996-88-9	-	-	-	-	-	-	-	-	-	-
7HPFHpA	7*H*-Dodecafluoroheptanoic acid	1546-95-8	-	-	-	-	-	-	-	-	-	-
-	1-decanaminium, *N*-decyl-*N*, *N* dimethyl-0,1,1,2,2,3,3,4,4,5,5,6,6,7,7, 8,8,8-heptadecafluoro-1-octanesulfonate	251099-16-8	-	-	-	-	-	-	-	-	-	-
TCDCA	Taurochenodeoxycholic acid	516-35-8	X	-	-	-	-	-	-	-	-	-
TDCA	Taurodeoxycholic acid	516-50-7	X	-	-	-	-	-	-	-	-	-
TUDCA	Tauroursodeoxycholic acid	14605-22-2	X	-	-	-	-	-	-	-	-	-
6:2/8:2 diPAP	6:2/8:2 Fluorotelomer phosphate diester	943913-15-3	X	-	-	-	-	-	-	-	-	-

* PFAS acronyms, compound names, and CAS numbers vary across methods and guidelines, and they also depend on compound form (e.g., neutral vs. salt). The names are standardized here to facilitate comparison. Please refer to each document for its specific nomenclature.
† Restek's Pro *EZ*LC chromatogram modeler is a free, web-based chromatography simulator that allows methods to be developed and optimized in minutes without lab time. Try this virtual method development tool first to view and modify PFAS separations on your screen before running an LC-MS/MS in the lab. (https://ez.restek.com/proezlc)
†† Analysis of bile acids TCDCA, TDCA, and TUDCA is also required for EPA Method 1633.
X = Target compound

UNITED STATES VOLATILE FLUORINATED COMPOUNDS IN AIR METHOD

EPA OTM-50 *Air analysis from passivated stainless-steel canisters*	
Compound Name*	**CAS***
Carbon tetrafluoride	75-73-0
Hexafluoroethane (FC-116)	76-16-4
Tetrafluoroethene	116-14-3
Trifluoromethane (HFC-23)	75-46-7
Octafluoropropane	76-19-7
Difluoromethane (HFC-32)	75-10-5
Fluoromethane (HFC-41)	593-53-3
Pentafluoroethane (HFC-125)	354-33-6
Hexafluoropropene	116-15-4
Hexafluoropropene oxide (HFPO)	428-59-1
Decafluorobutane	355-25-9
Dodecafluoropentane	678-26-2
Tetradecafluorohexane	355-42-0
1*H*-Perfluoropentane	375-61-1
Hexadecafluoroheptane	335-57-9
Heptafluoropropyl-1,2,2,2-tetrafluoroethyl ether (E1)	3330-15-2
1*H*-Perfluorohexane	355-37-3
1*H*-Perfluoroheptane	375-83-7
2H-Perfluoro-5-methyl-3,6-dioxanonane (E2)	3330-14-1
1*H*-Perfluorooctane	335-65-9
Octadecafluorooctane	307-34-6
1*H*-Nonafluorobutane	375-17-7
1*H*-Heptafluoropropane	2252-84-8
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2
1,1,1-Trifluoroethane (HFC-143a)	420-46-2
Chlorodifluoromethane (HCFC-22)	75-45-6
Chlorotrifluoromethane (CFC-13)	75-72-9
Octafluorocyclobutane (FC-C318)	115-25-3
Octafluorocyclopentene (FC-C1418)	559-40-0
Trichloromonofluoromethane (CFC-11)	75-69-4

EUROPEAN PFAS TESTING METHODS & GUIDELINES

Acronym*	PFAS Name*	CAS*	Pro EZLC† *Online chromatogram modeler*	EU 2023/915 *Foodstuffs*	EU 2022/1431 *Food*	EU 2020/2184 *Drinking water*	EURL POPs Version 1.2 *Food, feed*	DIN EN 17892 *Drinking water*	DIN 38407-42 *Water, wastewater, sludge*
NEtFOSAA	*N*-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	X	-	-	-	-	X	-
NMeFOSAA	*N*-Methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	X	-	-	-	-		
PFBS	Perfluoro-1-butanesulfonic acid	375-73-5	X	-	X	X	X	X	X
PFDA	Perfluorodecanoic acid	335-76-2	X	-	X	X	X	X	X
PFDoA	Perfluorododecanoic acid	307-55-1	X	-	X	X	X	X	-
PFHpA	Perfluoroheptanoic acid	375-85-9	X	-	X	X	X	X	X
PFHxS	Perfluoro-1-hexanesulfonic acid	355-46-4	X	X	X	X	X	X	X
PFHxA	Perfluorohexanoic acid	307-24-4	X	-	X	X	X	X	X
PFNA	Perfluorononanoic acid	375-95-1	X	X	X	X	X	X	X
PFOS	Perfluorooctanesulfonic acid	1763-23-1	X	X	X	X	X	X	X
PFOSF	Heptadecafluorooctanesulfonyl fluoride	307-35-7	-	-	-	-	-	-	-
PFOA	Perfluorooctanoic acid	335-67-1	X	X	X	X	X	X	X
Me-PFOA	Methyl perfluorooctanoate	376-27-2	-	-	-	-	-	-	-
Et-PFOA	Ethyl perfluorooctanoate	3108-24-5	-	-	-	-	-	-	-
PF-3,7-DMOA	Perfluoro(3,7-dimethyloctanoic acid)	172155-07-6	-	-	-	-	-	-	-
PFTeDA	Perfluorotetradecanoic acid	376-06-7	X	-	X	-	X	-	-
PFTrDA	Perfluorotridecanoic acid	72629-94-8	X	-	X	X	X	X	-
PFUnA	Perfluoroundecanoic acid	2058-94-8	X	-	X	X	X	X	-
HFPO-DA, GenX	Hexafluoropropylene oxide dimer acid	13252-13-6	X	-	X	-	X	X	-
PFBA	Perfluorobutanoic acid	375-22-4	X	-	X	X	X	X	X
PFPeA	Perfluoropentanoic acid	2706-90-3	X	-	X	X	X	X	X
PFDS	Perfluoro-1-decanesulfonic acid	335-77-3	X	-	X	X	X	X	-
PFHpS	Perfluoro-1-heptanesulfonic acid	375-92-8	X	-	X	X	X	X	-
PFPeS	Perfluoro-1-pentanesulfonic acid	2706-91-4	X	-	X	X	X	X	-
FOSA	Perfluoro-1-octanesulfonamide	754-91-6	X	-	X	-	X	X	-
4:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorohexane sulfonic acid	757124-72-4	X	-	-	-	-	-	-
4:2 FTSA	(Sodium) 1*H*,1*H*,2*H*,2*H*-Perfluoro-1-hexanesulfonate	27619-93-8	-	-	-	-	-	X	-
6:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorooctane sulfonic acid	27619-97-2	X	-	-	-	-	X	-
8:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorodecane sulfonic acid	39108-34-4	X	-	-	-	-	X	-
10:2 FTS	1*H*,1*H*,2*H*,2*H*-perfluorododecane sulfonate (10:2)	120226-60-0	X	-	-	-	-	-	-
8:2 FTUCA, FOUEA	2*H*-Perfluoro-2-decenoic acid (8:2)	70887-84-2	X	-	-	-	-	-	-
6:2PAP	6:2 Fluorotelomer phosphate monoester	57678-01-0	-	-	-	-	-	-	-
6:2diPAP	Sodium bis(1*H*,1*H*,2*H*,2*H*-perfluorooctyl)phosphate	57677-95-9	X	-	-	-	-	-	-
8:2PAP	8:2 Fluorotelomer phosphate monoester	57678-03-2	-	-	-	-	-	-	-
8:2 diPAP	8:2 Polyfluoroalkyl phosphate diester	678-41-1	X	-	-	-	-	-	-
NMeFOSA	*N*-Methylperfluorooctanesulfonamide	31506-32-8	X	-	-	-	-	-	-
NEtFOSA	*N*-Ethylperfluorooctanesulfonamide	4151-50-2	X	-	-	-	-	-	-
PFHxDA	Perfluoro-*n*-hexadecanoic acid	67905-19-5	X	-	-	-	-	-	-
PFODA	Perfluoro-*n*-octadecanoic acid	16517-11-6	X	-	-	-	-	-	-
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	756426-58-1	X	-	X	-	X	X	-
11Cl-PF3OUdS	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	763051-92-9	X	-	-	-	X	-	-
ADONA	4,8-Dioxa-3*H*-perfluorononanoic acid	919005-14-4	X	-	X	-	X	X	-
PFNS	Perfluoro-1-nonanesulfonic acid	68259-12-1	X	-	X	X	X	X	-
PFecHS	Decafluoro-4-(pentafluoroethyl)cyclohexanesulfonate	646-83-3 (67584-42-3)	X	-	-	-	-	-	-
6:2FTCA, 6:2 FHEA	2-Perfluorohexyl ethanoic acid	53826-12-3	X	-	-	-	-	-	-
8:2 FOEA	2-Perfluorooctyl ethanoic acid	27854-31-5	X	-	-	-	-	-	-
10:2 FDEA	2-Perfluorodecyl ethanoic acid	53826-13-4	X	-	-	-	-	-	-
6:2 FHUEA	2*H*-Perfluoro-2-octenoic acid	70887-88-6	X	-	-	-	-	-	-
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid	113507-82-7	X	-	-	-	-	-	-
NFDHA	Nonafluoro-3,6-dioxaheptanoic acid	151772-58-6	X	-	-	-	-	-	-
PFMPA	Perfluoro-3-methoxypropanoic acid	377-73-1	X	-	-	-	-	X	-
PFMBA	Perfluoro-4-methoxybutanoic acid	863090-89-5	X	-	-	-	-	-	-
NMeFOSE	2-(*N*-methylperfluoro-1-octanesulfonamido)-ethanol	24448-09-7	X	-	-	-	-	-	-
NEtFOSE	2-(*N*-ethylperfluoro-1-octanesulfonamido)-ethanol	1691-99-2	X	-	-	-	-	-	-
PFDoS	Perfluorododecane sulfonate	79780-39-5	X	-	X	X	X	X	-
PFDoS	Sodium perfluoro-1-dodecanesulfonate	1260224-54-1	-	-	-	-	-	-	-
3:3 FTCA	3:3 Fluorotelomer carboxylic acid	356-02-5	X	-	-	-	-	-	-
5:3 FTCA	5:3 Fluorotelomer carboxylic acid	914637-49-3	X	-	-	-	-	-	-
7:3 FTCA, FHpPA	7:3 Fluorotelomer carboxylic acid or 3-perfluoroheptyl propanoic acid	812-70-4	X	-	-	-	-	-	-
8:3 FTCA	2*H*,2*H*,3*H*,3*H*-Heptadecafluoroundecanoic acid	34598-33-9	-	-	-	-	-	-	-
PFUnDS	Perfluoroundecane sulfonic acid	749786-16-1	X	-	X	X	X	X	-
PFTrDS	*Perfluorotridecane sulfonic acid*	791563-89-8	X	-	X	X	X	X	-
LiTFSI (LiTFSA, HQ-115)	*Lithium bis(trifluoromethane)sulfonimide*	90076-65-6	X	-	-	-	-	-	-
PFPrA	Pentafluoropropanoic acid	422-64-0	-	-	-	-	-	-	-
FHxSA	Perfluorohexanesulfonamide	41997-13-1	-	-	-	-	-	-	-
FBSA	Perfluobutylsufonamide	30334-69-1	-	-	-	-	-	-	-
PFMOAA	2,2-Difluoro-2-(trifluoromethoxy)acetic acid	674-13-5	-	-	-	-	-	-	-
Capstone A (DPOSA)	*N*-(Oxido)-*N*,*N*-dimethyl-3-{[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoroctyl) sulfonyl]amino}-1-propanamin	80475-32-7	X	-	X	-	X	-	-
Capstone B (CDPOS)	*N*-(Carboxymethyl)-*N*,*N*-dimethyl-3-{[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecaflu-or-octyl)sulfonyl]amino}-1-propanaminium	34455-29-3	X	-	X	-	X	-	-
R-PSDCA	Perfluoro-4-(2-sulfoethoxy)pentanoic acid	2416366-21-5	-	-	-	-	-	-	-
10:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluorododecan-1-ol or 2-(Perfluorodecyl)ethanol	865-86-1	-	-	-	-	-	-	-
8:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluoro-1-decanol	678-39-7	-	-	-	-	-	-	-
7:2 FTOH	3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Pentadecafluorononan-2-ol	24015-83-6	-	-	-	-	-	-	-
6:2 FTOH	3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctan-1-ol or 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluoro-1-octanol	647-42-7	-	-	-	-	-	-	-
4:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluorohexan-1-ol or 1-Hexanol	2043-47-2	-	-	-	-	-	-	-
6:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorooctyl acrylate	17527-29-6	-	-	-	-	-	-	-
8:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorodecyl acrylate	27905-45-9	-	-	-	-	-	-	-
10:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorododecyl acrylate	17741-60-5	-	-	-	-	-	-	-
6:2 FTMA	1*H*,1*H*,2*H*,2*H*-heptadecafluorooctylmethacrylate	2144-53-8	-	-	-	-	-	-	-
8:2 FTMA	1H,1H,2H,2H-heptadecafluorodecylmethacrylate	1996-88-9	-	-	-	-	-	-	-

(Continued on page 4)

EUROPEAN PFAS TESTING METHODS & GUIDELINES *(Cont.)*

Acronym*	PFAS Name*	CAS*	Pro *EZ*LC† *Online chromatogram modeler*	EU 2023/915 *Foodstuffs*	EU 2022/1431 *Food*	EU 2020/2184 *Drinking water*	EURL POPs Version 1.2 *Food, feed*	DIN EN 17892 *Drinking water*	DIN 38407-42 *Water, wastewater, sludge*
7HPFHpA	7*H*-Dodecafluoroheptanoic acid	1546-95-8	-	-	-	-	-	-	-
-	1-decanaminium, *N*-decyl-*N*, *N* dimethyl-0,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate	251099-16-8	-	-	-	-	-	-	-
TCDCA	Taurochenodeoxycholic acid	516-35-8	X	-	-	-	-	-	-
TDCA	Taurodeoxycholic acid	516-50-7	X	-	-	-	-	-	-
TUDCA	Tauroursodeoxycholic acid	14605-22-2	X	-	-	-	-	-	-
6:2/8:2 diPAP	6:2/8:2 Fluorotelomer phosphate diester	943913-15-3	X	-	-	-	-	-	-

* PFAS acronyms, compound names, and CAS numbers vary across methods and guidelines, and they also depend on compound form (e.g., neutral vs. salt). The names are standardized here to facilitate comparison. Please refer to each document for its specific nomenclature.
† Restek's Pro *EZ*LC chromatogram modeler is a free, web-based chromatography simulator that allows methods to be developed and optimized in minutes without lab time. Try this virtual method development tool first to view and modify PFAS separations on your screen before running an LC-MS/MS in the lab. (https://ez.restek.com/proezlc)
X = Target compound
X = Member States should, if possible, test also for the presence of these compounds which are similar to PFOS, PFOA, PFNA, and PFHxS but have a different alkyl chain and have relevant occurrence in food, drinking water, and/or human serum.
X = Member States should also consider testing for the presence in food of these emerging PFAS as well as fluorotelomer alcohols and sulfonates.
X = Main compounds for European Food Safety Authority (EFSA).

INTERNATIONAL STANDARDS PFAS TESTING METHODS & GUIDELINES

Acronym*	PFAS Name*	CAS*	Pro *EZ*LC† *Online chromatogram modeler*	ISO 21675:2019 *Water, < 2 g/L solids*	ISO 23702-1:2023 *Leather*	AOAC SMPR 2023.003 *Produce, beverages, dairy products, eggs, seafood, meat products, feed*	ASTM D7968-23 *Soil*	ASTM D7979-20 *Water, sludge, influent, effluent, wastewater*	ASTM D8421-22 *Aqueous*
NEtFOSAA	*N*-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	X	X	-	-	-	-	X
NMeFOSAA	*N*-Methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	X	X	-	-	-	-	X
PFBS	Perfluoro-1-butanesulfonic acid	375-73-5	X	X	X	X	X	X	X
PFDA	Perfluorodecanoic acid	335-76-2	X	X	X	X	X	X	X
PFDoA	Perfluorododecanoic acid	307-55-1	X	X	X	X	X	X	X
PFHpA	Perfluoroheptanoic acid	375-85-9	X	X	**X**	X	X	X	X
PFHxS	Perfluoro-1-hexanesulfonic acid	355-46-4	X	X	X	X	X	X	X
PFHxA	Perfluorohexanoic acid	307-24-4	X	X	X	X	X	X	X
PFNA	Perfluorononanoic acid	375-95-1	X	X	X	X	X	X	X
PFOS	Perfluorooctanesulfonic acid	1763-23-1	X	X	X	X	X	X	X
PFOSF	Heptadecafluorooctanesulfonyl fluoride	307-35-7	-	-	X	-	-	-	-
PFOA	Perfluorooctanoic acid	335-67-1	X	X	X	X	X	X	X
Me-PFOA	Methyl perfluorooctanoate	376-27-2	-	-	X	-	-	-	-
Et-PFOA	Ethyl perfluorooctanoate	3108-24-5	-	-	X	-	-	-	-
PF-3,7-DMOA	Perfluoro(3,7-dimethyloctanoic acid)	172155-07-6	-	-	X	-	-	-	-
PFTeDA	Perfluorotetradecanoic acid	376-06-7	X	X	X	X	X	X	X
PFTrDA	Perfluorotridecanoic acid	72629-94-8	X	X	X	X	X	X	X
PFUnA	Perfluoroundecanoic acid	2058-94-8	X	X	X	X	X	X	X
HFPO-DA, GenX	Hexafluoropropylene oxide dimer acid	13252-13-6	X	X	X	X	-	-	X
PFBA	Perfluorobutanoic acid	375-22-4	X	X	**X**	X	X	X	X
PFPeA	Perfluoropentanoic acid	2706-90-3	X	X	**X**	X	X	X	X
PFDS	Perfluoro-1-decanesulfonic acid	335-77-3	X	X	**X**	X	-	-	X
PFHpS	Perfluoro-1-heptanesulfonic acid	375-92-8	X	X	**X**	X	-	-	X
PFPeS	Perfluoro-1-pentanesulfonic acid	2706-91-4	X	-	-	X	-	-	X
FOSA	Perfluoro-1-octanesulfonamide	754-91-6	X	X	X	X	-	-	X
4:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorohexane sulfonic acid	757124-72-4	X	-	**X**	X	-	-	X
4:2 FTSA	(Sodium) 1*H*,1*H*,2*H*,2*H*-Perfluoro-1-hexanesulfonate	27619-93-8	-	-	-	-	-	-	-
6:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorooctane sulfonic acid	27619-97-2	X	X	**X**	X	-	-	X
8:2 FTS	1*H*,1*H*,2*H*,2*H*-Perfluorodecane sulfonic acid	39108-34-4	X	X	X	X	-	-	X
10:2 FTS	1*H*,1*H*,2*H*,2*H*-perfluorododecane sulfonate (10:2)	120226-60-0	X	-	**X**	X	-	-	-
8:2 FTUCA, FOUEA	2*H*-Perfluoro-2-decenoic acid (8:2)	70887-84-2	X	X	-	-	X	X	X
6:2PAP	6:2 Fluorotelomer phosphate monoester	57678-01-0	-	-	-	**X**	-	-	-
6:2diPAP	Sodium bis(1*H*,1*H*,2*H*,2*H*-perfluorooctyl)phosphate	57677-95-9	X	-	-	**X**	-	-	-
8:2PAP	8:2 Fluorotelomer phosphate monoester	57678-03-2	-	-	-	**X**	-	-	-
8:2 diPAP	8:2 Polyfluoroalkyl phosphate diester	678-41-1	X	X	-	**X**	-	-	-
NMeFOSA	*N*-Methylperfluorooctanesulfonamide	31506-32-8	X	X	X	-	-	-	X
NEtFOSA	*N*-Ethylperfluorooctanesulfonamide	4151-50-2	X	X	X	-	-	-	X
PFHxDA	Perfluoro-*n*-hexadecanoic acid	67905-19-5	X	X	-	-	-	-	-
PFODA	Perfluoro-*n*-octadecanoic acid	16517-11-6	X	X	-	-	-	-	-
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	756426-58-1	X	X	-	X	-	-	X
11Cl-PF3OUdS	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	763051-92-9	X	-	-	X	-	-	X
ADONA	4,8-Dioxa-3*H*-perfluorononanoic acid	919005-14-4	X	X	-	X	-	-	X
PFNS	Perfluoro-1-nonanesulfonic acid	68259-12-1	X	-	-	X	-	-	X
PFecHS	Decafluoro-4-(pentafluoroethyl)cyclohexanesulfonate	646-83-3 (67584-42-3)	X	-	-	-	X	X	-
6:2FTCA, 6:2 FHEA	2-Perfluorohexyl ethanoic acid	53826-12-3	X	-	-	-	X	X	-
8:2 FOEA	2-Perfluorooctyl ethanoic acid	27854-31-5	X	-	-	-	X	X	-
10:2 FDEA	2-Perfluorodecyl ethanoic acid	53826-13-4	X	-	-	-	X	X	-
6:2 FHUEA	2H-Perfluoro-2-octenoic acid	70887-88-6	X	-	-	-	X	X	X
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid	113507-82-7	X	-	-	-	-	-	X
NFDHA	Nonafluoro-3,6-dioxaheptanoic acid	151772-58-6	X	-	-	-	-	-	X
PFMPA	Perfluoro-3-methoxypropanoic acid	377-73-1	X	-	-	-	-	-	X
PFMBA	Perfluoro-4-methoxybutanoic acid	863090-89-5	X	-	-	-	-	-	X
NMeFOSE	2-(*N*-methylperfluoro-1-octanesulfonamido)-ethanol	24448-09-7	X	-	X	-	-	-	X
NEtFOSE	2-(*N*-ethylperfluoro-1-octanesulfonamido)-ethanol	1691-99-2	X	-	X	-	-	-	X
PFDoS	Perfluorododecane sulfonate	79780-39-5	X	-	-	X	-	-	X
PFDoS	Sodium perfluoro-1-dodecanesulfonate	1260224-54-1	-	-	-	-	-	-	-
3:3 FTCA	3:3 Fluorotelomer carboxylic acid	356-02-5	X	-	-	-	-	-	X
5:3 FTCA	5:3 Fluorotelomer carboxylic acid	914637-49-3	X	-	-	-	-	-	X

(Continued on page 5)

INTERNATIONAL STANDARDS PFAS TESTING METHODS & GUIDELINES *(Cont.)*

Acronym*	PFAS Name*	CAS*	Pro *EZ*LC† *Online chromatogram modeler*	ISO 21675:2019 *Water, < 2 g/L solids*	ISO 23702-1:2023 *Leather*	AOAC SMPR 2023.003 *Produce, beverages, dairy products, eggs, seafood, meat products, feed*	ASTM D7968-23 *Soil*	ASTM D7979-20 *Water, sludge, influent, effluent, wastewater*	ASTM D8421-22 *Aqueous*
7:3 FTCA, FHpPA	7:3 Fluorotelomer carboxylic acid or 3-perfluoroheptyl propanoic acid	812-70-4	X	-	-	-	X	X	X
8:3 FTCA	2*H*,2*H*,3*H*,3*H*-Heptadecafluoroundecanoic acid	34598-33-9	-	-	X	-	-	-	-
PFUnDS	Perfluoroundecane sulfonic acid	749786-16-1	X	-	-	X	-	-	-
PFTrDS	*Perfluorotridecane sulfonic acid*	791563-89-8	X	-	-	X	-	-	-
LiTFSI (LiTFSA, HQ-115)	*Lithium bis(trifluoromethane)sulfonimide*	90076-65-6	X	-	-	-	-	-	X
PFPrA	Pentafluoropropanoic acid	422-64-0	-	-	-	-	-	-	X
FHxSA	Perfluorohexanesulfonamide	41997-13-1	-	-	-	-	-	-	-
FBSA	Perfluobutylsufonamide	30334-69-1	-	-	-	-	-	-	-
PFMOAA	2,2-Difluoro-2-(trifluoromethoxy)acetic acid	674-13-5	-	-	-	-	-	-	-
Capstone A (DPOSA)	*N*-(Oxido)-*N*,*N*-dimethyl-3-{[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoroctyl) sulfonyl]amino}-1-propanamin	80475-32-7	X	-	-	X	-	-	-
Capstone B (CDPOS)	*N*-(Carboxymethyl)-*N*,*N*-dimethyl-3-{[(3,3,4,4,5,5,6,6,7,7,8,8,8-trideca-fluor-octyl)sulfonyl]amino}-1-propanaminium	34455-29-3	X	-	-	X	-	-	-
R-PSDCA	Perfluoro-4-(2-sulfoethoxy)pentanoic acid	2416366-21-5	-	-	-	-	-	-	-
10:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluorododecan-1-ol or 2-(Perfluorodecyl)ethanol	865-86-1	-	-	X	X	-	-	-
8:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluoro-1-decanol	678-39-7	-	-	X	X	-	-	-
7:2 FTOH	3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Pentadecafluorononan-2-ol	24015-83-6	-	-	-	-	-	-	-
6:2 FTOH	3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctan-1-ol or 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluoro-1-octanol	647-42-7	-	-	X	X	-	-	-
4:2 FTOH	1*H*,1*H*,2*H*,2*H*-Perfluorohexan-1-ol or 1-Hexanol	2043-47-2	-	-	X	X	-	-	-
6:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorooctyl acrylate	17527-29-6	-	-	X	-	-	-	-
8:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorodecyl acrylate	27905-45-9	-	-	X	-	-	-	-
10:2 FTA	1*H*,1*H*,2*H*,2*H*-Perfluorododecyl acrylate	17741-60-5	-	-	X	-	-	-	-
6:2 FTMA	1*H*,1*H*,2*H*,2*H*-heptadecafluorooctylmethacrylate	2144-53-8	-	-	X	-	-	-	-
8:2 FTMA	1*H*,1*H*,2*H*,2*H*-heptadecafluorodecylmethacrylate	1996-88-9	-	-	X	-	-	-	-
7HPFHpA	7*H*-Dodecafluoroheptanoic acid	1546-95-8	-	-	X	-	-	-	-
-	1-decanaminium, *N*-decyl-*N*, *N* dimethyl-0,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8, 8-heptadecafluoro-1-octanesulfonate	251099-16-8	-	-	X	-	-	-	-
TCDCA	Taurochenodeoxycholic acid	516-35-8	X	-	-	-	-	-	-
TDCA	Taurodeoxycholic acid	516-50-7	X	-	-	-	-	-	-
TUDCA	Tauroursodeoxycholic acid	14605-22-2	X	-	-	-	-	-	-
6:2/8:2 diPAP	6:2/8:2 Fluorotelomer phosphate diester	943913-15-3	X	-	-	-	-	-	-

* PPFAS acronyms, compound names, and CAS numbers vary across methods and guidelines, and they also depend on compound form (e.g., neutral vs. salt). The names are standardized here to facilitate comparison. Please refer to each document for its specific nomenclature.
† Restek's Pro *EZ*LC chromatogram modeler is a free, web-based chromatography simulator that allows methods to be developed and optimized in minutes without lab time. Try this virtual method development tool first to view and modify PFAS separations on your screen before running an LC-MS/MS in the lab. (https://ez.restek.com/proezlc)
X = Target compound
X = Optional compound

Other Methods and Guidelines

1. Restek Corporation, Your partner in pfas analysis, Technical article, GNLP4243A-UNV, 2024. https://www.restek.com/pfas
2. U.S. Department of Defense and U.S. Department of Energy, DoD/DOE quality systems manual for environmental laboratories (QSM), Version 6.0, December 13, 2023. https://www.denix.osd.mil/edqw/denix-files/sites/43/2024/01/QSM-Version-6.0-FINAL-Dec-13-2023.pdf
3. U.S. Department of Defense, DoD AFFF01 Determination of perfluorooctanoic acid and perfluorooctanesulfonic acid in aqueous film forming foam (AFFF) for demonstration of compliance to MIL-PRF-24385, Rev 1.0, December 10, 2021. https://www.denix.osd.mil/edqw/denix-files/sites/43/2021/12/DoD-AFFF01-Rev-1.0-dtd-7-Dec-2021-1.pdf
4. U.S. Environmental Protection Agency, EPA 1621 Determination of adsorbable organic fluorine (AOF) in aqueous matrices by combustion ion chromatography (CIC), January 2024. https://www.epa.gov/system/files/documents/2024-01/method-1621-for-web-posting.pdf
5. Michigan Department of Environment, Great Lakes, and Energy (EGLE), General PFAS sampling guidance, January 2024. https://www.michigan.gov/pfasresponse/-/media/Project/Websites/PFAS-Response/Sampling-Guidance/General.pdf?rev=6217442052bf4fedb89bbf786560d645

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