

UHPLC-MS Solvents tested for PFAS analysis according to EPA 533 and EPA 537.1 methods

PFAS testing becomes one key emerging area due to major increases in regulation and legislation. There is a growing focus on eliminating PFAS background and contamination. Reliable and effective testing is a needed criteria to facilitate identification and quantitation of PFAS analytes. Testing laboratories need consumables not contributing to noise and/or interferences that may lead to false positive or false negative results in their LC-MS/MS analysis.

We are pleased to introduce new ultra-high purity solvents for sensitive analyses (low ppt range) of PFAS analytes using authority defined LC-MS/MS methods. The new products will help to reduce background interference for the defined methods. These new solvents will not contain any of the PFAS compounds above the LCMRLs defined by the EPA 533 and EPA 537.1.

Product Table

Product Number	Product Description	Size
1.04726.1000	LiChrosolv [®] Acetonitrile tested for EPA 533 and EPA 537.1 PFAS Methods	1L
1.04732.1000	LiChrosolv [®] Methanol tested for EPA 533 and EPA 537.1 PFAS Methods	1L
1.04735.1000	LiChrosolv [®] Water tested for EPA 533 and EPA 537.1 PFAS Methods	1L



PFAS Testing Features:

- QC batch tested on 29 PFAS analytes according to EPA 533 (25 analytes) and EPA 537.1 (18 analytes)
- Lot to lot consistency: Multiple batches validated by a third-party accredited testing laboratory and internal laboratories

LC-MS/MS Suitability and Ultimate Benefits:

- ESI/APCI (+) < 2 ppb; ESI/APCI (-) < 10 ppb
- Lowest impurity profile for interference free baseline
- Borosilicate glass bottles minimized contamination with metal ions
- Lowest levels of trace metal impurities: for minimized metal ion adduct formation < 5 ppb
- Microfiltration through 0.2 µm filter

None of the 29 PFAS analytes tested by EPA method 533 and/or 537.1 have been identified at concentration levels above the EPA defined lowest concentration minimum reporting levels (LCMRL's).

Table 1: PFAS analyses (in ng/L) by LC-MS/MS performed on LiChrosolv® solvents according to EPA 533 method*.

Abbreviation	CAS Number	Native Analyte Name	PPT (ng/L)
Perfluoroalkyl carboxylic acids			
PFBA	375-22-4	Perfluorobutanoic acid	<LCMRL
PFPeA	2706-90-3	Perfluoropentanoic acid	<LCMRL
PFHxA	307-24-4	Perfluorohexanoic acid	<LCMRL
PFHpA	375-85-9	Perfluoroheptanoic acid	<LCMRL
PFOA	335-67-1	Perfluorooctanoic acid	<LCMRL
PFNA	375-95-1	Perfluorononanoic acid	<LCMRL
PFDA	335-76-2	Perfluorodecanoic acid	<LCMRL
PFUnA	2058-94-8	Perfluoroundecanoic acid	<LCMRL
PFDoA	307-55-1	Perfluorododecanoic acid	<LCMRL
Perfluoroalkyl sulfonic acids			
PFBS	375-73-5	Perfluorobutanesulfonic acid	<LCMRL
PFPeS	2706-91-4	Perfluoropentanesulfonic acid	<LCMRL
PFHxS	355-46-4	Perfluorohexanesulfonic acid	<LCMRL
PFHpS	375-92-8	Perfluoroheptanesulfonic acid	<LCMRL
PFOS	1763-23-1	Perfluorooctanesulfonic acid	<LCMRL
Fluorotelomer sulfonic acids			
4:2FTS	757124-72-4	1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	<LCMRL
6:2FTS	27619-97-2	1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	<LCMRL
8:2FTS	39108-34-4	1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	<LCMRL
Per- and Polyfluoroether carboxylic acids			
HFPO-DA	13252-13-6	Hexafluoropropylene oxide dimer acid	<LCMRL
ADONA	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid	<LCMRL
PFMPA	377-73-1	Perfluoro-3-methoxypropanoic acid	<LCMRL
PFMBA	863090-89-5	Perfluoro-4-methoxybutanoic acid	<LCMRL
NFDHA	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	<LCMRL

EPA 533 method*

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Ether sulfonic acids			
9CI-PF3ONS	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<LCMRL
11CI-PF3OUDS	763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	<LCMRL
PFEESA	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	<LCMRL

Table 2: PFAS analyses (in ppt) by LC-MS/MS performed on LiChrosolv® solvents according to EPA 537.1 method*.

Abbreviation	CAS Number	Native Analyte Name	PPT (ng/L)
Perfluoroalkyl carboxylic acids			
PFHxA	307-24-4	Perfluorohexanoic acid	<LCMRL
PFHpA	375-85-9	Perfluoroheptanoic acid	<LCMRL
PFOA	335-67-1	Perfluorooctanoic acid	<LCMRL
PFNA	375-95-1	Perfluorononanoic acid	<LCMRL
PFDA	335-76-2	Perfluorodecanoic acid	<LCMRL
PFUnA	2058-94-8	Perfluoroundecanoic acid	<LCMRL
PFDoA	307-55-1	Perfluorododecanoic acid	<LCMRL
PFTTrDA	72629-94-8	Perfluorotridecanoic acid	<LCMRL
PFDoA	307-55-1	Perfluorododecanoic acid	<LCMRL
Perfluoroalkyl sulfonic acids			
PFBS	375-73-5	Perfluorobutanesulfonic acid	<LCMRL
PFHxS	355-46-4	Perfluorohexanesulfonic acid	<LCMRL
PFOS	1763-23-1	Perfluorooctanesulfonic acid	<LCMRL
Perfluorooctane sulfonamidoacetic acids			
NMeFOSAA	2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid	<LCMRL
NEtFOSAA	2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid	<LCMRL
Per- and Polyfluoroether carboxylic acids			
HFPO-DA	13252-13-6	Hexafluoropropylene oxide dimer acid	<LCMRL
ADONA	919005-14-4	4,8-dioxa-3H-perfluorononanoic acid	<LCMRL
Ether sulfonic acids			
9CI-PF3ONS	756426-58-1	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<LCMRL
11CI-PF3OUDS	763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	<LCMRL

EPA 537.1*

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