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Nestlé Quality Assurance Center
Dublin

Technical Datasheet

Analysis Name: PFAS in Food By LC-MS/MS

Method Number: NQA-54.0013

Scope of Application: This method has been validated in baby food, infant formula, infant cereals, milk powders, meat, fish, eggs, coffee, and fish oil/ vegetable oil.

Description: This is a method for the determination of 56 per- and polyfluoroalkyl substances (PFAS) in food by isotope dilution liquid chromatography tandem mass spectrometry. The analyte scope comprises 56 PFAS with 49 compounds fully quantifiable and 6 others (having only one transition reaction) that have quantitative results included. However, because of the limitations of the technology with these specific analytes, they are more prone to interferences, and it is recommended to confirm any detections in these six compounds with a more selective technology such as high-resolution mass spectrometry (**highlighted in yellow**).

Sample Weight Required: 500 g

Analytical Platform: LC-MS/MS

Sample Submission Information: Avoid use of Teflon containing coated equipment, LDPE bottles/materials and glass containers. Avoid use of markers/waterproof pens, post-it notes, blue ice or chemical packs, and aluminum foil. HDPE, PET, PP, or PE containers is recommended. Samples should be stored in airtight containers and protected from light.

Special Information: Limit of quantification (LOQ or QL) differs significantly between food matrices and between analytes. Below are two charts showing the PFAS analyte groups and the QL's associated with each analyte group for the different validated matrices. The lowest QLs are not available to all matrices. Contact customer service regarding specific QL requirements. Capstone A & B are only available for baby foods, infant formulas, infant cereals, and milk-based products. PFOA, PFNA, PFOS, and PFHxS are calculated as the sum of all linear and branched isomers of each compound quantitated using the linear standard of each. The presence of the branched isomers are identified and confirmed by retention time of a mixed standard (branched and linear isomers).



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Matrix	Analyte	LOQ (µg/kg)
Baby Food Infant Formulas Infant Cereals Milk-based Products	PFAS Group a (PFOS, PFOA, PFHxS, PFNA)	0.010
	PFAS Group b	0.050
	PFAS Group c	0.250
	PFAS Group d	0.500
	PFAS Group e	1.000
	PFAS Group f	2.000
	Capstone A & B	1.000
Fish Meat	PFAS Group a (PFOS, PFOA, PFHxS, PFNA)	0.200
	PFAS Group b	1.000
	PFAS Group c	5.000
	PFAS Group d	10.000
	PFAS Group e	20.000
	PFAS Group f	40.000
Eggs Coffee	PFAS Group a (PFOS, PFOA, PFHxS, PFNA)	0.300
	PFAS Group b	1.500
	PFAS Group c	7.500
	PFAS Group d*	15.000
	PFAS Group e	30.000
	PFAS Group f	60.000
Fish Oil Vegetable Oil & Fat	PFAS Group a (PFOS, PFOA, PFHxS, PFNA)	0.500
	PFAS Group b	2.500
	PFAS Group c	12.500
	PFAS Group d	25.000
	PFAS Group e	50.000
	PFAS Group f	100.000

*PFPeA (group d) LOQ is 75 µg/kg in coffee

Analyte Reported	Alias	Unit of Measure	PFAS group	Reproducibility (%)
PFDA	Perfluorodecanoic acid	µg/kg	b	25
PFDoA	Perfluorododecanoic acid	µg/kg	c	25
PFEESA	Perfluoro(2-ethoxyethane) sulfonic acid	µg/kg	b	25
PFHpA	Perfluoroheptanoic acid	µg/kg	b	25
PFHxA	Perfluorohexanoic acid	µg/kg	b	25
PFHxDA	Perfluorohexadecanoic acid	µg/kg	b	25
PFNA	Perfluorononanoic acid	µg/kg	a	20
PFOA	Perfluorooctanoic acid	µg/kg	a	20
PFODA	Perfluorooctadecanoic acid	µg/kg	b	25
PFTeDA	Perfluorotetradecanoic acid	µg/kg	b	25
PFTTrDA	Perfluorotridecanoic acid	µg/kg	b	25



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PFUdA	Perfluoroundecanoic acid	µg/kg	b	25
PF4OPeA	Perfluoro-3-methoxypropanoic acid	µg/kg	b	88
PF5OHxA	Perfluoro(5-oxahexanoic) acid	µg/kg	b	25
3,6-OPFHpA	Perfluoro-2-methoxyethoxyacetic acid	µg/kg	b	25
11Cl-PF3OUdS	11-Chloro-perfluoro-3-oxaundecane sulfonic acid	µg/kg	b	25
9Cl-PF3ONS	9-Chloro-perfluoro-3-oxanonane sulfonic acid	µg/kg	b	25
8:2diPAP	Fluorotelomer phosphate diester, 8:2	µg/kg	b	25
10:2FTS	Fluorotelomer sulfonic acid, 10:2	µg/kg	b	25
4:2FTS	Fluorotelomer sulfonic acid, 4:2	µg/kg	b	25
6:2FTS	Fluorotelomer sulfonic acid, 6:2	µg/kg	b	25
8:2FTS	Fluorotelomer sulfonic acid, 8:2	µg/kg	b	32
FOSAA	Perfluorooctanesulfonamidoacetic acid	µg/kg	b	25
H4PFUnA	2H, 2H, 3H, 3H-Perfluoroundecanoic acid	µg/kg	c	25
HPFHpA	Dodecafluoroheptanoic acid, 7H-	µg/kg	e	25
HPFUndA	Perfluoroundecanoic acid, 11H-	µg/kg	c	25
L-PFBS	Perfluorobutane sulfonic acid	µg/kg	b	25
L-PFDoS	Perfluorododecane sulfonic acid	µg/kg	b	25
L-PFDS	Perfluorodecane sulfonic acid	µg/kg	b	25
L-PFHpS	Perfluoroheptane sulfonic acid	µg/kg	b	25
PFHxS	Perfluorohexane sulfonic acid	µg/kg	a	20
L-PFNS	Perfluorononane sulfonic acid	µg/kg	b	25
PFOS	Perfluorooctane sulfonic acid	µg/kg	a	20
L-PFPeS	Perfluoropentane sulfonic acid	µg/kg	b	25
L-PFTrDS	Perfluorotridecane sulfonic acid	µg/kg	b	25
L-PFUdS	Perfluoroundecane sulfonic acid	µg/kg	b	25
NaDONA	4,8-dioxa-3H-perfluorononanoic acid	µg/kg	b	25
N-EtFOSAA	Perfluorooctanesulfonamidoacet ac, N-Et-	µg/kg	b	25
N-MeFOSAA	Perfluorooctanesulfonamidoacet ac, N-Me-	µg/kg	b	25
HFPO-DA	Perfluoro-2-propoxypropanoic acid (GenX)	µg/kg	c	25
PF37DMOA	Perfluoro-3,7-dimethyloctanoic acid	µg/kg	c	25
FDEA	Perfluorododecanoic acid, 2H, 2H-	µg/kg	c	25
FHEA	Perfluorooctanoic acid, 2H, 2H-	µg/kg	c	32
FOEA	Perfluorodecanoic acid, 2H, 2H-	µg/kg	c	25
FDUEA	Perfluoro-2-dodecenoic acid, 2H	µg/kg	c	25
FOUEA	Perfluoro-2-decenoic acid, 2H-	µg/kg	c	25
FHUEA	Perfluoro-2-octenoic acid, 2H-	µg/kg	c	25
FOSA-I	Perfluorooctanesulfonamide	µg/kg	c	25



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8:2PAP	Fluorotelomer phosphate monoester, 8:2	µg/kg	c	27
N-EtFOSA-M	Perfluorooctanesulfonamide, N-Et-	µg/kg	e	25
N-EtFOSE-M	Perfluorooctanesulfonamidoethanol, N-Et-	µg/kg	f	25
N-MeFOSA-M	Perfluorooctanesulfonamide, N-Me-	µg/kg	e	25
N-MeFOSE-M	Perfluorooctanesulfonamidoethanol, N-Me-	µg/kg	f	25
Capstone A	Capstone product A	µg/kg	e	25
Capstone B	Capstone product B	µg/kg	e	25
PFPeA	Perfluoropentanoic acid	µg/kg	d	25