Analytical Results for FY23-24 PFAS in Clams (canned or pouched) Assignment

Note: Twelve clam samples imported from China were analyzed for 30 PFAS analytes in FY23-FY24 as a follow-up to the 2022 Seafood Survey. PFOA and PFOS were detected in all 12 samples, and all but one sample had three or more PFAS detected. 12 different PFAS analytes were detected in this clam assignment.

Measured Concentrations in ng/g (ppb)

Sample	PFBA* MDL = 0.345	PFPeA* MDL = 0.207	PFHxA MDL = 0.032	PFHpA MDL = 0.008	PFOA MDL = 0.051	PFNA MDL = 0.025	PFDA MDL = 0.025	PFUdA MDL = 0.026	PFDoA MDL = 0.017	PFTrDA MDL = 0.077	PFTeDA MDL = 0.017	PFBS MDL = 0.006	PFPeS MDL = 0.017	PFHxS MDL = 0.009	PFHpS MDL = 0.019	PFOS MDL = 0.014	HFPO-DA MDL = 0.010	DONA MDL = 0.005	9Cl-PF3ONS MDL = 0.007	11Cl-PF3OUdS MDL = 0.011	PFNS MDL = 0.005	PFDS MDL = 0.009	PFUdS MDL = 0.009	PFDoS MDL = 0.010	PFTrDS MDL = 0.010	PFOSA MDL = 0.008	4:2 FTS MDL = 0.008	6:2 FTS MDL = 0.025	8:2 FTS MDL = 0.014	10:2 FTS MDL = 0.012
1208654	< MDL	< MDL	< MDL	< MDL	3.15	0.475	0.086	0.270	0.054	0.191	0.117	< MDL	< MDL	0.038	< MDL	0.317	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1210254	< MDL	< MDL	< MDL	< MDL	3.01	0.555	0.172	0.592	0.062	0.670	0.096	< MDL	< MDL	0.034	< MDL	0.309	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1212831	< MDL	< MDL	< MDL	< MDL	6.02	0.567	< MDL	0.212	< MDL	0.423	< MDL	< MDL	< MDL	0.093	< MDL	0.423	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1227797	< MDL	< MDL	< MDL	0.295	25.2	0.554	0.077	0.107	< MDL	0.173	0.061	0.042	< MDL	0.163	< MDL	0.550	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1229356	< MDL	< MDL	< MDL	< MDL	6.59	0.637	0.115	0.244	< MDL	0.252	< MDL	1.20	< MDL	0.062	< MDL	0.434	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1254338	< MDL	< MDL	< MDL	< MDL	0.668	< MDL	0.038	0.061	< MDL	0.116	< MDL	0.035	< MDL	< MDL	< MDL	0.435	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1257304	< MDL	< MDL	< MDL	< MDL	0.450	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.398	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1264318	< MDL	< MDL	< MDL	< MDL	0.486	< MDL	< MDL	0.059	< MDL	0.104	< MDL	< MDL	< MDL	< MDL	< MDL	0.335	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1267071	< MDL	< MDL	< MDL	< MDL	0.384	0.122	< MDL	< MDL	< MDL	0.114	< MDL	0.032	< MDL	< MDL	< MDL	0.634	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1270805	< MDL	< MDL	0.063	< MDL	0.631	0.110	< MDL	< MDL	< MDL	< MDL	< MDL	0.034	< MDL	< MDL	< MDL	0.622	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1272135	< MDL	< MDL	< MDL	< MDL	0.498	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.052	< MDL	< MDL	< MDL	0.217	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
1272981	< MDL	< MDL	< MDL	< MDL	0.546	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.158	< MDL	< MDL	< MDL	0.383	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

*All PFBA and PFPeA detects were confirmed using High-Resolution Mass Spectrometry (HR-MS).

Legend

Acronym	Name	CAS	Formula	Nominal Mass
PFBA	Perfluorobutanoic acid	375-22-4	$C_4HF_7O_2$	214
PFPeA	Perfluoropentanoic acid	2706-90-3	$C_5HF_9O_2$	264
PFHxA	Perfluorohexanoic acid	307-24-4	$C_6HF_{11}O_2$	314
PFHpA	Perfluoroheptanoic acid	375-85-9	$C_7HF_{13}O_2$	364
PFOA	Perfluorooctanoic acid	335-67-1	$C_8HF_{15}O_2$	414
PFNA	Perfluorononanoic acid	375-95-1	$C_9HF_{17}O_2$	464
PFDA	Perfluorodecanoic acid	335-76-2	$C_{10}HF_{19}O_2$	514
PFUdA	Perfluoroundecanoic acid	2058-94-8	$C_{11}HF_{21}O_2$	564
PFDoA	Perfluorododecanoic acid	206-203-2	$C_{12}HF_{23}O_2$	614
PFTrDA	Perfluorotridecanoic acid	276-745-2	$C_{13}HF_{25}O_2$	664
PFTeDA	Perfluorotetradecanoic acid	376-06-7	$C_{14}HF_{27}O_2$	714
PFBS	Perfluorobutanesulfonic acid	375-73-5	$C_4HF_9O_3S$	300
PFPeS	Perfluoropentanesulfonic acid	2706-91-4	$C_5HF_{11}O_3S$	350
PFHxS	Perfluorohexanesulfonic acid	355-46-4	$C_6HF_{13}O_3S$	400
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	$C_7HF_{15}O_3S$	450
PFOS	Perfluorooctanesulfonic acid	1763-23-1	$C_8HF_{17}O_3S$	500
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	$C_6HF_{11}O_3$	330
DONA	4,8-Dioxa-3H-perfluorononanoic acid	919005-14-4	$C_7H_2F_{12}O_4$	378
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	756426-58-1	$C_8ClF_{16}O_4S$	532
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	$C_{10}HClF_{20}O_4S$	632
PFNS	Perfluorononanesulfonic acid	68259-12-1	$C_9HF_{19}O_3S$	550
PFDS	Perfluorodecanesulfonic acid	335-77-3	$C_{10}HF_{21}O_3S$	600
PFUdS	Perfluoroundecanesulfonic acid	749786-16-1	$C_{11}HF_{23}O_3S$	650
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	$C_{12}HF_{25}O_3S$	700
PFTrDS	Perfluorotridecanesulfonic acid	791563-89-8	$C_{13}HF_{27}O_3S$	750
PFOSA	Perfluorooctanesulfonamide	754-91-6	$C_8H_2F_{17}O_2S$	499
4:2 FTS	1*H* ,1*H* , 2*H* , 2*H* -Perfluorohexane sulfonic acid	757124-72-4	$C_6H_5F_9O_3S$	328
6:2 FTS	1*H* ,1*H* , 2*H* , 2*H* -Perfluorooctane sulfonic acid	27619-97-2	$C_8H_5F_{13}O_3S$	428
8:2 FTS	1*H* ,1*H* , 2*H* , 2*H* -Perfluorodecane sulfonic acid	39108-34-4	$C_{10}H_5F_{17}O_3S$	528
10:2 FTS	1*H* ,1*H* , 2*H* , 2*H* -Perfluorododecane sulfonic acid	120226-60-0	$C_{12}H_5F_{21}O_3S$	628

CAS = Chemical Abstract Service Number

MDL = Method Detection Limit. Method Detection Limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

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