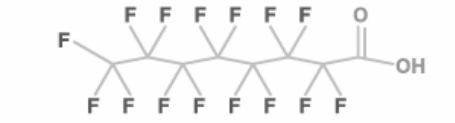
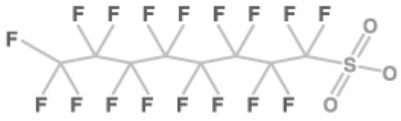
WECK LABORATORIES, INC.

Determination of Perfluorinated Compounds in Water

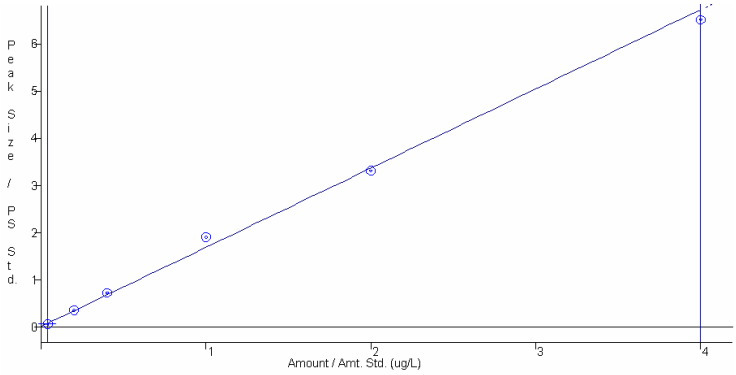
Perfluorinated compounds (PFCs) are ubiquitous carcinogenic chemicals which have many uses, including the synthesis of fluoropolymers such as Teflon®, industrial surfactants, lubricants, waxes and adhesives, among other products—with an estimated worldwide production of 5-6.5 million kg/year(1). The discovery of several PFCs in coastal waters both near industrial centers, and in remote environments, as well the detection of PFCs in human blood serum and in the tissues of aquatic animals has sparked concern as to the global fate of this common contaminant(2). Recently, several of these PFCs have been discovered in drinking water supplies near a West Virginia manufacturing plant and near a Decatur, AL treatment plant, prompting the USEPA to issue a provisional health advisory for perfluorooctanoic acid (PFOA) at 0.4 µg/L and perfluorooctane sulfonic acid (PFOS) at 0.2 µg/L(3), which is ten times higher than the guidance level in New Jersey. Weck Labs has developed a sensitive method for the analysis of two of the most common PFCs: PFOA and PFOS, which serve as representative indicators. Through the use of SPE concentration and tandem LC-MS, Weck Labs has been able to achieve reporting limits of 5 ng/L (0.005 µg/L).



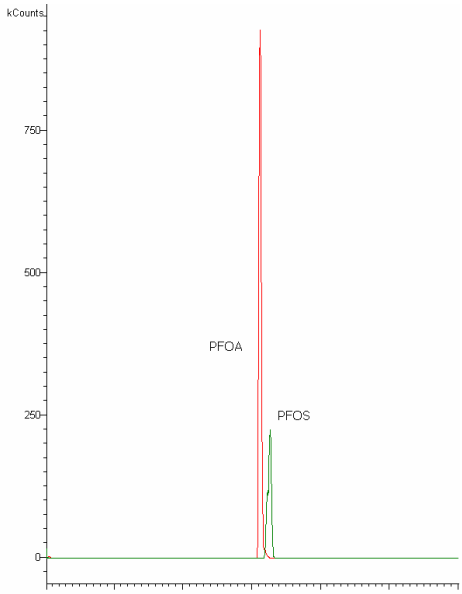
Perfluorooctanoic Acid (PFOA)



Perfluorooctanesulfonic acid (PFOS)



PFOS, 1-100 ppb, r^2=0.998



PFOA and PFOS, 5 ppb

Analyte	MDL(4) (ng/L)	RL(5) (ng/L)	Accuracy		Precision	
			Mean (%)	Acceptance(6) (%)	RSD (%)	Acceptance(6) (%)
PFOA	1.81	5	90	70-130	12.0	<30
PFOS	2.33	5	92	70-130	1.16	<30

Notes: (1) *J. Chromatogr. A 1093 (2005) 89–97*
(2) en.wikipedia.org/wiki/PFOA
(3) EPA Water Headlines, January 27, 2009
(4) Calculated Method Detection Limit using the procedure described in 40CFR Appendix B
(5) Reporting Limit
(6) Temporary limits until lab generated acceptance limits based on historical values are established

14859 East Clark Avenue, City of Industry, California 91745-1396 (626) 336-2139 FAX (626) 336-2634
www.wecklabs.com