Perfluorooctane Sulfonate Analysis and its close Relationship with Mass Spectrometry

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Since the 1950ies, polyfluorinated compounds (PFCs) are industrially produced mainly as paint and adhesive additives, as insecticide, as fire fighting foam, as well as coating for textile, leather and food paper. Perfluorooctane sulfonate (PFOS, $C_8F_{17}SO_3^-$), a possible final biodegradation compound of some PFCs received a lot of attention due to its ubiquity in the environment[1] and also due to its detection in the human blood in the ppb range[2].
Coupled to high performance liquid chromatography, mass spectrometry is the unique detection technique for PFOS analysis in biota. Limits of detections in the pg range can be reached[3]. The possibility of MS will be discussed to distinguish the structural PFOS isomers present in standard solutions and biota. Additionally, a new derivatisation procedure was developed for GC-MS to widen the applicability in environmental analysis. Results obtained by electron and negative chemical ionisation as well as by high resolution MS will be presented.

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