

An increasing number of studies have been conducted to investigate the environmental distribution of perfluorinated alkyl compounds (PFCs), some of which are known to be toxic in laboratory studies. Despite growing public concerns, environmental monitoring data are still limited in most places around the world, making it difficult to draw conclusions about environmental transport and human exposure issues. One of the key reasons these data have not been available is a basic lack of reliable methods. Several international round-robin studies for PFCs in a variety of matrices led by Swedish researchers revealed there has been significant improvement in detection methods; however, there also remains great room for method development in order to produce more reliable data that could be used for decision making processes. Due to unique properties of the PFCs, it is important to characterize not only conventional quality measures such as recovery, accuracy and precision but also instrument or preparation method specific interferences associated with each matrix analyzed. Those interferences include ionization interference in mass spectrometers, misidentification of target compounds, chromatographic co-elution problems, and interferences by sample matrices during preparation (solvent extract, solid phase extraction, etc.). In this presentation, special procedures required for collection, transport, storage and analysis of environmental samples in order to obtain high quality data will be provided.