

METHOD VALIDATION FOR MEASURING PERFLUORINATED CONTAMINANTS

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Perfluorinated compounds are an emerging class of organic contaminants with worldwide distribution and cause adverse toxicological effects. Therefore, it is important to be able to measure these compounds with accuracy in order to determine the potential risks of these compounds in humans and wildlife species. To measure contaminant concentrations in a sample, the sample undergoes 1) extraction, 2) removal of proteins and biomolecules, and 3) measurements of compounds. We have optimized a method for measuring perfluorinated contaminants using an automated solid-phase extraction system with weak anion exchange cartridges. The extraction system also removes proteins and biomolecules from the effluent. Liquid chromatography tandem mass spectrometry is used to measure the concentration of perfluorinated compounds in samples. We have validated the use of a second analytical column in the liquid chromatograph, which separates contamination that can be introduced from the instrument during analysis, and compound-specific standards for concentration measurements. This approach increases extraction efficiency, decreases contamination, and increases the accuracy of measurements.

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