Method Summary

PFAS in Solid Samples

The Vista Analytical Laboratory method, based on EPA Method 537, is used for the determination of the PFAS in solid matrix, by isotope dilution and internal standard techniques using solid phase extraction (SPE) with liquid chromatography/mass spectrometry (LC/MS/MS).
A Method Blank, Laboratory Control Sample (LCS) are prepared with every preparation batch of 20 samples or less per matrix type. All samples should be stored at less than 6°C.
Solid and Tissue samples: Samples (1g) are first spiked with Internal Standard, then sonicated with sodium hydroxide for 30 minutes, and incubated for 12-18 hours at ambient temperature. Hydrochloric acid is added to acidify, and the samples are vortexed. The samples are shaken in Acetonitrile:Methanol, then centrifuged. Ten mL is decanted, and the extraction process is repeated. The combined extracts are passed through a conditioned solid phase extraction cartridge.

The cartridge is washed with reagent water and methanol:water before drying under vacuum for ~10 minutes.

The cartridge is eluted with basic methanol and concentrated to near-dryness with nitrogen.

When appropriate, the cartridge is passed through an ENVI-Carb™ cartridge and concentrated to near dryness. Recovery standard is added.

Reversed-phase liquid chromatography is used to separate compounds of interest. The LC/MS/MS instrument is operated in negative ion ionization using multiple reaction monitoring (MRM) for quantitative analysis. Peak area is used for quantitation. An initial 5 or 6-point calibration curve is analyzed to demonstrate the linearity of the analytical system over the calibration range and verified with a continuing calibration verification standard per analytical sequence (10 samples). Unique precursor-product ions are monitored for each compound at specific retention times. The reporting limits correspond to the low point of the current calibration curve; they can be adjusted based on project requirements.

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