

Food and Environmental

Analysis of Hexafluoropropylene Oxide Dimer Acid (HFPO-DA), Commonly Known as Gen-X, and Related PFAS Compounds

KC Hyland
SCIEX, USA

What: Gen-X is an emerging polyfluorinated alkyl substance, hexafluoropropylene oxide (HFPO-DA), and it with other novel PFAS is shown as part of a multi-component PFAS acquisition method. Gen-X and several PFOS-replacement compounds were optimized on the SCIEX Triple Quad™ 4500 system.

How: Existing methods for the suite of EPA standard PFAS chemicals were updated to include four novel PFOS/PFOA replacement chemicals; HFPO-DA, DONA, 9CI-PF3ONS, 11CI-PF3UdS. Sensitive LOQs of 10-50 ng/L for the 4 additional compounds were achieved in a single ten-minute LC-MS/MS acquisition on the SCIEX QTRAP® 4500 system.

Table 1. Optimized MRM Transitions for 4 PFAS Chemicals Added to EPA 537 Suite.

Compound	Q1	Q3	RT	DP	CE
HFPO-DA (Quant)	329	185	2.6	-30	-32
HFPO-DA (Qual)	329	169	2.6	-30	-18
¹³ C ₃ -HFPO-DA	332	169	2.6	-30	-18
9CI-PF3ONS (Quant)	530.9	350.3	3.8	-115	-40
9CI-PF3ONS (Qual)	532.8	352.4	3.8	-115	-39
11CI-PF3UdS (Quant)	631	451	4.4	-120	-42
11CI-PF3UdS (Qual)	632.8	452.8	4.4	-120	-40
DONA (Quant)	377	250.5	2.9	-48	-14
DONA (Qual)	377	85	2.9	-48	-56

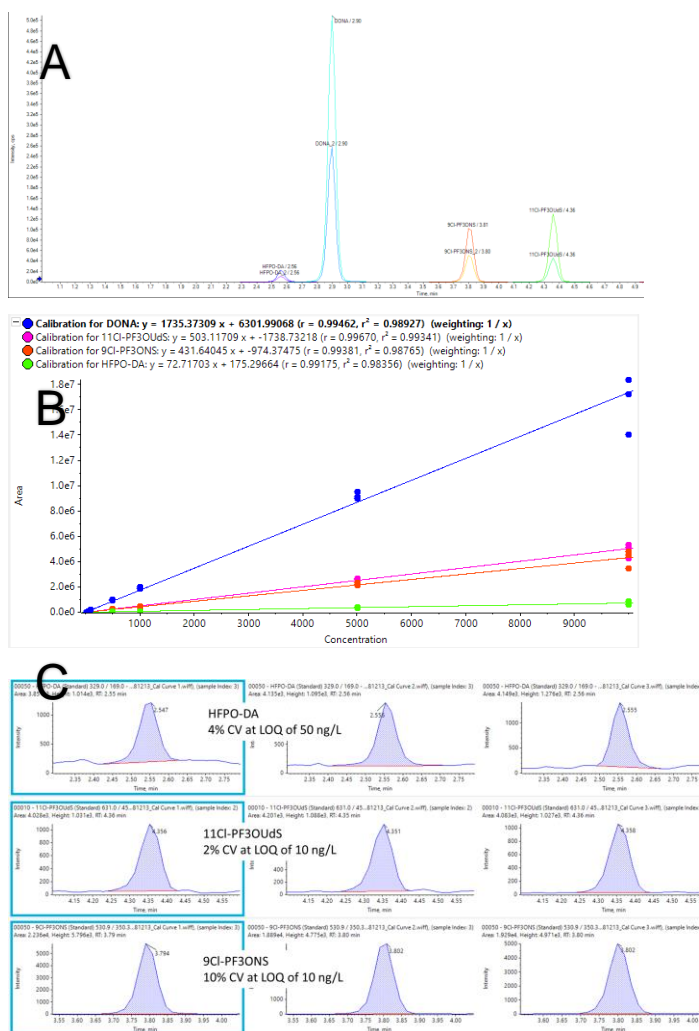


Figure 1. A) PFAS Compounds Shown Analyzed on the SCIEX QTRAP® 4500 System. Peaks shown with 1 point Gaussian smoothing. B) Linear calibration curves for the 4 analytes ranging from 10 to 10,000 ng/L. C) Precision for 3 example analytes at Limit of Quantitation is shown. % CVs at low est concentration remained at 10% or less for triplicate injections. At higher concentrations, %CV is equal to or better than 10%.

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Headquarters
500 Old Connecticut Path | Framingham, MA 01701 USA
Phone 508-383-7700
sciex.com

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