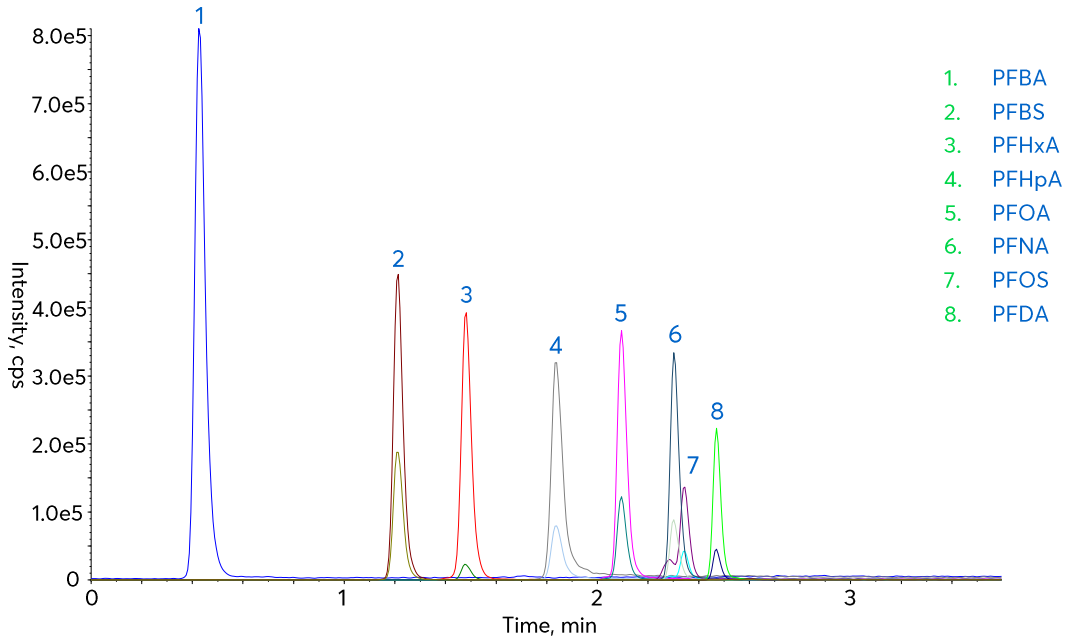
Chromatography Solutions

Application note #7500

Fast LC-MS/MS Analysis of Perfluoronated Alkyl Substances using Avantor® ACE® HTP-MS Column



Avantor® ACE®

Method Details

CONDITIONS

Column: Avantor® ACE® HTP-MS

Particle Size: 2 µm

Dimensions: 10 x 2.1 mm

Mobile Phase: A: 20 mM ammonium acetate in H_2O

B: 20 mM ammonium acetate in MeOH/H_2O (90:10)

Gradient:

Time (mins)	% B
0	0
0.1	25
2.1	75
2.2	100

Flow Rate: 0.5 mL/min

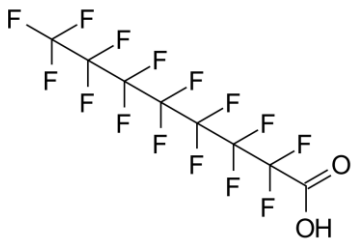
Injection: 0.5 µL

Temperature: 22 °C

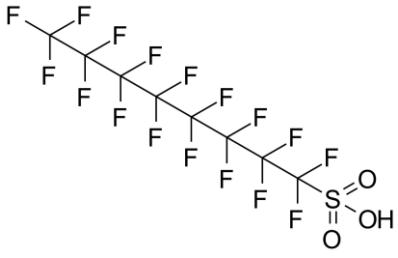
Detection: Sciex QTRAP® 6500+ LC-MS/MS system.

Ionisation mode: ESI, negative mode; Source temperature: 450 °C; Curtain gas: 38 psig; Ionspray™ source voltage: -3500 V; Ion source gas 1: 40 psig; Ion source gas 2: 70 psig;

Sample: 12 ng/mL for each analyte



Perfluorooctanoic acid (PFOA)



Perfluorooctane sulfonic acid (PFOS)

MRM TRANSITIONS

Analyte	MRM	Optimised MS Parameters		
		Declustering potential (V)	Collision energy (V)	Cell exit potential (V)
Perfluorobutanoic acid (PFBA)	-212.9 amu → -168.9 amu	-5	-12	-19
Perfluorobutane sulfonic acid (PFBS)	-298.8 amu → -79.8 amu	-20	-68	-13
	-298.8 amu → -98.9 amu	-20	-36	-9
Perfluorohexanoic acid (PFHxA)	-312.7 amu → -268.9 amu	-25	-14	-21
	-312.7 amu → -119.0 amu	-25	-30	-15
Perfluoroheptanoic acid (PFHpA)	-362.8 amu → -319.0 amu	-25	-14	-21
	-362.8 amu → -168.9 amu	-25	-24	-3
Perfluorooctanoic acid (PFOA)	-412.9 amu → -368.9 amu	-10	-14	-23
	-412.9 amu → -168.9 amu	-10	-24	-3
Perfluorononanoic acid (PFNA)	-462.9 amu → -418.9 amu	-25	-14	-35
	-462.9 amu → -218.8 amu	-25	-22	-11
Perfluorooctane sulfonic acid (PFOS)	-498.8 amu → -79.9 amu	-5	-96	-23
	-498.8 amu → -98.8 amu	-5	-88	-11
Perfluorodecanoic acid (PFDA)	-512.9 amu → -468.9 amu	-40	-14	-31
	-512.9 amu → -219.1 amu	-40	-26	-25

ORDERING TABLE

Product	Details	Size	Part Number
Avantor® ACE® HTP-MS Starter Kit	Fast Analysis LC-MS column (Holder + Cart)	10 x 2.1 mm	ACE-HTP-SK1
Methanol	VWR HiPerSolv CHROMANORM® for LC-MS	2.5 L	83638.320
Water	VWR HiPerSolv CHROMANORM® for LC-MS	2.5 L	83645.320
Ammonium acetate	VWR HiPerSolv CHROMANORM® for LC-MS	100 g	84885.180

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