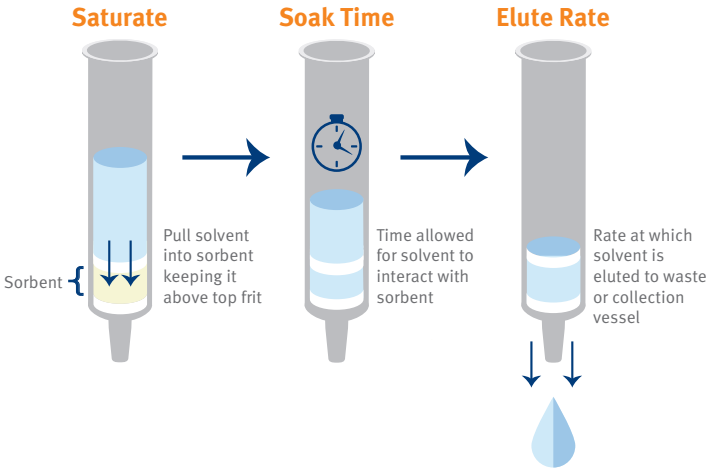
Recommended Procedure for Extraction of PFAS from Water Using EVOLUTE® EXPRESS WAX SPE Prior to LC-MS/MS Analysis

Extraction Technique

Whether you are utilizing manual or automated equipment, it is important to understand preparation technique throughout the extraction protocol. The pictures below demonstrate key parameters that will guide you in creating an effective, consistent, and robust procedure.



Extraction Procedure

The procedure below outlines a general extraction procedure that has demonstrated success using 6 mL SPE cartridges with bed mass ranging from 150–500mg.

EVOLUTE® EXPRESS 150 mg/6 mL (Tabless)
Part No. 614-0015-CXG

EVOLUTE® EXPRESS 500 mg/6 mL (Tabless)
Part No. 614-0050-CXG

Concentration Procedure

Bath Temperature: 60 °C

Evaporation Mode: Method (Ramp Gradient)

Manifold Set up: 48 Positions

Rack Row Height : 120 mm*

Step 1: 2.5 L/min. for 15 min.

Step 2: 3.0 L/min. for 15 min.

Step 3: 3.5 L/min. for 45 min.

- Concentrate to Dryness
- Run Time ≤ 1Hr. 15 min.
- Reconstitute to 1 mL with appropriate solvent for LC-MS/MS analysis

For additional assistance with your extraction protocol please contact Biotage to speak with one of our application specialists.

Step	Solvent	Saturate (s)	Soak (s)	Elute Rate (mL/min)	Elute To	Notes
Condition 1:	4 mL - 0.3% NH_4OH in MeOH*	3	60	4	Waste	Pull Solvents Fully Through During Condition Step 1 and 2.
Condition 2:	4 mL MeOH	3	60	4	Waste	
Equilibrate 1:	6 mL RO Water	3	60	4	Waste	Elute each step until just above top frit, add an additional 5 mL RO Water prior to load.
Equilibrate 2:	6 mL RO Water	3	30	4	Waste	
Load:				Add Sample at ~5 mL/min		
Air Dry:				Under Full Vacuum ~10 min		
Wash 1:	4 mL Water	-	-	4	Waste	Optional to remove interferences
Wash 2:	4 mL Water	-	-	4	Waste	
Elute 1:	4 mL - 0.3% NH_4OH in MeOH*	3	60	Gravity	Collect	Initiate with vacuum and allow to elute by gravity. Make sure first elution step has passed completely through cartridge, before adding second elution step. Apply vacuum to ensure all solvent has eluted through.
Elute 2:	4 mL - 0.3% NH_4OH in MeOH*	3	60	Gravity	Collect	

*Note – Ammonium Hydroxide will lose its strength over time. It is important to make up fresh solutions for best results. (s) = Time in Seconds.
**In some cases, improved results are observed when sample pH is adjusted to 3.5 ±0.5 with LC/MS grade Glacial Acetic Acid.

Literature Number: UI475

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