

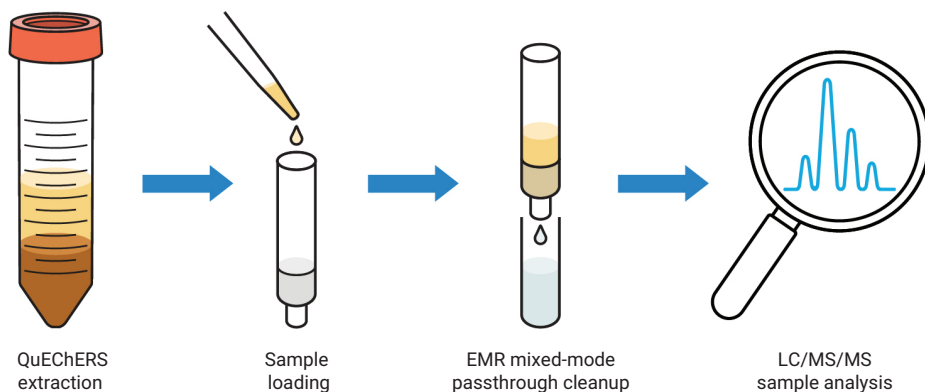
Agilent Captiva EMR PFAS Food I and Captiva EMR PFAS Food II User Guide



General instructions for Agilent Captiva EMR PFAS Food I and II cartridges

Agilent Captiva EMR PFAS Food I and Agilent Captiva EMR PFAS Food II 6 mL cartridges are designed specifically for per- and polyfluoroalkyl substance (PFAS) analysis in food matrices. The cartridges provide convenient, fast, and efficient enhanced matrix removal (EMR) mixed-mode passthrough cleanup after typical QuEChERS extraction, eliminating the need for traditional dispersive solid phase extraction (dSPE) cleanup and/or weak anion exchange (WAX) solid phase extraction (SPE). Captiva EMR PFAS Food cartridges remove matrix interferences, including carbohydrates, organic acids, pigments, fats and lipids, and other hydrophobic and hydrophilic matrix co-extractives, while delivering excellent PFAS compound recovery and reproducibility. The passthrough cleanup method also provides > 90% extract volume recovery, which is necessary for sample post-concentration to achieve the required ultralow limits of quantitation (LOQs) in food. In addition, the Captiva EMR PFAS Food I and II cartridges ensure PFAS background cleanliness to support method selectivity requirements.

Operating instructions for Agilent Captiva EMR PFAS Food I and II 6 mL cartridges



Choose from a variety of Captiva EMR PFAS Food products to meet your application needs.

Products	Recommended Food Matrices	Example Foods	Sample Size for Extraction	Cartridge Loading Volume
Captiva EMR PFAS Food I, 340 mg	Fresh produce and processed fresh plant-origin food	Fruits and vegetables, beverages, baby food, etc.	10 g	5 mL
Captiva EMR PFAS Food I, 680 mg	Fresh produce and processed fresh plant-origin food	Fruits and vegetables, beverages, baby food, etc.	15 g	10 mL
Captiva EMR PFAS Food II, 750 mg	Fresh animal-origin food, dry food, and feed	Milk, egg, infant formula, meat, fish, seafood, edible offal, oils, spices, coffee, etc.	2 to 10 g	5 mL containing 10% premixed water

User tips

Sample Size and Pretreatment	<ul style="list-style-type: none"> - Sample size varies based on food sample origin, fresh versus dry, and required limits of quantitation (LOQs) - Typical sample sizes are 2 to 10 g - For food matrices containing less water, add 10 mL of water for sample hydration
Sample Extraction	<p>Perform a standard QuEChERS extraction procedure using buffered salt. The crude sample extract (supernatant) is used for subsequent cleanup.</p> <p>Tip: Agilent recommends using ceramic homogenizers for your sample extraction. Ceramic homogenizers are effective in breaking up matrix and salt agglomerates for higher extraction recoveries of target analytes. Kits featuring ceramic homogenizers are marked with a CH (ex. 5982-5650CH).</p>
Passthrough Cleanup Using Captiva EMR PFAS Food Cartridges	<ol style="list-style-type: none"> 1. For PFAS analyses that require ultralow LOQs (< 100 ppt), Agilent recommends preconditioning the cartridge with 5 mL of 1:1 ACN/MeOH containing 1% acetic acid. 2. Prepare the sample for loading. <ul style="list-style-type: none"> - For Captiva EMR PFAS Food I, load crude sample extract directly onto the cartridge for cleanup. - For Captiva EMR PFAS Food II, mix the crude sample extract with 10% water. Agilent recommends preparing 6 to 7 mL for cartridge equilibrium and sample loading. <p>Tip: To achieve ultralow LOQs, Agilent recommends using a small aliquot of crude sample extract to equilibrate the cartridge, especially when a post-concentration step is necessary.</p> <ul style="list-style-type: none"> - For Captiva EMR PFAS Food I, add 0.6 to 0.8 mL of crude sample extract. - For Captiva EMR PFAS Food II, add 0.8 mL of crude sample extract premixed with 10% water. 3. For Captiva EMR PFAS Food I cartridges: <ol style="list-style-type: none"> a. Transfer the crude sample extract to the cartridge <ul style="list-style-type: none"> - For Captiva EMR PFAS Food I, 340 mg, transfer 5 mL of crude sample extract. - For Captiva EMR PFAS Food I, 680 mg, transfer 10 mL of crude sample extract. b. Allow sample to flow using gravity elution or low level vacuum or positive pressure. Then, apply high vacuum or positive pressure at the end for 1 to 2 minutes. c. Collect the eluent for post-treatment. 4. For Captiva EMR PFAS Food II cartridges: <ol style="list-style-type: none"> a. Transfer 5 mL of the sample extract mixture premixed with 10% water. b. Allow the sample to flow using gravity elution or low-level vacuum or positive pressure. Then, apply high-level vacuum or positive pressure at the end for 1 to 2 minutes. c. Collect the eluent for post-treatment.
Sample Post-Treatment	<p>Option 1: Dry and reconstitute</p> <p>Tip: Most PFAS in food analysis methods benefit from a drying and reconstitution step after sample cleanup. This step boosts method sensitivity to meet the required lower ppt-level LOQs. Also, it allows a solvent switch from ACN to MeOH or MeOH/water solution, which can improve chromatographic integrity for early eluting PFAS targets.</p> <ol style="list-style-type: none"> 1. Dry the sample completely. <p>Tip: A centrifuge evaporator (CentriVap or similar) is recommended, especially for matrix blank and low-level spiked samples. A nitrogen evaporator (TurboVap or similar) is recommended for high-level spiked samples.</p> 2. Reconstitute the sample. For Captiva EMR PFAS Food I cartridges, add 500 µL of reconstitution solvent. For Captiva EMR PFAS Food II, add 450 µL of reconstitution solvent. Vortex, sonicate, and centrifuge. <p>Note: Agilent recommends an 80:20 MeOH/water reconstitution solvent.</p> <p>Option 2: Direct dilution</p> <p>Tip: Direct dilution is only recommended for complex or fatty matrices such as edible offal, oils, pet food, etc., that generally have higher LOQ requirements.</p> <ol style="list-style-type: none"> 1. After collection of the sample eluent, vortex gently. Dilute an aliquot of sample eluent with water to 1:1 ACN/water and vortex.

Ordering Information

Agilent Captiva EMR PFAS Food cartridges

Product Description	Agilent Part Number
Captiva EMR PFAS Food I, 6 mL, 340 mg, 30/pk	5610-2230
Captiva EMR PFAS Food I, 6 mL, 680 mg, 30/pk	5610-2231
Captiva EMR PFAS Food II, 6 mL, 750 mg, 30/pk	5610-2232

Additional Agilent consumables and equipment recommended for PFAS in food analysis

Product Description	Agilent Part Number
QuEChERS Extraction kit, EN 15662 Method, Buffered, with Ceramic Homogenizers, 50/pk. Kit Contents: 4 g MgSO ₄ , 1 g NaCl, 1 g Na Citrate, 0.5 g Disodium Citrate Sesquihydrate with 50 mL Tubes with Ceramic Homogenizers	5982-5650CH
Centrifuge Tubes and Caps, 50 mL, 25/pk	5610-2049
Centrifuge Tubes and Caps, 15 mL, 50/pk	5610-2039
Clear Snap-Style Caps with Polyethylene Membrane Septa, 100/pk	5182-0542
1 mL Polypropylene Crimp/Snap-Top-Style, 100/pk	5182-0567
2 mL Polypropylene Screw Top Vials	5191-8121
Polypropylene Screw Caps	5191-8151
InfinityLab PFC Delay Column, 4.6 × 30 mm	5062-8100
InfinityLab PFC-free HPLC conversion kit	5004-0006
Positive pressure manifold 48 processor	5191-4101
ZORBAX RRHD Eclipse Plus C18 Column, 2.1 × 100 mm, 1.8 mm	959758-902
ZORBAX RRHD Eclipse Plus C18, 2.1 mm, 1.8 μm, 1,200 bar, UHPLC Guard, 3/pk	821725-901

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