



**Bisphenol A Analysis in Water by LC/MS/MS
Using an ENVIRO-CLEAN[®]
200 mg C18 Extraction Cartridge**
Part Number: EEC1812Z

1. Prepare Sample

- a) Using 100 mL of sample water, adjust the pH to 7 or less using 100mM acetic acid
- b) Add internal standard to water sample

Note: Bisphenol A has a pKa value of approximately 9.5

2. Condition ENVIRO-CLEAN[®] Extraction Cartridge

- a) Place a cartridge(s) on a multistation vacuum manifold or automated extraction system
- b) Condition the cartridge by adding 3 mL of methanol
- c) Partially draw the methanol through until the surface of the liquid reaches the top of the cartridge frit
- d) Wait 1 minute then add 3 mL of DI water to the cartridge.
- e) Add 1 mL of 100 mM acetic acid
- f) Draw liquid through until it touches the top of the frit
- g) Cartridge is now ready for sample extraction

Note: Do not allow the sorbent to completely dry out after the addition of methanol, otherwise repeat procedure.

3. Apply Sample

- a) Add sample to cartridge at a rate of approximately 5 mL/minute by adjusting vacuum

4. Wash Cartridge

- a) Wash by drawing through 5 mL of deionized water
- b) Dry sorbent (5 minutes at > 10 inches Hg)

5. Elute

- a) Insert a collection vial in the vacuum manifold
- b) Rinse sample bottle with 3 mL of methanol
- c) Add the methanol to the cartridge
- d) Elute at 5 mL per minute
- e) Add 3 mL of methanol to the cartridge
- f) Elute at 5 mL per minute

6. Evaporate

- a) Evaporate methanol eluate using gentle N₂ (< 40°C) to less than 500 µL
- b) Bring sample volume to 500 µL
- c) Sample is ready for injection

7. Quantitate

- a. LC-MS/MS MRM transition (negative ion mode)

Instrumental & Conditions:

Column: 100 x 2.1 (3 µm) Selectra® Phenyl, UCT, LLC

Instrument: Applied Biosystems Triplequad LC/MS/MS (other systems may be used)

- Detector: API3200 QTrap
- bisphenol A Precursor ion mass 226.9, product ion mass 109.1
- *bisphenol A standard deuterated A-D16. Precursor ion mass 241.1, Product ion mass 223.1

Inject: 5-10 µL

Mobile Phase: acetonitrile/0.1% formic acid

Flowrate: 0.5 mL/ minute

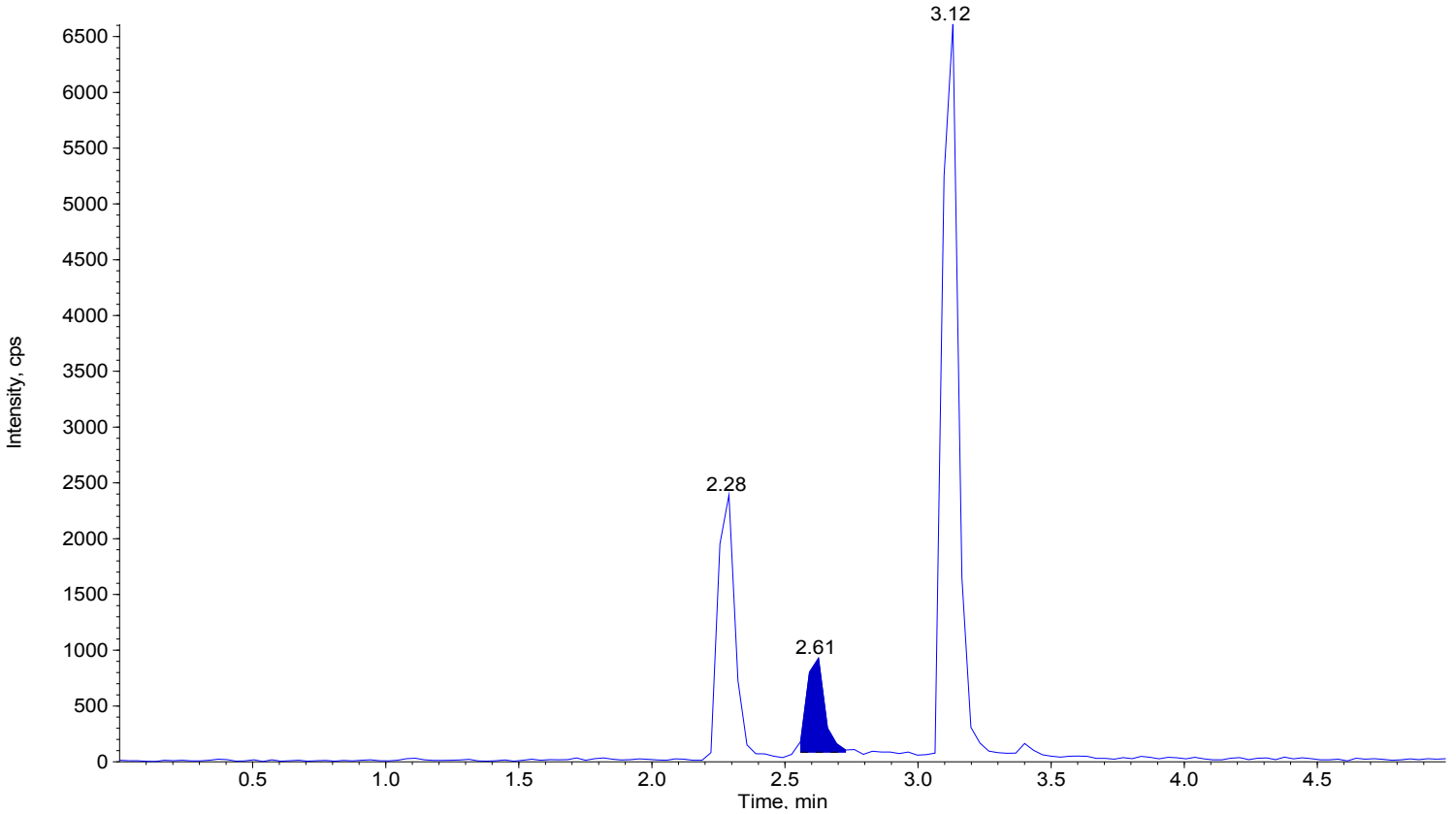
Flow Program

Time in minutes	% Acetonitrile	% 0.1% Formic Acid
0	30	70
3.0	90	10
3.5	30	70
5.0	30	70

Chromatogram Showing Retention Time for Bisphenol A in Water

Spike concentration: 15 µg/L
Calc Recovery: 15.70 µg/L
Recovery: 105%

15 - bpa (Unknown) 226.9/109.1 amu - sample 10 of 11 from Sept232008bpacal2.wiff
Area: 3.86e+003 counts Height: 8.84e+002 cps RT: 2.61 min



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