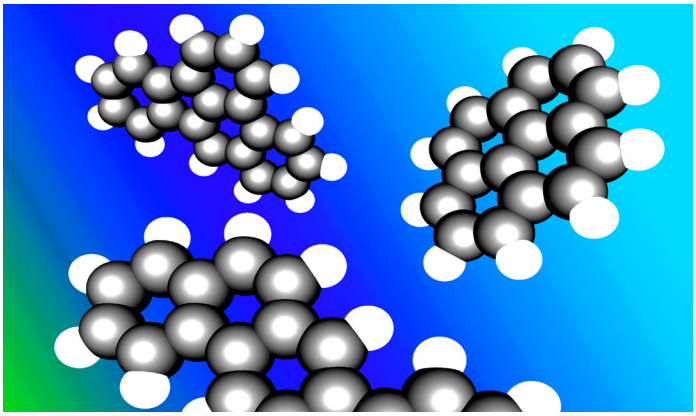
Determination of Polycyclic Aromatic Hydrocarbons in Drinking Water by Liquid-Solid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection



UCT Part Numbers

ECUNIPAH
2000 mg unendcapped C18, 83 mL cartridge

Or

EUC1812M15
2000 mg unendcapped C18, 15 mL cartridge

CUC181M6
1000 mg unendcapped C18, 6 mL cartridge

ECSS25K
Anhydrous Sodium Sulfate

Procedure:

1. Cartridge Preparation

a) Wash with 4 x 10 mL aliquots of methylene chloride ($MeCl_2$).
b) Wash with 4 x 10 mL aliquots of methanol (MeOH).
c) Wash with 2 x 10 mL aliquots of reagent water.

Note: Do not let the cartridge dry out after step 1) c. otherwise repeat starting at 1) b.

2. Sample Extraction

a) Adjust the vacuum setting for a flow rate of 10-15 mL per minute.
b) Add the 1 liter sample to the cartridge.
c) Rinse sample bottle with reagent water, add to cartridge and draw through.
d) Dry cartridge by drawing full vacuum for 10 minutes.

3. Sample Elution and Drying

a) Elute the cartridge dropwise by using 2 x 5 mL aliquots of $MeCl_2$ and collect.
b) Rinse sample container with 5 mL of $MeCl_2$, add to cartridge and draw through.
c) Prepare a drying column/funnel containing 10-20 g sodium sulfate by rinsing with 10 mL of $MeCl_2$ and discard.
d) Add the eluate to the drying column, draw through and collect.
e) Rinse the eluate vial and drying column with a 2 x 5 mL aliquot of $MeCl_2$ and collect.

4. Sample Evaporation

a) Evaporate the extract using a gentle stream of N_2 with a water bath or heating block temperature of 40°C. Evaporate to about 1.0 mL.
b) Add 3.0 mL of acetonitrile (ACN).
c) Concentrate to a final volume of 0.5 mL.

5. Sample Analysis

a) Inject 5 - 100 µL into an HPLC.

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References:

[1] See "Determination of Polycyclic Aromatic Hydrocarbons in Drinking Water by Liquid-Solid Extraction and HPLC with Coupled Ultraviolet and Fluorescence Detection", W. J. Bashe & T.V. Baker (Technology Applications, Inc, Environmental Monitoring Systems Laboratory, US Environmental Protection Agency, Cincinnati, OH)

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