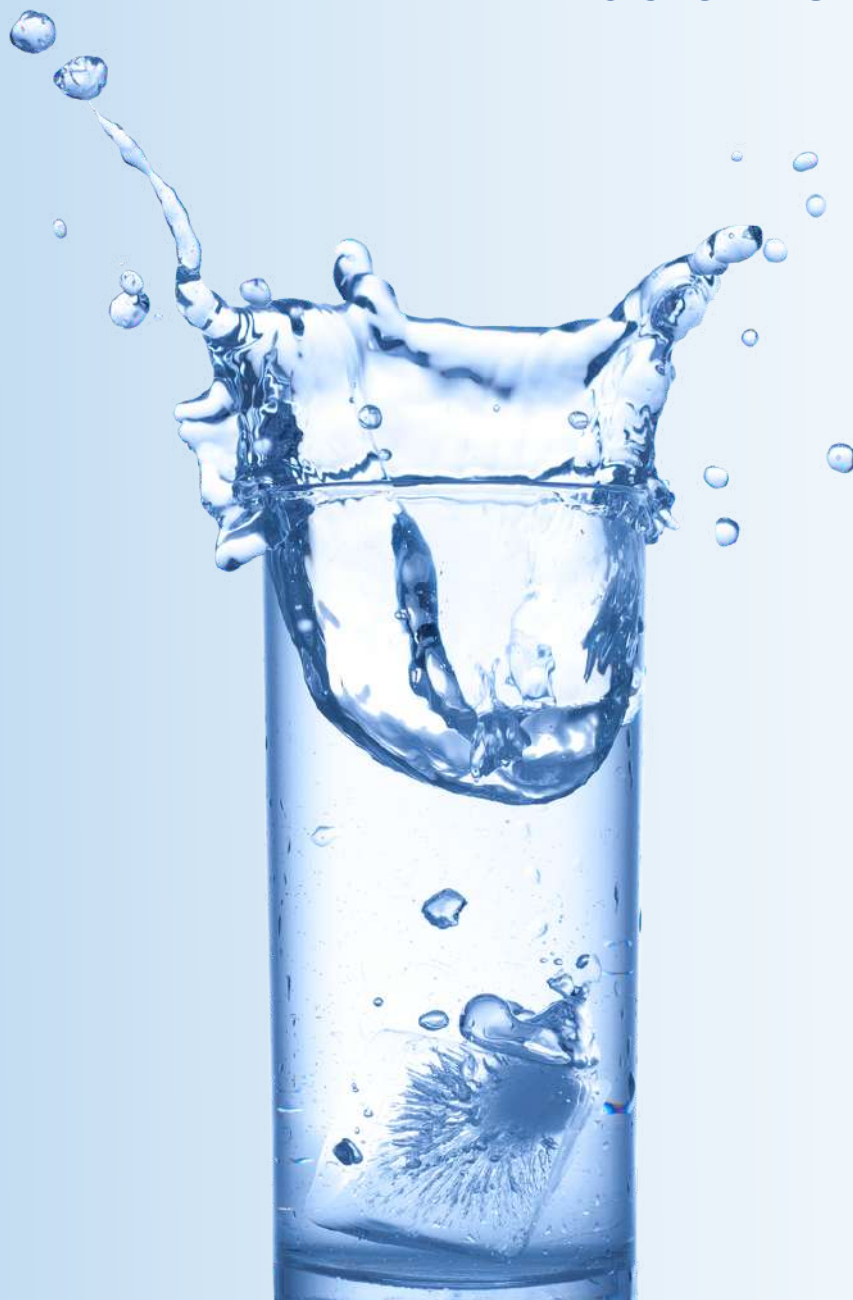




Application

Note

ANALYSIS OF POLYCYCLIC AROMATIC
HYDROCARBONS IN WATER USING
AttractSPE®DISKS – HLB



Polycyclic aromatic hydrocarbons (PAHs) are a large group of organic compounds with two or more fused aromatic rings and are known to be cancer causing agents.

AttractSPE®Disks - HLB is a thin, dense, soft and uniform extraction SPE membrane allowing the best interactions with analytes and a maximal flow rate without any channeling.

Our Innovation puts at your disposal a broad variety of sorbents (HLB, C18, SDB-RPS, SDB-XC, Anion and cation exchanges). The treatment of environmental samples implies great volume of environmental liquids, that's AttractSPE®Disks are especially designed for any kind of waters, dirty or ground waters.

SPE Disks manufactured by AFFINISEP is applied as well for passive sampling.

In this application, AttractSPE®Disks - HLB has been tested for the analysis of several PAHs. Seven PAHs were spiked in water at a concentration of 20ng/L each.



LOADING SOLUTION:

1L of water was put to pH<2 with HCl 37% (optional) and spiked at 20ng/L with each analyte (Benzo[a]anthracene, Chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, Benzo[a]pyrene, Dibenz[a,h]anthracene, Benzo[g,h,i]perylene).

INSTALLATION AND CONDITIONNING

Put the SPE disk on the holder

10 mL Acetone

10 mL Isopropanol

10 mL Methanol

50 mL of ultrapure water

LOADING

1 L of loading solution

WASHING

20 mL ultra pure water

ELUTION

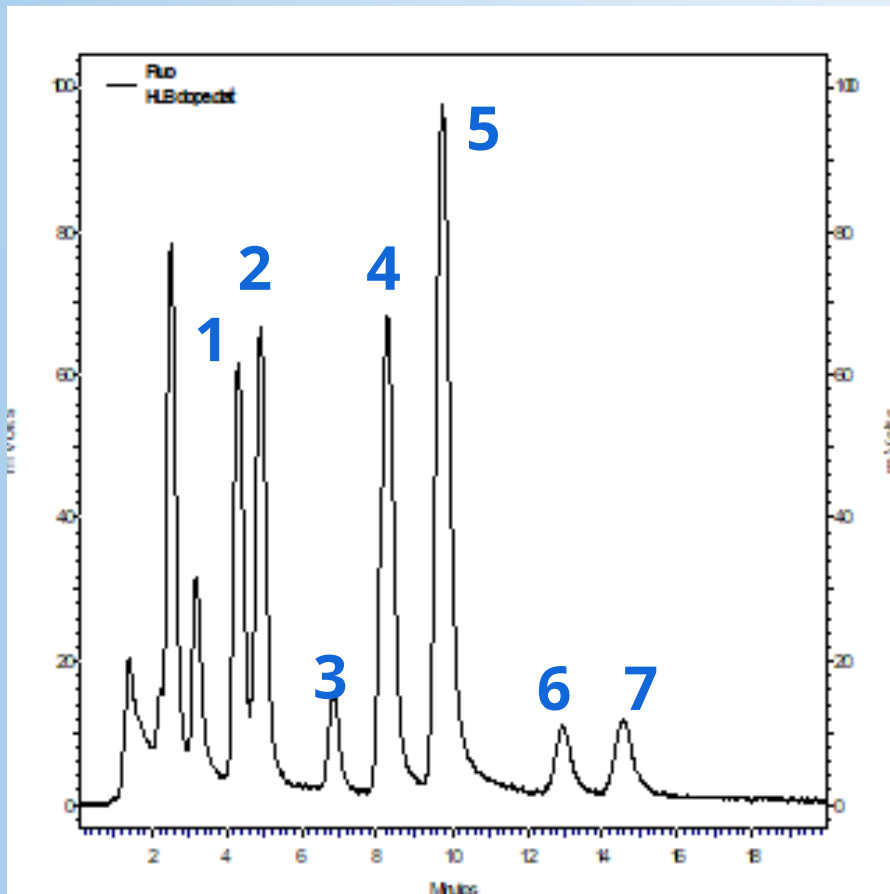
10 mL Methanol

4x10 mL Ethyl Acetate

ANALYSIS

Evaporate the elution solution and reconstitute with 5mL Acetonitrile prior to analysis





These chromatograms have been obtained after the extraction of 1L of water (spiked with 20ng/L PAHs each) on the respective **AttractSPE®Disks HLB**.

- 1 - Benzo[a]anthracene,
- 2 - Chrysene,
- 3- Benzo[b]fluoranthene,
- 4 - Benzo[k]fluoranthene,
- 5- Benzo[a]pyrene,
- 6- Dibenz[a,h]anthracene,
- 7 - Benzo[g,h,i]perylene

Conditions of analysis:

LC-Fluorescence. Column: Zorbax eclipse PAH 4,6*50mm (1,8µm), at 30°C. Injection volume: 50 µL.
 Isocratic: Water / Acetonitrile 15 / 85. Flow rate: 0.5 mL/min, run of 25min.
 Fluorescence detection: λ_{exc}/em 252nm / 400nm

*Recovery yields obtained for the loading of 1L of water spiked with 7 PAHs at 20 ng/L each by **AttractSPE®Disks HLB***

	Blank	Spiked
Benzo[a]anthracene	0	90%
Chrysene	0	90%
Benzo[b]fluoranthene	0	90%
Benzo[k]fluoranthene	0	96%
Benzo[a]pyrene	0	91%
Dibenz[a,h]anthracene	0	92%
Benzo[g,h,i]perylene	0	99%

AttractSPE®Disks - HLB have shown an excellent hold giving a great ease to handle. In addition, excellent performances were obtained at a high flow rate as recoveries are **higher than 90%**.

Product reference:

AttractSPE®Disks - HLB - 47mm , 20/pk : SPE-Disks-HLB-47.T1.20
SPE Disks Manifold 3 stations - 47mm : ACC-DISKSPÉ-G47-3