PAHs

Analysis of EPA 610 polyaromatic hydrocarbons

Application Note

Environmental

Authors

Agilent Technologies, Inc.

Introduction

For the analysis of trace PAH often the on-column injection technique is used because in hot injection ports discrimination, adsorption or decomposition can occur. Best columns for on-column injection are 0.53 mm and 0.32 mm id capillary columns because the inside diameter of the capillary is easily accessed by the syringe needles used for on-column injection. Also, high flow rates are easily obtained resulting in low elution temperatures.

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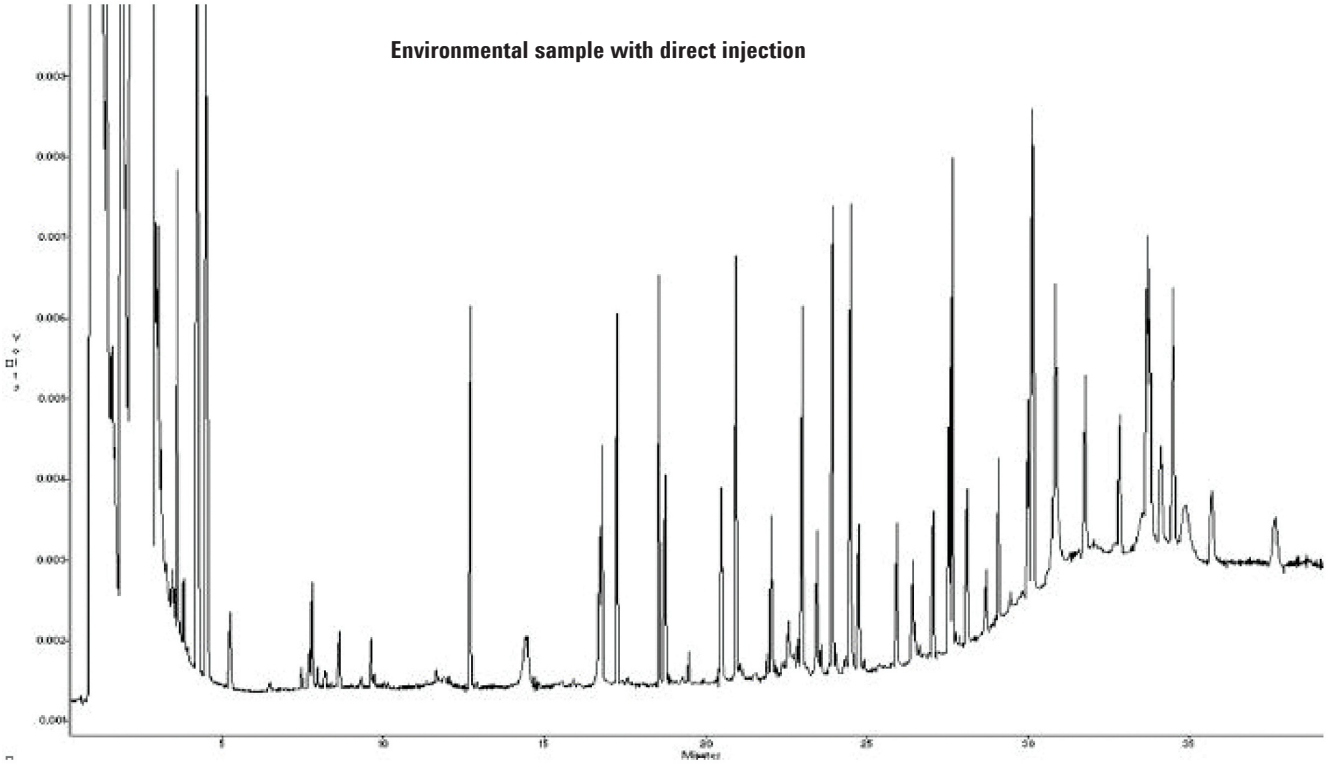
Conditions

Technique	: GC
Column	: Agilent VF-5ms, 0.53 mm x 30 m fused silica (df = 0.5 µm) (Part no. CP8974)
Temperature	: 50 °C, 6 min → 300 °C, 10 °C/min
Carrier Gas	: Helium, 50 cm/s
Detector	: FID T = 300 °C
Injector	: Direct, 2 µL
Concentration Range	: ca. 10 pg/µL

Environmental sample with direct injection



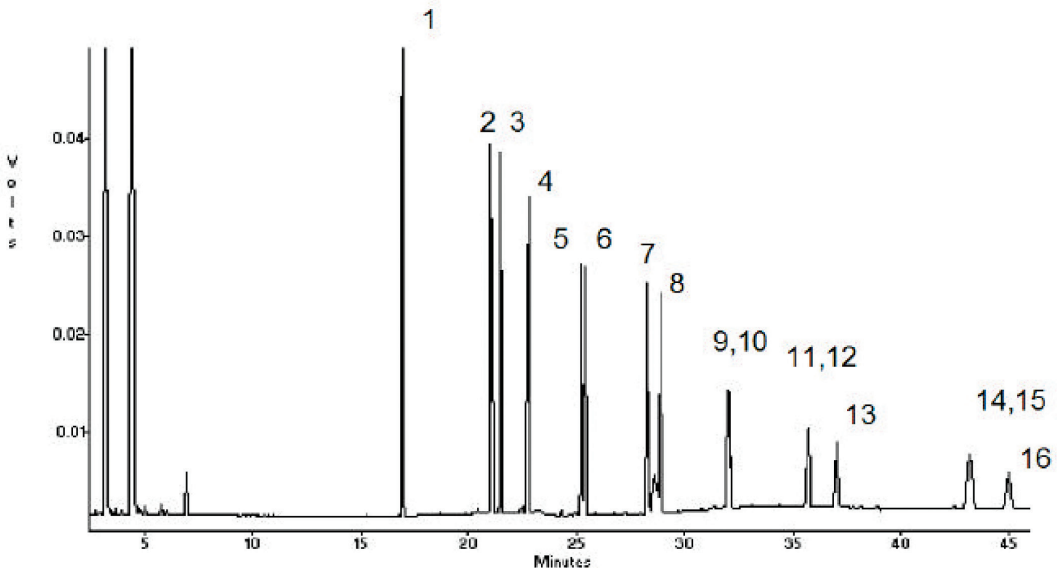
45 min

Analysis of standard mixture

Column	:	Agilent VF-5ms, 0.53 mm x 30 m fused silica (df = 0.5 µm) (Part no. CP8974)
Temperature	:	40 °C, 4 min → 270 °C, 10 °C/min
Carrier Gas	:	H_2, 50 kPa
Detector	:	FID T = 300 °C
Injector	:	Split
Concentration range	:	ca. 10 ng of each component on the column

Peak identification

1. napthalene
2. acenaphthylene
3. acenaphthene
4. fluorene
5. phenanthrene
6. anthracene
7. fluoranthene
8. pyrene
9. chrysene
10. benzo(a)anthracene
11. benzo(k)fluoranthene
12. benzo(b)fluoranthene
13. benzo(a)pyrene
14. indenol(1,2,3-c,d)pyrene
15. dibenzo(a,h)anthracene
16. benzo(g,h,i)perylene



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