Fast analysis of polyaromatic hydrocarbons using the Agilent 1290 Infinity LC and Eclipse PAH columns

Application Note

Environmental

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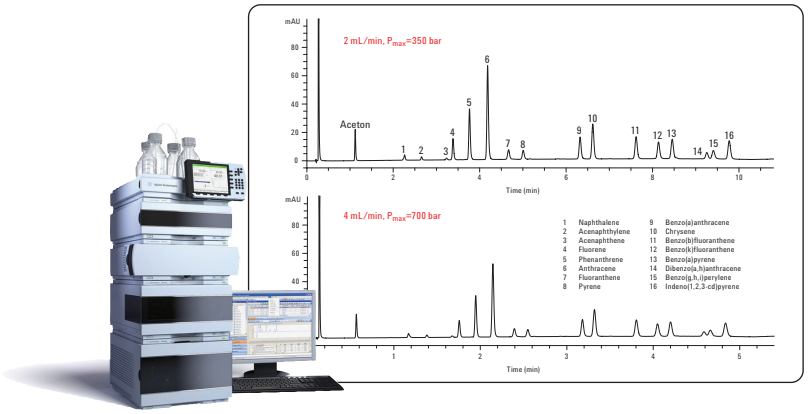

The Agilent 1290 Infinity LC has a broader power range (the combination of pressure and flow capabilities) than any other commercially available system. This is extremely useful for method transfer from one (U)HPLC to the Agilent 1290 Infinity LC system and allows the analyst to develop methods that are impossible to run on these other systems.

The flow and pressure capabilities are illustrated by a separation of 16 polyaromatic hydrocarbons (PAHs) at high pressure and flow rate. At 2 mL/min, the analysis time is approximately 11 min. Doubling the flow rate and gradient speed allows the sample to be analyzed in 5.5 min with a maximum pressure of 700 bar. The combination of high flow (4 mL/min) and pressure is useful in this case to increase the sample throughput. The separation of the PAHs is shown in Figure 1.

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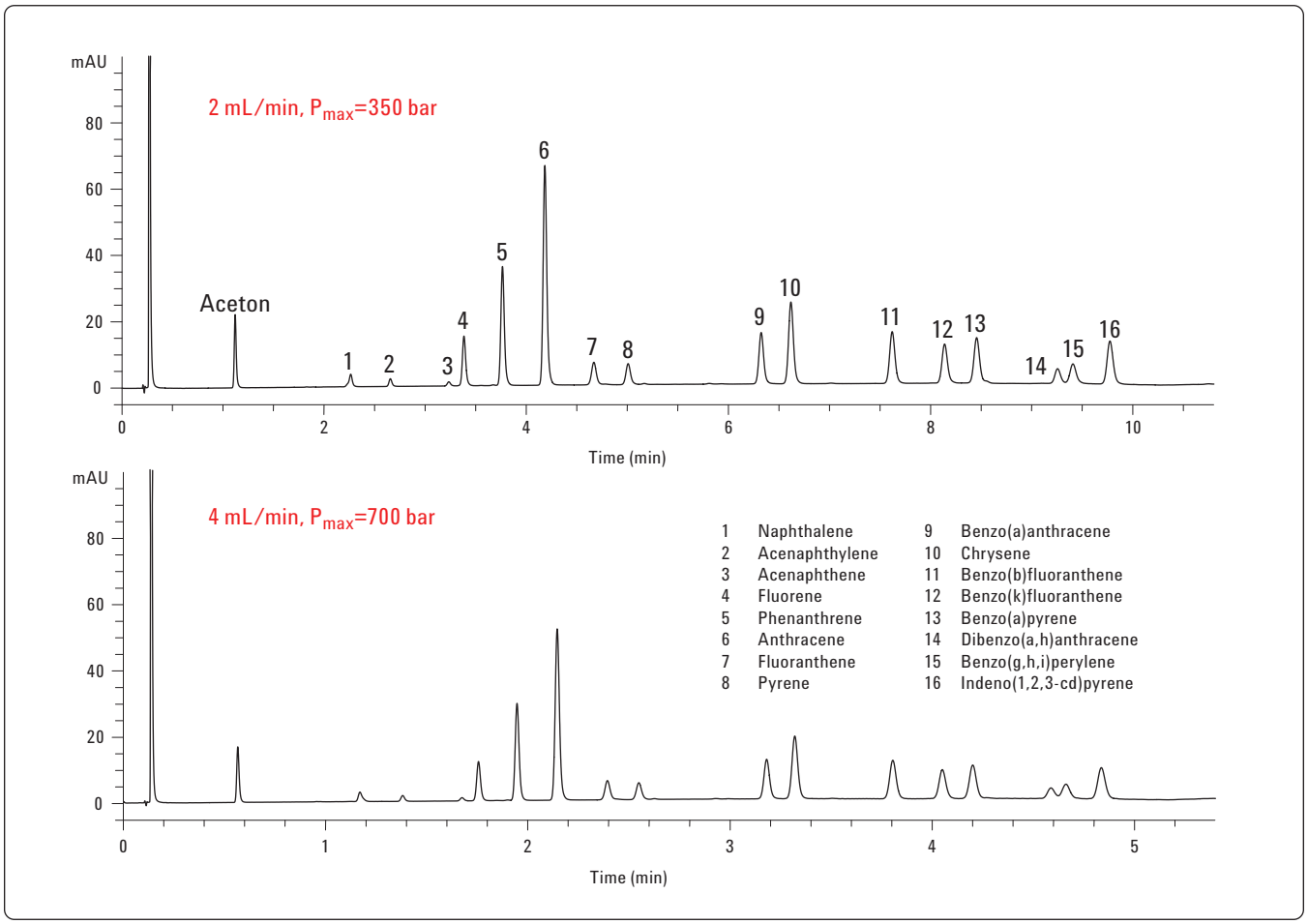

Figure 1
Analysis of 16 PAHs on the 1290 Infinity LC. Sample: standard solution of 16 PAHs, 50 µg/mL each.

Configuration:			
• G4220A	1290 Infinity Binary Pump with Integrated Vacuum Degasser		
• G4226A	1290 Infinity Autosampler		
• G1316C	1290 Infinity Thermostatted Column Compartment		
• G4212A	1290 Infinity Diode Array Detector		
Method:			
Column:	ZORBAX Eclipse PAH 4.6 mm × 50 mm, 1.8 µm		
Mobile phase:	A = water, B = acetonitrile		
Flow rate and gradient:	2 mL/min	0–0.33 min	40% B
		0.33–10 min	40–100% B
	4 mL/min	0–0.17 min	40% B
		0.17–5 min	40–100% B
Injection volume:	0.2 µL		
Detector:	Sig = 254/10 nm, Ref = off, 40 Hz		
Temperature:	25 °C		

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