



LionTM
ChromLine

PAHs – POLYCYCLIC AROMATIC HYDROCARBONS

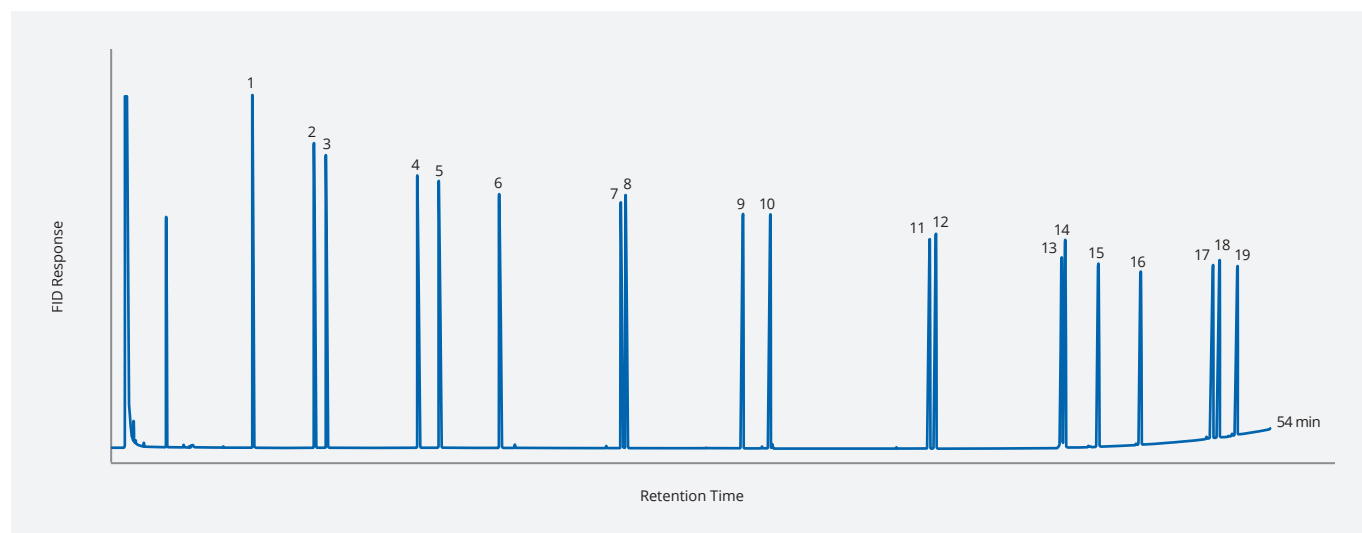
ABSTRACT

The application note shows very nice separation of 19 polycyclic aromatic hydrocarbons listed in the EPA methods 610 and 8100. Compared to some other GC methods, this separation uses temperature gradient up to 310 °C.

INTRODUCTION

Polycyclic aromatic hydrocarbons (PAHs) are a group of chemicals formed during the incomplete burning of coal, oil, gas, wood, garbage, and tobacco. They are widespread environmental pollutants found in air, soil and water. Many PAHs are highly toxic and have been determined as carcinogenic and mutagenic.

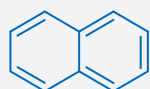
PAHs – Polycyclic Aromatic Hydrocarbons



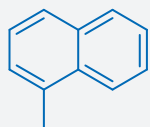
Calibration standard on LION™ LNI-PAH GC column column

Column	LNI-PAH	
Dimensions	30 m × 0.25 mm × 0.25 μm	
Part number	LNI-6012-FF30	
Injection	On-Column	
Column flowrate	Carrier Gas – Hydrogen, constant pressure 70 kPa	
Oven program	70 °C, 4 °C/min, 310 °C	
Detection	FID at 315 °C	
Analytes	1. Naphthalene, CAS: 91-20-3	11. Benzo(a)anthracene, CAS: 56-55-3
	2. 1-Methylnaphthalene, CAS: 90-12-0	12. Chrysene, CAS: 218-01-9
	3. 2-Methylnaphthalene, CAS: 91-57-6	13. Benzo(b)fluoranthene, CAS: 205-99-2
	4. Acenaphthylene, CAS: 208-96-8	14. Benzo(k)fluoranthene, CAS: 207-08-9
	5. Acenaphthene, CAS: 83-32-9	15. Benzo(a)pyrene, CAS: 50-32-8
	6. Fluorene, CAS: 86-73-7	16. 3-Methylcolantrene, CAS: 56-49-5
	7. Phenanthrene, CAS: 85-01-8	17. Indeno(1,2,3-cd)pyrene, CAS: 193-39-5
	8. Anthracene, CAS: 120-12-7	18. Dibenzo(a,h)anthracene, CAS: 53-70-3
	9. Fluoranthene, CAS: 206-44-0	19. Benzo(ghi)perylene, CAS: 191-24-2
	10. Pyrene, CAS: 129-00-0	

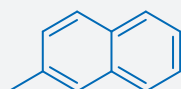
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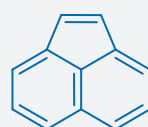
Naphthalene



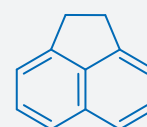
1-Methylnaphthalene



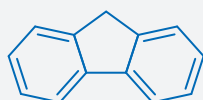
2-Methylnaphthalene



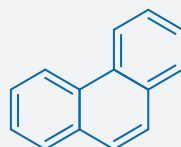
Acenaphthylene



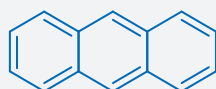
Acenaphthene



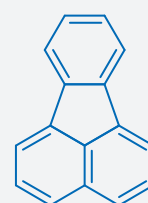
Fluorene



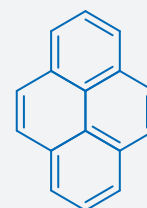
Phenanthrene



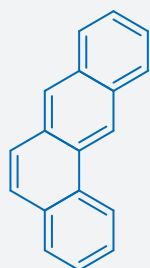
Anthracene



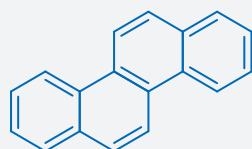
Fluoranthene



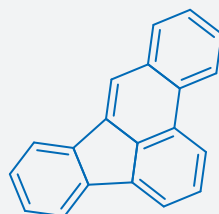
Pyrene



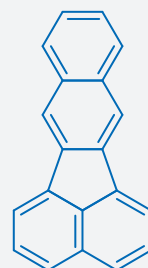
Benzo(a)anthracene



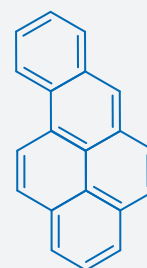
Chrysene



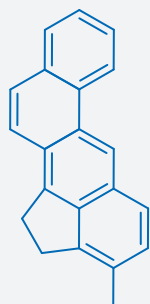
Benzo(b)fluoranthene



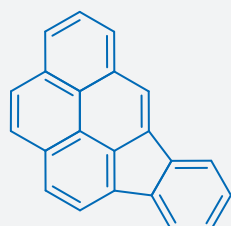
Benzo(k)fluoranthene



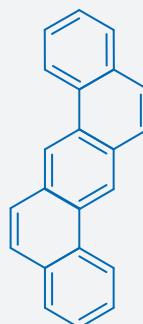
Benzo(a)pyrene



3-Methylcholanthrene



Indeno(1,2,3-cd)pyrene



Benzo[k]tetraphene



Benzo(ghi)perylene



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