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Waters Application Notebook

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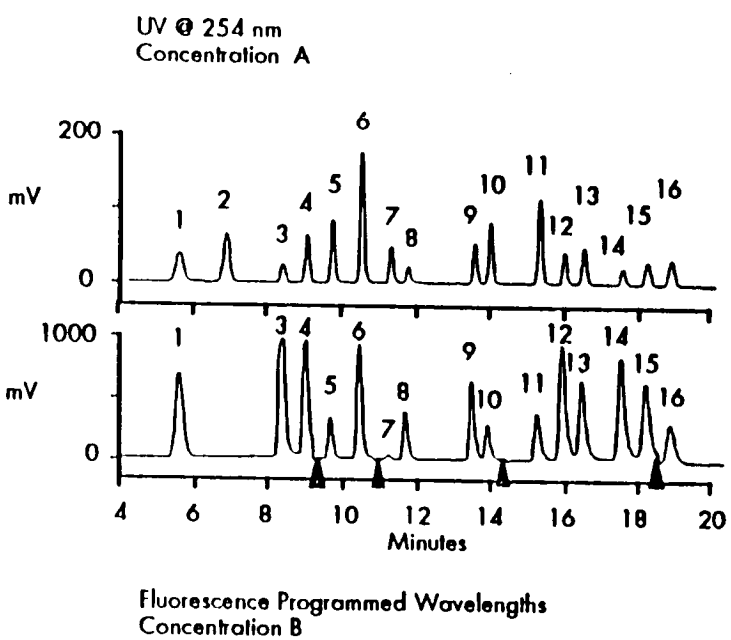
027 (Revised)

930502

Analysis of Polynuclear Aromatic Hydrocarbons (PAH's) Using the LC Module-1 with Fluorescence Detection for Enhanced Sensitivity



Peak ID's	Concentration A	Concentration B
1. Naphthalene	20 ppm	2 ppm
2. Acenaphthylene	40 ppm	4 ppm
3. Acenaphthene	20 ppm	2 ppm
4. Fluorene	4 ppm	400 ppt
5. Phenanthrene	2 ppm	200 ppt
6. Anthracene	2 ppm	200 ppt
7. Fluoranthene	4 ppm	400 ppt
8. Pyrene	2 ppm	200 ppt
9. Benzo[a]anthracene	2 ppm	200 ppt
10. Chrysene	2 ppm	200 ppt
11. Benzo[b]fluoranthene	4 ppm	400 ppt
12. Benzo[k]fluoranthene	2 ppm	200 ppt
13. Benzo[a]pyrene	2 ppm	200 ppt
14. Dibenzo[a,h]anthracene	4 ppm	400 ppt
15. Benzo[g,h,i]perylene	4 ppm	400 ppt
16. Indeno[1,2,3-cd]pyrene	2 ppm	200 ppt

Conditions:

Column: Supelcosil LC - PAH, 4.6 mm x 15 cm

Eluent A: Water/Methanol (35/65)

Eluent B: Acetonitrile

Gradient:

Time	%A	%B	Curve
Initial	100	0	*
11	0	100	6
18	100	0	11

Flow Rate: 1.0 ml/minute

Detection: UV at 254 nm and Fluorescence with time programmed wavelength changes

The LC Module 1 produces precise, reliable results for the analysis of 16 PAH compounds listed as priority pollutants by the EPA. A comparison of UV absorbance detection at 254 nm and fluorescence detection with programmed wavelength changes, displays over an order of magnitude increase in sensitivity with the 470 fluorescence detector.