

Accelerated Solvent Extraction of NIST SRM 1941b, Organics in Marine Sediment, on Rxi-PAH

- Peaks**
1. Naphthalene-d8
 2. Naphthalene
 3. 2-Methylnaphthalene
 4. Biphenyl
 5. Acenaphthylene
 6. Acenaphthene-d10
 7. Acenaphthene
 8. Fluorene
 9. Dibenzothiophene
 10. Phenanthrene-d10
 11. Phenanthrene
 12. Anthracene
 13. 4H-Cyclopenta[def]phenanthrene
 14. Fluoranthene
 15. Pyrene
 16. Benzo[c]fluorene
 17. Benzo[ghi]fluoranthene
 18. Benzo[c]phenanthrene
 19. Benz[a]anthracene
 20. Chrysene-d12
 21. Cyclopenta[cd]pyrene
 22. Triphenylene
 23. Chrysene

- Peaks**
24. 5-Methylchrysene
 25. Benzo[b]fluoranthene
 26. Benzo[k]fluoranthene
 27. Benzo[j]fluoranthene
 28. Benzo[a]fluoranthene
 29. Benzo[e]pyrene
 30. Benzo[a]pyrene
 31. Perylene-d12
 32. Perylene
 33. Dibenzo[a,j]anthracene
 34. Dibenzo[a,c]anthracene
 35. Indeno[1,2,3-cd]pyrene
 36. Dibenzo[a,h]anthracene
 37. Benzo[b]chrysene
 38. Picene
 39. Benzo[ghi]perylene
 40. Anthanthrene
 41. Dibenzo[b,k]fluoranthene
 42. Dibenzo[a,e]pyrene
 43. Coronene-d12
 44. Coronene
 45. Dibenzo[a,i]pyrene
 46. Dibenzo[a,h]pyrene

Scan Program:

Group	Start Time (min)	Ion(s) (m/z)	Dwell (ms)
1	3.09	102.1, 108.1, 128.1, 136.2	40
2	5.69	115.1, 142.1	40
3	6.23	76.1, 141.1, 154.1, 156.2	40
4	6.95	75.6, 76.1, 91.1, 152.1, 153.1, 155.1, 162.2, 170.2	20
5	7.93	82.4, 165.1	40
6	9.19	139.1, 152.1, 160.2, 178.1, 184.1, 188.2	40
7	11.78	94.6, 165.1, 190.1, 192.1	40
8	14.19	101.1, 202.1	40
9	16.60	101.1, 202.1	40
10	18.49	92.1, 184.1	40
11	19.58	108, 216	40
12	22.3	196.1, 212.2	40
13	24.92	113.1, 226.1, 228.1	40
14	26.27	113.1, 114.0, 120.1, 226.1, 228.1, 240.1	40
15	28.75	154.1, 252.1	35
16	30.62	119.8, 242.2	40
17	35.29	126.1, 252.1	40
18	38.56	125.1, 252.1	40
19	39.23	126.1, 252.1	40
20	40.71	125.1, 126.1, 132.1, 252.1, 264.1	40
21	42.91	125, 132.2, 252.1, 264.1	40
22	44.35	252.1, 268.1	40
23	48.41	139.1, 139.5, 278.1, 279.1	40
24	52.13	139.1, 139.5, 278.1, 279.1	40
25	53.70	138.1, 139.1, 278.1	40
26	54.97	138.1, 276.1	40
27	55.92	138.1, 276.1	40
28	57.04	132.6, 267.1	40
29	59.69	151.0, 302.1	40
30	63.27	150, 151, 156.1, 300.1, 302.1, 312.1	40
31	64.78	151.0, 302.1	40

Column Rxi-PAH, 60 m, 0.25 mm ID, 0.10 µm (cat.# 49317)
Sample SV internal standard mix (cat.# 31206)
 Coronene-d12 (CIL DLM-2715)
 Benzo[a]pyrene-d12 (CIL DLM-258-0)
 Aromatics in toluene (NIST SRM-2260a)
 PAH native stock solution (Wellington PAH-STK-B)
 Dichloromethane

Detector MS
Mode: SIM
Transfer Line
Temp.: 330 °C
Analyzer Type: Quadrupole
Source Type: Extractor
Extractor Lens: 9 mm ID
Source Temp.: 350 °C
Quad Temp.: 200 °C
Solvent Delay
Time: 3 min
Tune Type: DFTPP
Ionization Mode: EI
Instrument Agilent 7890B GC & 5977A MSD
Notes Performs the separation of two critical sets of isobars:
 1. Cyclopenta[cd]pyrene, triphenylene, and chrysene
 2. Benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[j]fluoranthene

Diluent:
Injection
 Inj. Vol.: 1 µL split (split ratio 10:1)
 Liner: Premium 4 mm Precision liner w/wool (cat.# 23305.1)
 Inj. Temp.: 275 °C
Split Vent Flow
 Rate: 19.5 mL/min
Oven
 Oven Temp.: 110 °C (hold 1.6 min) to 210 °C at 24 °C/min to 295 °C at 1.9 °C/min to 350 °C at 3.7 °C/min (hold 6 min)
Carrier Gas
 Flow Rate: He, constant flow
 1.95 mL/min

