Application Report 03

US EPA Method 8270 Semivolatiles on the Equity-5

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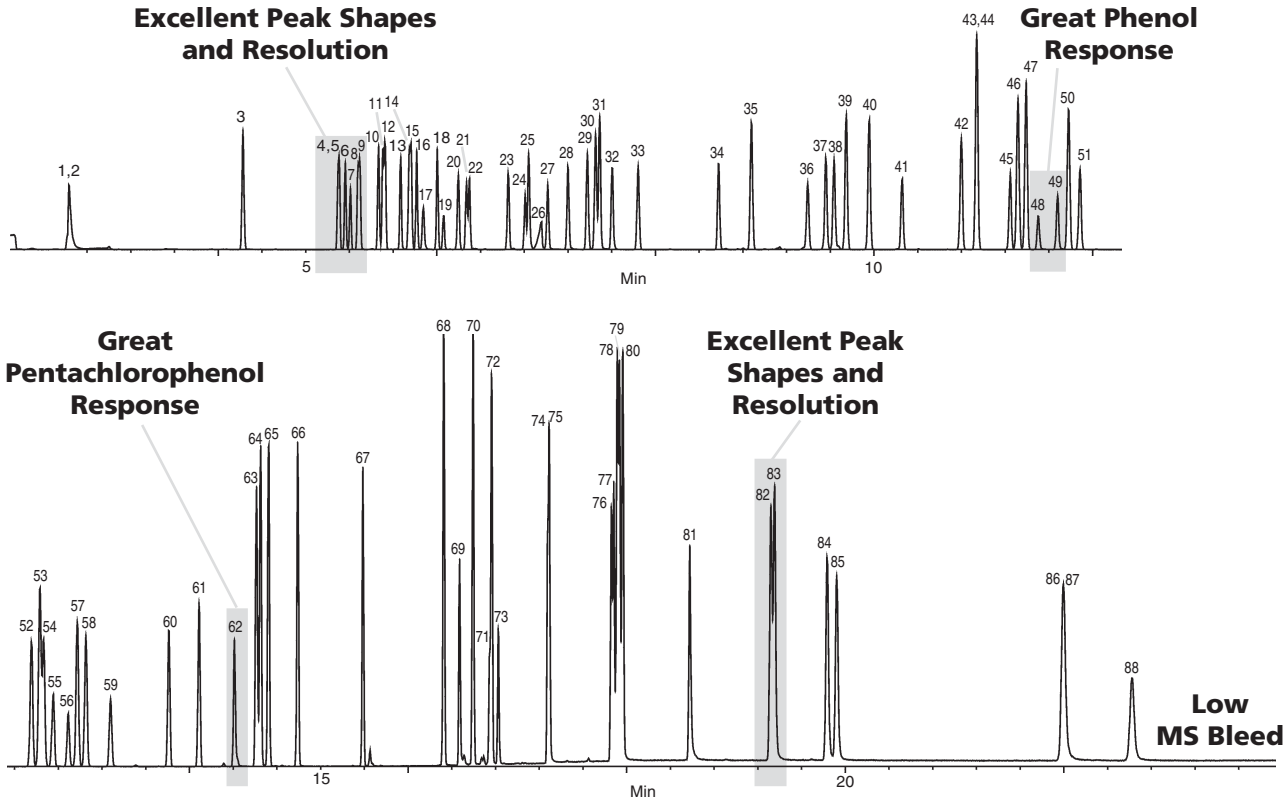
Raw Data File Name: mar02\0320004.D

Acquisition System: 5973 MSD

US EPA Method 8270 describes the analysis of a wide variety of semivolatile compounds by GC/MS. In this application, the Equity-5 was used to analyze 74 compounds commonly targeted for analysis by environmental laboratories. The analysis also included 6 internal standards and 8 surrogates. The Equity column showed excellent peak shape and response for both basic and acidic compounds, including the typically low-responding compounds 2,4-dinitrophenol, pentachlorophenol, and benzidine. The low bleed of this column made it suitable for use in an MSD.

Key Words

semivolatiles, Method 8270, Equity, 28092-U



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Conditions

Column:	Equity-5, 30m x 0.25mm ID, 0.5µm
Cat. No.:	28092-U
Oven:	40°C (2 min) to 100°C @ 50°C/min to 200°C @ 10°C/min to 325°C @ 30°C/min (7.5 min)
Inj.:	280°C
MSD Interface:	325°C
Scan Range:	45-450 m/z
Flow:	Pressure programmed, 20psi (0.0 min), ramp to 80psi (0.0 min), ramp to 16.5psi (3 min), ramp to 25psi (hold for remainder of run)
Injection:	1.0µL, splitless (0.61 min)
Liner:	4mm ID single taper
Sample:	50ng on-column of a 74 component semivolatile standard, 6 internal standards, and 8 surrogates

Peak IDs

1. Pyridine
2. N-Nitrosodimethylamine
3. 2-Fluorophenol (Surr.)
4. Phenol-d6 (Surr.)
5. Phenol
6. Aniline
7. Bis(2-Chloroethyl)ether
8. 2-Chlorophenol-d4 (Surr.)
9. 2-Chlorophenol
10. 1,3-Dichlorobenzene
11. 1,4-Dichlorobenzene-d4 (Int. Std.)
12. 1,4-Dichlorobenzene
13. Benzyl alcohol
14. 1,2-Dichlorobenzene-d4 (Surr.)
15. 1,2-Dichlorobenzene
16. 2-Methylphenol
17. Bis(2-Chloroisopropyl)ether
18. 4-Methylphenol
19. N-Nitroso-di-n-propylamine
20. Hexachloroethane
21. Nitrobenzene-d5 (Surr.)
22. Nitrobenzene
23. Isophorone
24. 2-Nitrophenol
25. 2,4-Dimethylphenol
26. Benzoic acid
27. Bis(2-Chloroethoxy)methane
28. 2,4-Dichlorophenol
29. 1,2,4-Trichlorobenzene
30. Naphthalene-d8 (Int. Std.)
31. Naphthalene
32. 4-Chloroaniline
33. Hexachlorobutadiene
34. 4-Chloro-3-methylphenol
35. 2-Methylnaphthalene
36. Hexachlorocyclopentadiene
37. 2,4,6-Trichlorophenol
38. 2,4,5-Trichlorophenol
39. 2-Fluorobiphenyl (Surr.)
40. 2-Chloronaphthalene
41. 2-Nitroaniline
42. Dimethyl phthalate
43. Acenaphthylene
44. 2,6-Dinitrotoluene
45. 3-Nitroaniline
46. Acenaphthene-d10 (Int. Std.)
47. Acenaphthene
48. 2,4-Dinitrophenol
49. 4-Nitrophenol
50. Dibenzofuran
51. 2,4-Dinitrotoluene
52. Diethyl phthalate
53. Fluorene
54. 4-Chlorophenyl phenyl ether
55. 4-Nitroaniline
56. 2-Methyl-4,6-dinitrophenol
57. N-Nitrosodiphenylamine
58. Azobenzene
59. 2,4,6-Tribromophenol (Surr.)
60. 4-Bromophenyl phenyl ether
61. Hexachlorobenzene
62. Pentachlorophenol
63. Phenanthrene-d10 (Int. Std.)
64. Phenanthrene
65. Anthracene
66. Carbazole
67. Di-n-butyl phthalate
68. Fluoranthene
69. Benzidine
70. Pyrene
71. Aramite#1
72. Terphenyl-d14 (Surr.)
73. Aramite#2
74. 3,3'-Dimethylbenzidine
75. Butylbenzyl phthalate
76. 3,3'-Dichlorobenzidine
77. Bis(2-Ethylhexyl) phthalate
78. Benzo(a)anthracene
79. Chrysene-d12 (Int. Std.)
80. Chrysene
81. Di-n-octyl phthalate
82. Benzo(b)fluoranthene
83. Benzo(k)fluoranthene
84. Benzo(a)pyrene
85. Perylene-d12 (Int. Std.)
86. Indeno(1,2,3-cd)pyrene
87. Dibenz(a,h)anthracene
88. Benzo(g,h,i)perylene

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