

Application Report 473

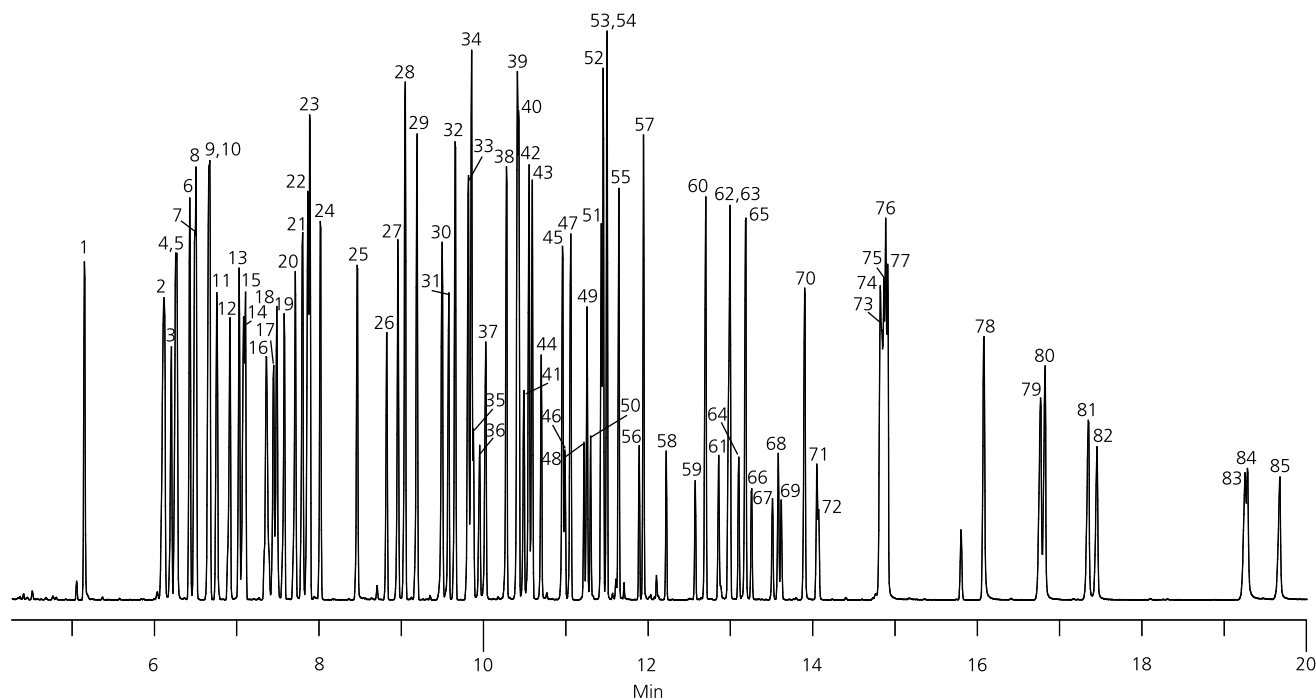
US EPA Method 625 Semivolatiles by GC-MS on the Supelco SLB™-5ms

US EPA Method 625 describes the procedure for the analysis of industrial and municipal waste water samples by GC-MS. This analysis illustrates the separation of the single-peak base-neutral and acid compounds listed in the method, along with commonly used surrogates and internal standards.

Key Words

US EPA Method 625, semivolatiles, waste water, base-neutrals, acids, SLB-5ms, 28471-U, BNA, GC-MS

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G003738

Conditions

column: SLB-5ms, 30 m x 0.25 mm I.D., 0.25 μ m (28471-U)
oven: 40 $^{\circ}$ C (2 min.), 22 $^{\circ}$ C/min. to 240 $^{\circ}$ C, 10 $^{\circ}$ C/min. to 330 $^{\circ}$ C (5 min.)
inj: 250 $^{\circ}$ C
MSD interface: 330 $^{\circ}$ C
scan range: m/z 40-450
carrier gas: helium, 1 mL/min. constant (10 min.), ramped to 1.5 mL/min., hold for remainder of run
injection: 1 μ L, pulsed (15 psi until 0.10 min.) splitless (0.50 min.)
liner: 4 mm I.D., single taper
sample: 79 component semivolatile standard (each at 50 ppm), plus 6 internal standards (each at 40 ppm) in methylene chloride

27. 2,4,6-Trichlorophenol
28. 2-Fluorobiphenyl (surr.)
29. 2-Chloronaphthalene
30. Dimethyl phthalate
31. 2,6-Dinitrotoluene
32. Acenaphthylene
33. Acenaphthene-d₁₀ (I.S.)
34. Acenaphthene
35. 2,4-Dinitrophenol
36. 4-Nitrophenol
37. 2,4-Dinitrotoluene
38. Diethyl phthalate
39. 4-Chlorophenyl phenyl ether
40. Fluorene
41. 2-Methyl-4,6-dinitrophenol
42. n-Nitrosodiphenylamine
43. Azobenzene
44. 2,4,6-Tribromophenol (surr.)
45. 4-Bromophenyl phenyl ether
46. α -BHC
47. Hexachlorobenzene
48. β -BHC
49. Pentachlorophenol
50. γ -BHC
51. Phenanthrene-d₁₀ (I.S.)
52. Phenanthrene
53. δ -BHC
54. Anthracene
55. Carbazole
56. Heptachlor
57. Di-n-butyl phthalate
58. Aldrin

59. Heptachlor epoxide
60. Fluoranthene
61. Benzidine
62. Endosulfan I
63. Pyrene
64. 4,4'-DDE
65. Terphenyl-d₁₄ (surr.)
66. Dieldrin
67. Endrin
68. 4,4'-DDD
69. Endosulfan II
70. Butyl benzyl phthalate
71. 4,4'-DDT
72. Endosulfan sulfate
73. 3,3'-Dichlorobenzidine
74. Benzo(a)anthracene
75. Chrysene-d₁₂ (I.S.)
76. Bis(2-ethylhexyl)phthalate
77. Chrysene
78. Di-n-octyl phthalate
79. Benzo(b)fluoranthene
80. Benzo(k)fluoranthene
81. Benzo(a)pyrene
82. Perylene-d₁₂ (I.S.)
83. Indeno(1,2,3-cd)pyrene
84. Dibenzo(a,h)anthracene
85. Benzo(g,h,i)perylene

Peak IDs

1. 2-Fluorophenol (surr.)	14. Nitrobenzene-d ₅ (surr.)
2. Phenol-d ₆ (surr.)	15. Nitrobenzene
3. Bis(2-chloroethyl)ether	16. Isophorone
4. 2-Chlorophenol-d ₄ (surr.)	17. 2-Nitrophenol
5. 2-Chlorophenol	18. 2,4-Dimethylphenol
6. 1,3-Dichlorobenzene	19. Bis(2-chloroethoxy)methane
7. 1,4-Dichlorobenzene-d ₄ (I.S.)	20. 2,4-Dichlorophenol
8. 1,4-Dichlorobenzene	21. 1,2,4-Trichlorobenzene
9. 1,2-Dichlorobenzene-d ₄ (surr.)	22. Naphthalene-d ₈ (I.S.)
10. 1,2-Dichlorobenzene	23. Naphthalene
11. Bis(2-chloroisopropyl)ether	24. Hexachlorobutadiene
12. n-Nitroso-di-n-propylamine	25. 4-Chloro-3-methylphenol
13. Hexachloroethane	26. Hexachlorocyclopentadiene