

Application Report 351

Analysis of US EPA Method 8270D Semivolatiles Using SLB-5ms

US EPA Method 8270D specifies a procedure for the determination of semivolatiles in solid wastes and ground waters. The suitability of the SLB-5ms for the separation of 72 analytes (plus eight surrogates and six internal standards) specified in the method is demonstrated. The optimized chromatogram obtained on the SLB-5ms is presented.

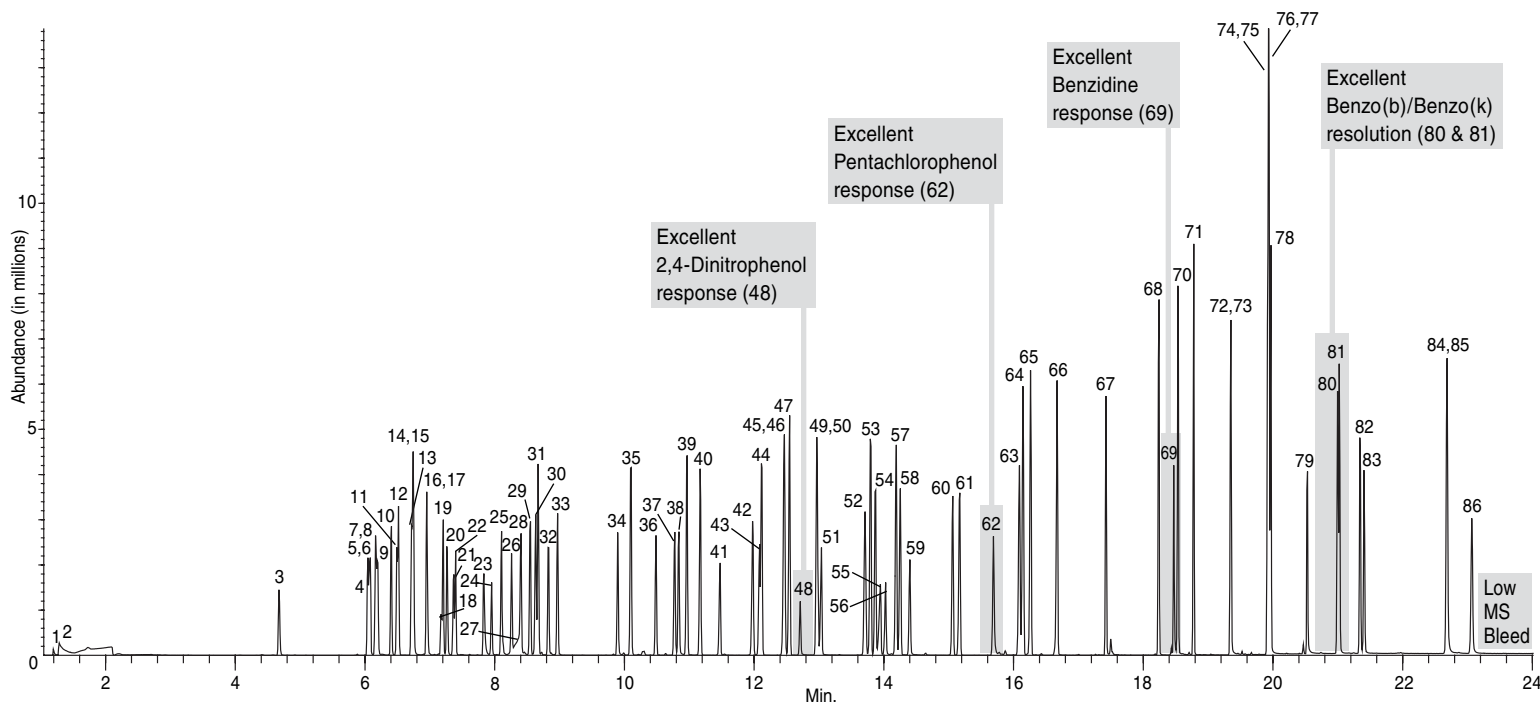
Key Words

semivolatiles, BNA, 506508, 861148, 46702-U, 48467, 861155, 46955-U, US EPA Method 8270D, RCRA, SLB-5ms, 28471-U

Author: Katherine Stenerson

Acquisition System: 6890 GC / 5973
MSD

Notebook Reference: 1509-098



G003349

Conditions

column: SLB-5ms, 30 m x 0.25 mm I.D., 0.25 μ m (28471-U)
oven: 40 $^{\circ}$ C (3 min.), 20 $^{\circ}$ C/min. to 100 $^{\circ}$ C, 10 $^{\circ}$ C/min. to 200 $^{\circ}$ C,
30 $^{\circ}$ C/min. to 325 $^{\circ}$ C (5 min.)
inj.: 250 $^{\circ}$ C
MSD interface: 325 $^{\circ}$ C
scan range: 40-450 amu
carrier gas: helium, pressure programmed, 20 psi (0 min.), 99 psi/min. to 80 psi
(0 min.), 99 psi/min. to 16.5 psi (3 min.), 99 psi/min. to 25 psi (hold
remainder of run)
injection: 1.0 μ L splitless (0.75 min.)
liner: 4 mm I.D., single taper
sample: 50 ng on-column of a 72 component semivolatile standard and 8 sur-
rogate compounds, plus 6 internal standards (at 40 ng on-column)

27. Benzoic acid
28. 2,4-Dichlorophenol
29. 1,2,4-Trichlorobenzene
30. Naphthalene- d_8 (I.S.)
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. 2,6-Dinitrotoluene
44. Acenaphthylene
45. Acenaphthene- d_{10} (I.S.)
46. 3-Nitroaniline
47. Acenaphthene
48. 2,4-Dinitrophenol
49. Dibenzofuran
50. 4-Nitrophenol
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- d_{10} (I.S.)
64. Phenanthrene
65. Anthracene
66. Carbazole
67. Di-n-butyl phthalate
68. Fluoranthene
69. Benzidine
70. Pyrene
71. Terphenyl- d_{14} (surr.)
72. 3,3'-Dimethylbenzidine
73. Butylbenzyl phthalate
74. 3,3'-Dichlorobenzidine
75. Benzo(a)anthracene
76. Bis(2-ethylhexyl)phthalate
77. Chrysene- d_{12} (I.S.)
78. Chrysene
79. Di-n-octyl phthalate
80. Benzo(b)fluoranthene
81. Benzo(k)fluoranthene
82. Benzo(a)pyrene
83. Perylene- d_{12} (I.S.)
84. Indeno(1,2,3-cd)pyrene
85. Dibenzo(a,h)anthracene
86. Benzo(g,h,i)perylene

Peak IDs

1. N-nitrosodimethylamine
2. Pyridine
3. 2-Fluorophenol (surr.)
4. Aniline
5. Phenol- d_6 (surr.)
6. Phenol
7. Bis(2-chloroethyl)ether
8. 2-Chlorophenol- d_4 (surr.)
9. 2-Chlorophenol
10. 1,3-Dichlorobenzene
11. 1,4-Dichlorobenzene- d_4 (I.S.)
12. 1,4-Dichlorobenzene
13. 1,2-Dichlorobenzene- d_4 (surr.)
14. 1,2-Dichlorobenzene
15. Benzyl alcohol
16. 2-Methylphenol
17. Bis(2-chloroisopropyl)ether
18. N-nitroso-di-n-propylamine
19. 4-Methylphenol
20. Hexachloroethane
21. Nitrobenzene- d_5 (surr.)
22. Nitrobenzene
23. Isophorone
24. 2-Nitrophenol
25. 2,4-Dimethylphenol
26. Bis(2-chloroethoxymethane)