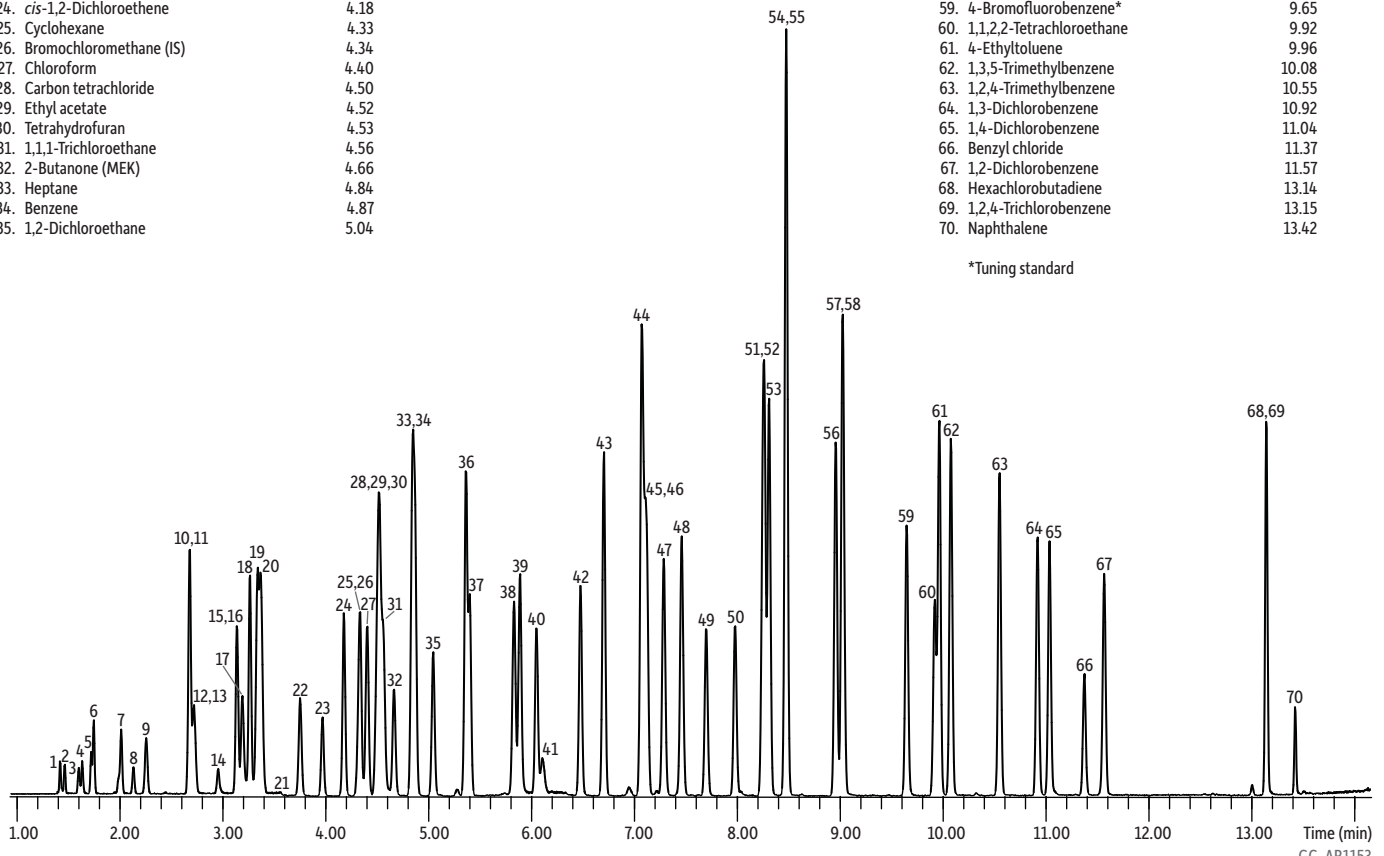


TO-15 65 Component Mix on Rtx®-VMS (30 m)

Peaks	Retention Time (min)
1. Propylene	1.42
2. Dichlorodifluoromethane (Freon® 12)	1.46
3. 1,2-Dichlorotetrafluoroethane (Freon® 114)	1.60
4. Chloromethane	1.63
5. Vinyl chloride	1.72
6. 1,3-Butadiene	1.75
7. Bromomethane	2.01
8. Chloroethane	2.13
9. Trichlorofluoromethane (Freon® 11)	2.26
10. 1,1-Dichloroethene	2.67
11. Carbon disulfide	2.68
12. Ethanol	2.70
13. 1,1,2-Trichlorotrifluoroethane (Freon® 113)	2.72
14. Acrolein	2.96
15. Isopropyl alcohol	3.14
16. Methylene chloride	3.14
17. Acetone	3.19
18. trans-1,2-Dichloroethene	3.26
19. Hexane	3.33
20. Methyl tert-butyl ether (MTBE)	3.37
21. Acetonitrile (contaminant)	3.57
22. 1,1-Dichloroethane	3.75
23. Vinyl acetate	3.97
24. cis-1,2-Dichloroethene	4.18
25. Cyclohexane	4.33
26. Bromochloromethane (IS)	4.34
27. Chloroform	4.40
28. Carbon tetrachloride	4.50
29. Ethyl acetate	4.52
30. Tetrahydrofuran	4.53
31. 1,1,1-Trichloroethane	4.56
32. 2-Butanone (MEK)	4.66
33. Heptane	4.84
34. Benzene	4.87
35. 1,2-Dichloroethane	5.04

Peaks	Retention Time (min)
36. Trichloroethylene	5.36
37. 1,4-Difluorobenzene (IS)	5.40
38. 1,2-Dichloropropane	5.83
39. Bromodichloromethane	5.89
40. Methyl methacrylate	6.05
41. 1,4-Dioxane	6.11
42. cis-1,3-Dichloropropene	6.48
43. Toluene	6.70
44. Tetrachloroethene	7.07
45. 4-Methyl-2-pentanone (MIBK)	7.10
46. trans-1,3-Dichloropropene	7.13
47. 1,1,2-Trichloroethane	7.29
48. Dibromochloromethane	7.46
49. 1,2-Dibromoethane	7.70
50. 2-Hexanone (MBK)	7.98
51. Chlorobenzene-d5 (IS)	8.25
52. Chlorobenzene	8.27
53. Ethylbenzene	8.31
54. m-Xylene	8.48
55. p-Xylene	8.48
56. o-Xylene	8.96
57. Styrene	9.02
58. Bromoform	9.03
59. 4-Bromofluorobenzene*	9.65
60. 1,1,2,2-Tetrachloroethane	9.92
61. 4-Ethyltoluene	9.96
62. 1,3,5-Trimethylbenzene	10.08
63. 1,2,4-Trimethylbenzene	10.55
64. 1,3-Dichlorobenzene	10.92
65. 1,4-Dichlorobenzene	11.04
66. Benzyl chloride	11.37
67. 1,2-Dichlorobenzene	11.57
68. Hexachlorobutadiene	13.14
69. 1,2,4-Trichlorobenzene	13.15
70. Naphthalene	13.42



*Tuning standard

GC_AR1153

Column: Rtx®-VMS, 30 m, 0.32 mm ID, 1.80 µm (cat.# 19919)
Sample: TO-15 65 component mix (cat.# 34436)
 TO-14A internal standard/tuning mix (cat.# 34408)
Diluent: Nitrogen
Conc.: 10.0 ppbv 200 cc injection
Injection: Direct
Oven Temp.: 32 °C (hold 1 min) to 150 °C at 11 °C/min (hold 0 min) to 230 °C at 33 °C/min (hold 0 min)
Carrier Gas: He, constant flow
Flow Rate: 2.0 mL/min
Linear Velocity: 51 cm/sec @ 32 °C
Detector: MS
Mode: Scan
Scan Program: Group Start Time (min) Scan Range (amu) Scan Rate (scans/sec)
 Direct 35-250 3.32
Transfer Line Temp.: 230 °C
Analyzer Type: Quadrupole
Source Temp.: 230 °C

Quad Temp.: 150 °C
Electron Energy: 69.9 eV
Solvent Delay Time: 1.0 min
Tune Type: BFB
Ionization Mode: EI
Preconcentrator: Nutech 8900DS
Trap 1 Settings:
 Type/Sorbent: Glass beads
 Cooling temp: -155 °C
 Preheat time: 5 °C
 Preheat time: 0 sec
 Desorb temp: 20 °C
 Desorb flow: 5 mL/min
 Desorb time: 360 sec
 Bakeout temp: 200 °C
 Flush flow: 120 mL/min
 Flush time: 60 sec
 Sweep flow: 120 mL/min
 Sweep time: 60 sec

Trap 2 Settings:
 Type/Sorbent: Tenax®
 Cooling temp: -35 °C
 Desorb temp: 190 °C
 Desorb time: 30 sec
 Bakeout temp: 200 °C
 Bakeout time: 10 sec
 Cryofocuser
 Cooling temp: -160 °C
 Inject time: 140 sec
Internal Standard:
 Purge flow: 100 mL/min
 Purge time: 6 sec
 Vol.: 20 mL
 ISTD flow: 100 mL/min
Standard:
 Size: 200 mL
 Purge flow: 100 mL/min
 Purge time: 6 sec
 Sample flow: 100 mL/min
Instrument: HP6890 GC & 5973 MSD
Acknowledgement: Nutech