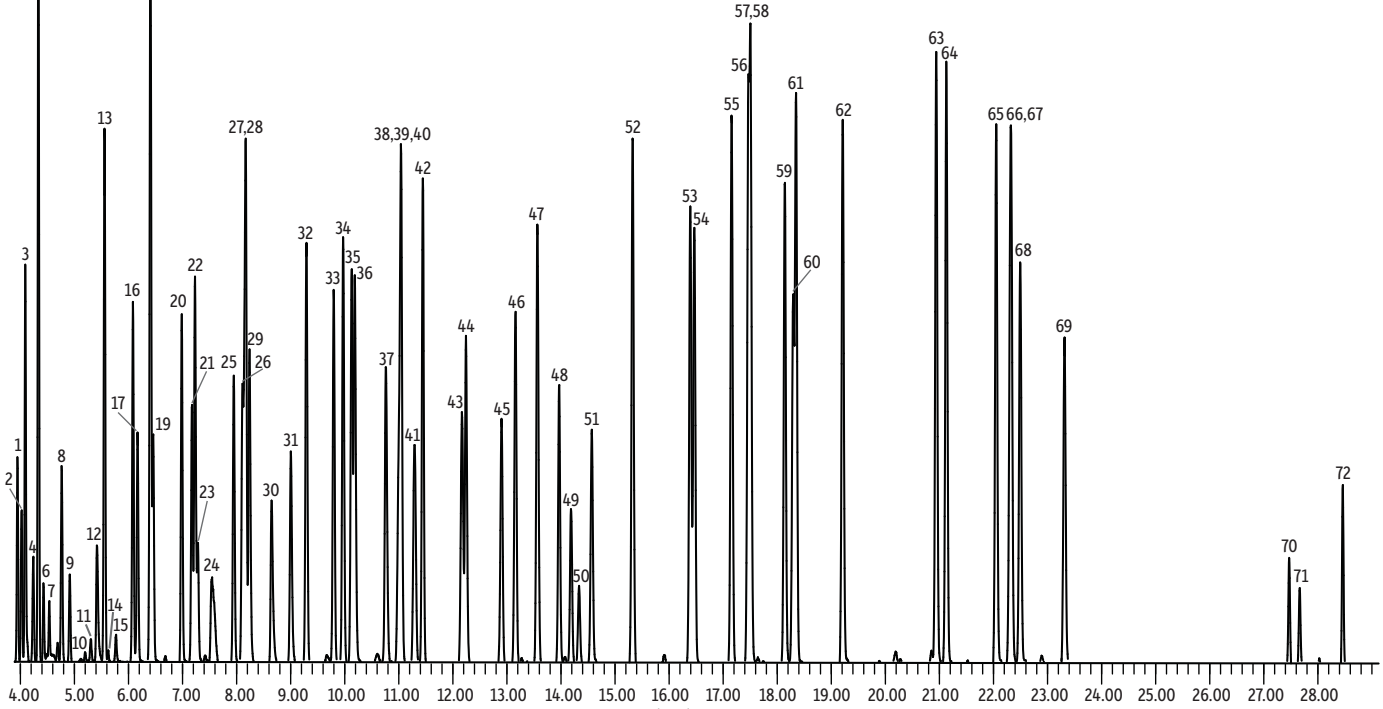


**TO-15 65 Component Mix on Rxi®-1ms (60 m)**

Peaks	t <sub>R</sub> (min)	Peaks	t <sub>R</sub> (min)	Peaks	t <sub>R</sub> (min)
1. 1,1-Difluoroethane (Freon® 152)	3.96	21. 1,1-Dichloroethane	7.18	46. 1,1,2-Trichloroethane	13.16
2. Propylene	4.03	22. Methyl tert-butyl ether (MTBE)	7.23	47. Toluene	13.57
3. Dichlorodifluoromethane (Freon® 12)	4.09	23. Vinyl acetate	7.29	48. 2-Hexanone (MBK)	13.97
4. Chloromethane	4.24	24. 2-Butanone (MEK)	7.55	49. Dibromochloromethane	14.19
5. 1,2-Dichlorotetrafluoroethane (Freon® 114)	4.34	25. cis-1,2-Dichloroethene	7.95	50. Hexanal (contaminant)	14.35
6. Vinyl chloride	4.43	26. Bromochloromethane (IS)	8.11	51. 1,2-Dibromoethane	14.57
7. 1,3-Butadiene	4.54	27. Ethyl acetate*	8.15	52. Tetrachloroethene	15.33
8. Bromomethane	4.77	28. Hexane*	8.17	53. Chlorobenzene-d5 (IS)	16.39
9. Chloroethane	4.92	29. Chloroform	8.24	54. Chlorobenzene	16.47
10. Ethanol	5.20	30. Tetrahydrofuran	8.65	55. Ethylbenzene	17.16
11. Acrolein	5.31	31. 1,2-Dichloroethane	9.01	56. m-Xylene	17.50
12. Acetone	5.42	32. 1,1,1-Trichloroethane	9.30	57. p-Xylene	17.50
13. Trichlorofluoromethane (Freon® 11)	5.56	33. Benzene	9.80	58. Bromoform	17.54
14. Acetonitrile (contaminant)	5.77	34. Carbon tetrachloride	9.97	59. Styrene	18.14
15. Isopropyl alcohol	5.77	35. Cyclohexane	10.13	60. 1,1,2,2-Tetrachloroethane	18.30
16. 1,1-Dichloroethene	6.08	36. 1,4-Difluorobenzene (IS)	10.19	61. o-Xylene	18.35
17. Methylene chloride	6.17	37. 1,2-Dichloropropane	10.76	62. 4-Bromofluorobenzene**	19.21
18. 1,1,2-Trichlorotrifluoroethane (Freon® 113)	6.41	38. Bromodichloromethane	11.01	63. 4-Ethyltoluene	20.94
19. Carbon disulfide	6.46	39. Trichloroethylene	11.05	64. 1,3,5-Trimethylbenzene	21.13
20. trans-1,2-Dichloroethene	6.99	40. 1,4-Dioxane	11.06	65. 1,2,4-Trimethylbenzene	22.05
		41. Methyl methacrylate	11.29	66. Benzyl chloride	22.31
		42. Heptane	11.45	67. 1,3-Dichlorobenzene	22.33
		43. cis-1,3-Dichloropropene	12.17	68. 1,4-Dichlorobenzene	22.50
		44. 4-methyl-2-pentanone (MIBK)	12.25	69. 1,2-Dichlorobenzene	23.32
		45. trans-1,3-Dichloropropene	12.90	70. 1,2,4-Trichlorobenzene	27.47
				71. Naphthalene	27.67
				72. Hexachlorobutadiene	28.47

\*Peaks 27 and 28 share ion m/z 43; \*\*Tuning standard



GC\_AR1156

**Column** Rxi®-1ms, 60 m, 0.32 mm ID, 1.00 µm (cat.# 13357)  
**Sample** TO-15 65 component mix (cat.# 34436)  
 TO-14A internal standard/tuning mix (cat.# 34408)  
**Diluent:** Nitrogen  
**Conc.:** 10.0 ppbv 400 mL injection  
**Injection** Direct  
**Oven**  
 Oven Temp.: 32 °C (hold 1.00 min) to 150 °C at 5 °C/min to 230 °C at 15 °C/min  
**Carrier Gas** He, constant flow  
 Flow Rate: 1.2 mL/min  
 Linear Velocity: 31 cm/sec @ 32 °C  
**Detector** MS  
 Mode: Scan  
**Scan Program:**

Group	Start Time (min)	Scan Range (amu)	Scan Rate (scans/sec)
1	0.00	35-250	3.32

Transfer Line Temp.: 230 °C  
 Analyzer Type: Quadrupole  
 Source Temp.: 230 °C  
 Quad Temp.: 150 °C  
 Electron Energy: 70.0 eV

**Solvent Delay** Time: 1.0 min  
**Tune Type:** BFB  
**Ionization Mode:** EI  
**Preconcentrator** Nutech 8900DS  
**Trap 1 Settings**  
 Type/Sorbent: Siltek®-treated glass beads  
 Cooling time: -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® GR

**Cooling temp:** -35 °C  
**Desorb temp:** 190 °C  
**Desorb time:** 30 sec  
**Bakeout temp:** 200 °C  
**Bakeout time:** 10 sec  
**Cryofocuser**  
 Cooling time: -160 °C  
 Inject time: 14.0 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 Instruments/EST Analytical