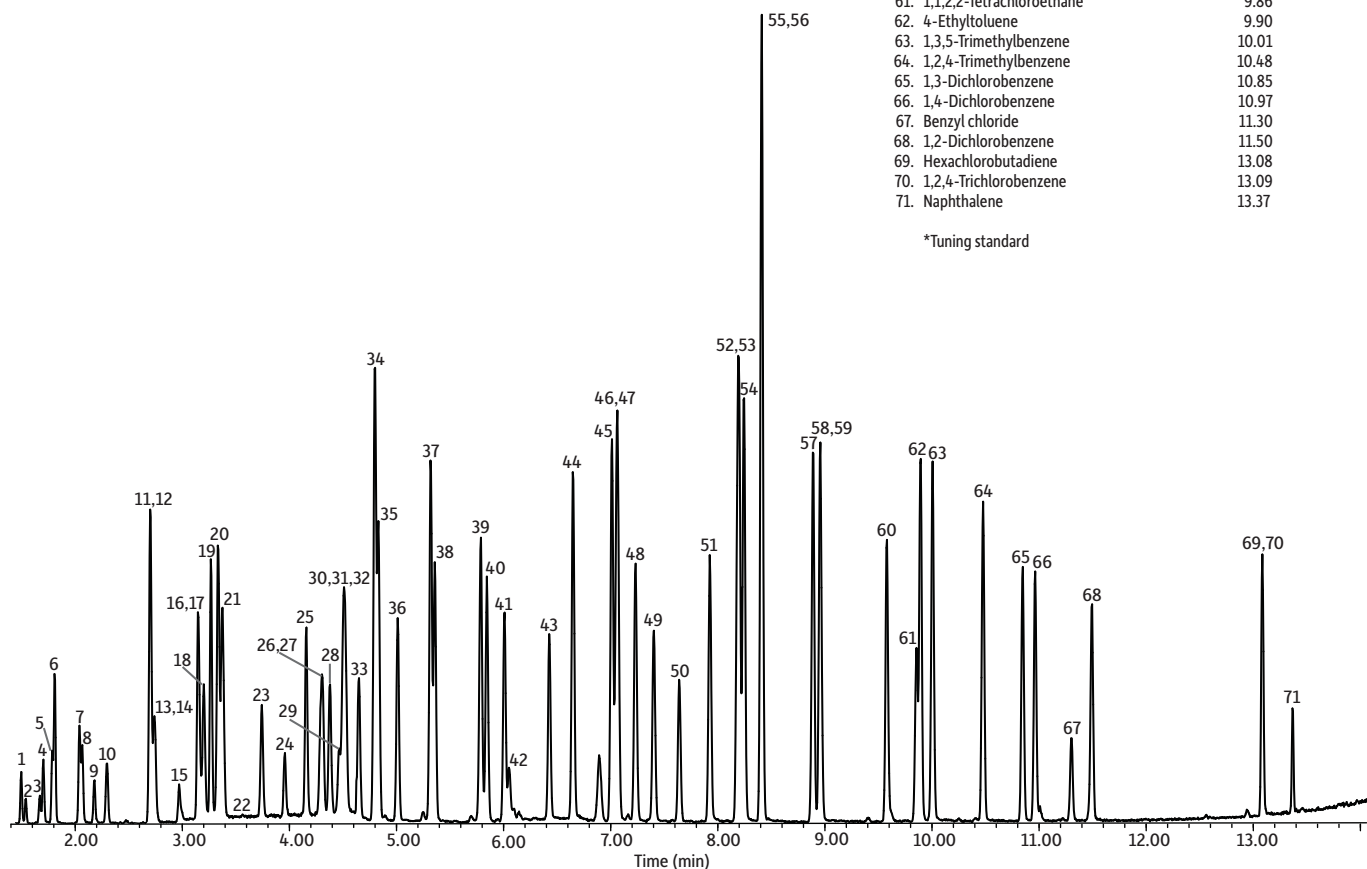


# TO-15 65 Component Mix on Rtx®-VMS (30 m, 2.0 mL/min)

Peaks	Retention Time (min)	Peaks	Retention Time (min)	Peaks	Retention Time (min)
1. Propylene	1.50	21. Hexane	3.34	41. Methyl methacrylate	6.01
2. Dichlorodifluoromethane (Freon® 12)	1.54	22. Methyl tert-butyl ether (MTBE)	3.38	42. 1,4-Dioxane	6.06
3. 1,2-Dichlorotetrafluoroethane (Freon® 114)	1.67	23. 1,1-Dichloroethane	3.74	43. cis-1,3-Dichloropropene	6.43
4. Chloromethane	1.70	24. Vinyl acetate	3.96	44. Toluene	6.65
5. Vinyl chloride	1.79	25. cis-1,2-Dichloroethene	4.16	45. Tetrachloroethene	7.01
6. 1,3-Butadiene	1.81	26. Cyclohexane	4.30	46. 4-Methyl-2-pentanone (MIBK)	7.06
7. Acetaldehyde (contaminant)	2.04	27. Bromochloromethane (IS)	4.31	47. trans-1,3-Dichloropropene	7.07
8. Bromomethane	2.07	28. Chloroform	4.38	48. 1,1,2-Trichloroethane	7.23
9. Chloroethane	2.18	29. Carbon tetrachloride	4.47	49. Dibromochloromethane	7.40
10. Trichlorofluoromethane (Freon® 11)	2.30	30. Ethyl acetate	4.50	50. 1,2-Dibromoethane	7.64
11. 1,1-Dichloroethene	2.70	31. Tetrahydrofuran	4.52	51. 2-Hexanone (MBK)	7.93
12. Carbon disulfide	2.71	32. 1,1,1-Trichloroethane	4.53	52. Chlorobenzene-d5 (IS)	8.19
13. Ethanol	2.72	33. 2-Butanone (MEK)	4.65	53. Chlorobenzene	8.20
14. 1,1,2-Trichlorotrifluoroethane (Freon® 113)	2.74	34. Heptane	4.80	54. Ethylbenzene	8.25
15. Acrolein	2.97	35. Benzene	4.83	55. m-Xylene	8.41
16. Methylene chloride	3.15	36. 1,2-Dichloroethane	5.01	56. p-Xylene	8.41
17. Isopropyl alcohol	3.16	37. Trichloroethylene	5.32	57. o-Xylene	8.89
18. Acetone	3.20	38. 1,4-Difluorobenzene (IS)	5.36	58. Styrene	8.96
19. trans-1,2-Dichloroethene	3.27	39. 1,2-Dichloropropane	5.79	59. Bromoform	8.97
20. Acetonitrile (contaminant)	3.34	40. Bromodichloromethane	5.85	60. 4-Bromofluorobenzene*	9.58



\*Tuning standard

**Column** Rtx®-VMS, 30 m, 0.25 mm ID, 1.40 µm (cat.# 19915)  
**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 min) to 150 °C at 11 °C/min to 230 °C at 33 °C/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)
1	0	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 temp:** 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