

Choosing a Volatiles GC Column for PID/ELCD*

Restek Phase	Coelutions by Peak Numbers (Coelutions by PID/ELCD are indicated in BOLD)	Close Pairs by PID/ELCD	Suggested Confirmation Column	Poor Choice for Confirmation Column	Thick Phase Stable Temp. (°C)	Recommended High Temp. for VOA Work (°C)	Advantages	Page # for Chromatogram ²
Rtx-VGC	28/29¹ , 53/54	7/8, 32/33	Rtx-502.2, Rtx-VRX, Rtx-1	Rtx-VMS, Rtx-DX1	260	230	fast runtime	565
Rtx-502.2	14/15, 33/34, 39/40	4/5, 44/45, 56/57, 52/55, 64/65	Rtx-VGC, Rtx-VRX, Rtx-1	Rtx-Volatiles, Vocol, Rtx-35, Rtx-20	270	240	low bleed	567
Rtx-Volatiles	14/15, 21/22, 38/40, 44/45, 53/55	56/57, 68/69	Rtx-VGC, Rtx-1, Rtx-624	Rtx-502.2, Vocol, Rtx-20, Rtx-35	270	240	low bleed	no
Rtx-624	7/8, 10/11, 52/53, 31/34, 53/55, 59/60	32/33, 44/45, 51/54	Rtx-VGC, Rtx-502.2	Rtx-1701	280	240		no
Rtx-VRX	11/13, 39/43, 46/50 , 40/44	8/9, 15/17, 24/27, 58/60	Rtx-VGC, Rtx-502.2	Rtx-1	260	230		566
Rtx-1	9/12, 15/17, 25/26, 24/27, 33/36, 38/40 , 40/44, 45/50, 56/57	7/12, 49/55	Rtx-502	Rtx-VRX	320	260		no
Rtx-1701	9/10, 18/19, 16/20 , 50/53, 51/55 , 54/56	5/6, 29/30, 32/33	Rtx-502.2	Rtx-624	270	240		no
Rtx-200	2/3, 5/6, 11/12, 14/16, 22/24, 28/35, 32/33/37, 43/44, 50/55/56, 57/58	13/17, 36/37	Rtx-VGC		320	240	<i>m/p</i> xylene separation	no
Rtx-35	4/5, 16/19, 18/20, 21/22, 34/31, 39/38/41/42/40, 46/51/49, 53/54, 48/52/55, 61/62, 66/67	2/3,	Rtx-VGC, Rtx-624	Rtx-502.2, Rtx-Volatiles, Rtx-20	270	240		no
Rtx-50	4/5/6, 8/7/12, 25/28, 32/33, 37/41/42, 38/40, 45/47, 46/54/52, 56/55/48, 57/58	2/3, 20/18, 31/32, 39/41/42	Rtx-VGC, Rtx-624	Rtx-35	280	240		no
Rtx-DX1 (custom)	4/5, 9/10, 25/27, 38/39 , 47/50, 49/46/48, 52/54, 53/55	27/28, 32/36/31, 65/67	Rtx-502.2	Rtx-VGC	220	200		no

¹ Can be resolved under different conditions. See application showing method 601/602 with the Rtx®-VGC column on www.restek.com/chromatograms (search: chromatogram number GC_EV00420).

² pages listed include GC/MS analyses.

Volatile Analytes:

- dichlorodifluoromethane
- chloromethane
- vinyl chloride
- bromomethane
- chloroethane
- trichlorofluoromethane
- 1,1-dichloroethene
- Freon®113
- methylene chloride
- trans-1,2-dichloroethene
- methyl tert-butyl ether
- tert-butyl alcohol
- 1,1-dichloroethane
- cis-1,2-dichloroethene
- 2,2-dichloropropane
- bromochloromethane
- chloroform
- carbon tetrachloride
- 1,1,1-trichloroethane
- 1,1-dichloropropene
- benzene
- 1,2-dichloroethane
- fluorobenzene
- trichloroethene
- dibromomethane
- 1,2-dichloropropane
- bromodichloromethane
- 2-chloroethyl vinyl ether
- cis-1,3-dichloropropene
- toluene
- tetrachloroethene
- trans-1,3-dichloropropene
- 2-bromo-1-chloropropane
- 1,1,2-trichloroethane
- dibromochloromethane
- 1,3-dichloropropane
- 1,2-dibromoethane
- chlorobenzene
- ethyl benzene
- 1,1,1,2-tetrachloroethane
- m*-xylene
- p*-xylene
- 1-chloro-2-fluorobenzene
- o*-xylene
- styrene
- bromoform
- isopropyl benzene
- bromobenzene
- n*-propylbenzene
- 1,4-dichlorobutane
- 1,1,2,2-tetrachloroethane
- 2-chlorotoluene
- 1,3,5-trimethylbenzene
- 1,2,3-trichloropropane
- 4-chlorotoluene
- tert-butylbenzene
- 1,2,4-trimethylbenzene
- sec-butylbenzene
- p*-isopropyl toluene
- 1,3-dichlorobenzene
- 1,4-dichlorobenzene
- n*-butylbenzene
- 1,2-dichlorobenzene
- 4-bromo-1-chlorobenzene
- 1,2-bromo-3-chloropropane
- hexachlorobutadiene
- 1,2,4-trichlorobenzene
- naphthalene
- 1,2,3-trichlorobenzene

Compounds listed in US EPA Methods 502.2, 8021, 8010, 8020, 601 & 602, plus commonly added compounds.

m/p xylene coelute on all phases listed above except Rtx®-200 in 60m, 0.25mm ID, 1.0µm under optimized conditions. See 8260 application, using the Rtx®-200 column, www.restek.com/chromatograms (search: chromatogram number GC_EV00429).

Conditions for Rtx®-VGC, Rtx®-502.2, Rtx®-Volatiles, Rtx®-VRX and Rtx®-1: optimum conditions on 75m, 0.45mm ID, 2.55µm columns.

Conditions for all other columns: 60m, 0.53mm ID, 3.0µm column, flow 10mL/min., temp. program: 35°C (hold 9 min.) to 220°C @ 11°C/min. (hold 10 min.)

Analytes identified using Agilent 5971a mass selective detector with splitless injection or using Finnigan PID/ELCD

Please see chromatograms on pages 565–574 for more details, or call technical service at 800-356-1688 (ext. 4), or your Restek representative.

for **more info**

*For GC/MS analyses, see Rtx®-VMS applications on pages 568–571.