

Rtx®-1301 (G43) Columns (fused silica)

(low- to midpolarity phase)

- General-purpose columns for residual solvents, alcohols, oxygenates, and volatile organic compounds.
- Temperature range: -20 °C to 280 °C.
- Equivalent to USP G43 phase.

Many analysts feel the Rtx®-1301 column has the best cyanosiloxane bonded stationary phase available, with no other column manufacturer providing lower bleed, longer lifetime, or better inertness. Our polymer is fully characterized to ensure long-term reproducibility, column-to-column consistency, and low bleed—even with sensitive detectors such as ECDs and MSDs.

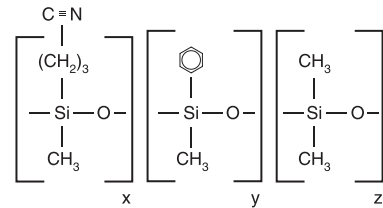
ID	df	temp. limits*	15-Meter cat.#	30-Meter cat.#	60-Meter cat.#	75-Meter cat.#	105-Meter cat.#
0.25 mm	0.25 µm	-20 to 280 °C	16020	16023	16026		
	0.50 µm	-20 to 270 °C		16038			
	1.00 µm	-20 to 260 °C		16053	16056		
	1.40 µm	-20 to 240 °C			16016		
0.32 mm	0.25 µm	-20 to 280 °C	16021	16024			
	0.50 µm	-20 to 270 °C		16039	16042		
	1.00 µm	-20 to 260 °C		16054	16057		
	1.50 µm	-20 to 250 °C	16066	16069	16072		
	1.80 µm	-20 to 240 °C		16092	16093		
0.53 mm	0.25 µm	-20 to 280 °C		16025			
	0.50 µm	-20 to 270 °C		16040	16043		
	1.00 µm	-20 to 260 °C	16052	16055	16058		
	1.50 µm	-20 to 250 °C		16070			
	3.00 µm	-20 to 240 °C		16085	16088	16076	16091

*Maximum temperatures listed are for shorter length columns. Longer columns may have a different maximum temperature.

Rtx®-1301 with Integra-Guard® Columns

- No leaks for a more robust method.
- No column connections for easier, faster maintenance.
- No peak distortions due to connector dead volume and thermal capacity.

Description	qty.	cat.#
30 m, 0.53 mm ID, 3.00 µm Rtx-1301 w/5 m Integra-Guard Column	ea.	16085-126

Rtx®-1301 Structure

Similar to: (6%-cyanopropylphenyl)-methylpolysiloxane

similar phases

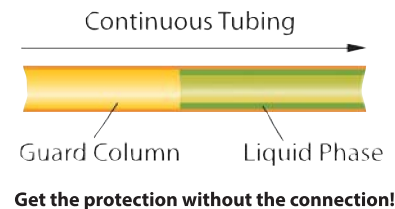
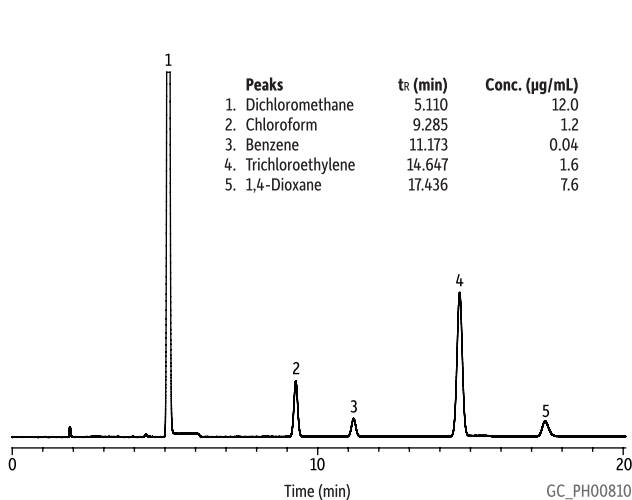
DB-1301, DB-624, DB-624UI, VF-1301ms, VF-624ms, CP-1301, ZB-624

also
available

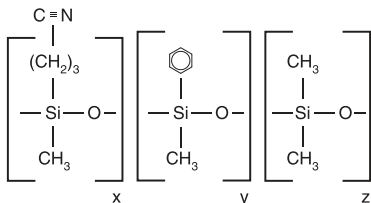
**Metal MXT® Columns**

Rugged, flexible, Siltek®-treated stainless steel tubing; inertness comparable to fused silica tubing.

MXT®-1301 columnspage 109

Integra-Guard® Built-In Guard Column**USP <467> Residual Solvents on Rtx®-1301 (G43) by Static Headspace**

Column	Rtx®-1301 w/5 m Integra-Guard®, 30 m, 0.53 mm ID, 3.00 µm (cat.# 16085-126)	Mixer time:	2.0 min
Sample	USP <467> Calibration Mixture #5 (cat.# 36007)	Mixing level:	5
Diluent:	DMSO	Mixer stabilize time:	0.5 min
Conc.:	To each 22 mL headspace vial 5ml water, ~ 1.0 g of sodium sulfate and 100 µL of stock standard were added.	Vial Pressure:	15 psi
Injection	headspace-loop split (split ratio 2:1)	Pressurize Time:	2.0 min
Headspace-Loop		Pressure	
Inj. Port Temp.:	180 °C	Equilibration Time:	0.5 min
Instrument:	Teledyne Tekmar HT3	Loop Pressure:	5 psi
Inj. Time:	1.0 min	Loop Fill Time:	2.0 min
Transfer Line Temp.:	150 °C	Loop fill equil. time:	0.5 min
Valve Oven Temp.:	150 °C	Oven	
Standby flow rate:	10 mL/min	Oven Temp.:	40 °C (hold 20 min) to 240 °C at 25 °C/min (hold 10 min)
Sample Temp.:	80 °C	Carrier Gas	He, constant flow
Platen temp		Flow Rate:	5 mL/min
equil. time:	2.0 min	Detector	FID @ 250 °C
Sample Equil. Time:	15.0 min	Make-up Gas	
		Flow Rate:	45 mL/min
		Notes	FID conditions: hydrogen flow: 40 mL/min air flow: 450 mL/min

Rtx[®]-624 Structure

Similar to: (6%-cyanopropylphenyl)-methylpolysiloxane

similar phases

DB-1301, DB-624, DB-624UI, VF-1301ms, VF-624ms, CP-1301, ZB-624

also available

Metal MXT[®] ColumnsRugged, flexible, Siltek[®]-treated stainless steel tubing; inertness comparable to fused silica tubing.MXT[®]-624 columns.....page 111Rtx[®]-624 Columns (fused silica)

(low- to midpolarity phase)

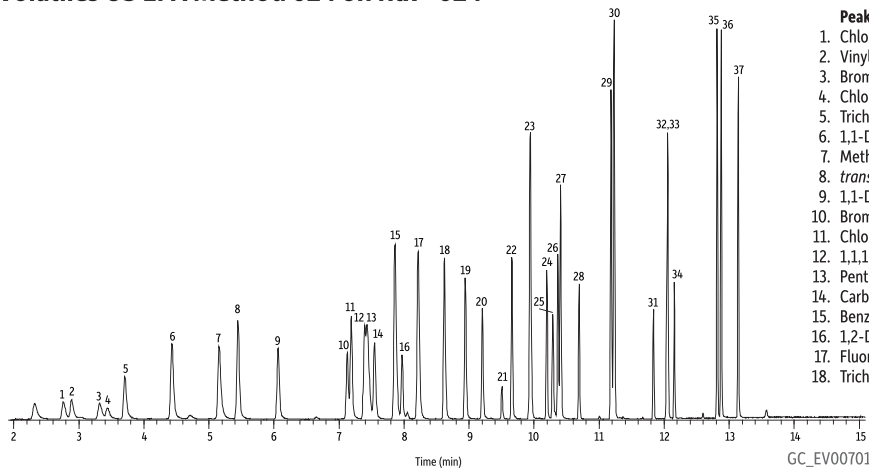
- Application-specific columns for volatile organic pollutants. Recommended in U.S. EPA methods for volatile organic pollutants.
- Temperature range: -20 °C to 240 °C.
- Equivalent to USP G43 phase.

The unique polarity of the Rtx[®]-624 column makes it ideal for analyzing volatile organic pollutants. Although the Rtx[®]-502.2 column is recommended in many methods, the Rtx[®]-624 column offers better resolution of early eluting compounds. The Rtx[®]-624 phase produces greater than 90% resolution of the first six gases in EPA Methods 8260 and 524.2. This stationary phase is especially well-suited for EPA Method 524.2 since it resolves 2-nitropropane from 1,1-dichloropropane, which share quantification ion m/z 43 and must be separated chromatographically.

ID	df	temp. limits*	30-Meter cat.#	60-Meter cat.#	75-Meter cat.#	105-Meter cat.#
0.25 mm	1.40 µm	-20 to 240 °C	10968	10969		
0.32 mm	1.80 µm	-20 to 240 °C	10970	10972		
0.53 mm	3.00 µm	-20 to 240 °C	10971	10973	10974	10975

ID	df	temp. limits	20-Meter cat.#	40-Meter cat.#
0.18 mm	1.00 µm	-20 to 240 °C	40924	40925

*Maximum temperatures listed are for shorter length columns. Longer columns may have a different maximum temperature.

Volatiles US EPA Method 624 on Rtx[®]-624

Peaks

1. Chloromethane
2. Vinyl chloride
3. Bromomethane
4. Chloroethane
5. Trichlorofluoromethane
6. 1,1-Dichloroethene
7. Methylene Chloride
8. *trans*-1,2-Dichloroethene
9. 1,1-Dichloroethane
10. Bromochloromethane
11. Chloroform
12. 1,1,1-Trichloroethane
13. Pentafluorobenzene
14. Carbon Tetrachloride
15. Benzene
16. 1,2-Dichloroethane
17. Fluorobenzene
18. Trichloroethene
19. 1,2-Dichloropropane
20. Bromodichloromethane
21. 2-Chloroethyl vinyl ether
22. *cis*-1,3-Dichloropropene
23. Toluene
24. 2-Bromo-1-chloropropane
25. 1,1,2-Trichloroethane
26. Tetrachloroethene
27. Dibromochloromethane
28. *trans*-1,3-Dichloropropene
29. Chlorobenzene
30. Ethylbenzene
31. Bromoform
32. 1,4-Dichlorobutane
33. 4-Bromofluorobenzene
34. 1,1,2,2-Tetrachloroethane
35. 1,3-Dichlorobenzene
36. 1,4-Dichlorobenzene
37. 1,2-Dichlorobenzene

Column Rtx[®]-624, 40 m, 0.18 mm ID, 1.00 µm (cat.# 40925)
Sample 624 Internal Standard Mix (cat.# 30023)
 624 Surrogate Standard Mix (cat.# 30243)
 Volatiles MegaMix[™], EPA Method 624 (cat.# 30497)
 compounds at 50 ppb (IS @ 40ppb) in 5mL of RO water
 purge and trap split (split ratio 40:1)
 250 °C

Conc.:
Injection
 Inj. Temp.:
Purge and Trap
 Instrument: Tekmar LSC-3100 Purge and Trap
 Trap Type: Vocarb 3000 (type K)
 Purge: 11 min @ ambient, flow 40 mL/min
 Dry Purge: 1 min, flow 40 mL/min
 Desorb Preheat
 Temp.: 245 °C
 Desorb: 2 min @ 250 °C, flow 10 mL/min
 Bake: 8 min @ 260 °C
 Interface Connection: injection port
 Transfer Line Tubing: Silcosteel[®] transfer line, 1mm ID sleeve

Oven
 Oven Temp.: 50 °C (hold 4 min) to 100 °C at 12 °C/min to 230 °C
 at 27 °C/min (hold 2 min)
Carrier Gas
 Flow Rate: 1.1 mL/min
 Dead Time: 2.06 min @ 50 °C
Detector
 Transfer Line Temp.: 280 °C
 Analyzer Type: Quadrupole
 Tune Type: PFTBA/BFB
 Ionization Mode: EI
 Scan Range: 35-260 amu
Notes
 (MCS bypassed using Silcosteel[®] tubing)