


Lower Detection Limits with Ground-Breaking Column Technology

Rxi[®] technology unifies outstanding inertness, low bleed, and high reproducibility into a single high performance column line. Take variation out of the equation and get the most consistent results for trace level analysis with Rxi[®] columns.

Visit us at www.restek.com/rxi

phases available

- 
- Rxi[®]-1ms (p. 41)
 - Rxi[®]-1HT (p. 47)
 - Rxi[®]-5ms (p. 41)
 - Rxi[®]-5Sil MS (p. 42)
 - Rxi[®]-5HT (p. 47)
 - Rxi[®]-XLB (p. 44)
 - Rxi[®]-624Sil MS (p. 46)
 - Rxi[®]-35Sil MS (p. 44)
 - Rxi[®]-17 (p. 44)
 - Rxi[®]-17Sil MS (p. 45)
 - Rxi[®] guard/retention gap columns (p. 40)



Make the Switch to Rxi[®] columns!

Experience what Rxi[®]
did for many others

- Lower detection limits
- Better peak shape
- Accurate results

Rxi 3-IN-1 TECHNOLOGY

Highest Inertness • Lowest Bleed • Exceptional Reproducibility

Lower Detection Limits with Ground-Breaking Column Technology

Rxi® columns deliver more accurate, reliable trace-level results than any other fused silica column on the market. To ensure the highest level of performance, all Rxi® capillary columns are manufactured and individually tested to meet stringent requirements for exceptional inertness, low bleed, and unsurpassed column-to-column reproducibility.

Highest Inertness

Inertness is one of the most difficult attributes to achieve in an analytical column, but it is one of the most critical as it improves peak shape, response, and retention time stability. Rxi® technology produces the most inert columns available, providing:

- Increased signal-to-noise ratios to improve low-level detection.
- Reproducible retention times for positive identifications.
- Improved response for polar, acidic, and basic compounds.

Increased Signal and Reproducible Retention Times

When capillaries are not sufficiently deactivated, peaks become asymmetric, resulting in reduced signal and unpredictable retention times. As column activity increases, peak tailing becomes more pronounced, reducing peak height and causing retention time to drift (Figure 1). In practice, this means that sensitivity is lost and trace-level analytes cannot be reliably determined. In addition, even compounds at higher concentrations may be misidentified, due to retention time shifting.

A more significant problem for sample analysis is that retention time can vary with analyte concentration if the column is not highly inert. Since the amount of target analyte in samples is unknown, retention times on a poorly deactivated column can easily vary enough to move compounds outside of the retention time window (Figure 2). This can result in inaccurate identifications and the need for manual integration and additional review or analysis before results can be reported. Using inert Rxi® columns ensures that compounds elute with good signal-to-noise ratios at expected retention times, regardless of analyte concentration.

Figure 1 As column activity increases, signal decreases and retention time shifts.

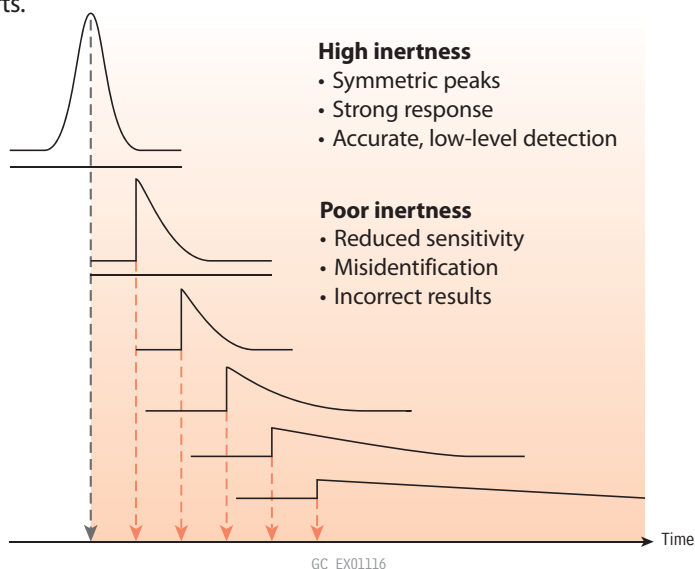
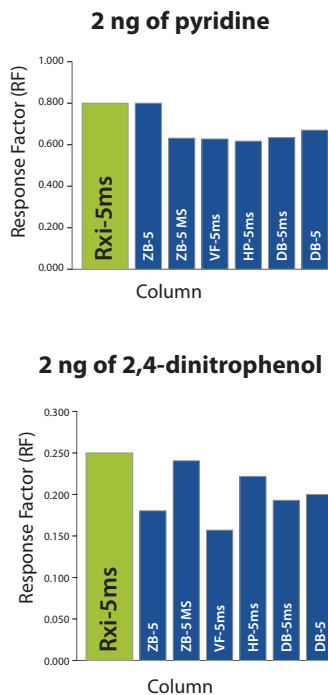
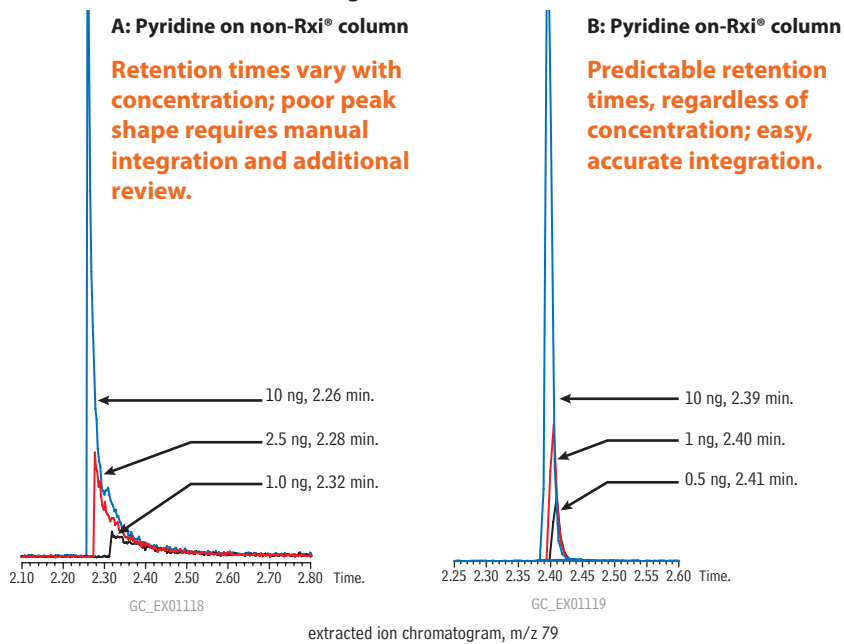


Figure 3 An Rxi®-5ms column gives the highest response for both basic and acidic compounds.



Comparison of 30m x 0.25mm ID, 0.25µm columns.

Figure 2 Analyte levels in samples are unknown; only inert columns, which prevent concentration from affecting retention time, can assure accurate results.



Improved Response for Difficult Compounds

Another reason column inertness is important for trace-level analysis is that many acidic, basic, and polar compounds will tail significantly and become difficult to analyze if the column contains active sites. The remarkable neutrality of Rxi® columns solves this problem and allows a wide range of compounds to be analyzed with high sensitivity, often on a single column. All Rxi® columns are exceptionally inert as demonstrated in Figure 3 by high response factors for both pyridine (basic) and 2,4-dinitrophenol (acidic). Rxi® columns reliably produce highly symmetric peaks and improved responses for difficult compounds, indicating greater inertness than columns produced by other manufacturers (Figure 4).

Innovation & Service

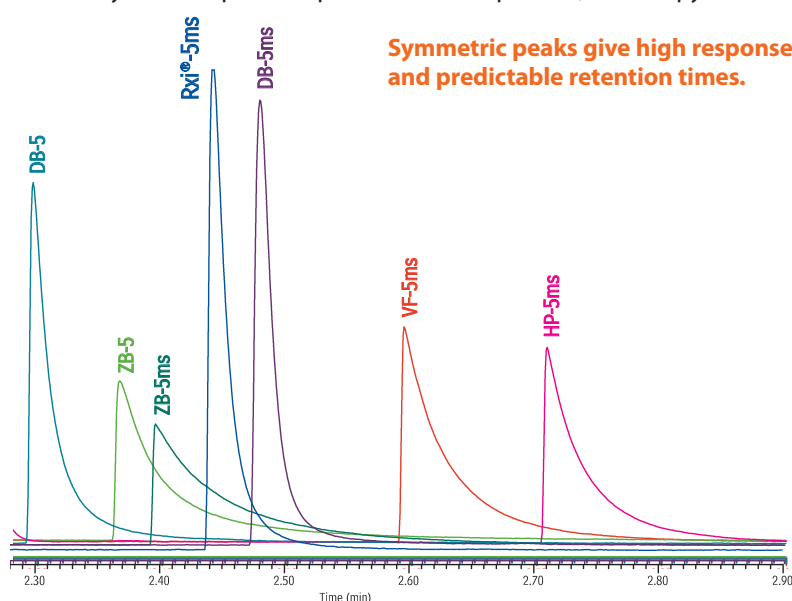
“When my research group needed a GC column for a chiral separation, Restek was the only company that offered to provide us with test columns to evaluate. The willingness of Restek to work with us to find a solution to our separation problem is exceptional.”

Joe Dinnocenzo,
Professor of Chemistry
Director, Center for
Photoinduced Charge Transfer
University of Rochester

How can we help you today?

Contact support@restek.com or your local Restek representative for helpful, knowledgeable technical support.

Figure 4 Rxi® columns are the most inert columns on the market providing the most symmetric peak shape for basic compounds, such as pyridine.



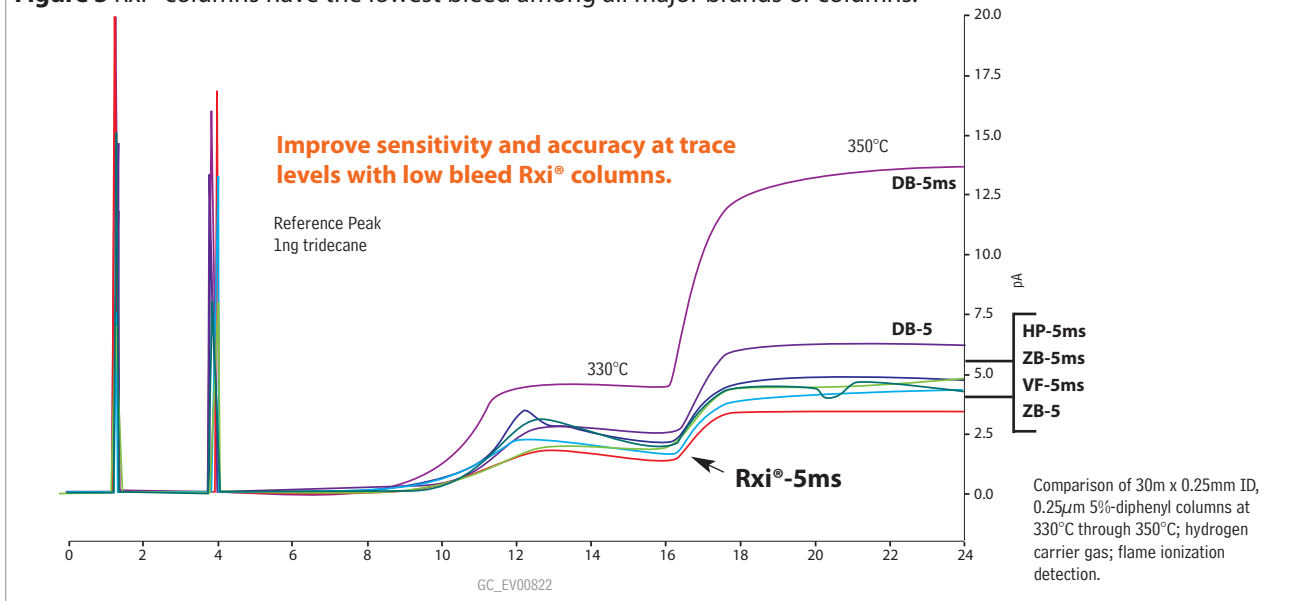
Comparison of 30m x 0.25mm ID, 0.25µm 5% diphenyl columns, 2ng pyridine on-column, helium carrier gas, Oven temp.: 50°C (3 min.) to 180°C @ 35°C/min. (5 min.), Det.: FID @ 250°C

Lowest Bleed

Rxi® columns are more stable at high temperatures than any other manufacturer's column (Figure 5), resulting in higher system sensitivity. This low-bleed characteristic is the result of superior stabilization achieved by optimizing polymer cross-linking and surface deactivation technologies. Benefits of using ultra-low bleed Rxi® columns include:

- Increased sensitivity, for lower detection limits and better matches to mass spectral libraries.
- Faster system stabilization.
- Reduced detector contamination and less downtime for maintenance.

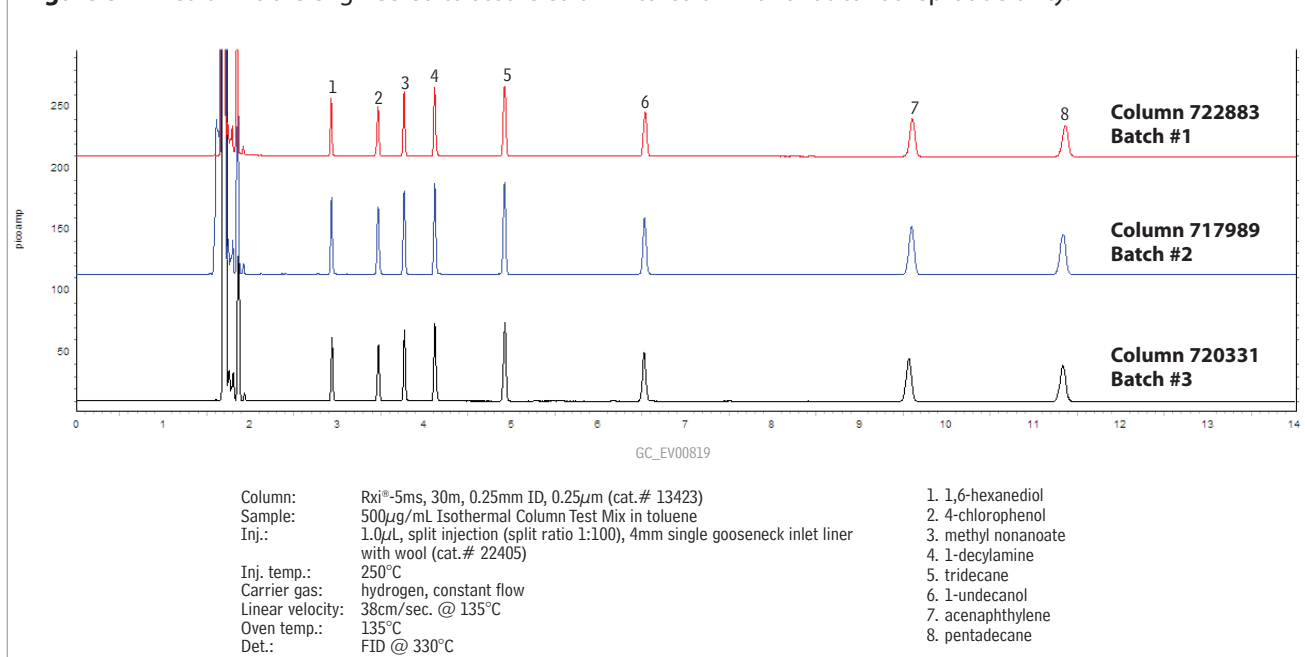
Figure 5 Rxi® columns have the lowest bleed among all major brands of columns.



Exceptional Reproducibility

Chromatographers today need to know that every column they receive is going to perform the same way as the column it replaces. Unmatched manufacturing precision and stringent quality control mean Rxi® columns exceed industry standards, resulting in the best column-to-column reproducibility available as measured by efficiency, retention, bleed, and inertness (Figure 6).

Figure 6 Rxi® columns are engineered to assure column-to-column and lot-to-lot reproducibility.



Rxi® Columns Overview

Column Cross-Reference Table

Rxi® columns produce the same selectivity as competitor columns, but are much more inert, exhibit lower bleed, and offer exceptional reproducibility. For more accurate, reliable trace-level results, choose Rxi® columns.

POLARITY	Restek	Phase Composition	Agilent	Varian/ Chrompack	SGE	Phenomenex	Machery-Nagel	Supelco
	non-polar	Rxi-1ms	100% dimethyl polysiloxane	HP-1ms UI, DB-1ms UI, HP-1, HP-1ms, DB-1 DB-1ms, Ultra-1	VF-1ms CP-Sil 5 CP Sil 5 CB Low Bleed/MS	BP-1	ZB-1 ZB-1ms	Optima-1 Optima-1ms Optima-1ms Accent
	Rxi-1HT	100% dimethyl polysiloxane	DB-1HT	VF-1HT		ZB-1HT		
	Rxi-5ms	5% diphenyl/ 95% dimethyl polysiloxane	HP-5ms UI, HP-5, HP-5ms, DB-5, Ultra-2	CP-Sil 8 CP Sil 8 CB	BP-5	ZB-5 ZB-5ms	Optima-5 Optima-5ms	SPB-5 Equity-5
POLARITY	Rxi-5Sil MS	5% phenyl, 95% dimethyl arylene polysiloxane	DB-5ms UI, DB-5ms	VF-5ms CP-Sil 8 CB Low Bleed/MS	BPX-5	ZB-5ms	Optima-5ms Accent	SLB-5ms
	Rxi-5HT	5% diphenyl/95% dimethyl polysiloxane	DB-5HT	VF-5HT		ZB-5HT		
	Rxi-XLB	arylene/methyl modified polysiloxane	DB-XLB	VF-Xms		MR1	Optima-XLB	
	Rxi-624Sil MS	6% cyanopropylphenyl, 94% dimethyl arylene polysiloxane	DB-624, HP-624	VF-624ms	BP-624	ZB-624	Optima-624	
+ polar	Rxi-35Sil MS	35% phenyl, 65% dimethyl arylene polysiloxane	DB-35ms	VF-35ms	BP-35	MR2	Optima-35ms	
	Rxi-17	50% diphenyl/50% dimethyl polysiloxane	HP-17, DB-17, DB-608, HP-50+	CP-Sil 24 CB		ZB-50	Optima-17	
	Rxi-17Sil MS	50% phenyl, 50% dimethyl arylene polysiloxane	DB-17ms, HP-17, DB-17	VF-17ms CP-Sil 24 CB	BPX-50	ZB-50	Optima-17ms	

Visit www.restek.com/rxi for detailed comparisons and to learn how exceptional Rxi® inertness, bleed, and reproducibility can improve your data.

Use **Rxi® Guard/Retention Gap Columns** to protect your analytical column and help focus analytes.

Rxi® Guard/Retention Gap Columns (fused silica)

- Extend column lifetime.
- Excellent inertness—obtain lower detection limits for active compounds.
- Sharper chromatographic peaks by utilizing retention gap technology.
- Maximum temperature: 360°C.

Nominal ID	Nominal OD	5-Meter	5-Meter/6-pk.	10-Meter	10-Meter/6-pk.
0.25mm	0.37 ± 0.04mm	10029	10029-600	10059	10059-600
0.32mm	0.45 ± 0.04mm	10039	10039-600	10064	10064-600
0.53mm	0.69 ± 0.05mm	10054	10054-600	10073	10073-600

Rxi®-1ms Columns (fused silica)

(nonpolar phase, Crossbond® 100% dimethyl polysiloxane)

- General purpose columns for drugs of abuse, essential oils, hydrocarbons, pesticides, PCB congeners (e.g. Aroclor mixes), sulfur compounds, amines, solvent impurities, simulated distillation, oxygenates, gasoline range organics (GRO), refinery gases.
- Tested and guaranteed for ultra-low bleed—improved signal-to-noise ratio, for better sensitivity and mass spectral integrity.
- Temperature range: -60 °C to 330/350 °C (bleed tested temperature/maximum operating temperature).
- Equivalent to USP G2 phase.

ID	df	temp. limits	15-Meter	30-Meter	60-Meter
0.25mm	0.25 μ m	-60 to 330/350°C	13320	13323	13326
	0.50 μ m	-60 to 330/350°C	13335	13338	13341
	1.00 μ m	-60 to 330/350°C	13350	13353	13356
0.32mm	0.25 μ m	-60 to 330/350°C	13321	13324	13327
	0.50 μ m	-60 to 330/350°C	13336	13339	13342
	1.00 μ m	-60 to 330/350°C	13351	13354	13357
	4.00 μ m	-60 to 330/350°C		13396	
0.53mm	0.50 μ m	-60 to 330/350°C	13337	13340	
	1.00 μ m	-60 to 330/350°C	13352	13355	
	1.50 μ m	-60 to 330/350°C	13367	13370	13373

ID	df	temp. limits	10-Meter	12-Meter	20-Meter	25-Meter	50-Meter
0.10mm	0.10 μ m	-60 to 330/350°C	13301				
0.18mm	0.18 μ m	-60 to 330/350°C			13302		
	0.36 μ m	-60 to 330/350°C			13311		
0.20mm	0.33 μ m	-60 to 330/350°C		13397		13398	13399

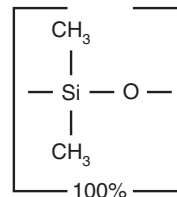
Rxi®-5ms Columns (fused silica)

(low polarity phase, Crossbond® 5% diphenyl/95% dimethyl polysiloxane)

- General purpose columns for semivolatiles, phenols, amines, residual solvents, drugs of abuse, pesticides, PCB congeners (e.g. Aroclor mixes), solvent impurities.
- Most inert column on the market.
- Tested and guaranteed for ultra-low bleed—improved signal-to-noise ratio, for better sensitivity and mass spectral integrity.
- Temperature range: -60 °C to 330/350 °C (bleed tested temperature/maximum operating temperature).
- Equivalent to USP G27 phase.

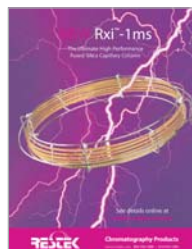
ID	df	temp. limits	15-Meter	30-Meter	60-Meter
0.25mm	0.25 μ m	-60 to 330/350°C	13420	13423	13426
	0.40 μ m	-60 to 330/350°C		13481	
	0.50 μ m	-60 to 330/350°C	13435	13438	13441
	1.00 μ m	-60 to 330/350°C	13450	13453	13456
0.32mm	0.25 μ m	-60 to 330/350°C	13421	13424	13427
	0.50 μ m	-60 to 330/350°C	13436	13439	13442
	1.00 μ m	-60 to 330/350°C	13451	13454	13457
0.53mm	0.25 μ m	-60 to 330/350°C	13422	13425	
	0.50 μ m	-60 to 330/350°C	13437	13440	
	1.00 μ m	-60 to 330/350°C	13452	13455	
	1.50 μ m	-60 to 330/350°C	13467	13470	

ID	df	temp. limits	10-Meter	12-Meter	20-Meter	25-Meter	50-Meter
0.10mm	0.10 μ m	-60 to 330/350°C	13401				
0.18mm	0.18 μ m	-60 to 330/350°C			13402		
	0.30 μ m	-60 to 330/350°C			13409		
	0.36 μ m	-60 to 330/350°C			13411		
0.20mm	0.33 μ m	-60 to 330/350°C		13497		13498	13499

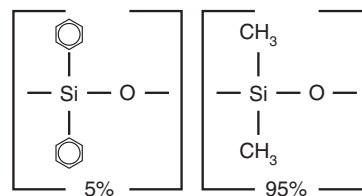
Rxi®-1ms Structuresimilar **phases**

DB-1, DB-1ms, HP-1, HP-1ms, Ultra-1, SPB-1, Equity-1, VF-1ms, CP-Sil 5 CB Low Bleed/MS

free literature

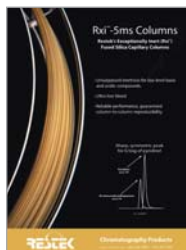
**Rxi®-1ms: The Ultimate High Performance Fused Silica Capillary Column**Download your free copy from www.restek.com

lit. cat.# 580075B

Rxi®-5ms Structuresimilar **phases**

DB-5, HP-5, HP-5ms, Ultra-2, SPB-5, Equity-5, CP-Sil 8

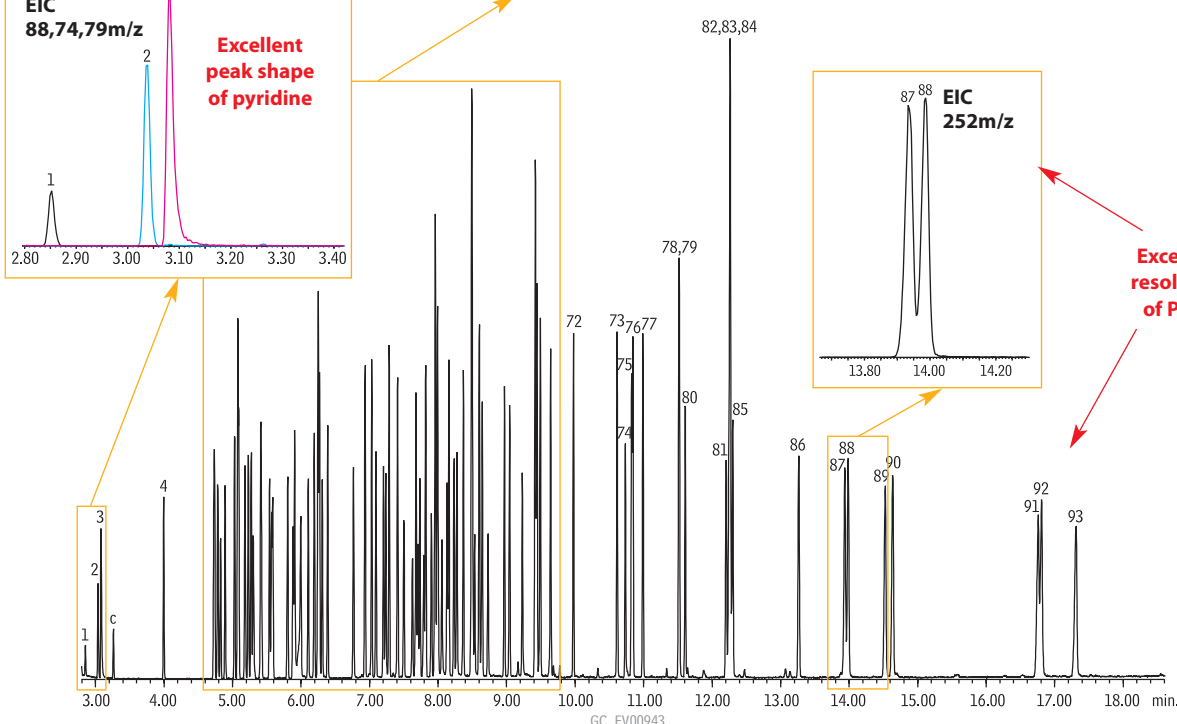
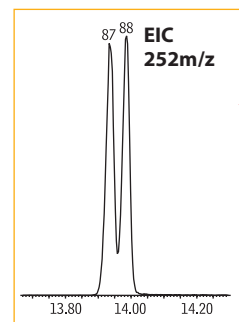
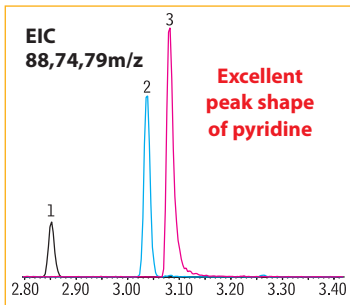
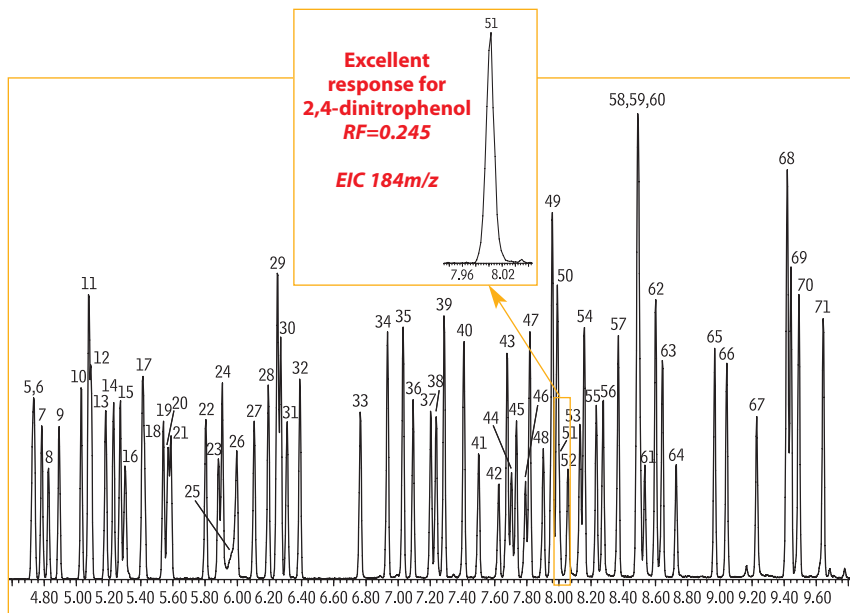
free literature

**Rxi®-5ms Columns**Download your free copy from www.restek.com

lit. cat.# 580046A

Semivolatile organics for US EPA Method 8270 on an Rxi®-5Si1 MS column.

Column: Rxi®-5Si1 MS, 30m, 0.25mm ID, 0.25µm (cat.# 13623)
 Sample: US EPA Method 8270D Mix, 1µL of 10µg/mL (IS 40µg/mL) 8270 MegaMix® (cat.# 31850) Benzoic Acid (cat.# 31879) 8270 Benzidines Mix (cat.# 31852) Acid Surrogate Mix (4/89 SOW) (cat.# 31025) Revised B/N Surrogate Mix (cat.# 31887) 1,4-Dioxane (cat.# 31853) SV Internal Standard Mix (cat.# 31206)
 Inj.: 1.0µL (10ng on-column concentration), 4mm Drilled Uniliner® (hole near bottom) inlet liner (cat.# 20756), pulsed splitless: pulse 25psi @ 0.2 min., 60mL/min. @ 0.15 min.
 Inj. temp.: 250°C
 Carrier gas: helium, constant flow
 Flow rate: 1.2mL/min.
 Oven temp.: 40°C (hold 1.0 min.) to 280°C @ 25°C/min. to 320°C @ 5°C/min. (hold 1 min.)
 Det.: MS
 Transfer line temp: 280°C
 Scan range: 35-550amu
 Ionization: EI
 Mode: scan



- | | | | | | |
|-----------------------------------|---|-------------------------------|--|-----------------------------------|-----------------------------------|
| 1. 1,4-dioxane | 17. 4-methylphenol/3-methylphenol | 34. 2-methylnaphthalene | 51. 2,4-dinitrophenol | 66. hexachlorobenzene | 83. bis(2-ethylhexyl) phthalate |
| 2. <i>n</i> -nitrosodimethylamine | 18. <i>n</i> -nitroso-di- <i>n</i> -propylamine | 35. 1-methylnaphthalene | 52. 4-nitrophenol | 67. pentachlorophenol | 84. chrysene-d12 (IS) |
| 3. pyridine | 19. hexachloroethane | 36. hexachlorocyclopentadiene | 53. 2,4-dinitrotoluene | 68. phenanthrene-d10 (IS) | 85. chrysene |
| c. toluene | 20. nitrobenzene-d5 (SS) | 37. 2,4,6-trichlorophenol | 54. dibenzofuran | 69. phenanthrene | 86. di- <i>n</i> -octyl phthalate |
| 4. 2-fluorophenol (SS) | 21. nitrobenzene | 38. 2,4,5-trichlorophenol | 55. 2,3,5,6-tetrachlorophenol | 70. anthracene | 87. benzo(b)fluoranthene |
| 5. phenol-d6 (SS) | 22. isophorone | 39. 2-fluorobiphenyl (SS) | 56. 2,3,4,6-tetrachlorophenol | 71. carbazole | 88. benzo(k)fluoranthene |
| 6. phenol | 23. 2-nitrophenol | 40. 2-chloronaphthalene | 57. diethyl phthalate | 72. di- <i>n</i> -butyl phthalate | 89. benzo(a)pyrene |
| 7. aniline | 24. 2,4-dimethylphenol | 41. 2-nitroaniline | 58. 4-chlorophenyl phenyl ether | 73. fluoranthene | 90. perylene-d12 (IS) |
| 8. bis(2-chloroethyl) ether | 25. benzoic acid | 42. 1,4-dinitrobenzene | 59. fluorene | 74. benzidine | 91. indeno(1,2,3-cd)pyrene |
| 9. 2-chlorophenol | 26. bis(2-chloroethoxy)methane | 43. dimethyl phthalate | 60. 4-nitroaniline | 75. pyrene-d10 (SS) | 92. dibenzo(a,h)anthracene |
| 10. 1,3-dichlorobenzene | 27. 2,4-dichlorophenol | 44. 1,3-dinitrobenzene | 61. 4,6-dinitro-2-methylphenol | 76. pyrene | 93. benzo(ghi)perylene |
| 11. 1,4-dichlorobenzene-d4 (IS) | 28. 1,2,4-trichlorobenzene | 45. 2,6-dinitrotoluene | 62. <i>n</i> -nitrosodiphenylamine (diphenylamine) | 77. <i>p</i> -terphenyl-d14 (SS) | |
| 12. 1,4-dichlorobenzene | 29. naphthalene-d8 (IS) | 46. 1,2-dinitrobenzene | 63. 1,2-diphenylhydrazine (as azobenzene) | 78. 3,3'-dimethylbenzidine | |
| 13. benzyl alcohol | 30. naphthalene | 47. acenaphthylene | 64. 2,4,6-tribromophenol (SS) | 79. butyl benzyl phthalate | |
| 14. 1,2-dichlorobenzene | 31. 4-chloroaniline | 48. 3-nitroaniline | 65. 4-bromophenyl phenyl ether | 80. bis(2-ethylhexyl) adipate | |
| 15. 2-methylphenol | 32. hexachlorobutadiene | 49. acenaphthene-d10 (IS) | | 81. 3,3'-dichlorobenzidine | |
| 16. bis(2-chloroisopropyl) ether | 33. 4-chloro-3-methylphenol | 50. acenaphthene | | 82. benzo(a)anthracene | |
- c = contaminant

similar phases

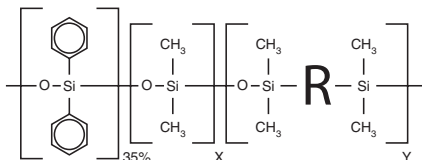
DB-XLB, VF-Xms


tech tip

In combination with an Rxi®-XLB column, simple adjustments to the injection conditions can greatly improve sensitivity for active and high molecular weight Method 525.2 target compounds.

By eliminating contact between the sample and the hot metal surfaces in the injection port, a Drilled Uniliner® inlet liner prevents analytes from degrading in the injection port.

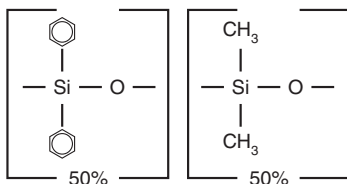
Rxi®-35Si MS Structure



similar phases

DB-35ms, MR2, VF-35ms

Rxi®-17 Structure



similar phases

DB-17, DB-608, CP-Sil 24 CB, HP-50+

Rxi®-XLB Columns (fused silica)

(low polarity proprietary phase)

- General purpose columns exhibiting extremely low bleed. Ideal for many GC/MS applications, including pesticides, PCB congeners (e.g. Aroclor mixes), PAHs.
- Unique selectivity.
- Temperature range: 30 °C to 360 °C.

ID	df	temp. limits*	15-Meter	30-Meter	60-Meter
0.25mm	0.10μm	30 to 340/360°C	13705	13708	
	0.25μm	30 to 340/360°C	13720	13723	13726
	0.50μm	30 to 340/360°C		13738	
	1.00μm	30 to 340/360°C	13750	13753	
0.32mm	0.10μm	30 to 340/360°C		13709	
	0.25μm	30 to 340/360°C	13721	13724	13727
	0.50μm	30 to 340/360°C		13739	
0.53mm	0.10μm	30 to 340/360°C		13754	
	0.50μm	30 to 340/360°C		13740	
	1.50μm	30 to 320/340°C	13767	13770	

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10μm	30 to 340/360°C	43701	
0.18mm	0.18μm	30 to 340/360°C		43702

*Maximum temperatures listed are for 15- and 30-meter lengths. Longer lengths may have a slightly reduced maximum temperature.

Rxi®-35Si MS Columns (fused silica)

(midpolarity phase; equivalent to 35% phenyl/65% dimethyl arylene polysiloxane)

- Special selectivity and excellent inertness for substituted polar compounds, such as drugs, pesticides, herbicides, PCBs, phenols, etc.
- Very low bleed phase for GC/MS analysis.
- Extended temperature range: 50 °C to 340/360 °C.

ID	df	temp. limits	15-Meter	30-Meter
0.25mm	0.25μm	50 to 340/360°C	13820	13823
	0.50μm	50 to 340/360°C	13835	13838
	1μm	50 to 320/340°C	13850	13853
0.32mm	0.25μm	50 to 340/360°C	13821	13824
	0.50μm	50 to 340/360°C	13836	13839
	1μm	50 to 320/340°C	13851	13854
0.53mm	0.50μm	50 to 320/340°C	13837	13840
	1μm	50 to 320/340°C	13852	13855



More dimensions are now available!

Rxi®-17 Columns (fused silica)

(midpolarity phase; Crossbond® 50% diphenyl/50% dimethyl polysiloxane)

- General purpose columns for pesticides, herbicides, rosin acids, phthalate esters, triglycerides, sterols.
- Temperature range: 40 °C to 320 °C.

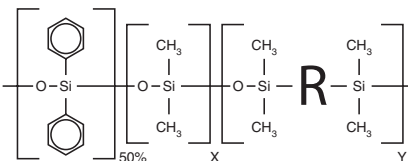
ID	df	temp. limits	15-Meter	30-Meter
0.25mm	0.25μm	40 to 280/320°C	13520	13523
	0.50μm	40 to 280/320°C	13535	13538
	1.00μm	40 to 280/320°C	13550	13553
0.32mm	0.25μm	40 to 280/320°C	13521	13524
	0.50μm	40 to 280/320°C	13536	13539
	1.00μm	40 to 280/320°C	13551	13554
0.53mm	0.25μm	40 to 280/320°C	13522	13525
	0.50μm	40 to 280/320°C	13537	13540
	0.83μm	40 to 280/320°C		13569
	1.00μm	40 to 280/320°C	13552	13555
	1.50μm	40 to 280/320°C	13567	13570

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10μm	40 to 280/320°C	13501	
0.18mm	0.18μm	40 to 280/320°C		13502

Rxi®-17Si MS Columns (fused silica)

(midpolarity Crossbond® silarylene phase; equivalent to 50% phenyl/50% dimethyl arylene polysiloxane)

- 340/360 °C upper temperature limits.
- Excellent inertness and selectivity for active environmental compounds, such as PAHs.
- Equivalent to USP phase G3.
- Low-bleed for use with sensitive detectors, such as MS.
- Excellent separation of EU-PAHs, including fluoranthenes.

**Rxi®-17Si MS Structure****similar phases**

DB-17ms, VF-17ms, BPX-50

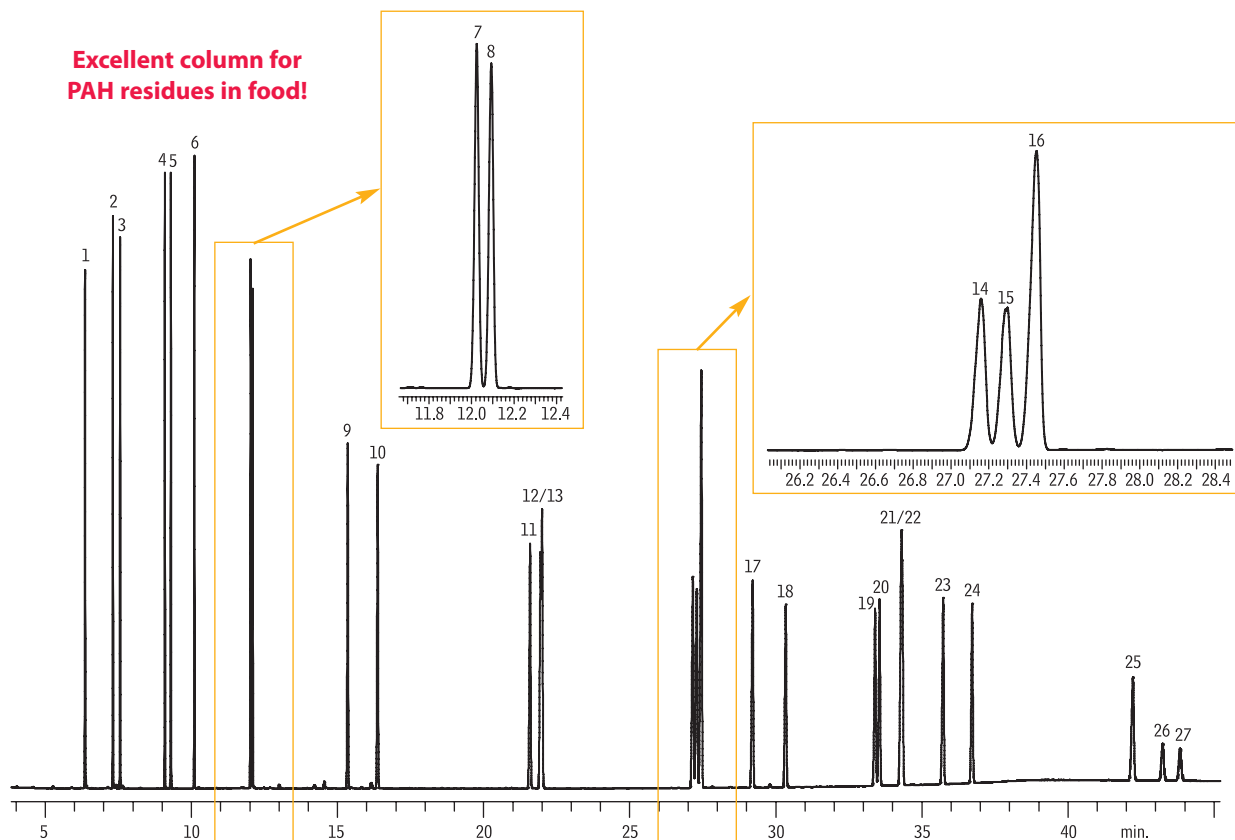
ID	df	temp. limits*	15-Meter	30-Meter	60-Meter
0.25mm	0.25 μ m	40 to 340/360°C	14120	14123	14126
0.32mm	0.25 μ m	40 to 340/360°C	14121	14124	

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10 μ m	40 to 340/360°C	14101	
0.18mm	0.18 μ m	40 to 340/360°C		14102
	0.36 μ m	40 to 340/360°C		14111

*Maximum temperatures listed are for 15- and 30-meter lengths. Longer lengths may have a slightly reduced maximum temperature.

Polycyclic Aromatic Hydrocarbons on Rxi®-17Si MS

**Excellent column for
PAH residues in food!**



GC_EV1160

1. Naphthalene
2. 2-Methylnaphthalene
3. 1-Methylnaphthalene
4. Acenaphthylene
5. Acenaphthene
6. Fluorene
7. Phenanthrene
8. Anthracene
9. Fluoranthene
10. Pyrene
11. Benz[*a*]anthracene
12. Chrysene
13. Triphenylene
14. Benzo[*b*]fluoranthene

15. Benzo[*k*]fluoranthene
16. Benzo[*j*]fluoranthene
17. Benzo[*a*]pyrene
18. 3-Methylcholanthrene
19. Dibenz[*a,h*]acridine
20. Dibenz[*a,j*]acridine
21. Indeno[1,2,3-*cd*]pyrene
22. Dibenz[*a,h*]anthracene
23. Benzo[*ghi*]perylene
24. 7H-Dibenzo[*c,g*]carbazole
25. Dibenzo[*a,e*]pyrene
26. Dibenzo[*a,i*]pyrene
27. Dibenzo[*a,h*]pyrene

**Column
Sample**

Diluent:
Conc.:
Injection
Inj. Vol.:
Liner:
Inj. Temp.:
Purge Flow:

Oven

Oven Temp:
Carrier Gas
Flow Rate:
Detector
Instrument
Acknowledgement

Rxi®-17Si MS, 30 m, 0.25 mm ID, 0.25 μ m (cat.# 14123)
SV Calibration Mix #5 / 610 PAH Mix (cat.# 31011)
EPA Method 8310 PAH Mixture (cat.# 31841)
dichloromethane
10 ppm

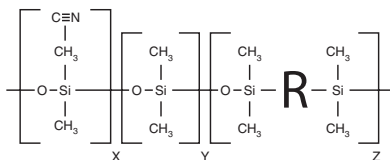
0.5 μ L splitless (hold 1.75 min.)
Auto SYS XL PSS Split/Splitless w/Wool (cat.# 21718)
320 °C
75 mL/min.

65 °C (hold 0.5 min.) to 220 °C at 15 °C/min. to 330 °C at 4 °C/min. (hold 15 min.)
He, constant flow
2.0 mL/min.
FID @ 320 °C
PE Clarus 600 GC

Instrument provided by PerkinElmer



Rxi®-624Sil MS Structure



Rxi®-624Sil MS Columns (fused silica)

(midpolarity Crossbond® silarylene phase; equivalent to 6% cyanopropylphenyl/94% dimethyl arylene polysiloxane)

- Low bleed, high thermal stability column—maximum temperatures up to 320 °C.
- Inert—excellent peak shape for a wide range of compounds, including acidic and basic compounds.
- Selective—highly selective for residual solvents, great choice for USP<467>.
- Manufactured for column-to-column reproducibility—well-suited for validated methods.

ID	df	temp. limits	20-Meter	30-Meter	60-Meter
0.18mm	1.00µm	-20 to 300/320°C	13865		
0.25mm	1.40µm	-20 to 300/320°C		13868	
0.32mm	1.80µm	-20 to 300/320°C		13870	13872
0.53mm	3.00µm	-20 to 280/300°C		13871	

similar phases

DB-624, HP-624, VF-624, BP-624, ZB-624, AT-624, 007-1301, G43R



free literature

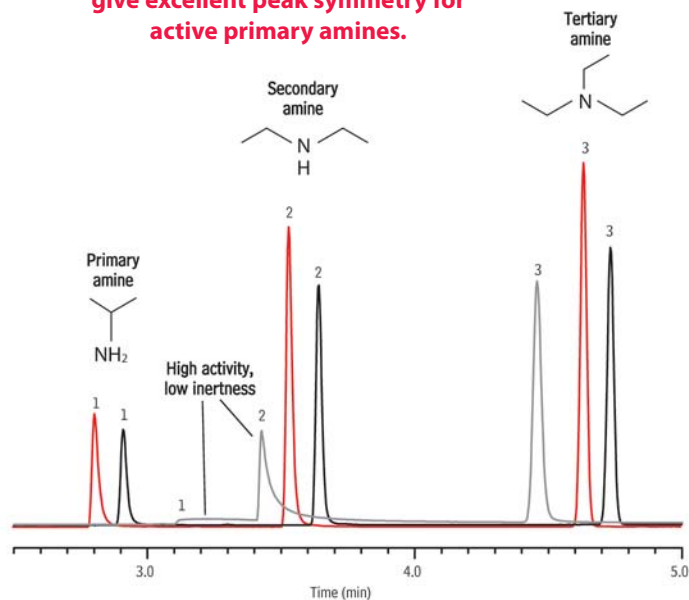
Rxi®-624Sil MS: The "Go To" GC Column for Fast, Effective Volatile Impurities Method Development

Download your free copy from www.restek.com

lit. cat.# PHFL1245

Inertness comparison (basic compounds): primary, secondary, and tertiary amines on an Rxi®-624Sil MS column.

Highly inert Rxi®-624Sil MS columns give excellent peak symmetry for active primary amines.



Peaks	Conc. (µg/mL)
1. Isopropylamine	100
2. Diethylamine	100
3. Triethylamine	100

Column	Rxi®-624SilMS, 30 m, 0.32 mm ID, 1.8 µm (cat.# 13870)
Sample	
Diluent:	DMSO
Conc.:	100 µg/mL
Injection	
Inj. Vol.:	1 µL split (split ratio 20:1)
Liner:	5mm Single Gooseneck with Wool (cat.# 22973-200.1)
Inj. Temp.:	250 °C
Oven	
Oven Temp:	50 °C (hold 1 min.) to 200 °C at 20 °C/min. (hold 5 min.)
Carrier Gas	He, constant flow
Linear Velocity:	37 cm/sec.
Detector	FID @ 250 °C
Instrument	Agilent/HP6890 GC

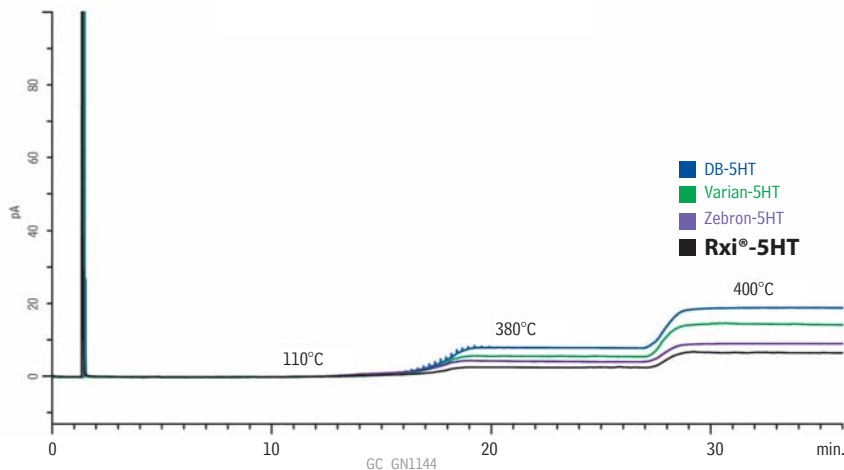
NEW!



Looking for an Inert and Low Bleed High Temp Column?

High temperature columns have thin films so they need to be thoroughly deactivated. Restek's Rxi® process offers better inertness and lower bleed than any other manufacturer.

Bleed Profiles of 5HT Columns



Column: Rxi®-5HT (see notes for competitors), 30 m, 0.25 mm ID, 0.10 μ m (cat.# 13908)
For analytical conditions, visit www.restek.com and search for chromatogram GC_GN1144

Replace DB-5ht, ZB-5HT, and VF-5ht and benefit from better data and lower bleed!

Rxi®-5HT Columns (fused silica)

(low polarity phase; 5% diphenyl/95% dimethyl polysiloxane)

- 40% longer lifetime from specially designed fused silica tubing.
- Columns processed for high temperature applications.
- Temperature range: -60 to 400 °C*.

ID	df	temp. limits	15-Meter	30-Meter
0.25mm	0.10 μ m	-60 to 400°C	13905	13908
	0.25 μ m	-60 to 400°C		13923
0.32mm	0.10 μ m	-60 to 400°C	13906	13909
	0.25 μ m	-60 to 400°C		13924
0.53mm	0.15 μ m	-60 to 400°C		13910

*Column is capable of going to 430°C, but column lifetime will be reduced.

Rxi®-1HT Columns (fused silica)

(100% dimethyl polysiloxane)

- Columns processed for high temperature applications.
- Temperature range: -60 to 400 °C*.

ID	df	temp. limits	15-Meter	30-Meter
0.25mm	0.10 μ m	-60 to 400°C	13950	13951
	0.25 μ m	-60 to 400°C		13952
0.32mm	0.10 μ m	-60 to 400°C	13953	13954
	0.25 μ m	-60 to 400°C		13955
0.53mm	0.15 μ m	-60 to 400°C		13956

*Column is capable of going to 430°C, but column lifetime will be reduced.

NEW!