

NEW Rxi™ -1ms

The Ultimate High Performance
Fused Silica Capillary Column



See details online at
www.restek.com/rxi



Chromatography Products

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New Rxi™-1ms Fused Silica Columns

Restek's Exceptionally Inert (Rxi™) Fused Silica Capillary Columns

- Stable at high temperatures; improved signal to noise ratios.
- Excellent inertness for acids and bases; predictable column performance.
- Engineered to assure column to column reproducibility.

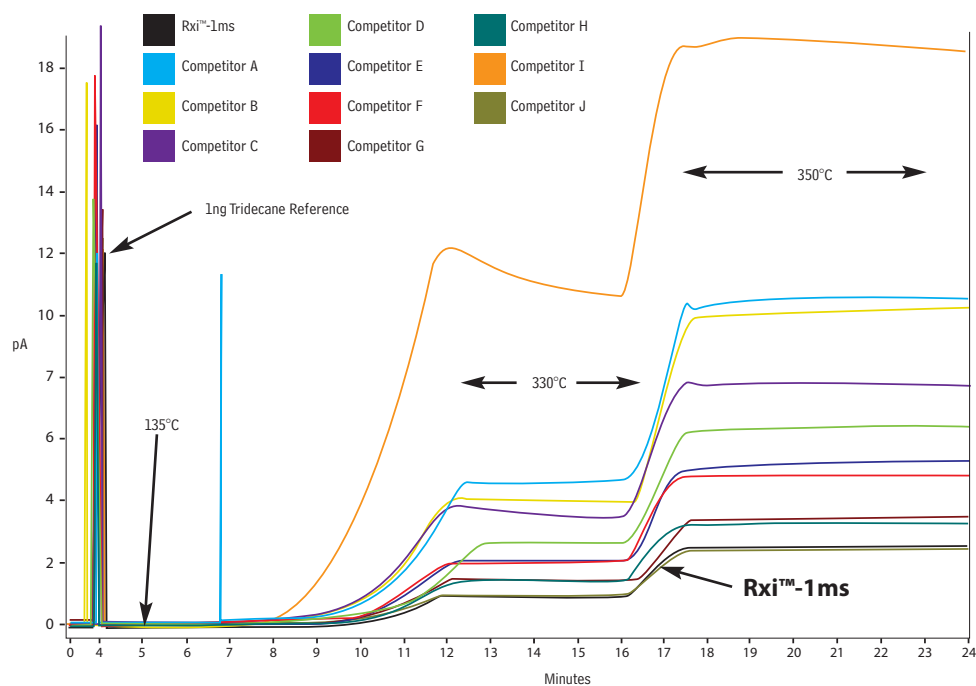
The combination of **ultra low bleed** and **unsurpassed inertness** make the Rxi™-1ms the **best column choice** for analysis using a 100% Polydimethyl siloxane stationary phase.

Lowest Bleed

Restek chemists have developed new GC column manufacturing technology that assures low bleed, unsurpassed inertness, and exceptionally reproducible columns from batch to batch. The reduced bleed and increased inertness produced by the new technology result in increased signal to noise ratios and thus lower detection limits for active compounds. The Rxi™-1ms column offers maximum compound response for quantitative GC and GC/MS analysis.

We compared the bleed profiles of ten competitor columns at both 330°C and 350°C to the Rxi™-1ms column. At both temperatures the Rxi™-1ms column exhibits the lowest bleed level or equivalent of all the columns tested.

Figure 1 The Rxi™-1ms column has the lowest bleed available, allowing better accuracy and lower detection limits for active compounds.



please note

Columns included in the comparison are BP-1, DB-1, DB-1ms, EQ-1, HP-1, HP-1ms, Rtx-1, **Rxi-1ms**, VF-1ms, ZB-1, and ZB-1ms. The bleed profiles in Figure 1 are labeled randomly.

Column: 100% dimethyl polysiloxane 30m, 0.25 ID, 0.25 μ m
Sample: 1 ng. on column tridecane in dichloromethane
Inj.: 1.0 μ L split (split ratio 40:1), 4mm splitless inlet liner (cat.# 20799)
Inj. temp.: 250°C
Carrier gas: helium, constant pressure
Linear velocity: 60cm/sec. @ 135°C
Oven temp.: 135°C (hold 6 min.) to 330°C @ 30°C/min. (hold 4 min.) to 350°C @ 15°C/min. rate (hold 6 min.)
Det.: FID @350°C

Unsurpassed Inertness

The Rxi™-1ms exhibits excellent inertness for both acidic and basic compounds. We used 2, 4-dinitrophenol (acidic) and pyridine (basic) to evaluate the Rxi™-1ms column. This test is stringent, with an on-column amount of 0.5ng for each compound. Surface activity in the column is revealed by the peak shapes and response factors for acidic and basic compounds. The outstanding inertness of the Rxi™-1ms column allows acidic and basic compounds to be run under the same conditions, as shown below.

Figure 2 Basic analytes on an Rxi™-1ms column (0.5ng each; extracted ion chromatograms).

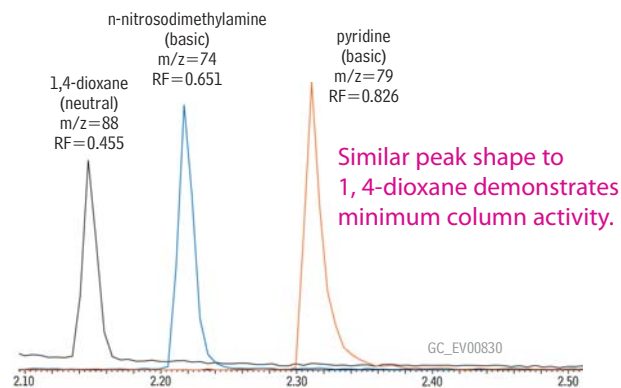


Figure 3 Acidic analyte on an Rxi™-1ms column (0.5ng; extracted ion chromatogram).

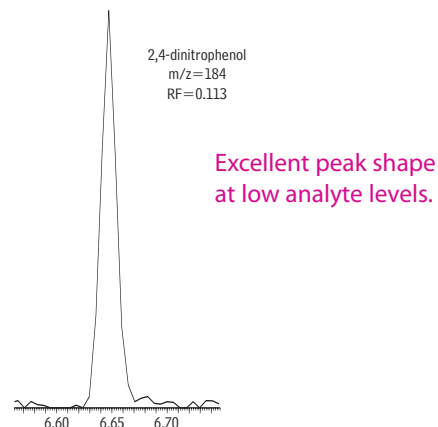
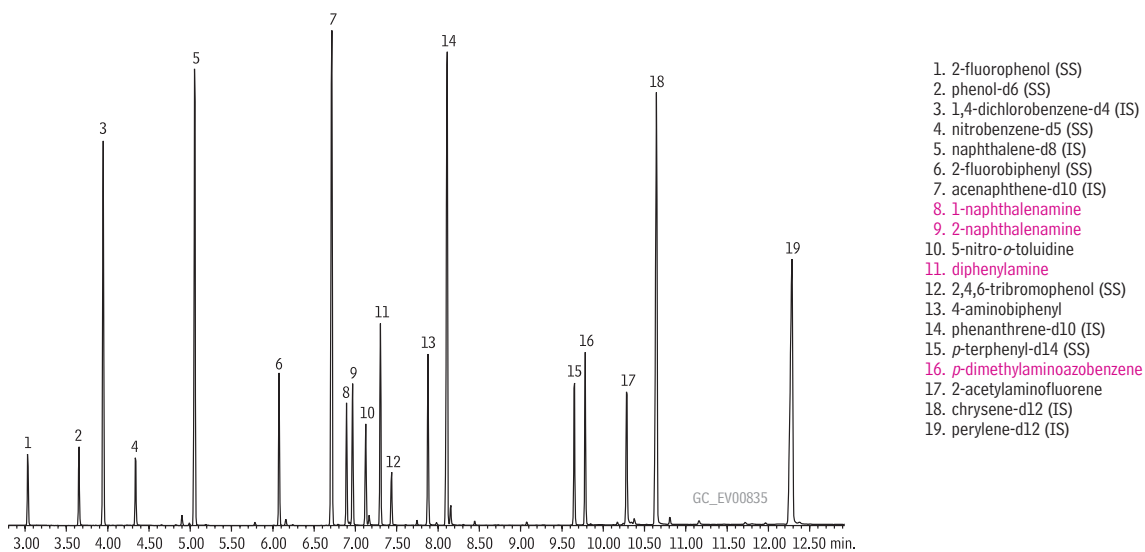


Figure 4 Outstanding peak symmetry even for difficult basic compounds at 5.0ng on an Rxi™-1ms column.



Column: Rxi™-1ms, 30m, 0.25mm ID, 0.25 μ m (cat.# 13323)
 Sample: Custom Appendix IX Mix, plus SV Internal Standard Mix (cat.# 31206), B/N Surrogate Mix (4/89 SOW) (cat.# 31024), Acid Surrogate Mix (4/89 SOW) (cat.# 31025)
 Inj.: 1.0 μ L, 5 μ g/mL each analyte (internal standards 25 μ g/mL), split (10:1)
 4mm Drilled Uniliner® inlet liner (hole at bottom) (cat.# 20771)
 Instrument: Agilent 6890
 Inj. temp.: 250°C
 Carrier gas: helium, constant flow

Flow rate: 1.2mL/min.
 Oven temp.: 50°C (hold 0.5 min.) to 300°C @ 25°C/min. (hold 5 min.)
 Det.: Agilent 5973 MSD
 Transfer line temp.: 280°C
 Scan range: 35-550 amu
 Solvent delay: 2.35 min.
 Tune: DFTPP
 Ionization: EI

Conclusion

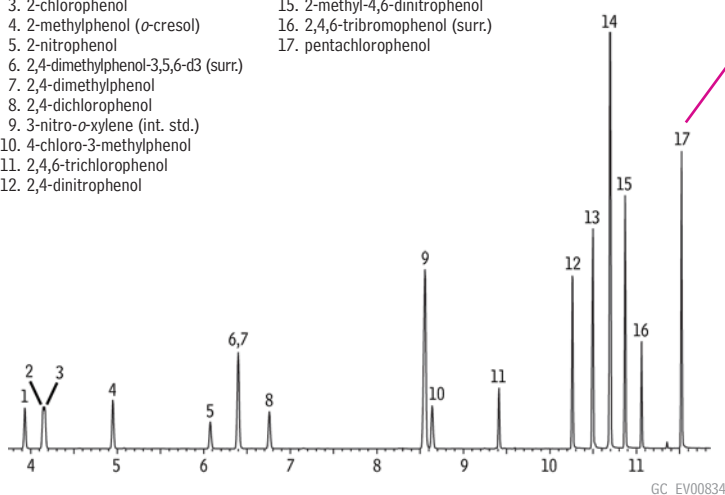
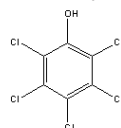
The Rxi™-1ms column is the new industry standard for 100% dimethyl polysiloxane columns. Column bleed is the lowest in the industry, improving compound signal to noise ratios and allowing lower detection limits for active compounds. The unsurpassed inertness of the column allows both acidic and basic compounds to be analyzed, often under the same conditions. We guarantee you will be 100% satisfied with the performance of the Rxi™-1ms column.

Figure 5 Excellent peak shape for acidic compounds, even phenols, at 5.0ng on an Rxi™-1ms column (extracted ion chromatogram).

1. phenol
2. 2-chlorophenol-d4 (surr.)
3. 2-chlorophenol
4. 2-methylphenol (*o*-cresol)
5. 2-nitrophenol
6. 2,4-dimethylphenol-3,5,6-d3 (surr.)
7. 2,4-dimethylphenol
8. 2,4-dichlorophenol
9. 3-nitro-*o*-xylene (int. std.)
10. 4-chloro-3-methylphenol
11. 2,4,6-trichlorophenol
12. 2,4-dinitrophenol

13. 4-nitrophenol
14. 2,3,4,5-tetrachlorophenol (int. std.)
15. 2-methyl-4,6-dinitrophenol
16. 2,4,6-tribromophenol (surr.)
17. pentachlorophenol

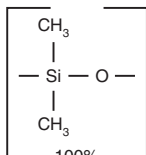
pentachlorophenol



Column: Rxi™-1ms, 30m, 0.25mm ID, 0.25µm (cat.# 13323)
 Sample: US EPA Method 528 Mix: Phenols Fortification Mix, EPA 528 (cat.# 31695), Internal Standard Mix, EPA 528 (cat.# 31696), Surrogate Standard Mix, EPA 528 (cat.# 31697)
 Inj.: 1.0µL, 5µg/mL each analyte (internal standards 25µg/mL), split (10:1) 4mm Drilled Uniliner® inlet liner (hole at bottom) (cat.# 20771)
 Instrument: Agilent 6890
 Inj. temp.: 250°C
 Carrier gas: helium, constant flow
 Flow rate: 1.2mL/min.
 Oven temp.: 70°C (hold 0.5 min.) to 130°C @ 8°C/min., to 300°C @ 50°C/min. (hold 1 min.)
 Det.: Agilent 5973 MSD

replace these similar phases

DB-1, DB-1ms, HP-1,
 HP-1ms, Ultra-1, SPB-1,
 Equity-1, ZB-1, ZB-1ms,
 VF-1ms, Rtx-1, Rtx-1ms



Restek Trademarks:
 Crossbond, Restek logo, Rtx,
 Rxi, Uniliner.

For other trademark
 attributions, please refer to
 our catalog.

Rxi™-1ms Fused Silica Columns

- General purpose columns for drugs of abuse, essential oils, hydrocarbons, pesticides, polychlorinated biphenyl (PCB) congeners or (e.g.) Aroclor® mixes, sulfur compounds, amines, solvent impurities, simulated distillation, oxygenates, gasoline range organics (GRO), refinery gases.
- Nonpolar phase (Crossbond® 100% dimethyl polysiloxane) Equivalent to USP G2 phase.
- Temperature range: -60°C to 330/350°C
 (330°=bleed tested temperature/350°=maximum operating temperature).

(Crossbond® 100% dimethyl polysiloxane)

ID	df (µm)	temp. limits	15-Meter	30-Meter	60-Meter	
0.25mm	0.25	-60 to 330/350°C	13320	13323	13326	
	0.50	-60 to 330/350°C	13335	13338	13341	
	1.00	-60 to 330/350°C	13350	13353	13356	
0.32mm	0.25	-60 to 330/350°C	13321	13324	13327	
	0.50	-60 to 330/350°C	13336	13339	13342	
	1.00	-60 to 330/350°C	13351	13354	13357	
0.53mm	0.50	-60 to 330/350°C	13337	13340		
	1.00	-60 to 330/350°C	13352	13355		
	1.50	-60 to 330/350°C	13367	13370	13373	
ID	df (µm)	temp. limits	12-Meter	20-Meter	25-Meter	50-Meter
0.18mm	0.18	-60 to 330/350°C		13302		
0.20mm	0.33	-60 to 330/350°C	13397		13398	13399

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