

Fast GC Using 0.10 mm and 0.15 mm ID Capillary Columns

- Significantly reduces analysis time without sacrificing resolution.
- Higher column efficiencies speed up separations.
- Ideal for GC/MS.
- Excellent for comprehensive GC (GCxGC) as second dimension column.

Narrow bore (less than or equal to 0.15 mm ID) columns are attractive alternatives to conventional-diameter capillary columns because they provide faster analysis times and higher resolving power. As column ID decreases, column efficiency (plates/meter) greatly increases. Therefore, resolution can be achieved with a shorter column, which decreases analysis time. In addition, narrow bore columns are more compatible with GC/MS since typical flow rates are 1.0 mL/min. or less, eliminating the need to split the column flow at the MS interface. Conventional methods are easily converted to narrow bore columns, but some research may be necessary due to lower column capacities and higher back pressures.

Rxi®-1ms Columns for Fast GC (fused silica)

(nonpolar phase; Crossbond® 100% dimethyl polysiloxane)

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10 μ m	-60 to 330/350°C	13301	
0.15mm	0.15 μ m	-60 to 330/350°C	43800	43801
	2.0 μ m	-60 to 330/350°C		43802

Rxi®-5ms Columns for Fast GC (fused silica)

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

ID	df	temp. limits	10-Meter
0.10mm	0.10 μ m	-60 to 330/350°C	13401

Rxi®-5Sil MS Columns for Fast GC (fused silica)

(low polarity Crossbond® silarylene phase; selectivity close to 5% diphenyl/95% dimethyl polysiloxane)

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10 μ m	-60 to 330/350°C	43601	
0.15mm	0.15 μ m	-60 to 330/350°C	43815	\$295 43816
	2.0 μ m	-60 to 330/350°C		43817

Rxi®-17 Columns for Fast GC (fused silica)

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

ID	df	temp. limits	10-Meter
0.10mm	0.10 μ m	40 to 280/320°C	13501

Rxi®-17Sil MS Columns for Fast GC (fused silica)

(midpolarity Crossbond® silarylene phase; equivalent to 50% phenyl methyl polysiloxane)

ID	df	temp. limits	10-Meter	20-Meter
0.15mm	0.15 μ m	40 to 340/360°C	43820	43821

Rtx®-200 Columns for Fast GC (fused silica)

(midpolarity phase; Crossbond® trifluoropropylmethyl polysiloxane)

ID	df	temp. limits	10-Meter	20-Meter
0.15mm	0.15 μ m	-20 to 320/340°C	43835	43836

Stabilwax® Columns for Fast GC (fused silica)

(polar phase; Crossbond® Carbowax® polyethylene glycol)

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10 μ m	40 to 250/260°C	42601	
0.15mm	0.15 μ m	40 to 250/260°C	43830	43831

Rtx®-LC50 Columns for Fast GC (fused silica)

(polar, dimethyl [50% liquid crystal] polysiloxane)

ID	df	temp. limits	10-Meter
0.10mm	0.10 μ m	100°C to 270°C	19736

Rtx®-CLPesticides for Fast GC (fused silica)

(proprietary Crossbond® phase)

ID	df	temp. limits	10-Meter
0.10mm	0.10 μ m	-60 to 310/330°C	43101

Rtx®-CLPesticides2 for Fast GC (fused silica)

(proprietary Crossbond® phase)

ID	df	temp. limits	10-Meter	20-Meter
0.10mm	0.10 μ m	-60 to 310/330°C	43301	43302

**Operating considerations for 0.10 mm ID columns**

The small degree of extra care involved in using 0.10 mm ID columns will be more than repaid by faster analyses and higher column efficiencies. 0.10 mm ID columns require higher operating pressures (>40 psig), which can result in more ferrule leaks, septum leaks, and sample flashback through leaking syringe plungers. Connections must be monitored and leak-checked more often. Operating a 0.10 mm ID column below optimum pressure will cause poor resolution and other poor performance. Sample capacity also is reduced, relative to wider-bore columns. Take care to not overload the column, and make sure you inject quickly when using split injection.