

**Fast GC Using 0.10mm ID Capillary Columns**

- Significantly reduces analysis time without sacrificing resolution.
- Highest column efficiencies, great for GC/MS.
- Excellent for comprehensive GC (2D-GC) as second dimension column.

Narrow bore (0.10mm 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. For instance, a 0.10mm ID column (6,700 plates/meter) is 160% more efficient than a 0.25mm ID column (2,500 plates/meter). Therefore, resolution can be achieved with a shorter column, which decreases the analysis time.

The low flow rates used with a 0.10mm ID column are compatible with the pumping capacity of most GC/MS systems. In addition, a 0.10mm ID column prevents “pumping out the column” or operating below atmospheric pressure, thereby minimizing instrument downtime.

The outer diameter of the 0.10mm ID tubing is the same as 0.25mm ID tubing, which makes connections less complicated.



**Jaap de Zeeuw**  
International  
GC Specialist

**Rxi®-1ms Columns (fused silica)**

(Crossbond® 100% dimethyl polysiloxane)

ID	df (µm)	temp. limits	10-Meter	new!
0.10mm	0.10	-60 to 330/350°C	13301	

**Rxi®-5ms Columns (fused silica)**

(Crossbond® 5% diphenyl/95% dimethyl polysiloxane)

ID	df (µm)	temp. limits	10-Meter	new!
0.10mm	0.10	-60 to 330/350°C	13401	

**Rxi®-5Sil MS Columns (fused silica)**

(Crossbond®, selectivity similar to 5% diphenyl/95% dimethyl polysiloxane)

ID	df (µm)	temp. limits	10-Meter	new!
0.10mm	0.10	-60 to 330/350°C	43601	

**Rxi®-17 Columns (fused silica)**

(Crossbond® 50% diphenyl/50% dimethyl polysiloxane)

ID	df (µm)	temp. limits	10-Meter	new!
0.10mm	0.10	40 to 280/320°C	13501	

**Rtx®-Wax Columns (fused silica)**

(Crossbond® Carbowax® polyethylene glycol)

ID	df (µm)	temp. limits	10-Meter	20-Meter
0.10mm	0.10	20 to 250°C	41601	41602
	0.20	20 to 240/250°C	41603	41604

**Rt™-LC50 Columns (fused silica)**

ID	df (µm)	temp. limits	10-Meter
0.10mm	0.10	100°C to 270°C	19736

**Rtx®-CLPesticides (fused silica)**

ID	df (µm)	temp. limits	10-Meter
0.10mm	0.10	-60 to 310/330°C	43101

**Rtx®-CLPesticides2 (fused silica)**

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

**tech tip****Operating considerations for 0.10mm ID columns**

The small degree of extra care involved in using 0.10mm ID columns will be more than repaid by faster analyses and higher column efficiencies. 0.10mm ID columns require high operating pressures (40psig), 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 0.10mm 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 fast when using split injection.