

MS Columns - Low-Bleed Stationary Phases for Capillary Gas Chromatography / Mass Spectrometry

Conventional capillary gas chromatography (GC) columns use liquid stationary phases, many of which are crossbonded to yield a higher working temperature. Even with crossbonding, however, the liquid stationary phase will slowly elute. This elution of the stationary phase, also termed column bleed, is more detectable at higher temperatures and is typically observed as an increasing baseline that follows the oven temperature program. Depending on the method of detection, column bleed may not be an issue for certain separations. If the capillary column is connected to a sensitive detector like a mass spectrometer (MS), then column bleed can cause a number of problems - specifically misidentification of analytes, loss of sensitivity, and inaccurate quantitation.

The level of column bleed will effect the sensitivity of **any MS, especially ion trap instruments**, which utilize automatic gain control. As the level of column bleed increases, so does the signal (from bleed ions in the mass spectra of analytes and unknowns) and sensitivity (or detection limit) severely degrades. The contribution of bleed ions to the mass spectra can result in misidentification of compounds, requiring laboratory personnel to subtract these ions before performing library searches. Doing so can add considerable time to their analyses. Finally, if bleed ions contribute to the signal of the quantitation mass, quantitation of analytes and unknowns is miscalculated. For these reasons, it is critical that analysts choose the lowest-bleed columns available for GC/MS applications.

Many manufacturers offer "MS" phases for applications requiring low bleed. In many cases, this represents nothing more than the reporting of the bleed signal when the column was tested for a single analysis at the manufacturer. Restek has recently developed new chemistry that allows us to manufacture true low-bleed MS phases. These columns exhibit a much lower column bleed than was previously available. We offer in addition to the existing Rtx-1MS column - Rtx-1 NIS, Rtx-35MS, and Rtx-200MS columns designed specifically for GC/MS analyses. This allows GC/MS analysts a wide range of stationary phases, while guaranteeing low column bleed. The combination of Restek's new chemistry and rigorous QA testing ensures that each MS column exceeds requirements of the most sensitive mass spectrometers.

Rtx-1MS (Fused Silica) (Crossbond[®] 100% dimethyl polysiloxane) Stable to 360°C

Custom lengths
and film
thicknesses
are available
ENQUIRE !

Rtx[®]-1MS (Fused Silica)

(Crossbond[®] 100% dimethyl polysiloxane) Stable to 360°C



ID	df (µm)	temp. limits	15-Meter	30-Meter
0.25mm	0.10	-60 to 330/350°C	11608	11608
	0.25	-60 to 330/350°C	11620	11621
	0.50	-60 to 330/350°C	11635	11638
	1.00	-60 to 325/350°C	11650	11653
0.32mm	0.10	-60 to 330/350°C	11606	11609
	0.25	-60 to 330/350°C	11621	11624
	0.50	-60 to 330/350°C	11636	11639
	1.00	-60 to 325/350°C	11651	11654
0.53mm	0.50	-60 to 320/340°C	11637	11640
	1.00	-60 to 320/340°C	11652	11655
	1.50	-60 to 310/350°C	11667	11670

GC Columns

Low Bleed MS Columns

Rtx[®]-5MS (Fused Silica)

(Crossbond[®] 5% diphenyl - 95% dimethyl polysiloxane) Stable to 360°C

ID	df (µm)	temp. limits	15-Meter	30-Meter	60-Meter
0.25mm	0.10	-60 to 330/350°C	12605	12608	12611
	0.25	-60 to 330/350°C	12620	12623	12626
	0.50	-60 to 330/350°C	12635	12638	12641
	1.00	-60 to 325/350°C	12650	12653	
0.32mm	0.10	-60 to 330/350°C	12606	12609	12612
	0.25	-60 to 330/350°C	12621	12624	12627
	0.50	-60 to 330/350°C	12636	12639	12642
	1.00	-60 to 325/350°C	12651	12654	
0.53mm	0.50	-60 to 320/340°C	12637	12640	
	1.00	-60 to 320/340°C	12652	12655	
	1.50	-60 to 310/330°C	12667	12670	

Rtx[®]-35MS (Fused Silica)

(Crossbond[®] 35% diphenyl - 65% dimethyl polysiloxane) Stable to 340°C



ID	df (µm)	temp. limits	15-Meter	30-Meter
0.25mm	0.10	-20 to 320/340°C	14605	14608
	0.25	-20 to 320/340°C	14620	14623
	0.50	-20 to 310/330°C	14635	14638
	1.00	-20 to 290/310°C	14650	14653
0.32mm	0.10	-20 to 320/340°C	14606	14609
	0.25	-20 to 320/340°C	14621	14624
	0.50	-20 to 310/330°C	14636	14639
	1.00	-20 to 290/310°C	14651	14654
0.53mm	0.50	-20 to 300/320°C	14637	14640
	1.00	-20 to 290/310°C	14652	14655
	1.50	-20 to 280/300°C	14667	14670

Rtx[®]-200MS (Fused Silica)

(Crossbond[®] trifluoropropylmethyl polysiloxane) Stable to 360°C



ID	df (µm)	temp. limits	15-Meter	30-Meter
0.25mm	0.10	-20 to 320/340°C	15605	15608
	0.25	-20 to 320/340°C	15620	15623
	0.50	-20 to 310/330°C	15635	15638
	1.00	-20 to 290/310°C	15650	15653
0.32mm	0.10	-20 to 320/340°C	15606	15609
	0.25	-20 to 320/340°C	15621	15624
	0.50	-20 to 310/330°C	15636	15639
	1.00	-20 to 290/310°C	15651	15654
0.53mm	0.50	-20 to 300/320°C	15637	15640
	1.00	-20 to 290/310°C	15652	15655
	1.50	-20 to 280/300°C	15667	15670