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The World's Premium Non-polar MS-Grade Capillary Column

Maximum Temperature 380°C

WHY

use SOLGEL-1ms™?

Column bleed for SOLGEL-1ms at 320°C and above is significantly lower compared with competitor columns (Figures 1a and 1b). This lower bleed results in better sensitivity (increased signal-to-noise ratio) for compounds eluting at higher oven temperatures (Figure 1a). Also, lower bleed will result in

less ion source maintenance of the mass spectrometer due to less phase deposition on mass spectrometer components.

Even though this column is designated "MS" it can be used successfully with all other GC detectors.

Figure 1a. The effect of lower bleed can be seen in better sensitivity using a SOLGEL-1ms column.

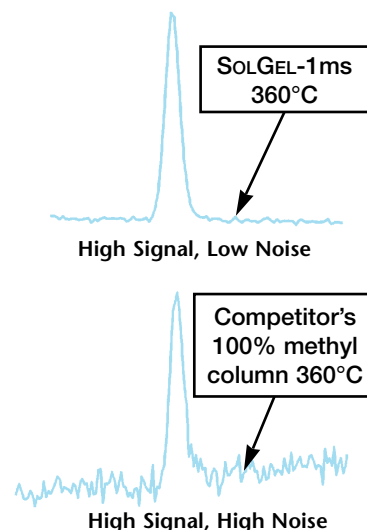
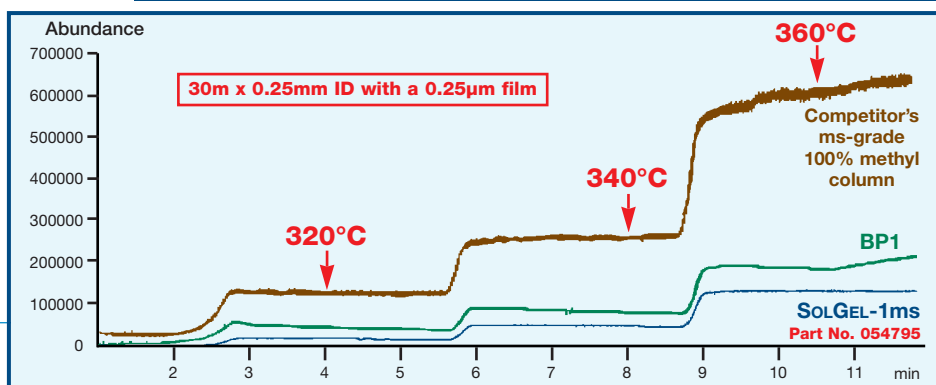


Figure 1b. Bleed profile of a competitor's ms-grade 100% methyl column, BP1 and SOLGEL-1ms.

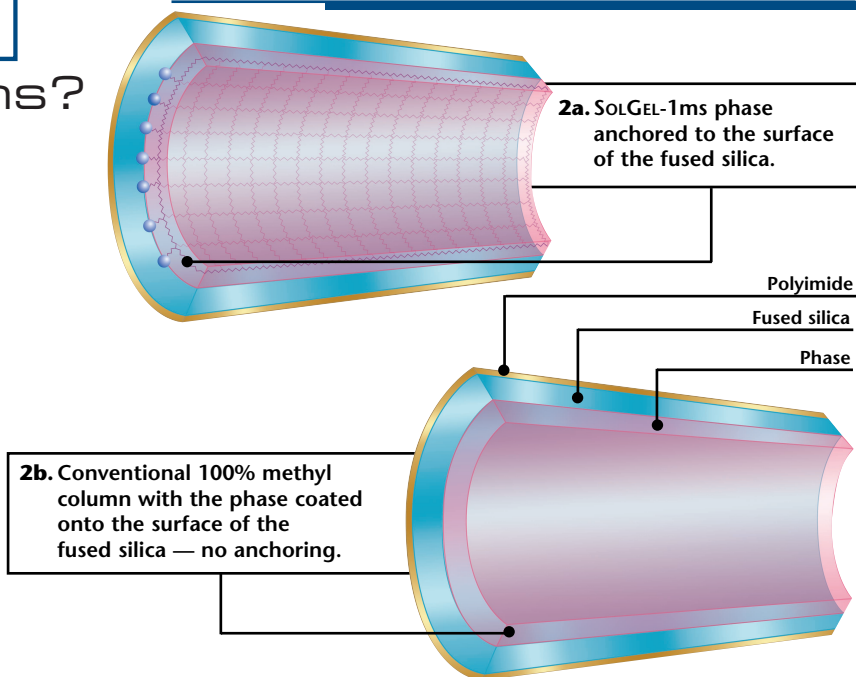


WHAT

is SOLGEL-1ms?

SOLGEL-1ms is a bonded polydimethylsiloxane (100% methyl) stationary phase encapsulated in synthetic glass (sol-gel material) and the whole matrix is itself bonded to the surface of the fused silica capillary. The anchoring of the matrix to the glass surface using this unique technology leads to a very inert, high-temperature column. The SOLGEL-1ms column is represented schematically in Figure 2. A conventional non-polar 100% methyl column is coated onto the surface of the fused silica but does not contain the glass (sol-gel) element which gives the column extra robustness and thermal stability.

Figure 2. Schematic representation of SOLGEL-1ms.



Polarity comparison of SOLGEL-1ms vs BP1 (100% methyl column).

Phase: SOLGEL-1ms, 0.25µm film
Sample: 1000ppm in pentane
Column: 30m x 0.25mm ID
 Isothermal Temp: 145°C, 9min
 Detector Type: Mass Spectrometer
 Carrier Gas: He, 34.5psi
 Carrier Gas Flow: 1.6mL/min
 Constant Flow: On

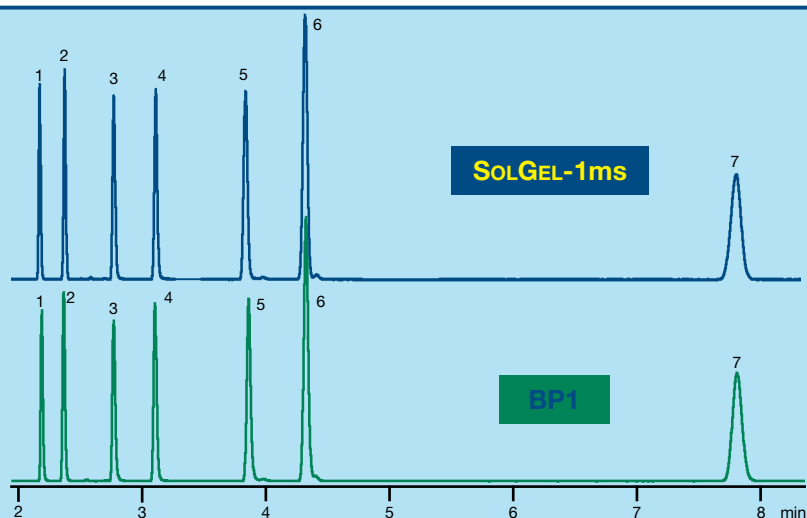
Average Linear Velocity: 35cm/sec at 50°C
 Injection Mode: Splitless
 Purge on Time: 0.5min
 Purge on (Split) Vent Flow: 60mL/min
 Injection Volume: 1µL
 Injection Temperature: 250°C
 Autosampler: No
 Liner Type: 4mm ID Double Taper Liner

Liner Part No: 092017
Column Part No: 054795
 ms-NoVent™ Part No: 113400
 HP5973 Restrictor: 113409
 Full Scan / SIM: Full scan
 45-450

COMPONENTS:

1. Solvent
2. Decane
3. 4-Chlorophenol
4. Decylamine
5. Undecanol
6. Acenaphthylene
7. Pentadecane

No.	Component	Kovats' Retention Index		
		SOLGEL-1ms™	BP1	Competitors 100% methyl polysiloxane
2	Decane	1000	1000	1000
3	4-Chlorophenol	1165	1167	1164
4	Decylamine	1240	1241	1239
5	Undecanol	1357	1358	1356
6	Acenaphthylene	1433	1434	1434
7	Pentadecane	1500	1500	1500

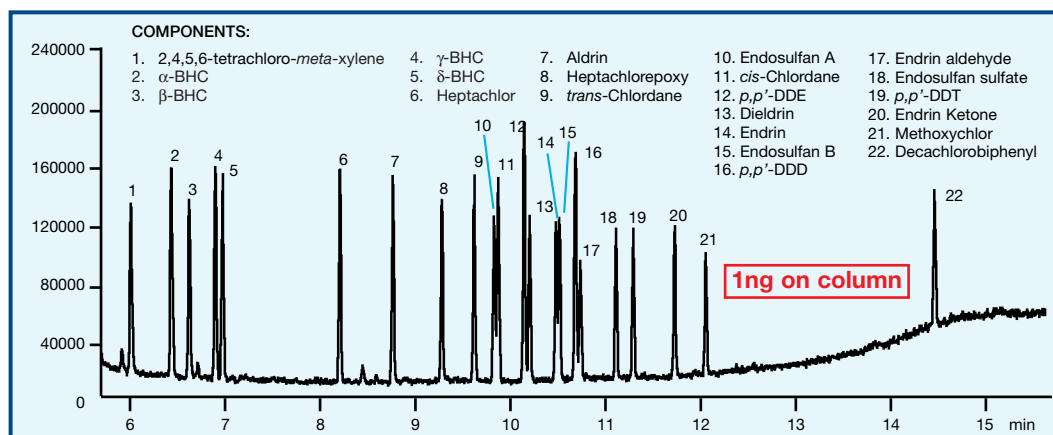


Analysis of Organochlorine Pesticides (OCP) on SOLGEL-1ms.

Phase: SOLGEL-1ms, 0.25µm film
Sample: 1ppm in Dichloromethane
Column: 30m x 0.25mm ID
 Initial Temp: 110°C, 1min
 Rate 1: 25°C/min to 150°C
 Rate 2: 12°C/min to 260°C
 Rate 3: 15°C/min to 300°C
 Final Temp: 300°C, 5min
 Detector Type: Mass Spectrometer
 Carrier Gas: He, 31.6psi

Carrier Gas Flow: 1.7mL/min
 Constant Flow: On
 Average Linear Velocity: 35cm/sec at 110°C
 Injection Mode: Splitless
 Purge on Time: 0.5min
 Purge on (Split) Vent Flow: 60
 Injection Volume: 1µL
 Injection Temp: 250°C
 Autosampler: No
 Liner Type: 4mm ID Single Taper Liner

Liner Part No: 092017
Column Part No: 054795
 ms-NoVent Part No: 113400
 HP5973 Restrictor: 113409
 Full Scan / SIM: Full scan
 40-500

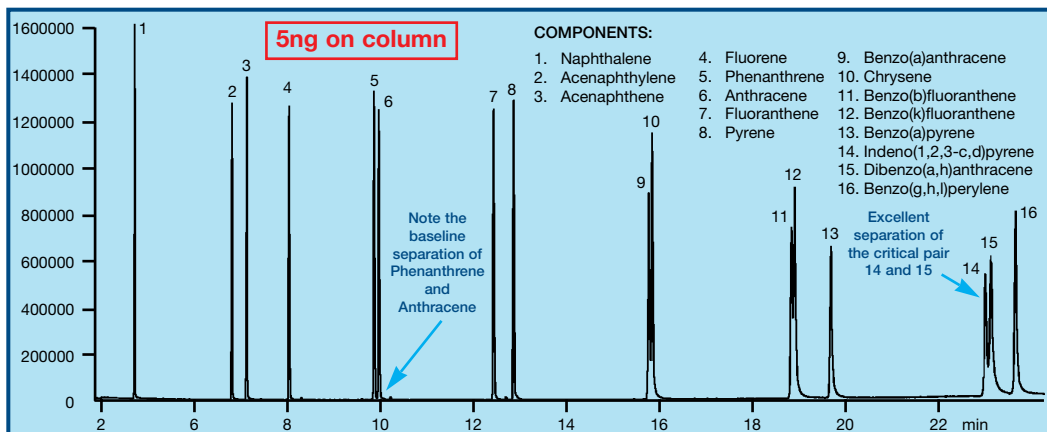


Analysis of Polynuclear Aromatic Hydrocarbons (PAH) on SOLGEL-1ms.

Phase: SOLGEL-1ms, 0.25µm film
Sample: 100ppm in Dichloromethane
Column: 30m x 0.25mm ID
Initial Temp: 65°C, 1min
Rate 1: 25°C/min to 140°C
Rate 2: 10°C/min to 240°C
Rate 3: 5°C/min to 300°C
Final Temp: 300°C, 2min
Detector Type: Mass Spectrometer
Carrier Gas: He, 27.8psi
Carrier Gas Flow: 1.7mL/min
Constant Flow: On
Average Linear Velocity: 35cm/sec at 65°C
Injection Mode: Split
Split Ratio: 50:1

Injection Volume: 1µL
Injection Temp: 250°C
Autosampler: No
Liner Type: 4mm ID Single Taper Liner
Liner Part No: 092017

Column Part No: 054795
ms-NoVent Part No: 113400
HP5973 Restrictor: 113409
Full Scan / SIM: Full scan 40-500



WHY

use a 100% methyl phase?

The main mechanism of separation for 100% methyl columns is based on boiling point. A higher boiling point component will elute later compared with a lower boiling component. This

leads to reasonable predictions of relative retention times for a non-polar column. Non-polar columns will generally be more resistant to oxygen impurity in the

carrier gas and are generally more robust compared with polar columns. This results in longer column lifetimes.

SOLGEL-1ms™ (100% methyl) columns are ideal for:

- Essential oils
- Pharmaceuticals
- Food additives
- Industrial solvents
- Hydrocarbons (petroleum products)

ORDERING INFORMATION

Description	Maximum Temperature	Part No.
30m x 0.25mm x 0.25µm SOLGEL-1ms™	360/380°C	054795
30m x 0.32mm x 0.25µm SOLGEL-1ms™	360/380°C	054798
60m x 0.25mm x 0.25µm SOLGEL-1ms™	360/380°C	054793
60m x 0.32mm x 0.25µm SOLGEL-1ms™	360/380°C	054794

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