SGE

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Capillary Column — **Wax at 300°C**

WHY
use SolGel-WAX™?

Several large trans national companies have adopted SolGel-WAX after extensive testing. Feedback has been:

"It is the most stable of polyethylene glycol phases we have ever used"

"I have injected water samples many thousands of times in the phase and retention time reproducibility is excellent. Times have not varied by more than 0.02 minutes for target compounds"

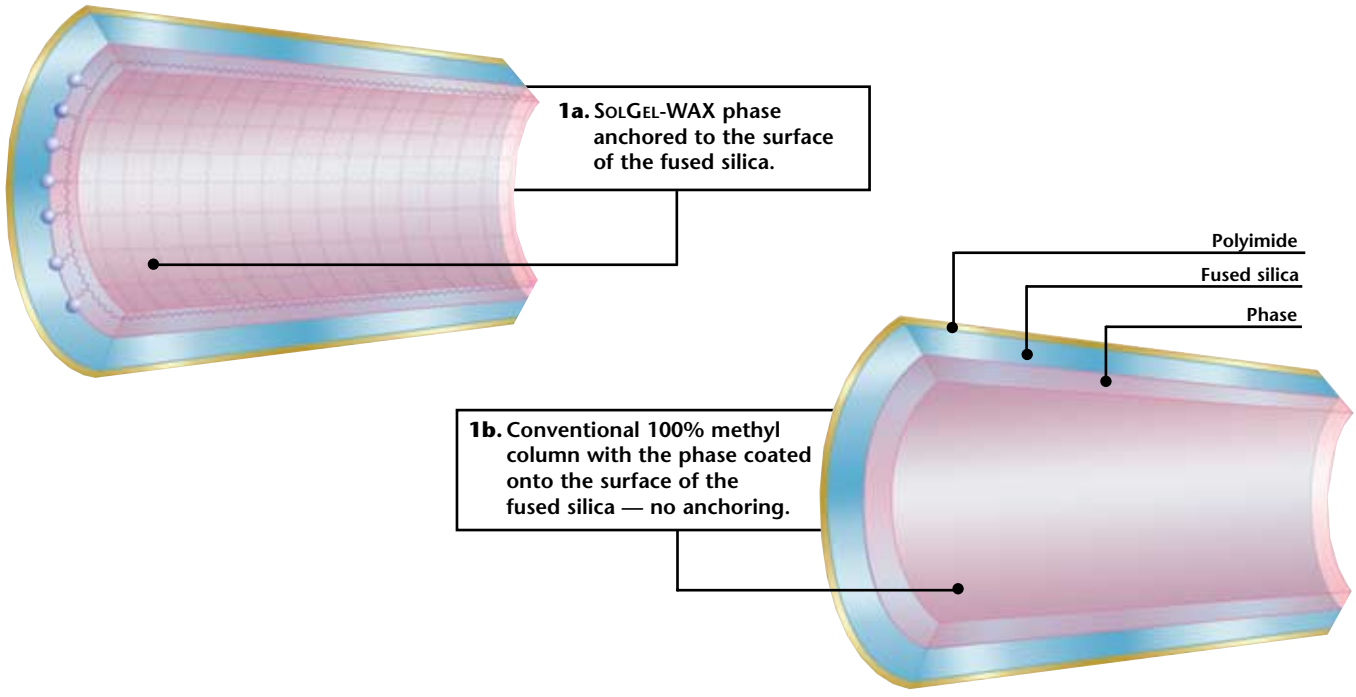
"The SolGel-WAX column is more robust than our usual column and consequently lasts longer"

If you want the most robust, hassle-free Wax Column on the market, use SolGel-WAX.

WHAT
is SolGel-WAX?

SolGel-WAX is a bonded polyethylene glycol stationary phase. It is unique technology because the phase is encapsulated in synthetic glass (SolGel material) and the whole matrix is itself bonded to the surface of the fused silica. This process leads to a very inert high-temperature column. The SolGel-WAX column is represented schematically in **Figure 1.** A conventional Wax column is coated onto the surface of the fused silica but does not contain the glass element which gives the column extra robustness and thermal stability.

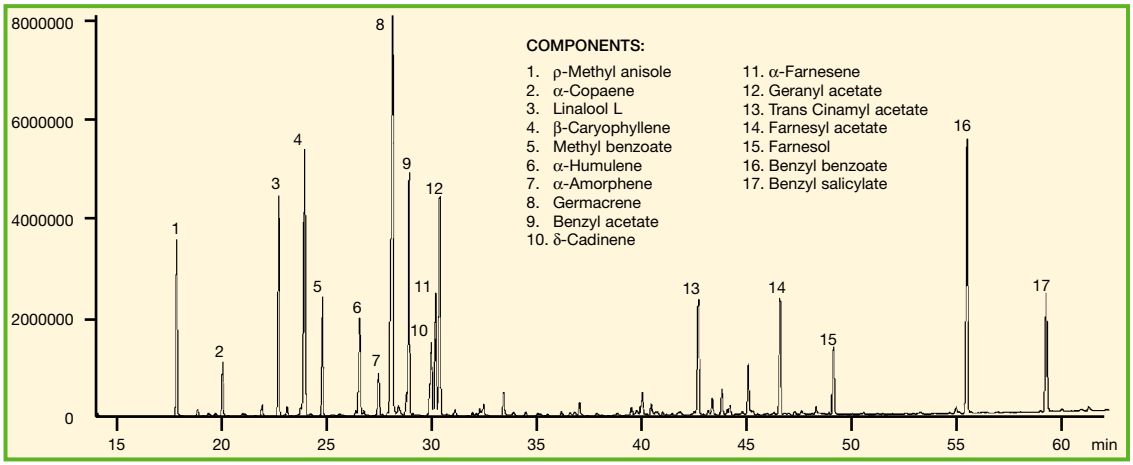
Figure 1. Schematic representation of SolGel-WAX.



SolGel-WAX is the highest temperature polyethylene glycol column on the market.

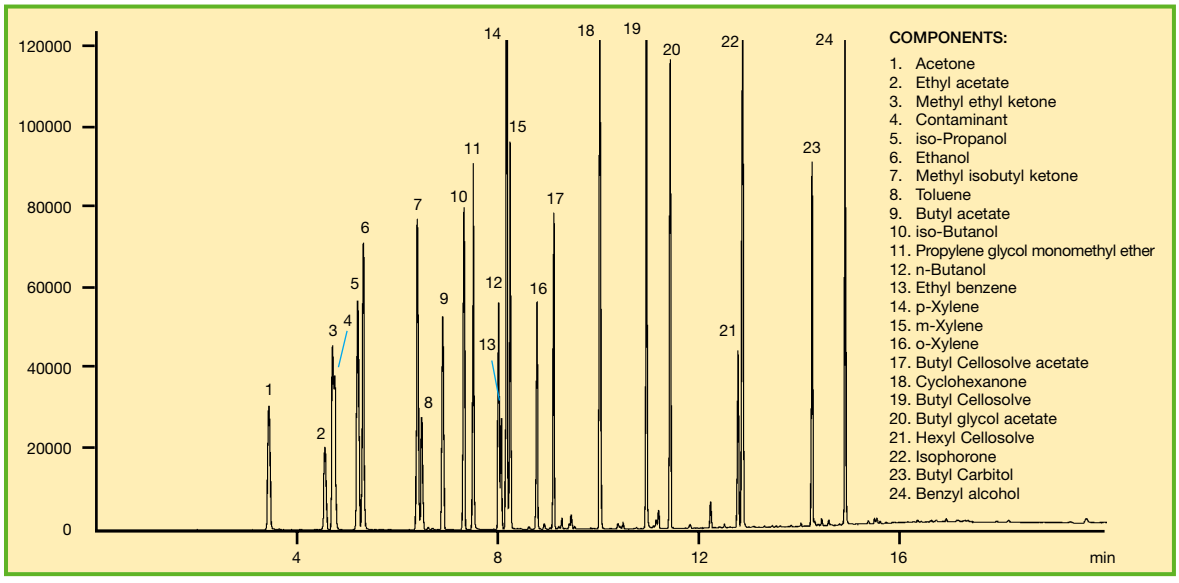
Analysis of Ylang Ylang essential oil on SolGel-WAX

Phase:	**SolGel-WAX, 0.25µm film**
Sample:	**Ylang Ylang oil, neat**
Column:	**30m x 0.25mm ID**
Initial Temp:	40°C, 2min
Rate 1:	3°C/min to 250°C
Final Temp:	250°C, 10min
Detector Type:	MSD
Carrier Gas:	He, 25.7psi
Carrier Gas Flow:	1.8mL/min
Constant Flow:	On
Linear Velocity:	35cm/sec at 40°C
Injection Mode:	Split
Split Ratio:	120:1
Injection Volume:	0.1µL
Injection Temp:	250°C
Autosampler:	No
Liner Type:	4mm ID Double Taper Liner
Liner Part No:	**092018**
Column Part No:	**054796**
ms-NoVent™ Part No:	113400
HP5973 Restrictor:	113409
Full Scan / SIM:	Full scan 45-450



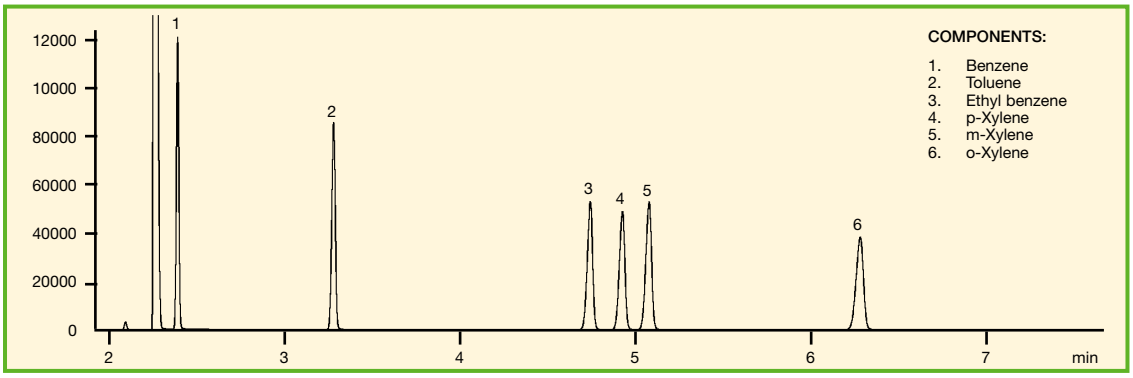
Analysis of industrial solvents on SolGel-WAX

Phase:	**SolGel-WAX, 0.5µm film**
Sample:	**Industrial solvents mix, 25 to 50ng per component on column**
Column:	**30m x 0.32mm ID**
Initial Temp:	35°C, 3min
Rate 1:	15°C/min
Final Temp:	230°C
Detector Type:	FID at 270°C
Carrier Gas:	He, 8.4psi
Carrier Gas Flow:	1.84mL/min
Constant Flow:	On
Linear Velocity:	30cm/sec at 35°C
Injection Mode:	Split
Split Ratio:	83:1
Injection Volume:	0.1µL
Injection Temp:	240°C
Autosampler:	0.5µL removable needle
Liner Type:	Single taper liner
Liner Part No:	**092017**
Column Part No:	**054797**



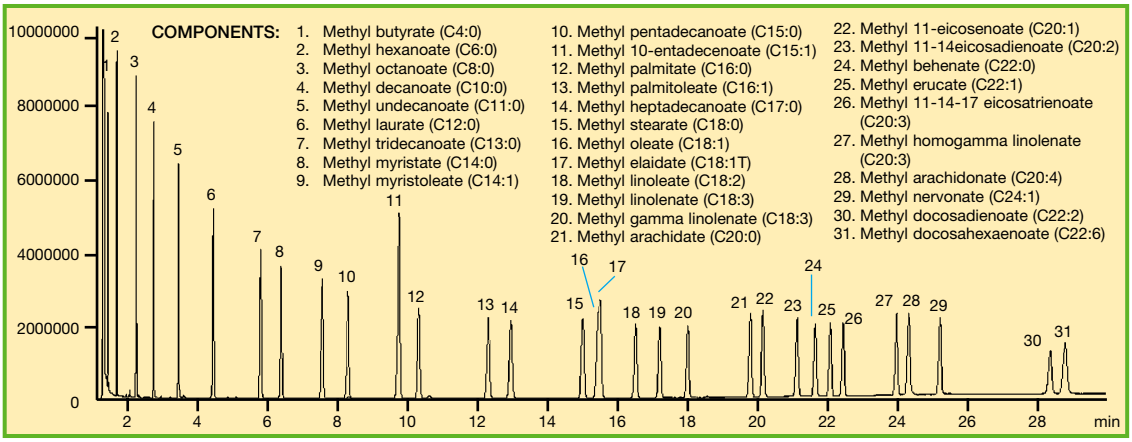
Analysis of BTEX on SolGel-WAX

Phase:	**SolGel-WAX, 0.25µm film**	Injection Mode:	Split
BTEX:	**300ppm in methanol**	Split Ratio:	100:1
Column:	**30m x 0.25mm ID**	Injection Volume:	0.2µL
Initial Temp:	60°C, 10min	Injection Temp:	250°C
Detector Type:	FID	Autosampler:	No
Carrier Gas:	He, 17.3psi	Liner Type:	4mm ID double taper liner
Carrier Gas Flow:	1.5mL/min	**Liner Part No:**	**092018**
Constant Flow:	On	**Column Part No:**	**054796**
Linear Velocity:	35cm/sec at 60°C		



Analysis of FAME on SolGel-WAX

Phase:	**SolGel-WAX, 0.25µm film**	Injection Mode:	Split
Sample:	**200ppm in dichloromethane**	Split Ratio:	80:1
Column:	**30m x 0.25mm ID**	Injection Volume:	0.5µL
Initial Temp:	155°C	Injection Temp:	250°C
Rate 1:	2°C/min to 180°C	Autosampler:	No
Rate 2:	4°C/min to 220°C	Liner Type:	4mm ID double taper liner
Final Temp:	220°C, 5min	**Liner Part No:**	**092018**
Detector Type:	MSD	**Column Part No:**	**054796**
Carrier Gas:	He, 35.3psi	ms-NoVent™ Part No:	113400
Carrier Gas Flow:	1.6mL/min	HP5973 Restrictor:	113409
Constant Flow:	On	Full Scan / SIM:	Full scan 45-450
Linear Velocity:	35cm/sec at 155°C		



WHY
use a polyethylene glycol (WAX) phase?

The main mechanism of separation for WAX type columns is hydrogen bonding or dipole interactions. This is the ideal separation mechanism for a mixture of components containing alcohols, esters, aldehydes, ketones or aromatics. For example, for essential oil analysis, a polyethylene glycol phase is preferred because of this. A non-polar polysiloxane phase, on the other hand, will separate components based on boiling points.

Wax type phases are ideal for:

- Essential oils
- Unreacted latex monomers
- Food additives
- Industrial solvents
- Mixtures of aromatic hydrocarbons (e.g. BTEX)
- Fatty Acid Methyl Esters (FAMEs)
- Mixtures of alcohols, esters, aldehydes & ketones

ORDERING INFORMATION

Description	Part No.
30m x 0.25mm x 0.25µm SolGel-WAX™	**054796**
30m x 0.32mm x 0.5µm SolGel-WAX™	**054797**
60m x 0.25mm x 0.25µm SolGel-WAX™	**054791**
60m x 0.32mm x 0.5µm SolGel-WAX™	**054792**

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BR-0086-C Rev:01