



## Branched Alcohols Analyzed on SolGel-WAX™

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The analysis of alcohols and glycols is important throughout the chemical and petrochemical industry. These components can be difficult to analyze due to their high polarity and tendency to tail on many GC columns.

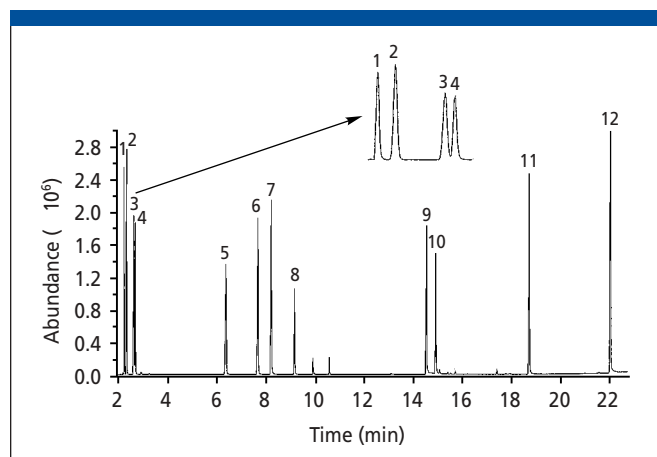
The SolGel-WAX™ column is an ideal column for this analysis. The phase of this wax column exhibits excellent inertness due to the nature of the bonding process in the phase. This bonding process involves the imbedding of the polyethylene glycol into a sol-gel matrix, which is essentially a synthetic glass. The sol-gel matrix,

together with the phase, is then covalently bonded to the fused silica. This results in a higher thermal stability of the column and a higher degree of inertness. The higher thermal stability results in lower bleed and the high degree of column inertness results in excellent peak shape and can be seen in Figure 1.

This analysis of branched alcohols was performed on a mass spectrometer. The MS is fitted with an ms-NoVent™, which allows the SolGel column to be changed without venting the MS. This saves countless hours every time a column is switched on the MS system.

**Table I: Conditions for analysis of branched alcohols on SolGel-WAX™ with ms-NoVent**

Phase:	SolGel-WAX™, 0.25- $\mu$ m film
Sample:	Neat solvent mixture
Column:	30 m $\times$ 0.25 mm i.d.
Initial temperature:	40 °C, 5 min
Rate 1:	10 °C/min to 230 °C
Final temperature:	230 °C
Detector type:	Mass spectrometer
Carrier gas:	Helium at 33.14 psi
Carrier gas flow:	2.3 mL/min
Constant flow:	On
Average linear velocity:	35 cm/s at 40 °C
Injection mode:	Split
Split ratio:	100:1
Injection volume:	0.1 $\mu$ L
Injection temperature:	250 °C
Autosampler:	No
Liner type:	Split/splitless FocusLiner™
Liner part number:	092002
Column part number:	054796
ms-NoVent™ part number:	113400
HP5973 restrictor:	113409
Full scan/SIM:	20–450 AMU



**Figure 1:** Peaks: 1 = methanol, 2 = *tert*-butanol, 3 = isopropanol, 4 = ethanol, 5 = isobutanol, 6 = *n*-butanol, 7 = 2-methoxyethanol, 8 = 2-ethoxyethanol, 9 = propylene glycol, 10 = ethylene glycol, 11 = diethylene glycol, 12 = triethylene glycol.

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