Alcohols C_1-C_3 on an Agilent J&W PoraPLOT Q GC Column

Application Note

Forensic Toxicology

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Introduction

The conversion of methanol into ethanol by reaction with hydrogen and carbon monoxide is well known. This reaction is carried out in the presence of a water-soluble cobalt catalyst at elevated temperatures and pressures. Higher alcohols are formed in relatively small amounts as by-products.

C_1-C_3 alcohols are polar solvents and are analyzed in a wide variety of samples including blood for alcohol intoxication. This application note shows the separation of these alcohols on an Agilent J&W PoraPLOT Q column.

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Materials and Methods

Technique:	GC-FID
Column:	Agilent J&W PoraPLOT Q, 25 m × 0.32 mm df=10 µm (p/n CP7551)
Sample:	Compounds in headspace
Injection Volume:	1 µL
Carrier Gas:	Hydrogen, constant pressure, 100 kPa (1 bar, 14.5 psi)
Temperature:	200 °C
Injection:	275 °C, split 1:100
Detection:	FID, 275 °C

Results and Discussion

The analysis of the C_1-C_3 alcohols took less than 2 minutes with the PoraPLOT Q column. The compounds were baseline separated and had an excellent peak shape (Figure 1).

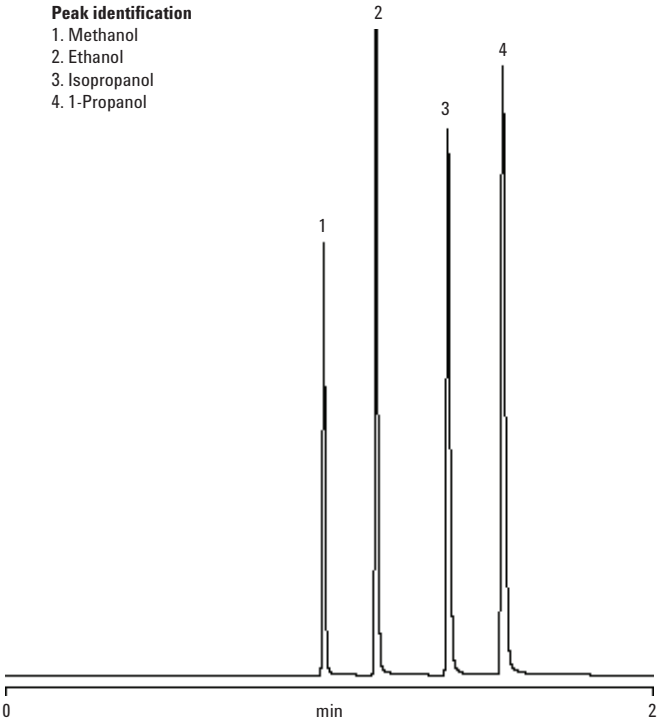

Figure 1. Chromatogram of C_1-C_3 alcohols on an Agilent J&W PoraPLOT Q column.

Conclusion

Using a PoraPLOT Q GC column, separation of C_1-C_3 alcohols was achieved in less than 2 minutes. PoraPLOT Q is recommended for column switching systems that analyze polar and apolar volatile compounds. The column delivers repeatable retention times because retention is not influenced by water in the sample.

Reference

http://www.freepatentsonline.com/4424383.pdf

www.agilent.com/chem

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