Alcohols $C_1^1$-$C_3^3$ on an Agilent J&W PoraPLOT Q GC Column

Application Note

Forensic Toxicology

Author
Laura Provoost
Agilent Technologies, Inc.

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.

$C_1^1$-$C_3^3$ 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.
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).

Reference


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.

www.agilent.com/chem

For Forensic Use.
This information is subject to change without notice.
© Agilent Technologies, Inc. 2012
Published in USA, September 17, 2012
SI-02484