**Oxygenates**

**Analysis of trace methanol in hydrocarbons**

**Application Note**

**Energy & Fuels**

**Authors**

Agilent Technologies, Inc.

**Introduction**

The Agilent Lowox adsorbent provides very high retention for all types of oxygenated compounds, see Application note 1362. The methanol elutes after n-C14, having a retention index of ca. 1430. This component can be measured at low levels in a range of hydrocarbon streams. Also, the change of retention index of methanol if analyzed at different temperatures is small. If analysis is done at 200 °C, methanol has an RI of ca. 1435, while at a temperature of 290 °C the methanol has a retention index of ca. 1470. For a highly polar phase these shifts in RI are very small. This results in reduced risk of peak swapping and possible misidentification.

The chromatogram also shows the C24 hydrocarbon eluting as a nice peak. Although this is a highly polar phase, the heavy hydrocarbons elute as sharp peaks. Also note the straight baseline.
**Conditions**

**Technique**: GC-wide-bore

**Column**: Agilent Lowox, 0.53 mm fused silica PLOT (Part no. CP8587)

**Temperature**: 175 °C (2 min) → 290 °C, 10 °C/min

**Carrier Gas**: He, 70 kPa (0.7 bar, 10 psi)

**Injector**: Split via Valco valve, 
- T = 250 °C

**Detector**: FID
- T = 250 °C

**Concentration Range**: ca. 100 ppm

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**Peak identification**

1. C\textsubscript{14}
2. methanol
3. C\textsubscript{15}
4. C\textsubscript{16}
5. C\textsubscript{18}
6. C\textsubscript{20}
7. C\textsubscript{22}
8. C\textsubscript{24}