



# Oxygenates

## Analysis of trace methanol in hydrocarbons

### Application Note

Energy & Fuels

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#### Introduction

The Agilent Lowox adsorbent provides very high retention for all types of oxygenated compounds, see Application note 1362. The methanol elutes after n-C<sub>14</sub>, 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 C<sub>24</sub> 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.



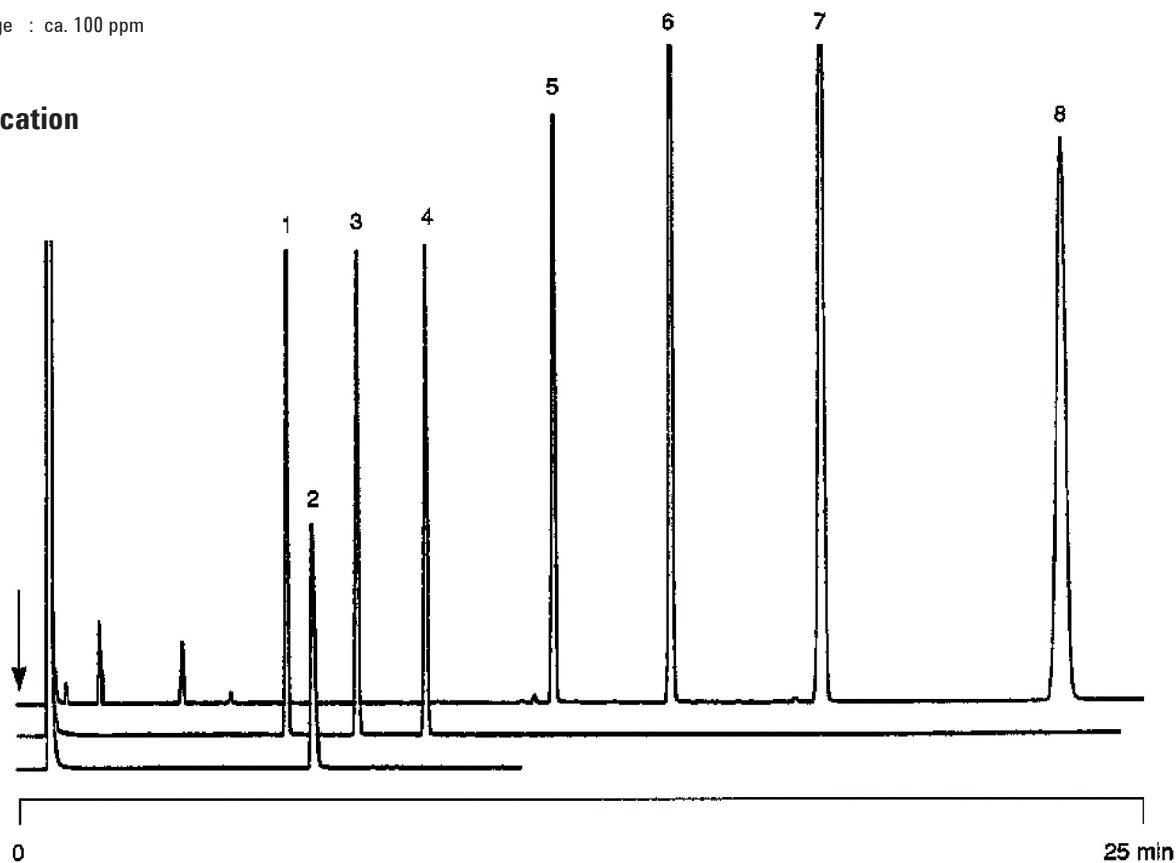
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## Conditions

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

## Peak identification

1. C<sub>14</sub>
2. methanol
3. C<sub>15</sub>
4. C<sub>16</sub>
5. C<sub>18</sub>
6. C<sub>20</sub>
7. C<sub>22</sub>
8. C<sub>24</sub>



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