C_1-C_5 hydrocarbons

Analysis of standard mixture of C_1-C_5 hydrocarbons

Application Note

Energy & Fuels

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Introduction

In petrochemical application often ppm levels of impurities must be measured in hydrocarbon streams. The response for such low levels must be accurate and reproducible over time. Conventional Al_2O_3 columns have different recoveries for "difficult" hydrocarbons (acetyelene, propadiene, methylacetylene). The Agilent Select Al_2O_3 MAPD is extensively deactivated which results in highest response for traces of polar hydrocarbons including acetylenes and dienes. Selectivity of this Al_2O_3 PLOT column is very high and separates all C_1 - C_5 hydrocarbons. Temperature stability is maintained at 200 °C.

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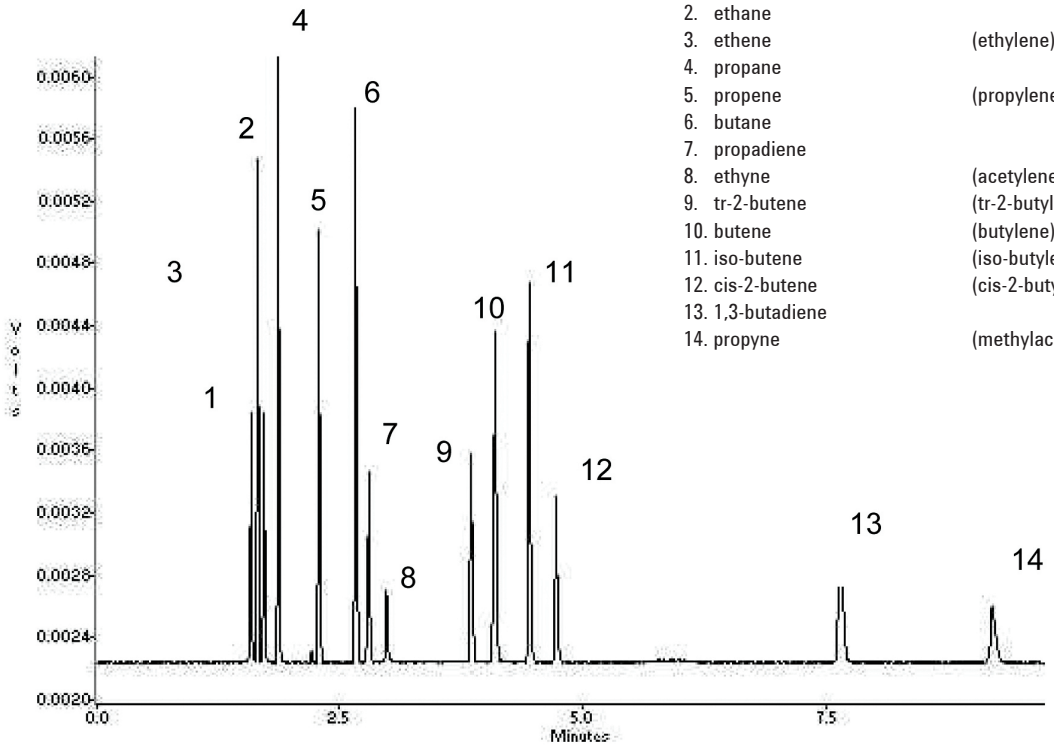
Conditions

Technique	:	GC
Column	:	Agilent Select Al_2O_3 MAPD, 0.53 mm x 50 m fused silica (Part no. CP7431)
Temperature	:	80 °C, ⟶ 200 °C, 10 °C/min
Carrier Gas	:	He, 95 kPa, 13.5 psi
Injector	:	Split 60 ml/min
Detector	:	FID
Sample Size	:	100 µL
Concentration Range	:	approx. 100 ppm in nitrogen

Courtesy : C. Duvekot, Agilent Application Laboratory, Middelburg, The Netherlands



Peak identification

1. methane	
2. ethane	
3. ethene	(ethylene)
4. propane	
5. propene	(propylene)
6. butane	
7. propadiene	
8. ethyne	(acetylene)
9. tr-2-butene	(tr-2-butylene)
10. butene	(butylene)
11. iso-butene	(iso-butylene)
12. cis-2-butene	(cis-2-butylene)
13. 1,3-butadiene	
14. propyne	(methylacetylene)

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