Hydrocarbons, $C_1 - C_4$
Analysis of impurities in propylene

Application Note

Energy & Fuels

Authors

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Introduction

The separation of impurities in propylene can be done very well on an Agilent CP-SilicaPLOT column. The 0.53 mm id column is ideal for quantifying traces because the direct injection technique can be used. The CP-SilicaPLOT column elutes - besides the hydrocarbons - compounds such as carbon dioxide, sulfur compounds and volatile halogenated hydrocarbons. Even traces of moisture will not influence retention times. Cyclopropane is well resolved from propylene.
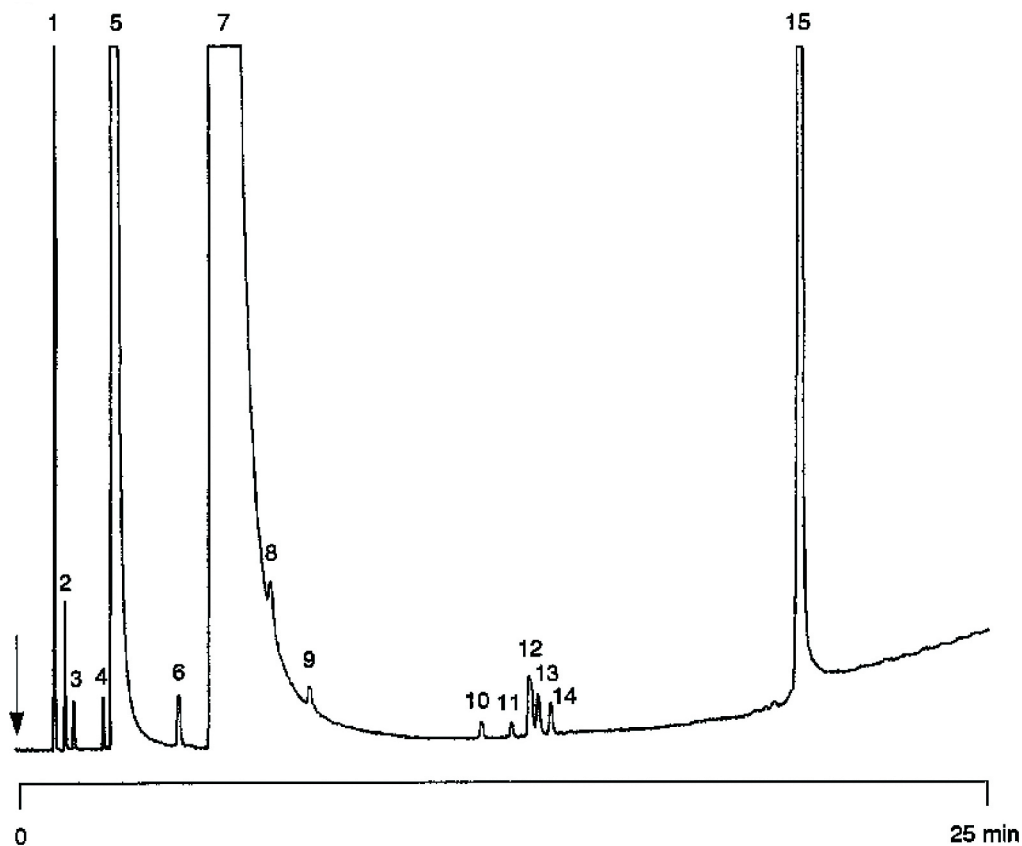
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Conditions

Technique	:	GC-capillary
Column	:	Agilent CP-SilicaPLOT, 0.53 mm x 30 m, fused silica PLOT CP-SilicaPLOT (df = 6 μm) (Part no. CP8570)
Temperature	:	50 °C (5 min) → 225 °C, 5 °C/min
Carrier Gas	:	He, 20 kPa (0.2 bar, 2.9 psi)
Injector	:	Direct T = 225 °C
Detector	:	FID T = 250 °C
Sample Size	:	2 μL
Concentration Range	:	ppm %

Peak identification

1. methane
2. ethane
3. ethylene
4. acetylene
5. propane
6. cyclopropane
7. propylene
8. isobutane
9. butane
10. 1-butene
11. propyne (methylacetylene)
12. 1,3-butadiene
13. isobutene
14. cis-2-butene
15. hexane

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