

Detailed Analysis of Cognac

Application Note

Food and Agriculture

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Introduction

Cognac can be injected without sample preparation on a very polar polyethylene glycol-type of stationary phase, Agilent J&W CP-Wax 57 CB. With this polar column an almost complete separation is possible of a wide range of alcohols, aldehydes, and esters. A reasonable separation is also possible between the isomers 2-methyl-1-butanol and 3-methyl-1-butanol, which is not possible on standard polyethylene glycol columns.

Conditions

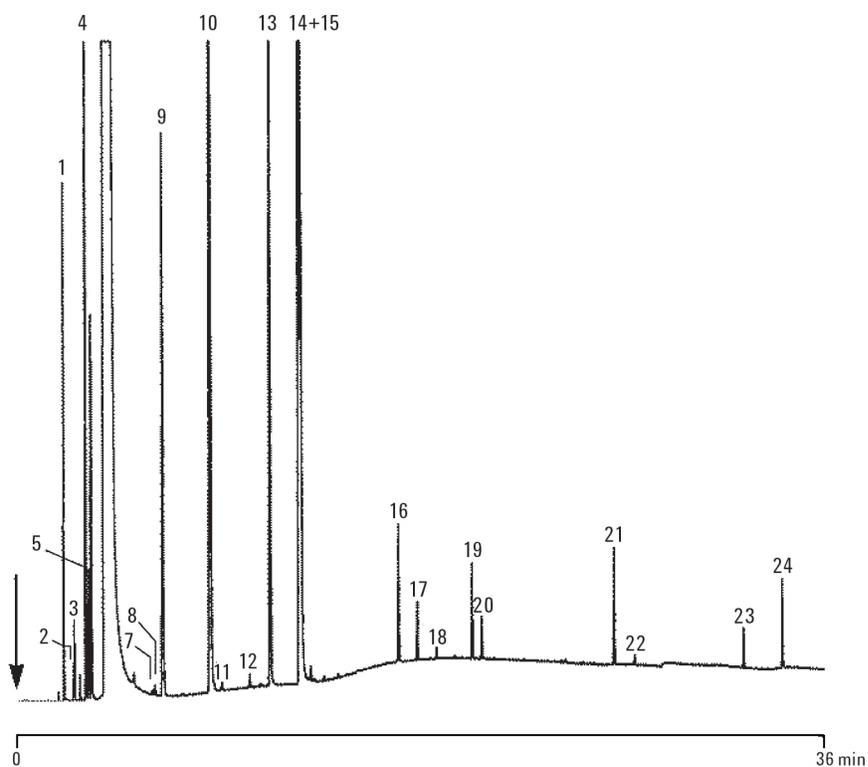
Technique:	GC-capillary
Columns:	Agilent J&W CP-Wax 57 CB, 0.25 mm × 50 m, df = 0.20 μm, fused silica WCOT (Part no. CP97723)
Temperature:	35 °C (5 min) → 220 °C, 4 °C/min, 220 °C (10 min)
Carrier gas:	H ₂ , 140 kPa (1.4 bar, 20 psi)
Injector:	Split, T = 220 °C
Detector:	FID, T = 220 °C
Sample size:	1.0 μL
Concentration range:	10 to 1,000 ppm
Solvent sample:	ethanol/water



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Peak identification

1. acetaldehyde (ethanal)
2. isobutyraldehyde (isobutanal)
3. ethyl formate
4. ethyl acetate
5. acetal
6. methanol
7. ethyl butyrate
8. 2-butanol
9. 1-propanol
10. isobutanol
11. allyl alcohol
12. 1-butanol
13. 4-methyl-2-pentanol
14. 2-methyl-1-butanol
15. 3-methyl-1-butanol
16. ethyl lactate
17. 1-hexanol
18. cis-3-hexen-1-ol
19. ethyl octanoate (ethyl caprylate)
20. furfural
21. ethyl decanoate (ethyl caprate)
22. diethyl succinate
23. ethyl laurate
24. 2-phenylethanol



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