



Hydrocarbons (alkanes) and C₃ – C₉ aromatics

Analysis of naphtha on a capillary column

Application Note

Materials Testing & Research

Authors

Agilent Technologies, Inc.

Introduction

Gas chromatography using an Agilent CP-Al₂O₃/KCl column separates 53 alkanes and C₃ to C₉ aromatics in 50 minutes.



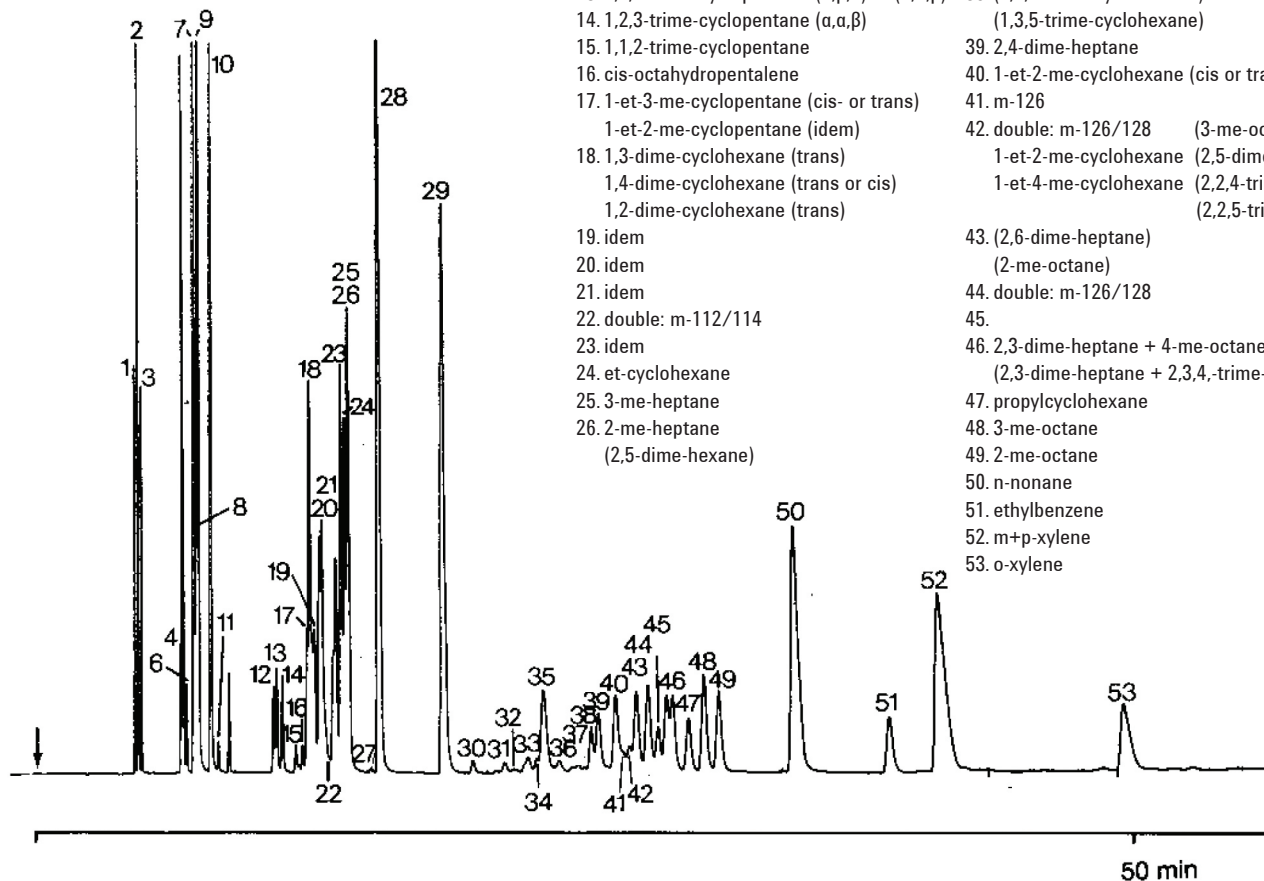
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Conditions

Technique : GC - capillary
 Column : Agilent CP-Al₂O₃/KCl 0.32 mm x 50 m
 fused silica PLOT Al₂O₃/KCl (5.0 µm)
 (Part no. CP7515)
 Temperature : 195 °C
 Carrier Gas : He, 210 kPa (2.1 bar), 19 cm/s
 Injector : Splitter, 100 mL/min
 T=200 °C
 Detector : FID, 10 x 10⁻¹² Afs
 T=200 °C
 Sample Size : 0.1 µL

Peak identification

- | | |
|---|--|
| 1. me-cyclopentane | 27. m112 |
| 2. cyclohexane | 28. n-octane |
| 3. n-hexane | 29. toluene |
| 4. 1,1-dime-cyclopentane | 30. |
| 5. trans-1,2-dime-cyclopentane | 31. (octahydro-2-me-pentalene) |
| 6. 2,4-dime-pentane | 32. |
| (2,2-dime-pentane) | 33. |
| (2,2,3-trime-pentane) | 34. (octahydro-1-me-pentalene) |
| 7. me-cyclohexane | (octahydro-2-me-pentalene) |
| 8. et-cyclopentane | (octahydro indene (trans or cis)) |
| 9. double: 3-me-hexane + 2 me-hexane | 35. 1,2,4-trime-cyclohexane (α,β,β) |
| (3-et-pentane + 2 me-hexane) | 1,3,5-trime-cyclohexane (α,α,β) or (α,α,α) |
| 10. n-heptane | 36. double: m-124/126 |
| 11. cycloheptane | 37. (1,2,4-trime-cyclohexane + m-128) |
| 12. 1,1,3-trime-cyclopentane | (1,3,5-trime-cyclohexane + m-128) |
| 13. 1,2,4-trime-cyclopentane (α,β,α) or (α,α,β) | 38. (1,2,4-trime-cyclohexane) |
| 14. 1,2,3-trime-cyclopentane (α,α,β) | (1,3,5-trime-cyclohexane) |
| 15. 1,1,2-trime-cyclopentane | 39. 2,4-dime-heptane |
| 16. cis-octahydropentalene | 40. 1-et-2-me-cyclohexane (cis or trans) |
| 17. 1-et-3-me-cyclopentane (cis- or trans) | 41. m-126 |
| 1-et-2-me-cyclopentane (idem) | 42. double: m-126/128 (3-me-octane) |
| 18. 1,3-dime-cyclohexane (trans) | 1-et-2-me-cyclohexane (2,5-dime-heptane) |
| 1,4-dime-cyclohexane (trans or cis) | 1-et-4-me-cyclohexane (2,2,4-trime-hexane) |
| 1,2-dime-cyclohexane (trans) | (2,2,5-trime-hexane) |
| 19. idem | 43. (2,6-dime-heptane) |
| 20. idem | (2-me-octane) |
| 21. idem | 44. double: m-126/128 |
| 22. double: m-112/114 | 45. |
| 23. idem | 46. 2,3-dime-heptane + 4-me-octane |
| 24. et-cyclohexane | (2,3-dime-heptane + 2,3,4,-trime-hexane) |
| 25. 3-me-heptane | 47. propylcyclohexane |
| 26. 2-me-heptane | 48. 3-me-octane |
| (2,5-dime-hexane) | 49. 2-me-octane |
| | 50. n-nonane |
| | 51. ethylbenzene |
| | 52. m+p-xylene |
| | 53. o-xylene |



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This information is subject to change without notice.

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