



Hydrocarbons, $C_2 - C_8$

Analysis of hydrocarbons in urban air

Application Note

Environmental

Authors

Agilent Technologies, Inc.

Introduction

Gas chromatography using an Agilent CP-Al₂O₃/KCl column separates 43 C₂ to C₈ hydrocarbons in street level urban air in the evening rush hour in a UK winter, in 46 minutes



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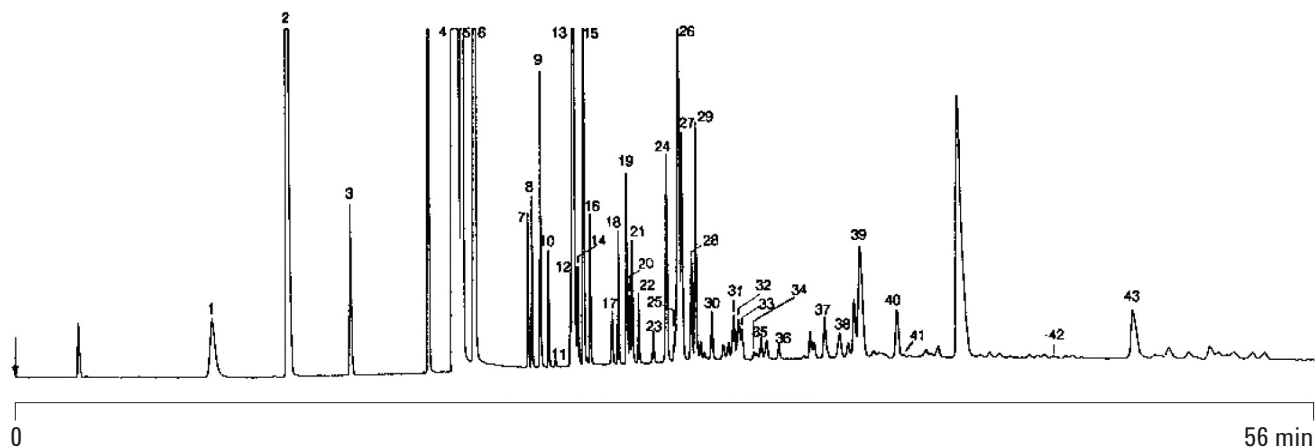
Conditions

Technique : GC-capillary
Column : Agilent CP-Al₂O₃/KCl, 0.32 mm x 50 m fused silica
PLOT Al₂O₃/KCl (df = 5 µm) (Part no. CP7515)
Temperature : -20 °C (3 min) → 190 °C, 10 °C/min (32 min)
Carrier Gas : He, 100 kPa (1.0 bar, 14 psi)
Injector : Split/Splitless, 1:25 (3 min Splitless)
Detector : FID
Sample Size : 2.0 mL
Concentration Range : 740 ppb/v for ethyne in original air sample (100 mL)

Courtesy : B. M. Hart and C.K. Laird, National Power
Technology and Environmental Centre, Surrey,
United Kingdom

Peak identification

- | | | | |
|---------------------------|-----------------------------|-----------------------------|-----------------------------------|
| 1. ethane | 12. cyclopentane | 23. 2-butyne | 34. cyclohexene |
| 2. ethylene | 13. 2-methylbutane | 24. 2,2-dimethylbutane | 35. 1-hexene |
| 3. propane | 14. propyne | 25. methylcyclopentane | 36. <i>cis</i> -2-hexene |
| 4. ethyne | 15. pentane | 26. 2,3-dimethylbutane | 37. 2,4-dimethylpentane |
| 5. 2-methylpropane | 16. 1,3-butadiene | 27. 2-methylpentane | 38. methylcyclohexane |
| 6. butane | 17. 3-methyl-1-butene | 26. 2-methyl-1,3-butadiene | 39. 3-methylhexane/2-methylhexane |
| 7. <i>trans</i> -2-butene | 18. <i>trans</i> -2-pentene | 29. hexane | 40. heptane |
| 8. 1-butene | 19. 2-methyl-2-butene | 30. 1-methyl-1-cyclopentane | 41. cycloheptane |
| 9. 2-methylpropene | 20. 1-pentene | 31. <i>trans</i> -3-hexene | 42. cycloheptene |
| 10. <i>cis</i> -2-butene | 21. 2-methyl-1-butene | 32. 4-methyl-1-pentene | 43. 2,2,4-trimethylpentane |
| 11. 2,2-dimethylpropane | 22. <i>cis</i> -2-pentene | 33. <i>trans</i> -2-hexene | |



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This information is subject to change without notice.

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Printed in the USA

October 30, 2015

Published in UK, August 03, 2010

A00479



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