

Hydrocarbons, $C_{10} - C_{40}$

Analysis of mineral oil in water to proposed Dutch NVN 6678

Application Note

Environmental

Authors

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Introduction

Mineral oil consists mainly of hydrocarbons, which can be separated on the non-polar Agilent CP-Sil 5 CB column. A relatively short column will provide sufficient separation for characterization of the mineral oil. The column must be stable up to 325 °C to elute the highest fractions. For trace analysis it is often necessary to inject larger volumes. In this method injection volumes up to 5 μ L were used, which were injected via a temperature-programmed injection device. The Agilent CP-SimDist UltiMetal column can also be used for applications where the final temperature exceeds 300 °C. Special features of the UltiMetal column are the low bleed and the high mechanical stability.



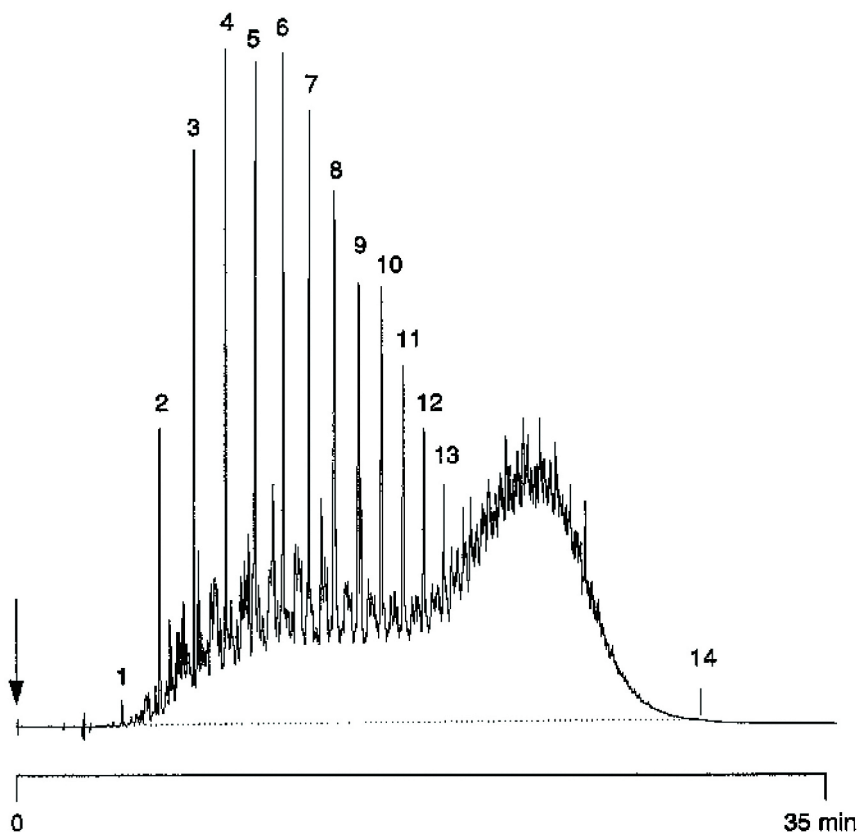
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Conditions

Technique : GC-capillary
Column : Agilent CP-Sil 5 CB Low Bleed/MS, 0.32 mm x 10 m
fused silica WCOT CP-Sil 5 CB Low Bleed/MS
(df = 0.4 μ m) (Part no. CP7859)
Temperature : 40 °C (2.5 min) \rightarrow 310 °C, 10 °C/min
Carrier Gas : He, 40 kPa (0.4 bar, 5.7 psi)
Injector : Temperature-programmed on-column injector,
temperature program identical to oven program
Detector : FID, T = 340 °C
Sample Size : 5 μ L
Concentration range : ca 10-5000 ppm total mineral oil (for this method)
Solvent sample : petroleum ether 40-60

Peak identification

1. decane (IS)
2. undecane
3. dodecane
4. C₁₃
5. C₁₄
6. C₁₅
7. C₁₆
8. C₁₇
9. C₁₈
10. C₁₉
11. C₂₀
12. C₂₁
13. C₂₂
14. C₄₀ (IS)



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