



Hydrocarbons, $C_5 - C_{44}$

Simulated distillation of reference gas oil to ASTM D2887

Application Note

Energy & Fuels

Authors

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Introduction

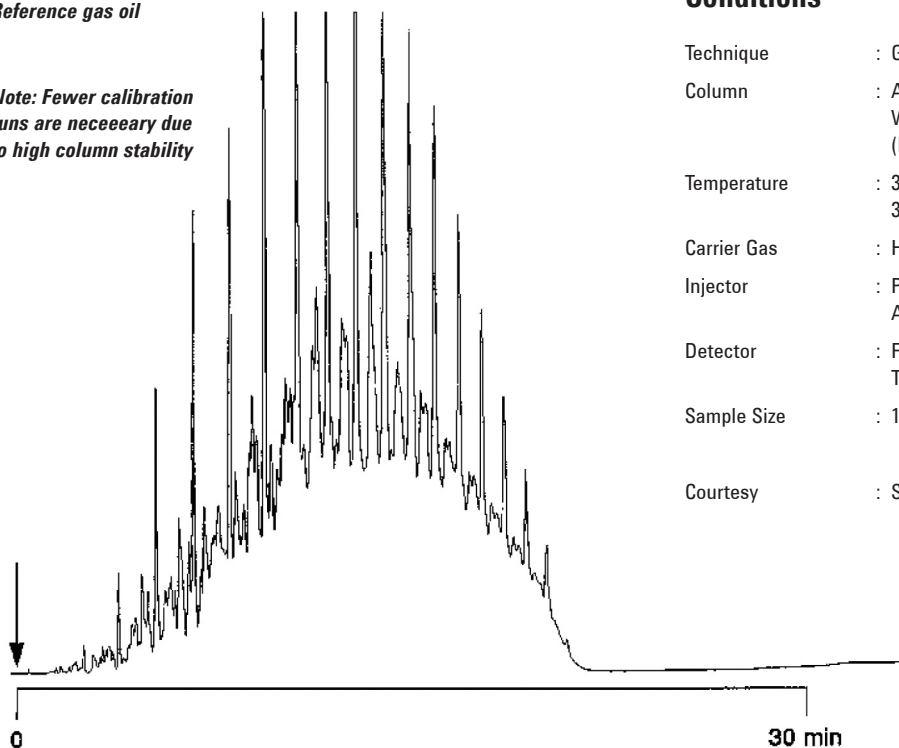
Gas chromatography using an Agilent CP-SimDist CB UltiMetal column analyzes reference gas oil according to ASTM D2887 in 30 minutes.



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Reference gas oil

Note: Fewer calibration runs are necessary due to high column stability



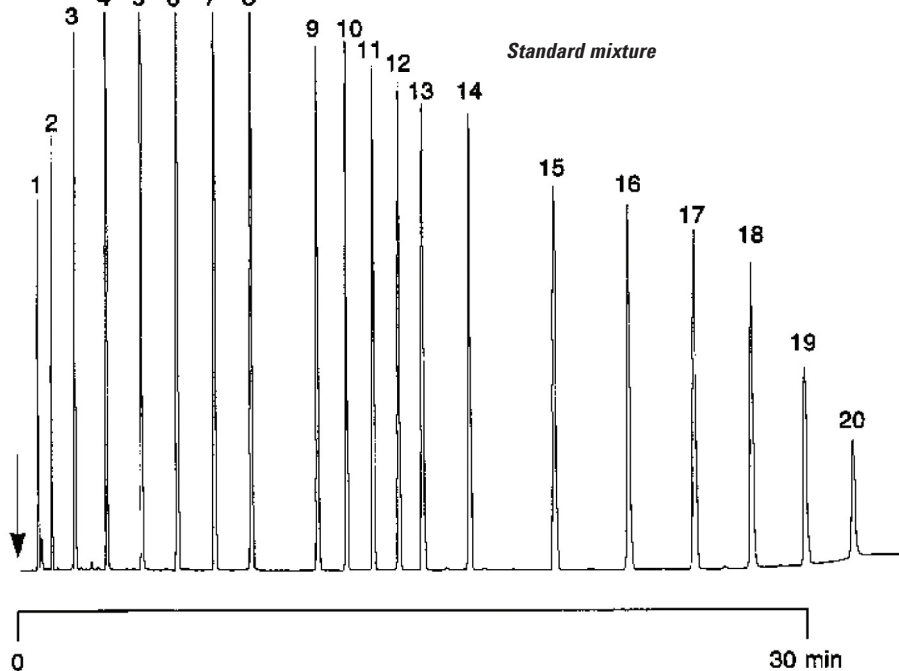
Conditions

Technique	: GC-wide-bore
Column	: Agilent CP-SimDist CB UltiMetal, 0.53 mm x 10 m WCOT CP-SimDist CB UltiMetal (df = 2.65 μ m) (Part no. CP7582)
Temperature	: 35 $^{\circ}$ C $\rightarrow$ 350 $^{\circ}$ C, 10 $^{\circ}$ C/min; 350 $^{\circ}$ C (2 min)
Carrier Gas	: He, 20 kPa (0.2 bar, 3 psi)
Injector	: PTV, AC SIMDIS D2887 analyzer
Detector	: FID T = 350 $^{\circ}$ C
Sample Size	: 1 μ L

Courtesy : S. Kucsera, Exxon

Peak identification

1. pentane
2. hexane
3. heptane
4. octane
5. nonane
6. decane
7. undecane
8. dodecane
9. C₁₄
10. C₁₅
11. C₁₆
12. C₁₇
13. C₁₈
14. C₂₀
15. C₂₄
16. C₂₈
17. C₃₂
18. C₃₈
19. C₄₀
20. C₄₄



Simulated distillation of the gasoline range hydrocarbons can be done very well with UltiMetal Simdis columns. This application shows the D2887 method using a PTV type inlet system. In this particular set-up the insert of the analyzer was installed upside-down: (narrow part positioned at the top). UltiMetal column was cut with special device #8099 to make a sharp cut to fit the glass insert. In this method the sample is injected near to the column. This method is very accurate and generates almost no deviation from the reference boiling point. This deviation, usually expressed as R₂, should typically be <139. Using the UltiMetal CP-SimDis column, R₂ values were < 10 over a period of 2 years.

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Printed in the USA

31 October, 2011

First published prior to 11 May, 2010

A01262



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