**Hydrocarbons, C₅ – C₄₄**
Simulated distillation of reference gas oil to ASTM D2887

Application Note

**Energy & Fuels**

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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.
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 μm) (Part no. CP7582)
- **Temperature**: 35 °C → 350 °C, 10 °C/min; 350 °C (2 min)
- **Carrier Gas**: He, 20 kPa (0.2 bar, 3 psi)
- **Injector**: PTV, AC SIMDIS D2887 analyzer
- **Detector**: FID
- **T**: 350 °C
- **Sample Size**: 1 μL

**Courtesy**: S. Kucsera, Exxon

### Peak identification

1. pentane
2. hexane
3. heptane
4. octane
5. nonane
6. decane
7. undecane
8. dodecane
9. C\textsubscript{14}
10. C\textsubscript{15}
11. C\textsubscript{16}
12. C\textsubscript{17}
13. C\textsubscript{18}
14. C\textsubscript{20}
15. C\textsubscript{24}
16. C\textsubscript{28}
17. C\textsubscript{32}
18. C\textsubscript{38}
19. C\textsubscript{40}
20. C\textsubscript{44}

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 $R^2$, should typically be <139. Using the UltiMetal CP-SimDis column, $R^2$ values were < 10 over a period of 2 years.