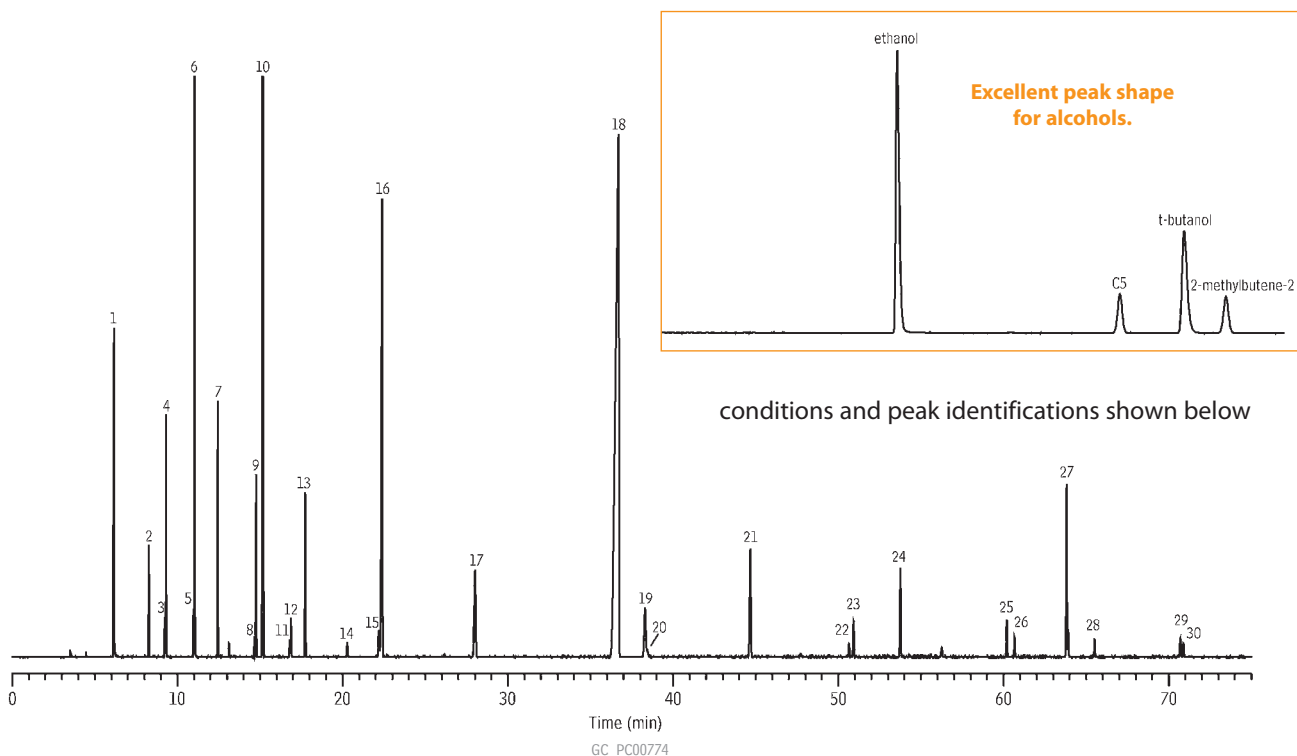


Fast Detailed Hydrocarbons Analysis (DHA) Rtx®-1PONA/Rtx®-5PONA



conditions and peak identifications shown below

Detailed Hydrocarbons Analysis (DHA) Rtx®-1PONA/Rtx®-5PONA

Column: Rtx®-1PONA, 100m, 0.25mm ID, 0.5 μ m (cat.# 10195) plus Rtx®-5PONA tuning column, 2.62m, 0.25mm ID, 1.0 μ m, connected via Press-Tight® connector (cat.# 20446)

Sample: custom detailed hydrocarbons analysis (DHA) mix, neat

Inj.: 0.01 μ L, split (split ratio 150:1), 4mm cup inlet liner (cat.# 20709)

Inj. temp.: 200°C

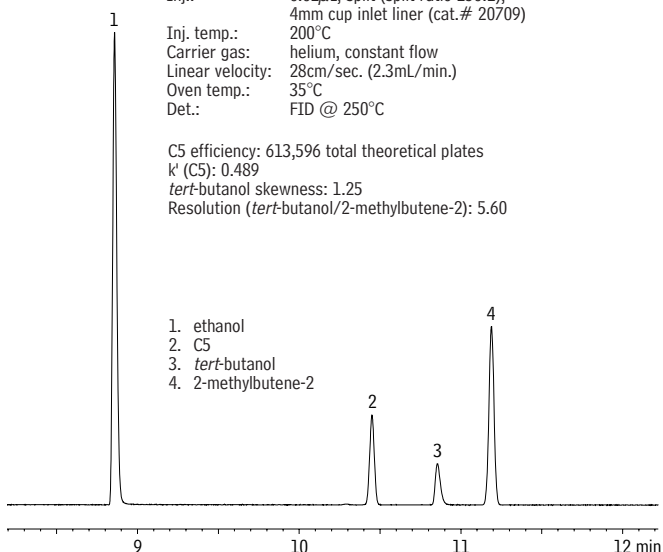
Carrier gas: helium, constant flow

Linear velocity: 28cm/sec. (2.3mL/min.)

Oven temp.: 35°C

Det.: FID @ 250°C

C5 efficiency: 613,596 total theoretical plates
k' (C5): 0.489
tert-butanol skewness: 1.25
Resolution (*tert*-butanol/2-methylbutene-2): 5.60



1. ethanol
2. C5
3. *tert*-butanol
4. 2-methylbutene-2

Column: Rtx®-1PONA 100m, 0.25mm ID, 0.5 μ m (cat.# 10195) plus Rtx®-5PONA tuning column (cat.# 10196), connected via angled Press-Tight® connector (cat.# 20446)

Sample: DHA/oxygenates setup blend

Inj.: 0.01 μ L, split (split ratio 150:1), 4mm ID cup inlet liner (cat.# 20709)

A: front slice of DHA/oxygenates setup blend
B: DHA/oxygenates setup blend

Carrier gas: hydrogen, constant flow (3.62cc/min.)

Linear velocity: 55cm/sec.

Inj. temp.: 250°C

Oven temp.: A: 35°C
B: 5°C (hold 8.32 min.) (elute C5) to 48°C @ 22°C/min. (hold 26.32 min.) (elute ethylbenzene) to 141°C @ 3.20°C/min. (no hold) (elute C12) to 300°C @ 1°C/min. FID @ 300°C

A: Front end of DHA/oxygenates setup blend
C5 efficiency: 586,825 plates
C5 k': 0.476
tert-butanol skew: 2.10
Resolution *tert*-butanol/
2-methylbutene-2: 5.39

B: DHA/oxygenates setup blend

1. ethanol
2. C5
3. *tert*-butanol
4. 2-methylbutene-2
5. 2,3-dimethylbutane
6. methyl *tert*-butyl ether (MTBE)
7. C6
8. 1-methylcyclopentene
9. benzene
10. cyclohexane
11. 3-ethylpentane
12. 1,2-dimethylcyclopentane
13. C7
14. 2,2,3-trimethylpentane
15. 2,3,3-trimethylpentane
16. toluene
17. C8
18. ethylbenzene
19. *p*-xylene
20. 2,3-dimethylheptane
21. C9
22. 5-methylnonane
23. 1,2-methylethylbenzene
24. C10
25. C11
26. 1,2,3,5-tetramethylbenzene
27. naphthalene
28. C12
29. 1-methylnaphthalene
30. C13

Chromatogram courtesy of Neil Johansen, Inc., Aztec, New Mexico, in association with Envantage Analytical Software, Inc., Cleveland, Ohio.