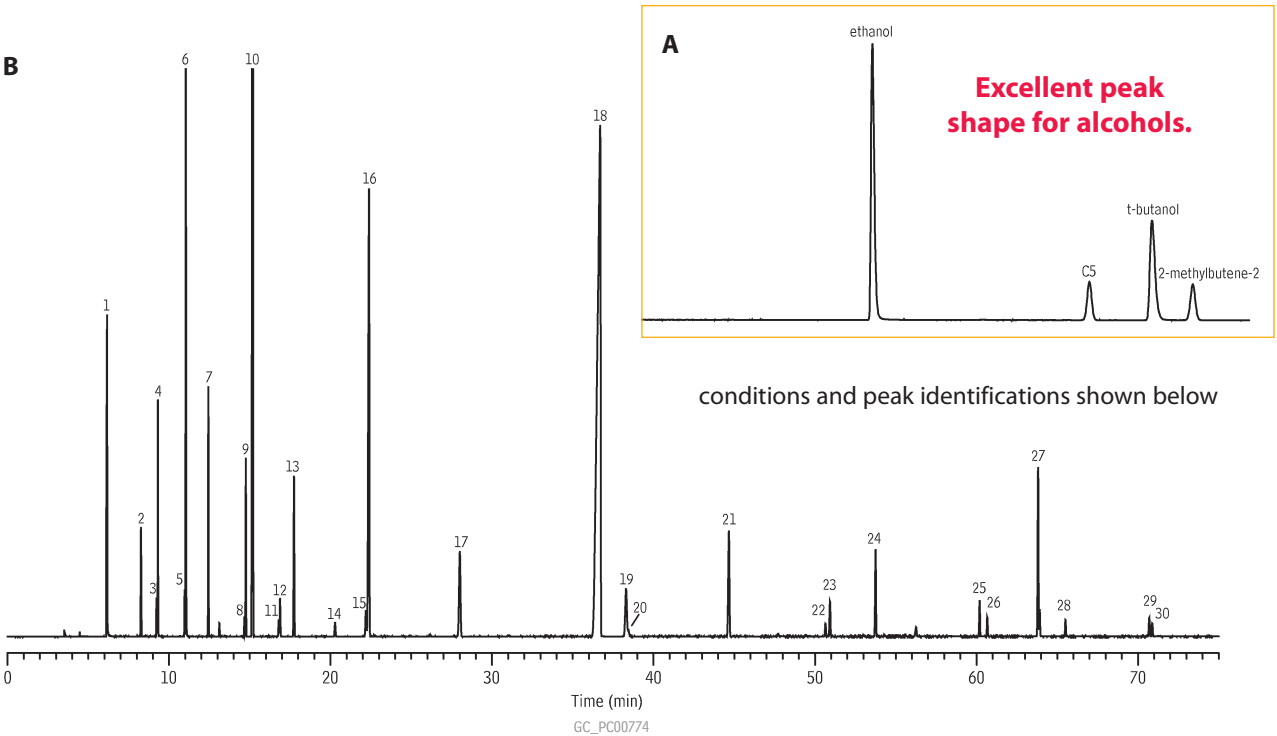
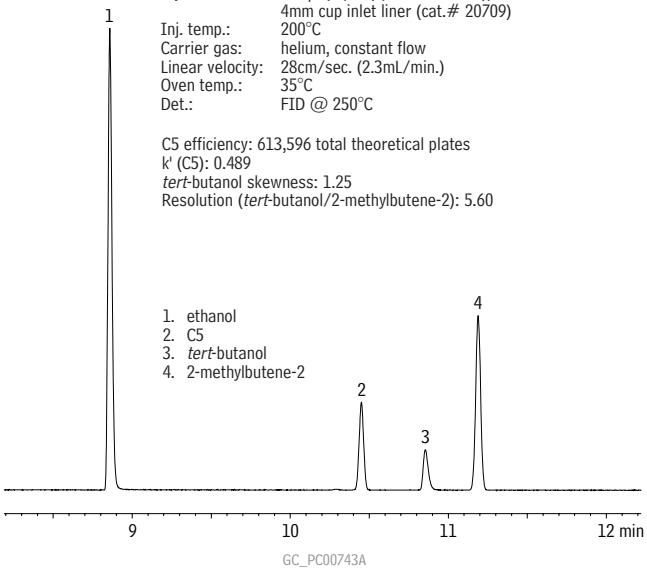
Fast Detailed Hydrocarbons Analysis (DHA)
Rtx®-DHA-100/Rtx®-5 DHA Tuning Column



Detailed Hydrocarbons Analysis (DHA)
Rtx®-DHA-100/Rtx®-5 DHA Tuning Column

Column:	Rtx®-DHA-100, 100m, 0.25mm ID, 0.5µm (cat.# 10148) plus Rtx®-5 DHA tuning column, 2.62m, 0.25mm ID, 1.0µm, connected via Press-Tight® connector (cat.# 20446)
Sample:	custom detailed hydrocarbons analysis (DHA) mix, neat
Inj.:	0.01µL, 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



Column:	Rtx®-DHA-100 100m, 0.25mm ID, 0.5µm (cat.# 10148) plus Rtx®-5 DHA tuning column (cat.# 10165), connected via angled Press-Tight® connector (cat.# 20446)
Sample:	DHA/oxygenates setup blend
Inj.:	0.01µL, 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.
Det.:	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: R = 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.