

Peak Assignments for C2-C9 Hydrocarbons in Vehicle Exhaust with Varian Alumina-KCl PLOT Capillary Column

by Randall Bramston-Cook

Technique: GC PLOT Capillary with Flame Ionization Detection

Column: Varian CP-Al₂O₃/KCl, 50 m x 0.32 mm ID, df = 5 µm, P/N CP7515

Temperature: 150 °C (0.05 minutes), 100 °C/min to 20 °C (5.70 minutes), 50 °C/min to 0 °C (1.60 minutes), 5 °C/min to 200 °C (40.95 minutes)

Carrier gas: Helium, 2 ml/min

Injection: Cryotrapping following California Air Resource Board Non-Methane Organic Gas Test Procedures, Method 1002 protocol

Detector: FID, Range - 12

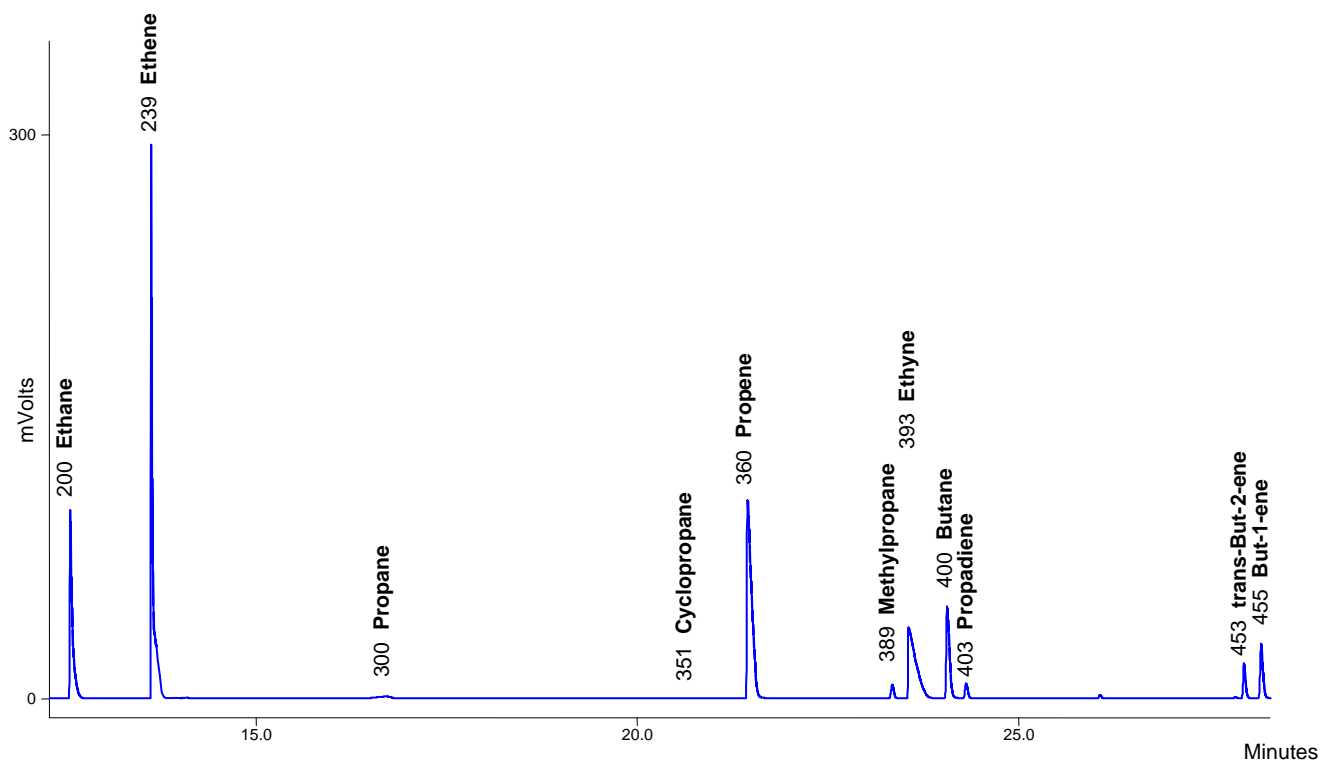
Sample: Vehicle Exhaust

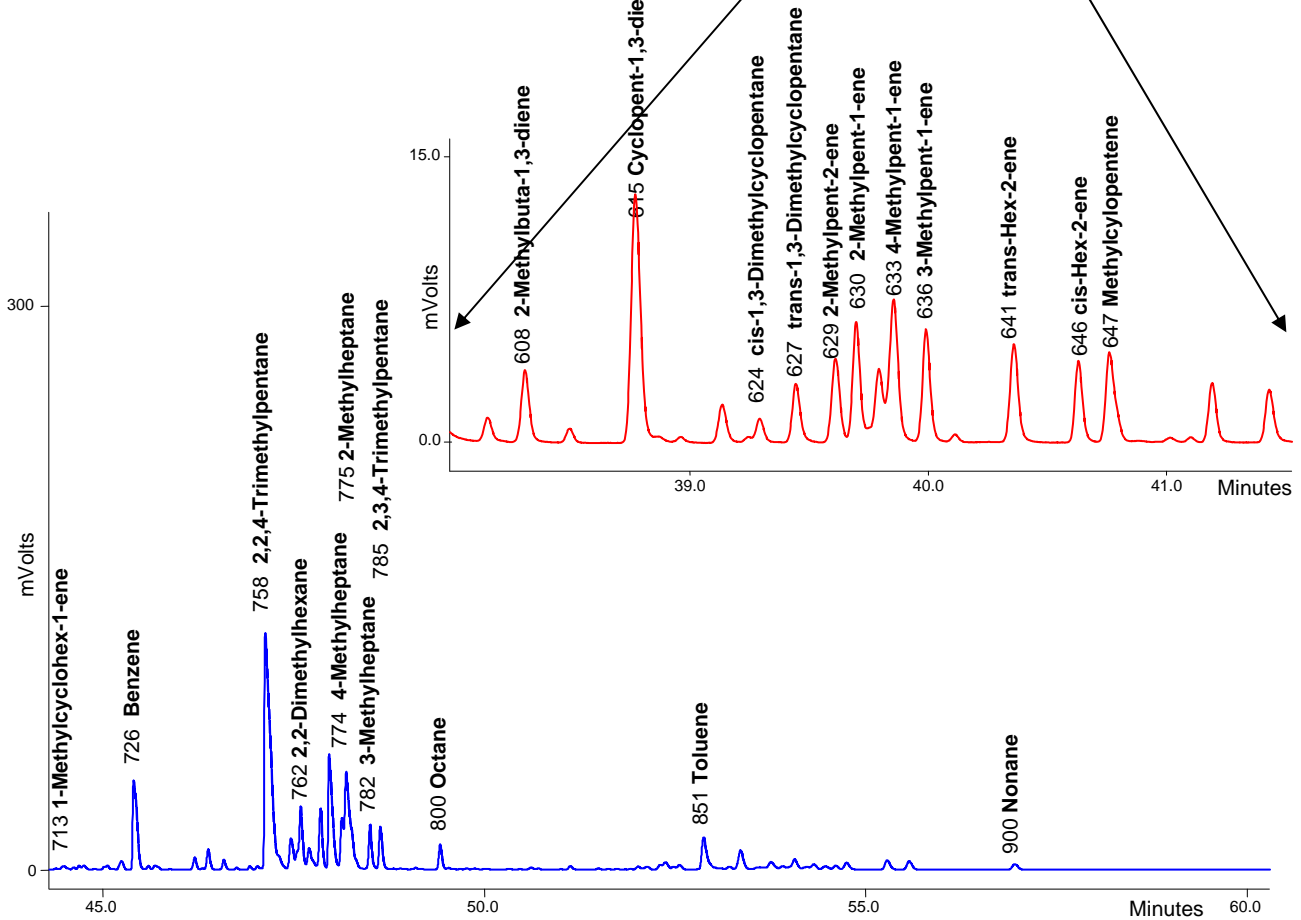
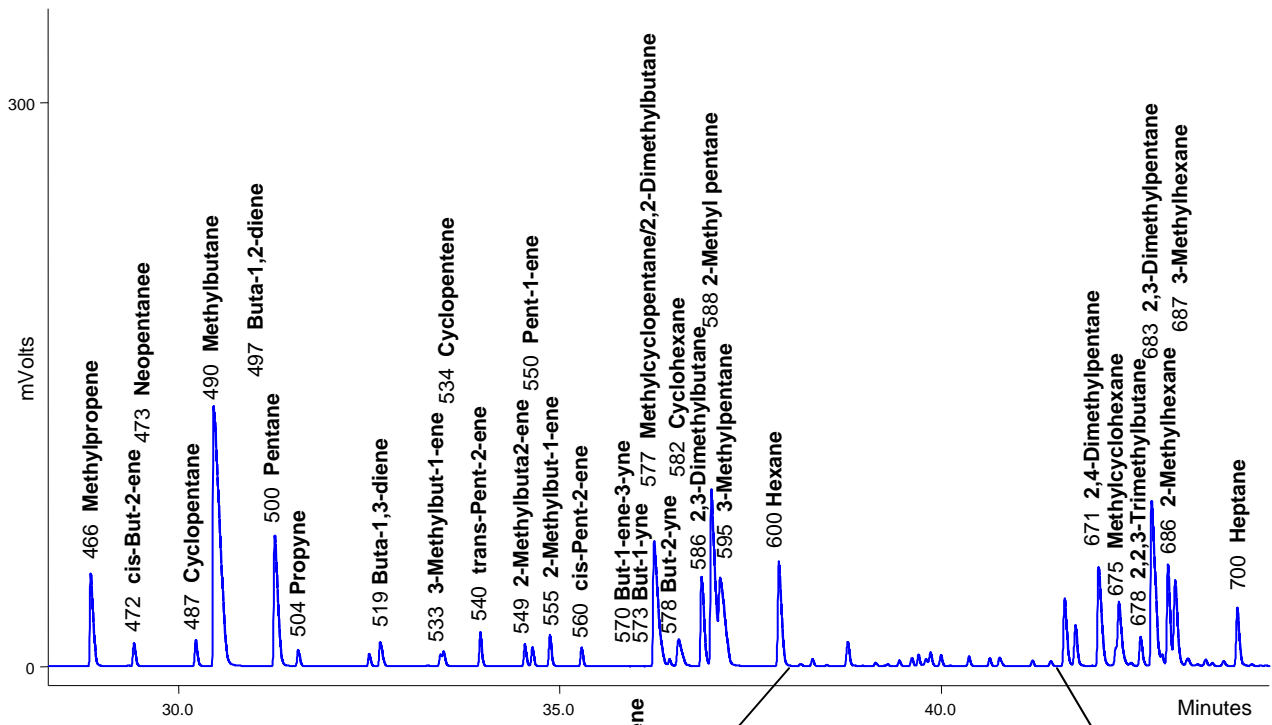
Sample Conc: Variable - from 40 ppbCarbon (cis-1,3-Dimethylcyclopentane) to 10,280 ppbCarbon (Methylbutane)

Sample Vol: 10 ml

Notes:

1. On-column injection performed at 9.00 minutes. Prior interval involves trapping processes.
2. All compound labels are per IUPAC protocol.
3. Numbers in front of compound names are average Kovats Indices from 10 chromatograms to aid in location of peaks.
4. Ethyne is readily distinguishable from its neighbors by its "saw-tooth" peak shape.
5. Heavier hydrocarbons (above Hexane) are attenuated in peak size due to employment of stripper column to prevent water in the sample matrix from reaching the analytical column.





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310/569-0128 Fax 714/898-7461

Email: ebramstoncook@msn.com



5781 Campo Walk
Long Beach, California 90803