UltraFast GC Columns

The huge demand of samples to be analyzed every day by labs in industries such as environmental and petrochemical requires an increased speed of analysis

A significant gain in analysis speed compared to conventional GC procedures is obtained through UltraFast Gas Chromatography. UltraFast GC utilizes short (2-10m) narrow bore capillaries and temperature programming conditions usually faster than 2°C/s. This leads to peak widths in the 50-200ms range. The analysis times are in the range of 1 minute or even less.

Benefits of UltraFast GC Columns

- Dramatically shorter analysis times – typically a minute or less
- Ideal for applications in petrochemical and environmental markets
- Long column lifetimes

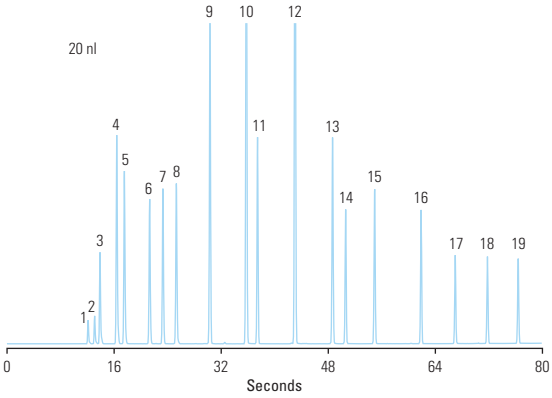
Application – UltraFast Analysis of Pure Petroleum Products through Nanovolumes Injection

The analyses were performed in the UltraFast GC mode using a TRACE GC Ultra System equipped with a Split/Splitless injector (SSL) and a Digital Pressure and Flow Controller, as well as a FAST FID detector. The GC System was also equipped with an UltraFast Module (UFM).

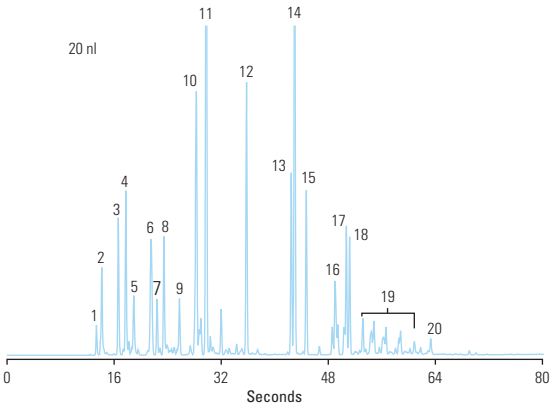
Split injections were performed with a AS3000 Autosampler using a 0.5µL plunger-in-needle syringe p/n 36504045. A minimum penetration depth in the injector (cold needle mode) was set, and 0.3µL of air was automatically withdrawn after the sample to ensure that the part of the needle inserted into the injector was empty. A 3mm ID upper-tapered empty liner with an 8mm long and 1mm wide restriction at the top was installed. The SSL injector was set to 225°C and the FID to 320°C.

UFC-1 10m x 0.32mm x 3um

Temperature:	40°C (6 sec hold) to 300°C (6 sec hold) at 180°C/min
Detector Type:	FID
Carrier Gas:	Helium
Flow Rate:	0.5mL/min
Injection Mode:	Split/Splitless



1. propane
2. methyl-propane
3. butane
4. methyl-butane
5. pentane
6. methyl-pentane
7. hexane
8. dimethyl-pentane
9. heptane
10. toluene
11. octane
12. p-xylene
13. propyl-benzene
14. n-decane
15. butyl-benzene
16. n-dodecane
17. n-tridecane
18. n-tetradecane
19. n-pentadecane



1. methyl-propane
2. butane
3. 2-methyl-butane
4. pentane
5. ter-butyl alcohol
6. methyl-pentane
7. 3-methyl-pentane
8. hexane
9. dimethyl-pentane
10. cyclohexane
11. dimethyl-hexane
12. toluene
13. ethyl-benzene
14. p-xylene
15. m-xylene
16. propyl-benzene
17. tetramethyl-octane
18. 1,2,4-trimethyl-benzene
19. tri/tetramethyl-benzene isomers
20. naphthalene

UltraFast GC Columns

Short, narrow-bore columns for use with the Thermo Scientific TRACE GC UltraFast instrument

- Dramatically shorter analysis times
- Increase sample throughput by a factor of 20
- Lengthen column lifetimes

Applications:

- Chemical
- Petrochemical
- Environmental
- Flavors and fragrances

UltraFast GC Columns

Phase	ID (mm)	Length (m)	Film Thickness (µm)	Uses	Cat. No.	Quantity
UFC-1	0.10	5	0.1	General	**UFMC00001010401**	1 Each
	0.32	5	0.1	ASTM D-2887	**UFMC00001070401**	1 Each
		5	0.25	ISO 9377-2	**UFMC00001070404**	1 Each
		10	3.0	ASTM D-3710	**UFMC00002070414**	1 Each
UFC-5	0.10	2.5	0.4	General	**UFMC00100000000**	1 Each
		5	0.4	General	**UFMC00200000000**	1 Each
		5	0.1	General	**UFMC00300000000**	1 Each
		10	0.1	General	**UFMC00002010601**	1 Each
		10	0.4	General	**UFMC00502010006**	1 Each
UFC-1701	0.10	5	0.1	General	**UFMC00400000000**	1 Each
UFC-WAX	0.10	5	0.1	FAMES, Essential Oils	**UFMC00001010501**	1 Each
		5	0.2	General	**UFMC00001010503**	1 Each
UFC-264	0.10	10	0.5	Volatiles	**UFMC00002010207**	1 Each
UFC-BioDiesel	0.32	5	0.5	Biodiesel	**UFMC00001070600**	1 Each
UFC-M1	0.32	5	0.25	General	**UFMC00001070904**	1 Each
UFC-POR Q					**UFMC00002060614**	1 Each