ChromGC

AVAILABLE IN ANY PHASE YOU REQUIRE

ChromGC
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Dear Customer,

Thank you for considering CHROM4 as your GC product supplier.

A trusted source.

Since our distributor owned group, CHROM4, started in 2011, we have focused on consumables for the chromatography industry.

After introducing Sample Handling (vials, caps, inserts, insert vials, as well as 96-well plates and their respective cap mats and foils) we introduced our LC column line of products with respective LC consumables. The Quattro, iSep silica and polymer based, column line has been well received and our iSep Isosceles fused core columns are being launched Q2 2021.

We have now directed our expertise to develop a GC fused silica column and accessory line, to provide you with a complete LC/GC column and accessory program. Quality is our first and primary focus.

These fused silica columns are capable of performing a wide variety of separations on the most difficult samples and reproducibility is of course guaranteed. Our ChromGC phases (as you can see in the table of contents) are inert, thermally stable and very efficient.

The wide variety of phases helps you choose the right polarity for your analytes.
We produce and test each column individually to guarantee our column-to-column reproducibility.

We have also listed an attractive line of Agilent™ equivalent and other GC instrument manufacturer's accessories. These aftermarket products are guaranteed to work and will bring savings to your consumable budget.

This GC section is presented to you as a reference tool for your research, routine analyses and production.

As our customer, you deserve excellent service, starting from the right phase for your application through swift and reliable delivery.

We welcome you to contact your distributor whenever you need sound advice for technical help, or to discuss the phase that best accomodates your needs.

ChromGC, better chemistry for better separation(s).

To find your local supplier and for all other enquiries, please contact **info@chrom4.com**

Please direct global company inquiries to **global@chrom4.com**

Distributor opportunities available.

Please contact **global@chrom4.com**

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Equivalency Chart for Chrom4 GC Columns

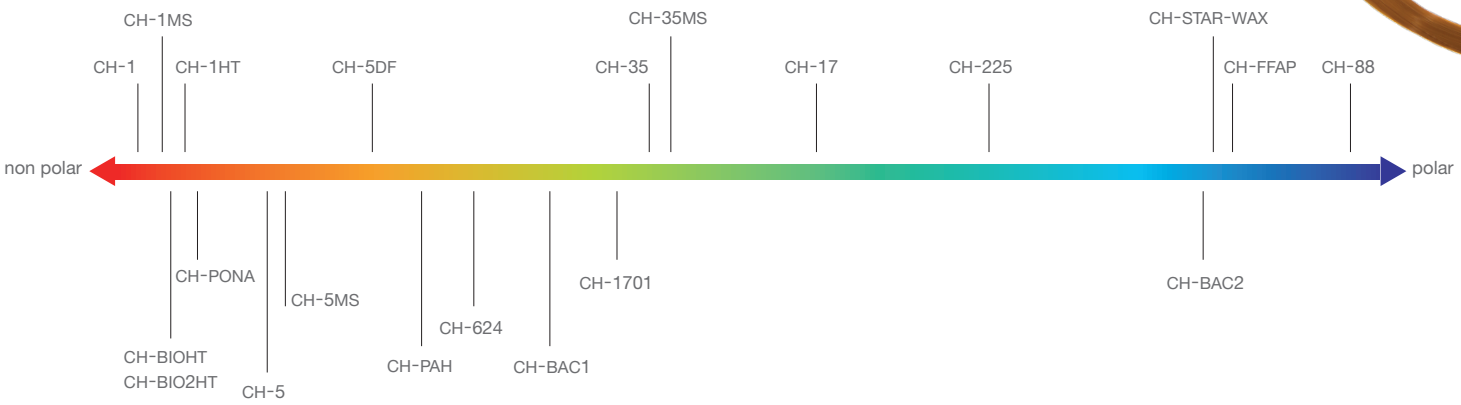
Agilent™			Restek	Phenomenex	Supelco*	Chrom4	PG #
J&W	HP	Chrompak	Rtx	Zebron			
DB-1	HP-1	CP-Sil5CB	Rtx-1	ZB-1	SPB-1	CH-1	6
DB-1HT	-	-	Rxi-1HT	ZB-1HTInferno	-	CH-1HT	8
DB-1ms	HP-1ms	VF-1ms	Rxi-1MS	ZB-1ms	Equity-1	CH-1MS	8
-	-	-	MXT- BioDiesel	-	MET-Biodiesel	CH-Bio-HT	9
						CH-Bio2-HT	10
DB-5	HP-5	CP-Sil 8CB	Rtx-5	ZB-5	SPB-5	CH-5	13
DB-5ms	HP-5ms	-	Rtx-5MS	ZB-5msi	Equity-5	CH-5MS	14
DB-Petro	HP-Pona	-	Rtx-1 Pona	Petrocol	-	CH-Pona	11
-	-	-	-	-	-	CH-5DF	15
Select PAH/VF-17ms	-	-	Rxi-PAH	-	-	CH-PAH	16
DB-624	HP-624	-	Rtx-624	ZB-624	SPB-624	CH-624	17
DB-ALC1	-	-	Rtx-BAC1	-	-	CH-BAC-1	18
DB-35	HP-35	-	Rtx-35	ZB-Multiresidue-2	SPB-35/SPB-608	CH-35	20
DB-35ms	-	-	RTX-35Silms	-	-	CH-35MS	20
DB-17/DB608	HP-17	CP-Sil24CB	Rtx-17	ZB-50	SPB-50	CH-17	21
DB-1701	HP-1701	CP-Sil19CB	Rtx-1701	ZB-50	SPB-50	CH-1701	19
DB-225	HP-225	CP-Sil43CB	Rtx-225	-	-	CH-225	21
DB-ALC2	-	-	Rtx-BAC2	-	-	CH-BAC-2	22
DB-WAXetr	HP-Innowax	-	Stabilwax	ZB-WaxPlus	Supelcowax	CH-STAR-WAX	23
DB-FFAP	-	CP-Wax57CB	-	ZB-FFAP	-	CH-FFAP	24
-	HP-88	-	-	-	SLB-IL111/SP2330	CH-88	26

To make your selection to our ChromGC equivalent columns, we have put together for your convenience an equivalency table of the top four selling brands.

If you do not see what you are looking for please email: info@chrom4.com

*Supelco part of Merck / MilliporeSigma

Polarity Table



GC Columns Available Dimensions

SPEED OF ANALYSIS			
I.D.	0.10mm	0.15mm	0.18mm
Length	from 2 to 15m	from 2.5 to 30m	from 5 to 60m
Film Thickness*	from 0.05 to 1.00µm	from 0.05 to 1.40µm	from 0.05 to 1.50µm
TRADITIONAL			
I.D.	0.25mm	0.32mm	
Length	from 5 to 100m	from 5 to 100m	
Film Thickness*	from 0.05 to 3.00µm	from 0.05 to 5.00µm	
WIDE BORE			
I.D.	0.45mm	0.53mm	
Length	from 10 to 75m	from 10 to 75m	
Film Thickness*	up to 5.00µm	up to 5.00µm	

* Maximum film thickness depends also on the stationary phase type.

Speed of Analysis

In today's world we are looking at shorter and faster run times. To accomplish this we can shorten the length and decrease the inner dimension and accordingly adjust the film thickness.
Example: 30m x 25mm x 25µm is easily adjusted to 20m x .18mm x .18µm

For further information, please contact our Technical Desk.

CH-1

ChromGC

- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 350°C
- Examples PCBs, SimDist, Essential Oils, Pesticides, etc.

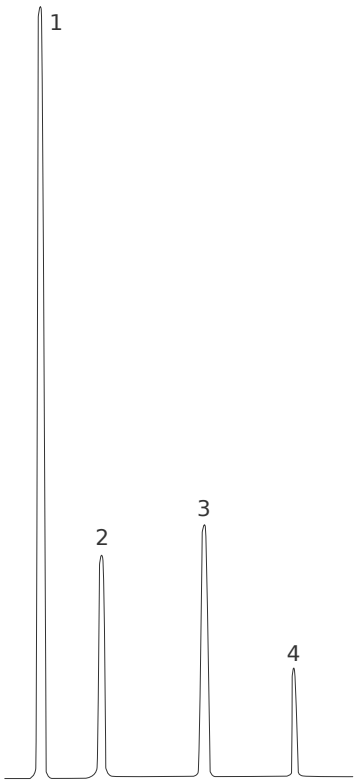
(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	10	0.10	CH1-101010	41101	127-1012	-60to325 / 350
		0.40	CH1-101040	41103	127-1013	-60to325 / 350
	20	0.10	CH1-201010	41102	127-1022	-60to325 / 350
		0.40	CH1-201040	41104	127-1023	-60to325 / 350
0.18	10	0.18	CH1-101818	40101	121-1012	-60to325 / 350
		0.40	CH1-101840	40110	121-1013	-60to325 / 350
	20	0.18	CH1-201818	40102	121-1022	-60to325 / 350
		0.40	CH1-201840	40111	121-1023	-60to325 / 350
	40	0.40	CH1-401840	40112	121-1043	-60to325 / 350
0.25	15	0.10	CH1-152510	10105	122-1011	-60to325 / 350
		0.25	CH1-152525	10120	122-1012	-60to325 / 350
		1.00	CH1-1525100	10150	122-1013	-60to325 / 350
	25	0.25	CH1-252525	-	122-1022	-60to325 / 350
	30	0.10	CH1-302510	10108	122-1031	-60to325 / 350
		0.25	CH1-302525	10123	122-1032	-60to325 / 350
		0.50	CH1-302550	10138	122-103E	-60to325 / 350
		1.00	CH1-3025100	10153	122-1033	-60to325 / 350
0.32	15	0.10	CH1-153210	10106	123-1011	-60to325 / 350
		0.25	CH1-153225	10121	123-1012	-60to325 / 350
		1.00	CH1-1532100	10151	123-1013	-60to325 / 350
		3.00	CH1-1532300	10181	123-1014	-60to280 / 300
		5.00	CH1-1532500	10176	123-1015	-60to280 / 300
	25	0.25	CH1-253225	-	123-1022	-60to325 / 350
		0.52	CH1-253252	-	123-1026	-60to325 / 350
		1.05	CH1-2532105	-	123-102F	-60to280 / 300
	30	0.10	CH1-303210	10109	123-1031	-60to325 / 350
		0.25	CH1-303225	10124	123-1032	-60to325 / 350
		0.50	CH1-303250	10139	123-103E	-60to325 / 350
		1.00	CH1-3032100	10154	123-1033	-60to325 / 350
		3.00	CH1-3032300	10184	123-1034	-60to280 / 300
		5.00	CH1-3032500	10178	123-1035	-60to280 / 300
	50	0.25	CH1-503225		123-1052	-60to325 / 350
		0.52	CH1-503252	18010	123-1056	-60to325 / 350
		1.05	CH1-5032105		123-105F	-60to280 / 300
	60	0.10	CH1-603210	10112	123-1061	-60to325 / 350
		0.25	CH1-603225	10127	123-1062	-60to325 / 350
		0.50	CH1-603250	10142	123-106E	-60to325 / 350
		1.00	CH1-6032100	10157	123-1063	-60to325 / 350
		3.00	CH1-6032300	10187	123-1064	-60to280 / 300
		5.00	CH1-6032500	10180	123-1065	-60to280 / 300

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.45	30	1.27	CH1-3045127	-	124-1032	-60to300/ 320
		2.55	CH1-3045255	-	124-1034	-60to260 / 300
0.53	10	2.65	CH1-1053265	-	125-10HB	-60to260 / 300
		5.00	CH1-1053500	-	125-10H5	-60to280 / 300
	15	0.15	CH1-155315	-	125-1011	-60to340/ 360
		0.50	CH1-155350	18037	125-1017	-60to300 / 320
		1.00	CH1-1553100	18052	125-101J	-60to300 / 320
		1.50	CH1-1553150	18067	125-1012	-60to300 / 320
		3.00	CH1-1553300	10182	125-1014	-60to260 / 300
		5.00	CH1-1553500	10177	125-1015	-60to280 / 300
	25	5.00	CH1-2553500	-	125-1025	-60to280 / 300
	30	0.50	CH1-305350	18040	125-1037	-60to300 / 320
		1.00	CH1-3053100	18055	125-103J	-60to300 / 320
		1.50	CH1-3053150	18070	125-1032	-60to300 / 320
		2.65	CH1-3053265	-	125-103B	-60to260 / 300
		3.00	CH1-3053300	10185	125-1034	-60to260 / 300
		5.00	CH1-3053500	10179	125-1035	-60to280 / 300
	60	1.00	CH1-6053100	18058	125-106J	-60to300 / 320
		1.50	CH1-6053150	18073	125-1062	-60to300 / 320
		3.00	CH1-6053300	10188	125-1064	-60to260 / 300
		5.00	CH1-6053500	10183	125-1065	-60to280 / 300

Cyclic Hydrocarbons

CH1 - 10 m, 0.53 mm, 5.00 µm
CH1-1053500
Conditions:
Injection: Split 250°C, 1.0µL
Detector: FID 250°C
Oven Temp: 40°C, 5°C /min, 100°C
Carrier Gas: Helium, 5mL/min

Peaks:
1. Cyclohexane
2. Cycloheptane
3. Cyclooctane
4. n-Decane



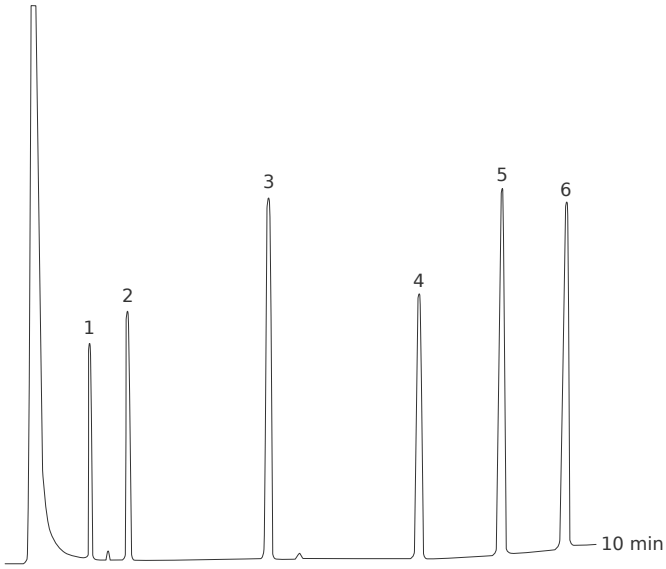
CH-1
ChromGC

- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 350°C

Phthalate Esters (EPA Method 606)

CH1 - 15 m, 0.53 mm, 1.50 µm
CH1-1553150
Conditions:
Injection: Split 250°C, 1.0µL
Sample: 2000µm/mL each in Methanol
Detector: FID 300°C
Oven Temp: 150°C, 15°C /min, 270°C
Carrier Gas: Helium, 20mL/min

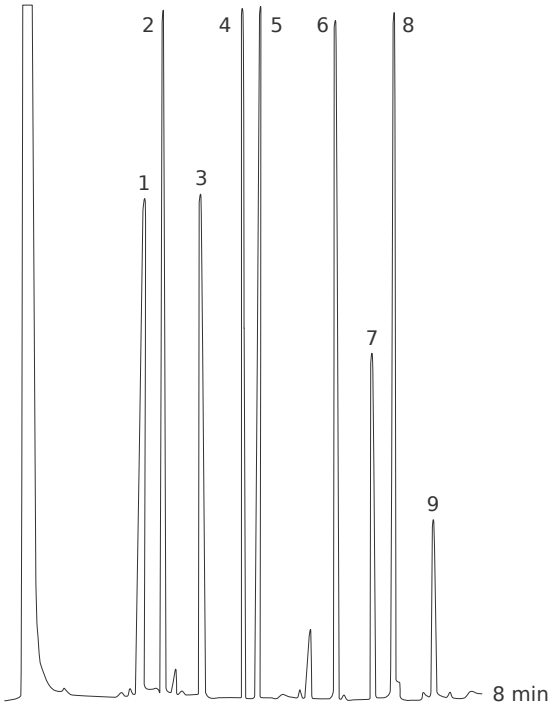
Peaks:
1. Dimethyl phthalate
2. Diethyl phthalate
3. Di-n-butyl phthalate
4. Butyl benzyl phthalate
5. Bis (2-ethylhexyl) phthalate
6. Di-n-octyl phthalate



Drugs of Abuse - Basic Drugs

CH1 - 15 m, 0.25 mm, 0.25 µm
CH1-152525
Conditions:
Injection: Split 280°C, 1.0µL, 1:50 Split Ratio
Detector: FID 320°C
Oven Temp: 120°C, 25°C /min, 310°C
Carrier Gas: Hydrogen,30 kPa

Peaks:
1. Caffeine
2. Lidocaine
3. Procaine
4. Cocaine
5. Butyl Antrachinon (I.S.)
6. Heroin
7. Papaverine
8. Etaverine (I.S.)
9. Narcotine



CH-1MS

ChromGC

- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 350°C
- Examples PCBs, SimDist, Essential Oils, Pesticides, Phenols, etc.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	10	0.40	CH1MS-101040	-	127-0113	-60to340 / 360
	20	0.40	CH1MS-201040	-	127-0123	-60to340 / 360
0.18	10	0.18	CH1MS-101818	-	-	-60to340 / 360
	20	0.18	CH1MS-201818	-	-	-60to340 / 360
0.20	12	0.33	CH1MS-122033	-	128-0122	-60to340 / 360
	25	0.33	CH1MS-252033	-	128-0122	-60to340 / 360
0.25	15	0.25	CH1MS-152525	11620	122-0112	-60to340 / 360
	30	0.10	CH1MS-302510	11608	122-0131	-60to340 / 360
		0.25	CH1MS-302525	11623	122-0132	-60to340 / 360
	60	0.25	CH1MS-602525	-	122-0162	-60to340 / 360
0.32	15	0.25	CH1MS-153225	11621	123-0112	-60to340 / 360
	30	0.10	CH1MS-303210	11609	123-0131	-60to340 / 360
		0.25	CH1MS-303225	11624	123-0132	-60to340 / 360
	60	0.25	CH1MS-603225	-	123-0162	-60to340 / 360

CH-1HT

ChromGC

- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 400°C
- Examples: High MW waxes, Motor Oil, CC-ME Methods

(mm)	(m)	(µm)	Part No.	Restek	J&W No.	iso/prog. (°C)
0.25	15	0.10	CH1HT-152510	-	122-1111	-60to380
	30	0.10	CH1HT-02510	-	122-1131	-60to380
0.32	15	0.10	CH1HT-153210	-	123-1111	-60to380
	30	0.10	CH1HT-303210	-	123-1131	-60to380

CH-BIO-HT

ChromGC

- 5% phenyl
- Stable up to 380°C
- Examples: FAME, BioDiesel Analysis, Free and Total Glycerine

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	10	0.10	CHBIOHT-103210	10292	-	360 / 380
	15	0.10	CHBIOHT-153210	10293	-	360 / 380

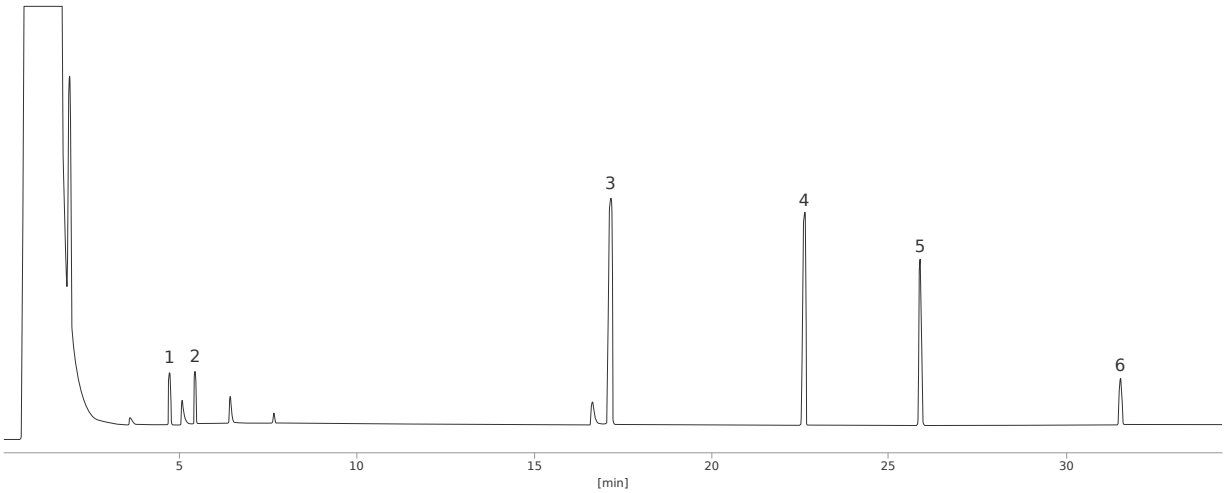
Biodiesel

CHBIOHT - 15m, 0.32mm, 0.10 µm
CHBIOHT-153210
Conditions:
Injection: PTV program Temp. 50°C, 999°C/min, 360°C (15 min)

Detector: FID 380°C.
Oven Temp: 50°C (1min), 15°C/min, 180°C, 7°C/min, 230°C, 10°C/min, 370°C (5min)
Carrier Gas: Helium, 3mL/min
Sample: Standards derivatized by MSTFA

Peaks:

1. Glycerin
2. I.S. 1
3. Monoolein
4. IS. 2
5. Diolein
6. Triolein



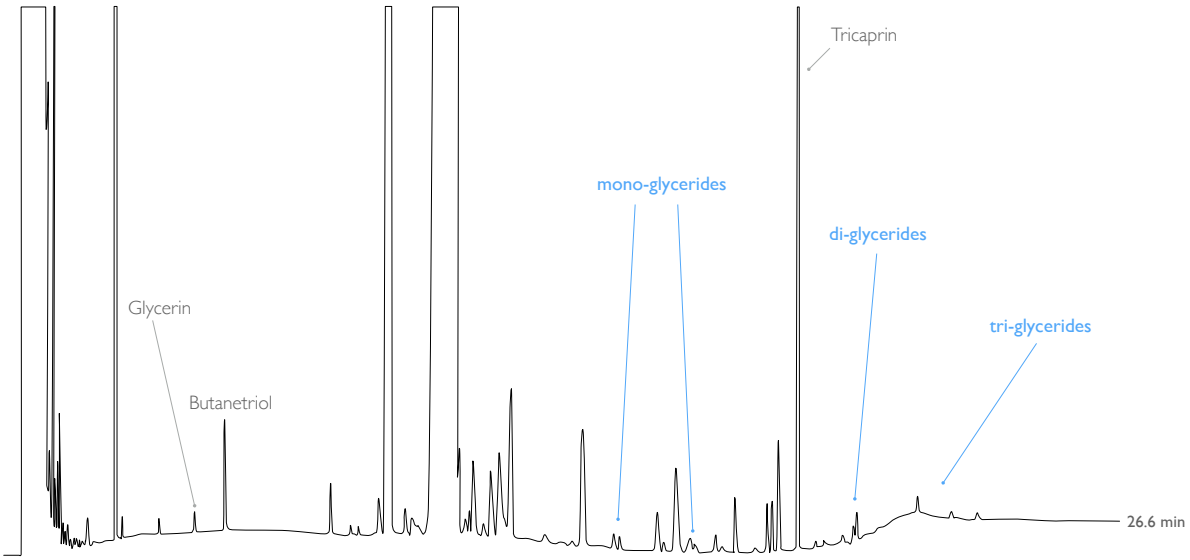
Biodiesel

CHBIOHT - 15m, 0.32mm, 0.10 µm
CHBIOHT-153210
Conditions:
Injection: PTV (from 100°C to 370°C).
Detector: FID 380°C.

Oven Program: 50°C (1min), 15°C/min, 180°C, 7°C/min, 230°C, 30°C/min, 370°C (15min).
Carrier Gas: Nitrogen, 3mL/min.

Peaks:

1. Glycerin
2. Butanetriol
3. FAME 16
4. C16:0
5. Mono palmitoyl glycerol
6. Mono linolenyl glycerol
7. Mono oleoyl glycerol + Linoleyl
8. Mono stearoyl
9. Campesterol TMS
10. Stigmasterol TMS
11. beta-Sitosterol TMS
12. Tricaprin
13. Diolein
14. beta-Sitosterol glucoside TMS



CH-BIO2-HT

ChromGC

- 5% phenyl
- Stable up to 380°C
- Examples: FAME, BioDiesel Analysis, Free and Total Glycerine

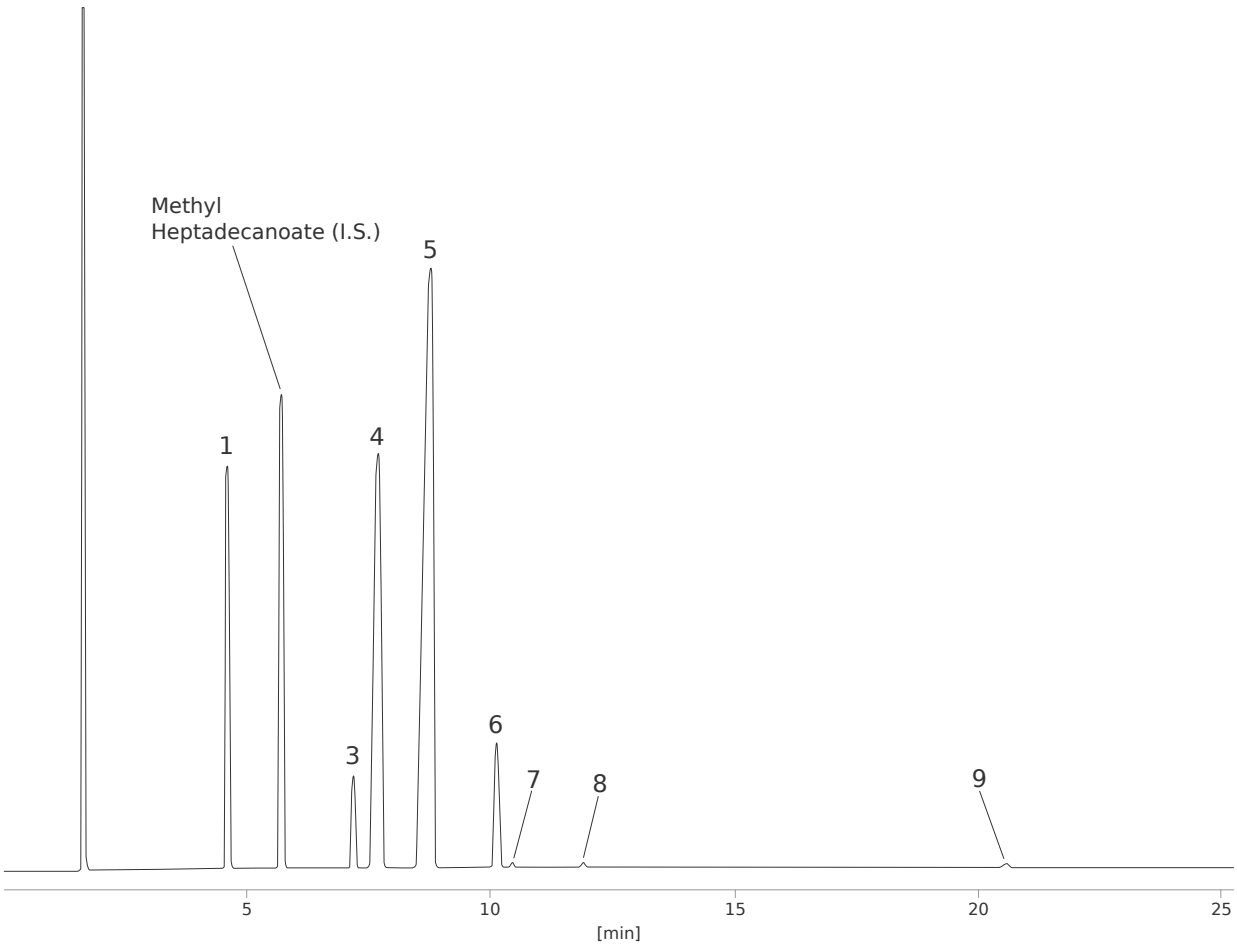
(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	10	0.10	CHBI2OHT-103210	10292	-	360 / 380
	15	0.10	CHBIO2HT-153210	10293	-	360 / 380

Biodiesel

CHBIO2HT - 30m, 0.32mm, 0.25 µm
CHBIO2HT-303225
Conditions:
Injection: Split 250°C, 1.0µL 1:50 Split Ratio
Detector: FID 250°C.
Oven Temp: 210°C Isothermal
Carrier Gas: Hydrogen, 50 kPA
Sample: Standard mix, 10mg/ml Methyl Heptadecanoate in Biodiesel sample

Peaks:

1. Palmitic Acid C:16
2. Methyl Heptadecanoate (I.S)
3. Stearic Acid C18:0
4. Oleic Acid C18:1
5. Linoleic Acid C18:2
6. Linolenic Acid C18:3
7. Arachidic Acid C20:0
8. Gadoleic Acid C20:1
9. Nervonic Acid C24:1



info@chrom4.com :: www.Chrom4.com

CH-PONA

ChromGC

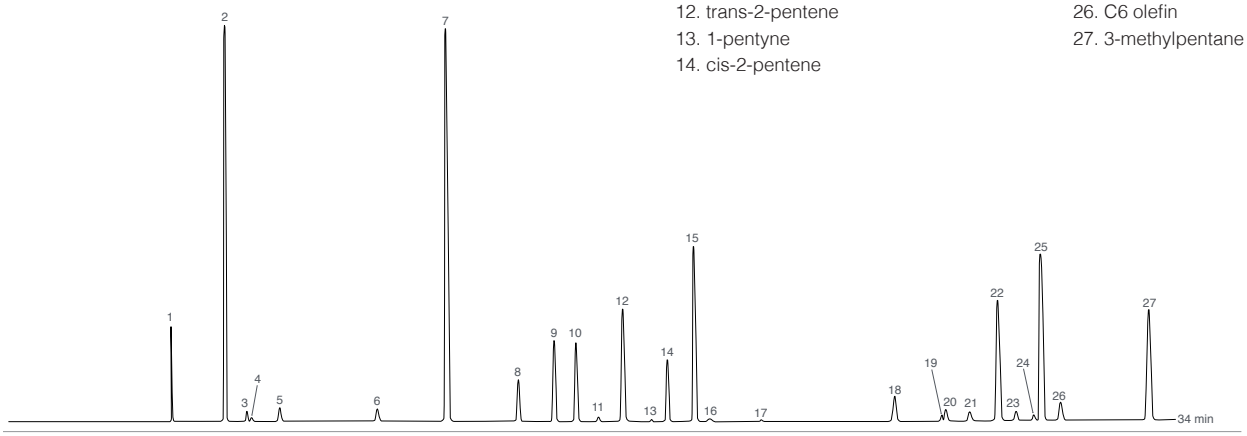
- 100%- Dimethylpolysiloxane
- Up to 350°C
- Examples: DHA, PIANO, PONA, PNA Analysis

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.20	50	0.50	CHPONA-502050	-	128-1056	-60to325 / 350
0.25	100	0.50	CHPONA-002550	10195	122-10A6	-60to325 / 350

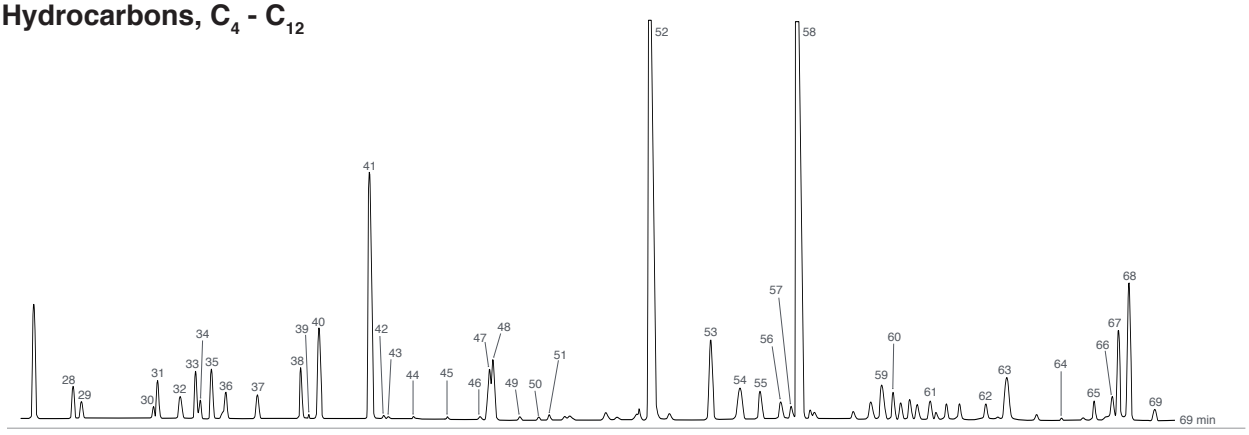
CH-PONA - 100m, 0.25mm, 0.50µm
CHPONA-1002550
Conditions:
Injection: Split, 220°C.
Detector: FID, 250°C.
Oven Program: 30°C (15min), 1°C/min, 50°C, 2°C/min, 130°C, 4°C/min, 180°C (20min)
Carrier Gas: 260kPa Helium constant pressure.
Sample: 8270 Calibration Mix #5, Revised 2000µg/mL in Methylene Chloride.

Part 1 - Peaks

1. isobutane
2. n-butane
3. trans-2-butene
4. 2,2-dimethylpropane
5. cis-2-butene
6. 3-methyl-1-butene
7. isopentane
8. 1-pentene
9. 2-methyl-1-butene
10. n-pentane
11. isoprene
12. trans-2-pentene
13. 1-pentyne
14. cis-2-pentene
15. 2-methyl-2-butene
16. trans-1,3-pentadiene
17. cis-1,3-pentadiene
18. cyclopentene
19. 4-methyl-1-pentene
20. cis-2,3-pentadiene
21. cyclopentane
22. 2,3-dimethylbutane
23. C6 olefin
24. C6 olefin
25. 2-methylpentane
26. C6 olefin
27. 3-methylpentane



Hydrocarbons, C_4 - C_{12}



Part 2 - Peaks

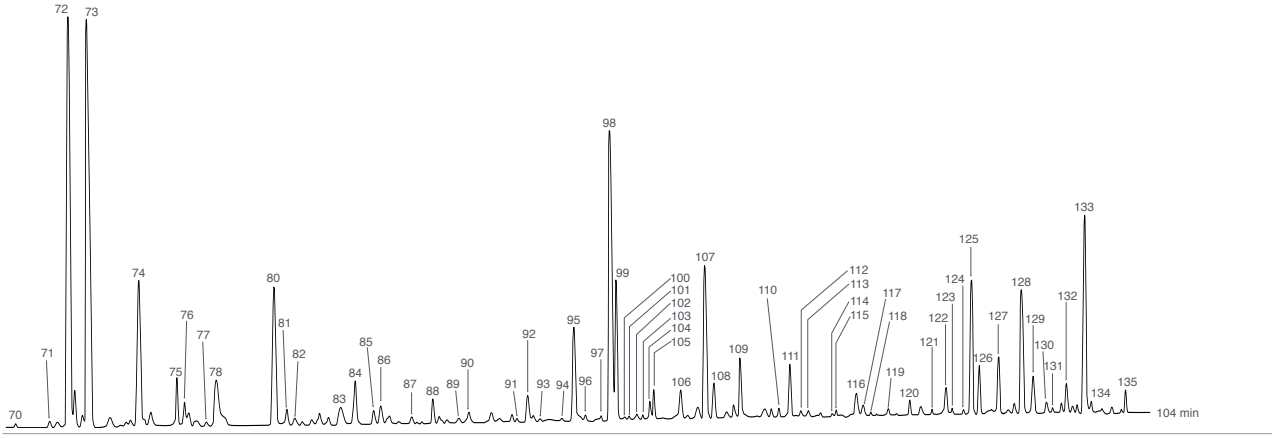
28. C6 olefin
29. 1-hexane
30. C6 olefin
31. n-hexane
32. C6 olefin
33. trans-2-hexane
34. C6 olefin
35. 2-methylpentadiene
36. C6 olefin
37. cis-2-hexene
38. C6 olefin
39. C6 olefin
40. methylcyclopentane
41. 2,4-dimethylpentane
42. C7 olefin
43. 2,2,3-trimethylbutane
44. C7 olefin
45. C7 olefin
46. C7 olefin
47. benzene
48. 1-methyl-1-cyclopentane
49. C7 olefin
50. 3,3-dimethylpentane
51. cyclohexane
52. 2-methylhexane
53. 3-methylhexane
54. cis1,3-dimethylcyclopentane
55. trans1,3-dimethylcyclopentane
56. 3-ethylpentane
57. trans-1,2-dimethylpentane
58. 2,2,4-trimethylpentane
59. 1-heptane
60. n-heptane
61. cis-3-heptane
62. trans-2-heptene
63. cis-2-heptene
64. methylcyclohexane
65. 2,2-dimethylhexane
66. ethylcyclopentane
67. 2,5-dimethylhexane
68. 2,2,3-trimethylpentane
69. 2,4-dimethylhexane

CH-PONA

ChromGC

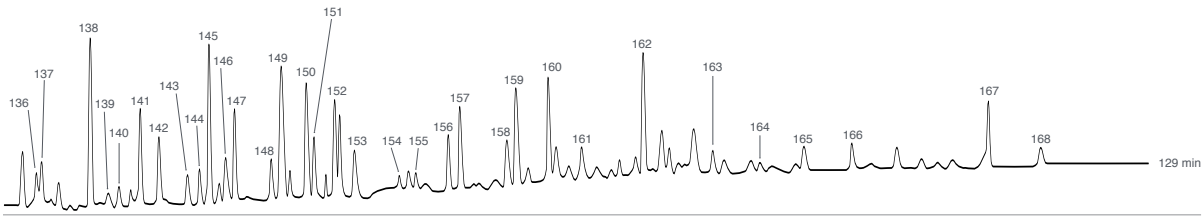
- 100%- Dimethylpolysiloxane
- Up to 350°C
- Examples: DHA, PIANO, PONA, PNA Analysis

Hydrocarbons, C_4 - C_{12}



Part 3 - Peaks

70. trans-cis-1,2,3-trimethylcyclopentane
71. trans-cis-1,2,3-trimethylcyclopentane
72. 2,3,4-trimethylpentane
73. toluene + 2,3,3-trimethylpentane
74. 2,3,4-dimethylhexane
75. 2-methylheptane
76. 4-methylheptane
77. cis-trans-1,2,4-trimethylpentane
78. 3,4-dimethylhexane
79. 3-methylheptane
80. 2,2,5-trimethylhexane
81. cis-1-ethyl-2-methylcyclohexane (?)
82. cis-1-ethyl-3-methylcyclohexane (?)
83. cis,cis-1,2,3-trimethylpentane
84. n-octane
85. trans-2-octene
86. isopropylcyclopentane
87. 2,3,5-trimethylhexane
88. 2,2-dimethylheptane
89. cis-1,2-dimethylcyclohexane
90. ethylcyclohexane
91. 1,1,4-trimethylcyclohexane
92. 3,3-dimethylheptane
93. 2,5-dimethylheptane
94. 2,3,3-trimethylhexane
95. ethylbenzene
96. trans-1,2,4-trimethylcyclohexane
97. 3,3,4-trimethylhexane
98. m-xylene
99. p-xylene
100. 3,5-dimethylheptane
101. 2,3-dimethylheptane
102. 3,4-dimethylheptane
103. 4-ethylheptane
104. 4-methyloctane
105. 2-methyloctane
106. 3-methyloctane
107. o-xylene
108. C9 paraffin
109. 1-nonene
110. cis-3-nonene
111. C9 paraffin
112. 1-methyl-1-ethylcyclohexane
113. C10 paraffin
114. isopropylbenzene
115. trans-butylcyclopentene
116. 2,2-dimethyloctane
117. 1-methyl-4-isopropylhexane
118. 2,4-dimethyloctane
119. 2,6-dimethyloctane
120. butylcyclopentane
121. 3,3-dimethyloctane
122. propylbenzene
123. 3,6-dimethyloctane
124. 3-methyl-5-ethylheptane
125. 1-ethyl-3-methylbenzene
126. 1-ethyl-4-methylbenzene
127. 1,3,5-trimethylbenzene
128. 3,3,4-trimethylheptane
129. 1-ethyl-2-methylbenzene
130. 3-ethyloctane
131. 3-methylnonane
132. C10 paraffin
133. 1,2,4-trimethylbenzene
134. C10 paraffin
135. 1-decane



Part 4 - Peaks

136. C10 paraffin
137. n-decane
138. 1,2,3-trimethylbenzene
139. 1-methyl-4-isopropylbenzene
140. C11 paraffin
141. indane
142. napthene + 3-ethylnonane
143. 1,3-diethylbenzene
144. 1-methyl-3-propylbenzene
145. 1-methyl-4-propylbenzene
146. 1,4-diethylbenzene
147. 1,3-dimethy-5-ethylbenzene
148. 1-methyl-2-propylbenzene
149. C11 paraffin
150. 1,4-dimethyl-2-ethylbenzene
151. 1,3-dimethyl-4-ethylbenzene
152. 1,2-dimethyl-4-ethylbenzene
153. 1,3-dimethyl-2-ethylbenzene
154. 1,2-dimethyl-3-ethylbenzene
155. n-undecane
156. 1,2,4,5-tetramethylbenzene
157. 1,2,3,5-tetramethylbenzene
158. trans-1-butyl-2-methylbenzene
159. 1-ethyl-2-propylbenzene
160. 1-methyl-3-butylbenzene
161. pentylbenzene
162. napthalene
163. n-dodecane
164. 1,3,5-triethylbenzene
165. 1,2,4-triethylbenzene
166. 1-methyl-4-pentylbenzene
167. 2-methylnapthalene
168. 1-methylnapthalene

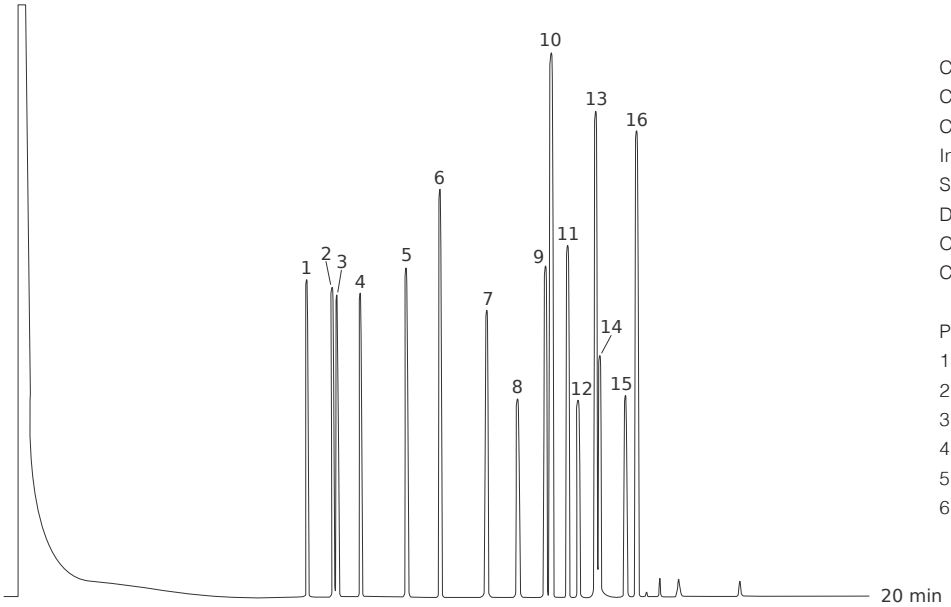
CH-5
ChromGC

- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 350°C
- Examples: Solvent Impurities, PCBs, Hydrocarbons, Semi Volutiles

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	10	0.10	CH5-101010	41201	127-5012	-60to325 / 350
		0.17	CH5-101017		127-501E	-60to325 / 350
		0.40	CH5-101040	41203	127-5013	-60to325 / 350
	20	0.10	CH5-201010	41202	127-5022	-60to325 / 350
		0.40	CH5-201040	41204	127-5023	-60to325 / 350
0.18	10	0.18	CH5-101818	-	121-5012	-60to325 / 350
		0.40	CH5-101840	40210	121-5013	-60to325 / 350
	20	0.18	CH5-201818	-	121-5022	-60to325 / 350
		0.40	CH5-201840	40211	121-5023	-60to325 / 350
0.20	12	0.33	CH5-122033	-	128-5012	-60to325 / 350
	15	0.20	CH5-152020	-	128-50H7	-60to325 / 350
	25	0.33	CH5-252033	-	128-5022	-60to325 / 350
0.25	15	0.10	CH5-152510	10205	122-5011	-60to325 / 350
		0.25	CH5-152525	10220	122-5012	-60to325 / 350
		0.50	CH5-152550	12335	122-501E	-60to325 / 350
		1.00	CH5-1525100	10250	122-5013	-60to325 / 350
	25	0.25	CH5-252525	-	122-5022	-60to325 / 350
	30	0.10	CH5-302510	10208	122-5031	-60to325 / 350
		0.25	CH5-302525	10223	122-5032	-60to325 / 350
		0.50	CH5-302550	12338	122-503E	-60to325 / 350
		1.00	CH5-3025100	10253	122-5033	-60to325 / 350
	50	0.25	CH5-502525	-	122-5052	-60to325 / 350
	60	0.10	CH5-602510	10211	122-5061	-60to325 / 350
		0.25	CH5-602525	10226	122-5062	-60to325 / 350
		0.50	CH5-602550	10241	122-506E	-60to325 / 350
		1.00	CH5-6025100	10256	122-5063	-60to325 / 350
		0.10	CH5-602510	10206	123-5011	-60to325 / 350

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	15	0.25	CH5-153225	10221	123-5012	-60to325 / 350
		1.00	CH5-1532100	-	123-5013	-60to325 / 350
	25	0.52	CH5-253252	-	123-5026	-60to325 / 350
	30	0.10	CH5-303210	10209	123-5031	-60to325 / 350
		0.25	CH5-303225	10224	123-5032	-60to325 / 350
		0.50	CH5-303250	10239	123-503E	-60to325 / 350
		1.00	CH5-3032100	10254	123-5033	-60to325 / 350
	50	1.00	CH5-5032100	-	123-5053	-60to325 / 350
	60	0.25	CH5-603225	10227	123-5062	-60to325 / 350
		1.00	CH5-6032100	10257	123-5063	-60to325 / 350
0.45	15	1.27	CH5-1545127	-	124-5012	-60to300 / 320
	30	1.27	CH5-3045127	-	124-5032	-60to300 / 320
0.53	10	2.65	CH5-1053265	-	125-50HB	-60to300 / 320
	15	0.25	CH5-155325	10222	125-501K	-60to300 / 320
		0.50	CH5-155350	10237	125-5017	-60to300 / 320
		1.00	CH5-1553100	12352	125-501J	-60to300 / 320
		1.50	CH5-1553150	10267	125-5012	-60to300 / 320
	30	0.25	CH5-305325	10225	125-503K	-60to300 / 320
		0.50	CH5-305350	10240	125-5037	-60to300 / 320
		0.88	CH5-305388	-	125-503D	-60to300 / 320
		1.00	CH5-3053100	12355	125-503J	-60to300 / 320
		1.50	CH5-3053150	10270	125-5032	-60to300 / 320
		3.00	CH5-3053300	10285	125-5034	-60to280 / 300
		5.00	CH5-3053500	10279	125-5035	-60to280 / 300
	60	1.50	CH5-6053150	10273	125-5062	-60to300 / 320
		5.00	CH5-6053500	10283	125-5065	-60to260 / 280

Organochlorine Pesticides (EPA Method 608/8081)



CH5 - 25 m, 0.32 mm, 0.25 µm
CH5-253225
Conditions:
Injection: On column, 1.0µL
Sample: 20µg/mL each in Hexane:Tolune (1:1)
Detector: FID 280°C
Oven Temp: 65°C, 20°C/min, 150°C, 7°C/min, 260°C
Carrier Gas: Hydrogen, 60 kPa

Peaks:
1. Dimethyl phthalate
2. Diethyl phthalate
3. Di-n-butyl phthalate
4. Butyl benzyl phthalate
5. Bis (2-ethylhexyl) phthalate
6. Di-n-octyl phthalate

CH-5MS

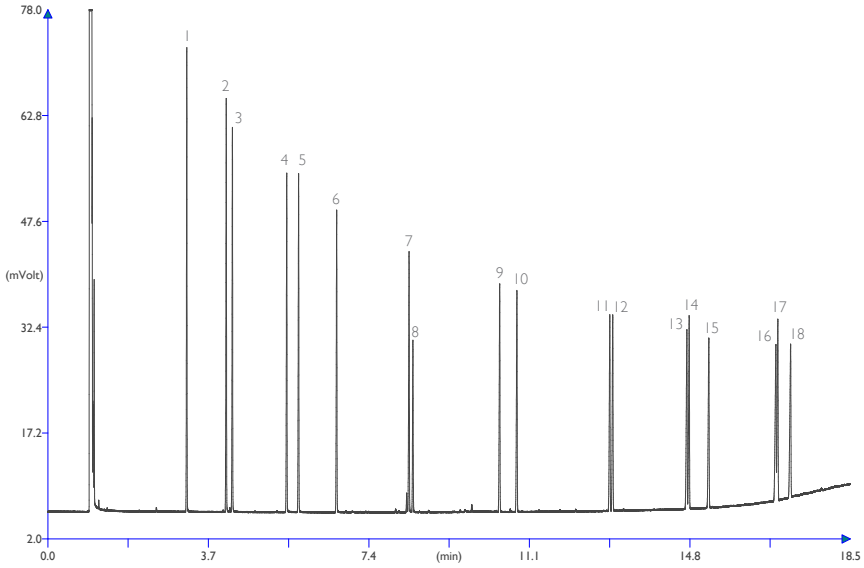
ChromGC

- Equivalent to USP G27
- (5%-Phenyl) - methylpolysiloxane
- Up to 360°C
- Examples: Solvent Impurities, PCBs, Hydrocarbons, Semi Volutiles

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.18	20	0.18	CH5MS-201818	-	121-5522	-60to325 / 350
	40	0.18	CH5MS-401818	-	121-5542	-60to325 / 350
0.20	12	0.33	CH5MS-122033	-	128-5512	-60to325 / 350
	25	0.33	CH5MS-252033	-	128-5522	-60to325 / 350
	50	0.33	CH5MS-502033	-	128-5552	-60to325 / 350
0.25	15	0.10	CH5MS-152510	12705	122-5511	-60to325 / 350
		0.25	CH5MS-152525	12720	122-5512	-60to325 / 350
		0.50	CH5MS-152550	12735	122-5516	-60to325 / 350
		1.00	CH5MS-1525100	12750	122-5513	-60to325 / 350
	25	0.25	CH5MS-252525	-	122-5522	-60to325 / 350
	30	0.10	CH5MS-302510	12708	122-5531	-60to325 / 350
		0.25	CH5MS-302525	12723	122-5532	-60to325 / 350
		0.50	CH5MS-302550	12738	122-5536	-60to325 / 350
		1.00	CH5MS-3025100	12753	122-5533	-60to325 / 350
	50	0.25	CH5MS-502525	-	122-5552	-60to325 / 350
	60	0.10	CH5MS-602510	-	122-5561	-60to325 / 350
		0.25	CH5MS-602525	-	122-5562	-60to325 / 350
		1.00	CH5MS-6025100	-	122-5563	-60to325 / 350

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	15	0.10	CH5MS-153210	12706	123-5511	-60to325 / 350
		0.25	CH5MS-153225	12721	123-5512	-60to325 / 350
		1.00	CH5MS-1532100	12751	123-5513	-60to325 / 350
	25	0.52	CH5MS-253252	-	123-5526	-60to325 / 350
	30	0.10	CH5MS-303210	-	123-5531	-60to325 / 350
		0.25	CH5MS-303225	12724	123-5532	-60to325 / 350
		0.50	CH5MS-303250	-	123-5536	-60to325 / 350
		1.00	CH5MS-3032100	12754	123-5533	-60to325 / 350
	60	0.10	CH5MS-603210	-	123-5561	-60to325 / 350
		0.25	CH5MS-603225	-	123-5562	-60to325 / 350
		1.00	CH5MS-6032100	-	123-5563	-60to325 / 350
0.53	15	1.50	CH5MS-1553150	12767	125-5512	-60to300 / 320
	30	1.00	CH5MS-3053100	12755	125-553J	-60to300 / 320
		1.50	CH5MS-3053150	12770	125-5532	-60to300 / 320

PAHs (Polycyclic Aromatic Hydrocarbons)



CH5MS - 30 m, 0.15 mm, 0.10 µm
CH5MS-301510
Conditions:
Injection: Split 250°C, 0.2µL injection volume, 200mL/min split flow
Sampe: 8270 Calibration Mix #5, Revised 2000µg/mL in Methylene Chloride
Detector: FID 330°C
Oven Program: 90°C, 15°C/min, 350°C
Carrier Gas: Hydrogen, 240kPa

Peaks:

1. Naphthalene
2. 1-methylnaphthalene
3. 2-methylnaphthalene
4. Acenaphthylene
5. Acenaphthene
6. Fluorene
7. Phenanthrene
8. Anthracene
9. Fluoranthene
10. Pyrene
11. Benzo[a]anthracene
12. Chrysene
13. Benzo[b]fluoranthene
14. Benzo[k]fluoranthene
15. Benzo[a]pyrene
16. Indeno[1,2,3-cd]pyrene
17. Dibenzo[a,h]anthracene
18. Benzo[g,h,i]perylene

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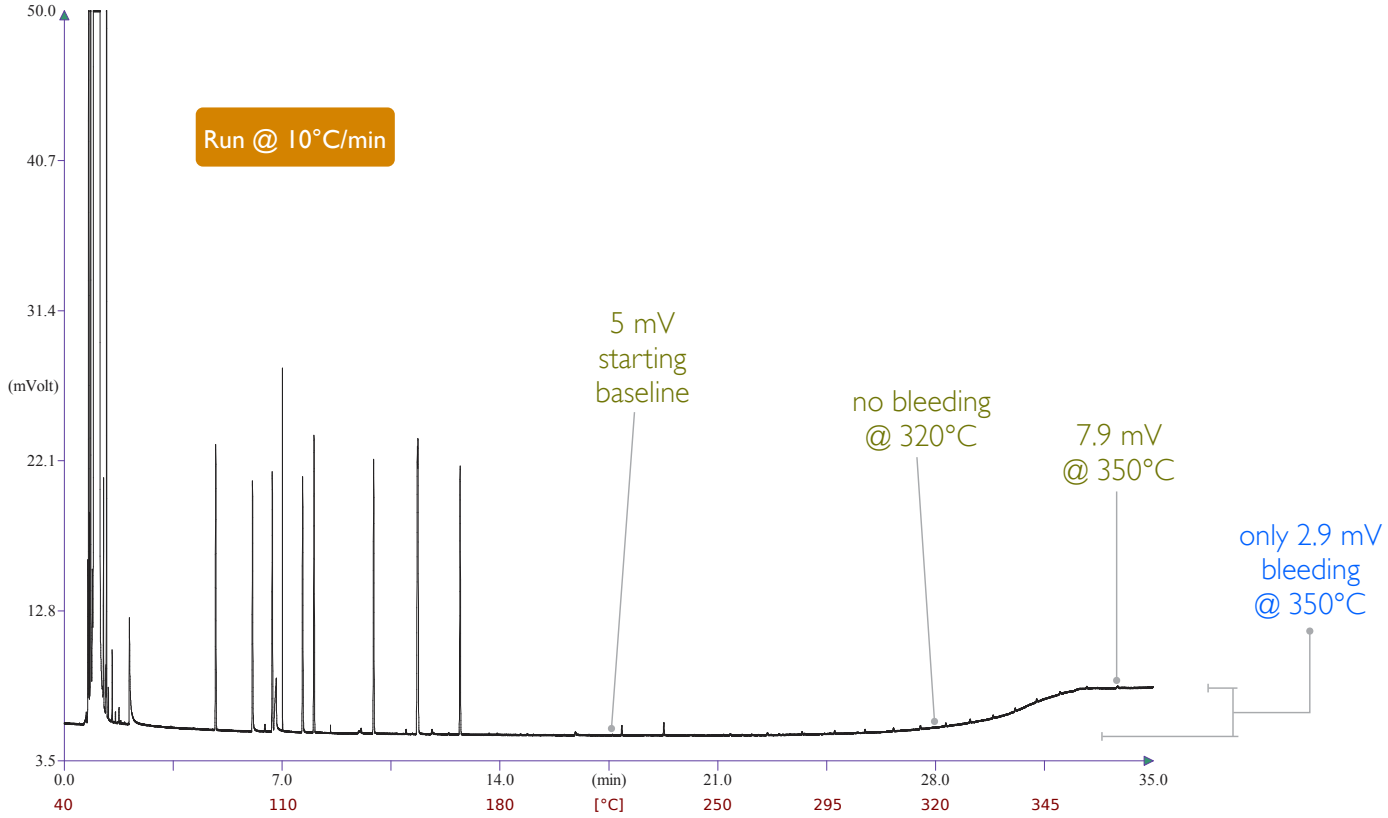
CH-5DF

ChromGC

- Dioxin Furan
- 5% silphenylen
- Up to 360°C
- Examples: Dioxins, Furans, Herbicides, Phthalate Esters, etc.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.25	60	0.15	CH5DF-602515	-	122-2461	350 / 360
		0.25	CH5DF-602525	-	122-2462	350 / 360

A Grob Test run performed on the new CH-5MS-DF 0.25mm, 0.25µm, 30m is shown to highlight the bleeding level. Even with a temperature rate of 10°C/min (from 40°C to 350°C) the bleeding remains extremely low. The chromatogram shows a very flat baseline with no bleeding at 320°C and a minimal growth of the signal at the end of the analysis at high temperature (350°C). Part number CH5DF-302525.



CH-PAH

ChromGC

- Polycyclic Aromatic Hydrocarbons
- 8-10% phenyl
- Up to 350°C

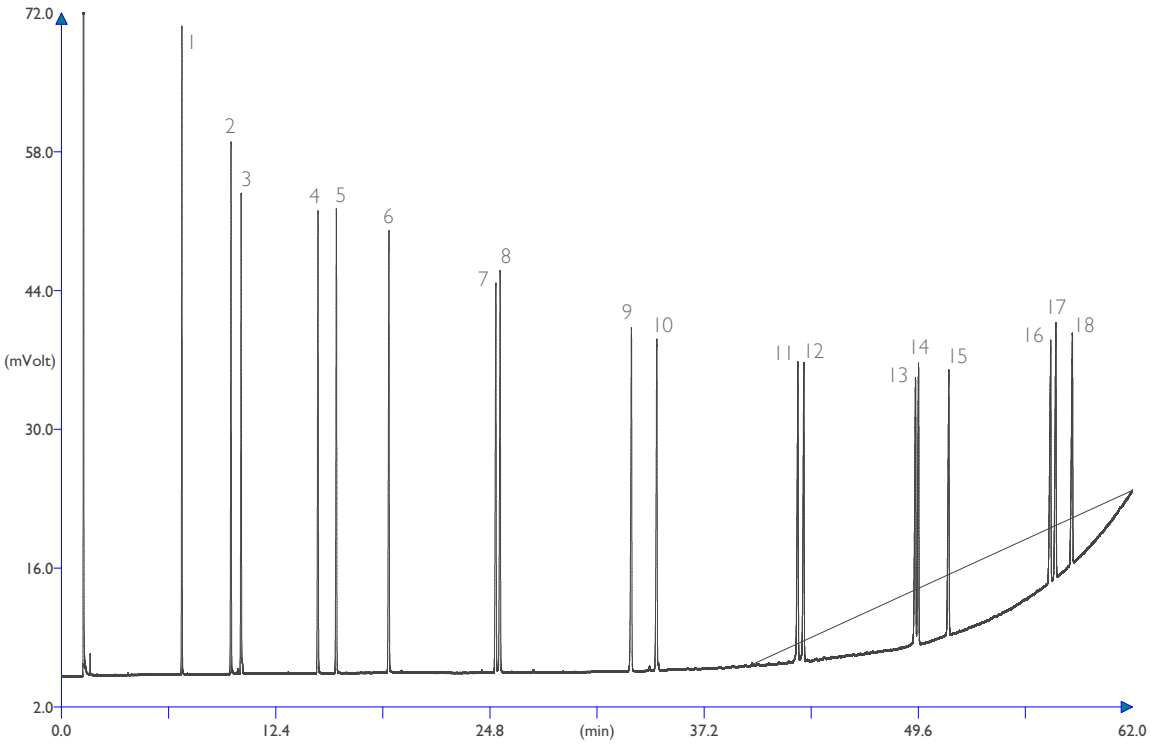
(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.18	40	0.07	CHPAH-40187	49316	-	340 / 360
0.25	30	0.10	CHPAH-302510	49318	-	340 / 360
	60	0.10	CHPAH-602510	49317	-	340 / 360

PAHs (Polycyclic Aromatic Hydrocarbons)

CHPAH - 30m, 0.25mm, 0.25µm
CHPAH-302525
Conditions:
Injection:Split 250°C, 0.2µL injection volume,100mL/min split flow.
Detector: FID 330°C.
Oven Program: 90°C, 3.5°C/min, 320°C.
Carrier Gas: Helium, 1.4mL/min.
Sample: 8270 Calibration Mix #5, Revised 2000µg/mL in Methylene Chloride.

Peaks:

1. Naphthalene
2. 1-methylnaphthalene
3. 2-methylnaphthalene
4. Acenaphthylene
5. Acenaphthene
6. Fluorene
7. Phenanthrene
8. Anthracene
9. Fluoranthene
10. Pyrene
11. Benzo[a]anthracene
12. Chrysene
13. Benzo[b]fluoranthene
14. Benzo[k]fluoranthene
15. Benzo[a]pyrene
16. Indeno[1,2,3-cd]pyrene
17. Dibenzo[a,h]anthracene
18. Benzo[g,h,i]perylene



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CH-624

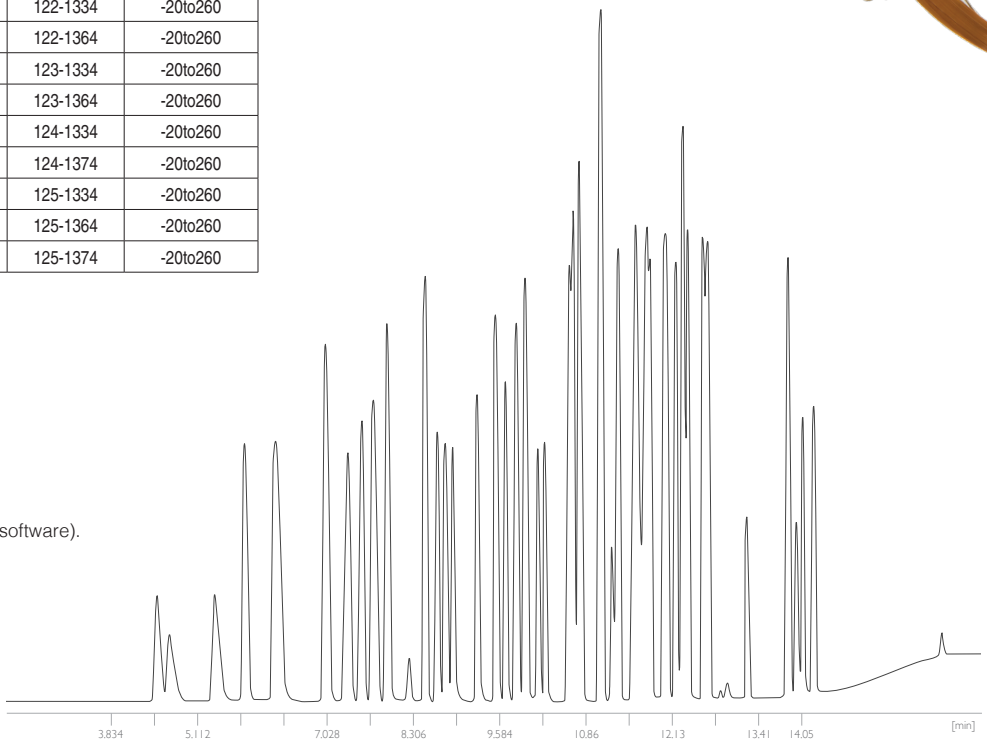
ChromGC

- Equivalent to USP G43
- (6% cyanopropyl-phenyl) - methylpolysiloxane
- Up to 380°C
- Examples: VOCs, Purgeable Aromatics and Hydrocarbons

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.18	20	1.00	CH624-2018100	40924	121-1324	-20to260
0.25	30	1.40	CH624-3025140	10968	122-1334	-20to260
	60	1.40	CH624-6025140	10969	122-1364	-20to260
0.32	30	1.80	CH624-3032180	10970	123-1334	-20to260
	60	1.80	CH624-6032180	10972	123-1364	-20to260
0.45	30	2.55	CH624-3045255	-	124-1334	-20to260
	75	2.55	CH624-7545255	-	124-1374	-20to260
0.53	30	3.00	CH624-3053300	10971	125-1334	-20to260
	60	3.00	CH624-6053300	10973	125-1364	-20to260
	75	3.00	CH624-7553300	10974	125-1374	-20to260

VOCs in Drinking Water

CH624 - 20m, 0.18mm, 1.00µm
CH624-2018100
Conditions:
Injection: Purge&Trap DHS(*), Splitless 250°C.
Detector: TOF MS(*) (deconvolution elaboration software).
Oven Program: 35°C (5 min), 20°C/min, 240°C.
Carrier Gas: Helium, 0.8 mL/min.



Ret. Time**	Compound
4.530	Ethene, 1,1-dichloro-
6.333	Ethane, 1,1-dichloro-
6.995	Propane, 2,2-dichloro-
7.017	Ethene, 1,2-dichloro-
7.280	Methane, bromochloro-
7.337	Trichloromethane
7.528	Ethane, 1,1,1-trichloro-
7.687	1-Propene, 1,1-dichloro-
7.725	Carbon Tetrachloride
7.900	Benzene
7.912	Ethane, 1,2-dichloro-
8.218	Benzene, 1,4-difluoro- (I.S. 1)
8.455	Trichloroethylene
8.633	Propane, 1,2-dichloro-
8.752	Methane, dibromo-
8.860	Methane, bromodichloro-
9.220	1-Propene, 1,3-dichloro-, (Z)-
9.488	Toluene

Ret. Time**	Compound
9.642	1-Propene, 1,3-dichloro-, (E)-
9.795	Ethane, 1,1,2-trichloro-
9.915	Propane, 1,3-dichloro-
9.928	Tetrachloroethylene
10.108	Methane, dibromochloro-
10.208	Ethane, 1,2-dibromo-
10.542	Chlorobenzene-d5 (I.S. 2)
10.562	Benzene, chloro-
10.628	Ethylbenzene
10.713	p-Xylene
11.013	o-Xylene
11.027	Styrene
11.278	Benzene, 1-methylethyl-
11.503	Ethane, 1,1,2,2-tetrachloro-
11.538	Benzene, bromo-
11.547	Propane, 1,2,3-trichloro-
11.583	Benzene, propyl-
11.668	Benzene, 1-chloro-2-methyl-

Ret. Time**	Compound
11.707	Benzene, 1,2,4-trimethyl-
11.742	Benzene, 1-chloro-3-methyl-
11.955	Benzene, tert-butyl-
11.990	Benzene, 1,3,5-trimethyl-
12.117	Benzene, 1-methylpropyl-
12.217	Benzene, 1-methyl-4-(1-methylethyl)-
12.227	Benzene, 1,4-dichloro-
12.273	1,4-Dichlorobenzene-d4 (I.S. 3)
12.290	Benzene, 1,3-dichloro-
12.525	Benzene, butyl-
12.577	Benzene, 1,2-dichloro-
13.165	Propane, 1,2-dibromo-3-chloro-
13.768	Benzene, 1,2,3-trichloro-
13.885	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
13.975	Naphthalene
14.140	Benzene, 1,2,4-trichloro-

CH-BAC1

ChromGC

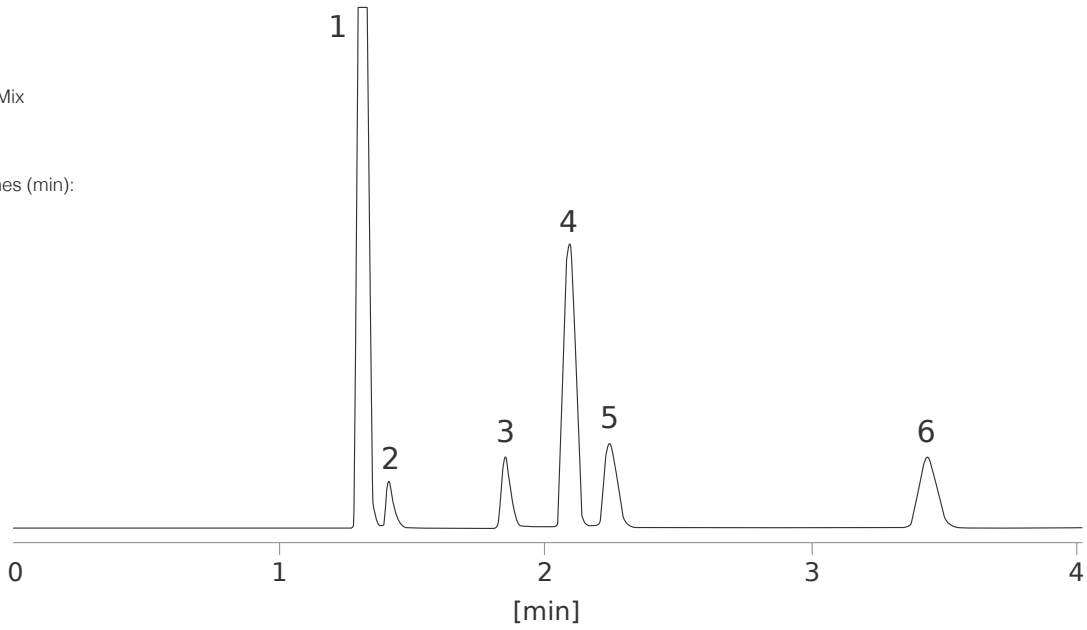
- Ethanol/Acetone
- Up to 280°C
- Examples: Blood Alcohol Testing

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	30	1.80	CHBAC1-3032180	-	123-9134	20to260 / 280
0.53	30	3.00	CHBAC1-3053300	-	125-9134	20to260 / 280

Blood Alcohols by Headspace

CHBAC1 - 30m, 32mm, 1.50 µm
CHBAC1-3032150
Conditions:
Injection: Split 250°C, 1.0µL with gas syringe
Detector: FID 250°C.
Oven Temp: 40°C Isothermal
Carrier Gas: Hydrogen, 50 kPA
Sample: Headspace of a Blood Alcohol Mix
hold 15 min @ 80°C

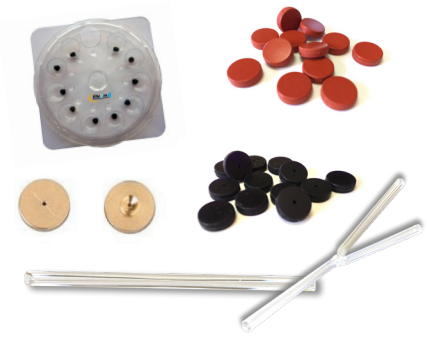
Peaks:	Ret. Times (min):
1. Acetaldehyde	1.30
2. Methanol	1.42
3. Ethanol	1.85
4. Acetone	2.09
5. Isopropanol	2.25
6.n-Propanol	3.44



Did you know?

We sell Gas Chromatography Accessories?

For more information, see pages 32-35



CH-1701

ChromGC

- Equivalent to USP G46
- (14%-Cyanopropyl-phenyl) - methylpolysiloxane
- Up to 280°C

Examples: Residual Solvents, Allergens, Oxygenated Pesticides

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	20	0.10	CH1701-201010	42202	127-0722	-20to280
		0.40	CH1701-201040	-	127-0723	-20to280
0.18	10	0.40	CH1701-101840	-	121-0713	-20to280
0.25	15	0.25	CH1701-152525	-	122-0712	-20to280
		1.00	CH1701-1525100	12050	122-0713	-20to280
	30	0.15	CH1701-302515	-	122-0731	-20to280
		0.25	CH1701-302525	12023-600	122-0732	-20to280
		1.00	CH1701-3025100	12053	122-0733	-20to280
	60	0.15	CH1701-602515	-	122-0761	-20to280
		0.25	CH1701-602525	12026	122-0762	-20to280
		1.00	CH1701-6025100	12056	122-0763	-20to280

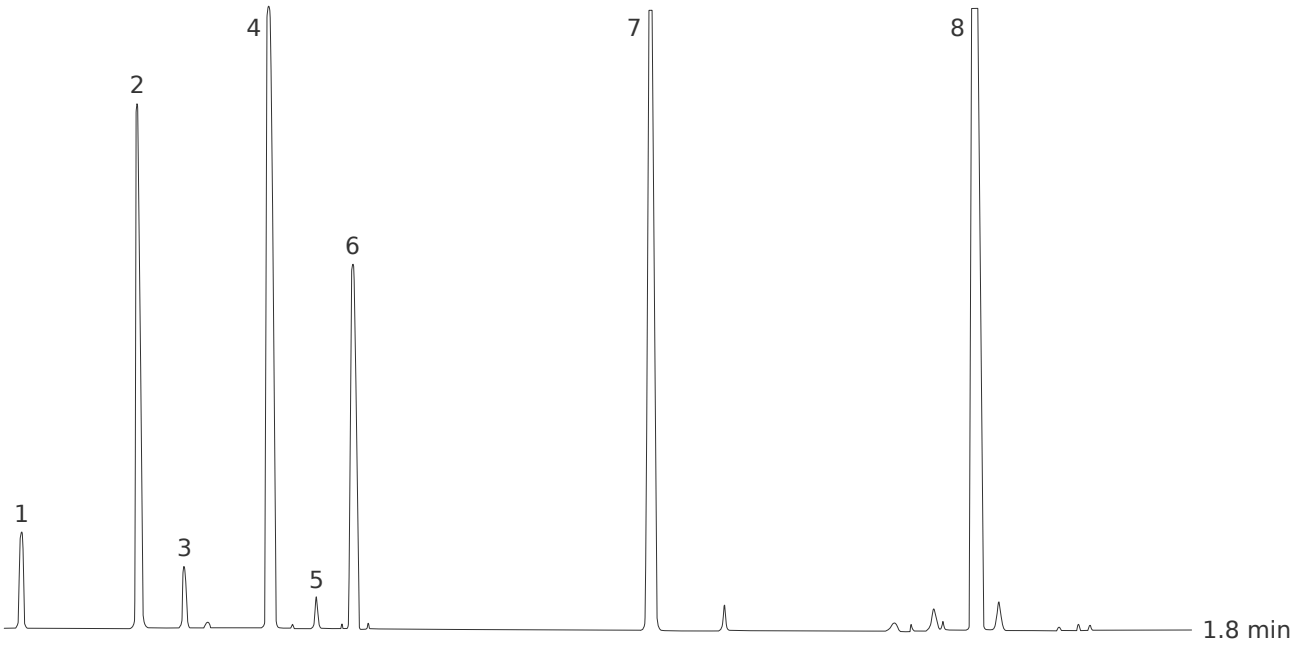
(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	15	0.25	CH1701-153225	12021	123-0712	-20to280
		1.00	CH1701-1532100	12051	123-0713	-20to280
	30	0.15	CH1701-303215	-	123-0731	-20to280
		0.25	CH1701-303225	12024	123-0732	-20to280
		1.00	CH1701-3032100	12054	123-0733	-20to280
	50	1.00	CH1701-5032100	-	123-0753	-20to280
	60	0.25	CH1701-603225	12027	123-0762	-20to280
		1.00	CH1701-3032100	12057	123-0763	-20to280
0.53	15	1.00	CH1701-1553100	12052	125-0712	-20to280
	30	0.50	CH1701-305350	12040	125-0737	-20to280
		1.00	CH1701-3053100	12055	125-0732	-20to280

Bergamot Oil

CH1701 - 5m, 0.10mm, 0.10 µm
CH1701-051010
Conditions:
Injection: Split 230°C, 0.5µL 1:250 Split Ratio
Sample Dilution: 1% in Cyclohexane
Detector: FID 250°C
Oven Temp: 50°C (0.1min), 50°C/min, 250°C
Carrier Gas: Hydrogen, 0.5mL/min

Peaks:

1. Alpha-Pinene
2. Beta-Pinene
3. Myrcene
4. Limonene
5. p-Cymene
6. Gamma-Terpinene
7. Linalol
8. Linalyl Acetate



CH-35
ChromGC

- Equivalent to USP G42
- (35%-Phenyl) - methylpolysiloxane
- Up to 320°C
- Examples: Pesticides, PCBs, Phenols, etc.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.25	30	0.25	CH35-302525	-	122-1932	40to300 / 320
0.32	30	0.25	CH35-303225	-	123-1932	40to300 / 320
		0.50	CH35-303250	-	123-1933	40to300 / 320
0.53	30	0.50	CH35-305350	-	125-1937	40to280 / 300
		1.00	CH35-3053100	-	125-1932	40to300 / 320

CH-35MS
ChromGC

- Equivalent to USP G42
- (35%-Phenyl) - methylpolysiloxane
- Up to 360°C
- Examples: Pesticides, PCBs, Phenols, etc.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.25	15	0.25	CH35MS-152525	-	122-3812	50to340 / 360
	30	0.25	CH35MS-302525	-	122-3832	50to340 / 360
	60	0.25	CH35MS-602525	-	122-3862	50to340 / 360
0.32	30	0.25	CH35MS-303225	-	123-3832	50to340 / 360
0.53	30	0.50	CH35MS-305350	-	125-3837	50to320 / 340
		1.00	CH35MS-3053100	-	125-3832	50to320 / 340

CH-17

ChromGC

- Equivalent to USP G3, G17
- (50%-Phenyl) - methylpolysiloxane
- Up to 300°C
- Examples: Phthalate Esters, Herbicides, Pharmaceuticals.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	10	0.10	CH17-101010	-	127-1712	40to280 / 300
		0.20	CH17-201020	-	127-1713	40to280 / 300
	20	0.10	CH17-201010	-	127-1722	40to280 / 300
0.18	20	0.18	CH17-201818	-	121-1722	40to280 / 300
		0.30	CH17-201830	-	121-1723	40to280 / 300
0.25	15	0.15	CH17-152515	-	122-1711	40to280 / 300
		0.25	CH17-152525	10520	122-1712	40to280 / 300
		0.50	CH17-152550	10535	122-1713	40to280 / 300
	30	0.15	CH17-302515	-	122-1731	40to280 / 300
		0.25	CH17-302525	10523	122-1732	40to280 / 300
		0.50	CH17-302550	10538	122-1733	40to280 / 300
	60	0.25	CH17-602525	-	122-1762	40to280 / 300
0.32	15	0.15	CH17-153215	-	123-1711	40to280 / 300
		0.25	CH17-153225	10521	123-1712	40to280 / 300
		0.50	CH17-153250	10536	123-1713	40to280 / 300
	30	0.15	CH17-303215	-	123-1731	40to280 / 300
		0.25	CH17-303225	-	123-1732	40to280 / 300
		0.50	CH17-303250	10539	123-1733	40to280 / 300
	60	0.25	CH17-603225	-	123-1762	40to280 / 300
0.53	15	1.00	CH17-1553100	10552	125-1712	40to260 / 280
	30	1.00	CH17-3053100	10555	125-1732	40to260 / 280
	60	1.50	CH17-6053150	-	125-1733	40to260 / 280
		1.00	CH17-6053100	10558	125-1762	40to260 / 280

CH-225

ChromGC

- Equivalent to USP G7, G19
- (50%-Cyanopropyl-phenyl) - methylpolysiloxane
- Up to 240°C
- Examples: Carbohydrates, Sterols, Flavours

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	20	0.10	CH225-201010	-	127-2222	45to220 / 240
0.18	20	0.20	CH225-201820	-	121-2223	45to220 / 240
0.25	15	0.25	CH225-152525	-	122-2212	45to220 / 240
	30	0.15	CH225-302515	-	122-2231	45to220 / 240
		0.25	CH225-302525	-	122-2232	45to220 / 240
0.32	30	0.25	CH225-303232	-	123-2232	45to220 / 240
0.53	15	1.00	CH225-1553100	-	125-2212	40to200 / 220
	30	1.00	CH225-3053100	-	125-2232	40to200 / 220

CH-BAC2

ChromGC

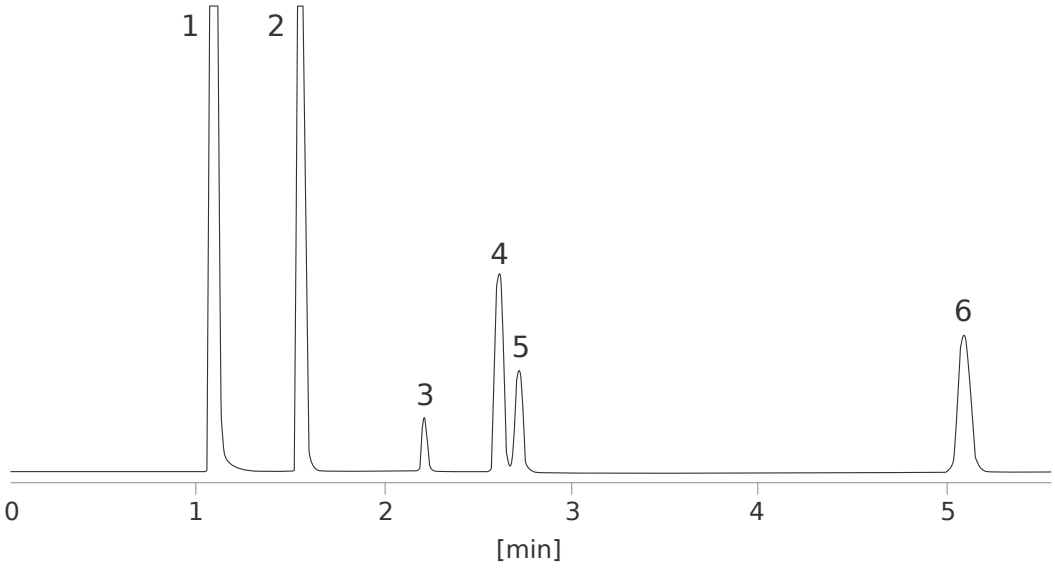
- Ethanol/Acetone
- Up to 280°C
- Examples: Blood Alcohol Testing

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	30	1.20	CHBAC2-3032120	-	123-9234	20to260 / 280
0.53	30	2.00	CHBAC2-3053200	-	125-9234	20to260 / 280

Blood Alcohol (Headspace)

CHBAC2 - 30m, 32mm, 1.00 µm
CHBAC2-3032100
Conditions:
Injection: Split 250°C, 1.0µL with gas syringe
Detector: FID 250°C.
Oven Temp: 40°C Isothermal
Carrier Gas: Hydrogen, 50 kPA
Sample: Headspace of a Blood Alcohol Mix hold 15 min @ 80°C

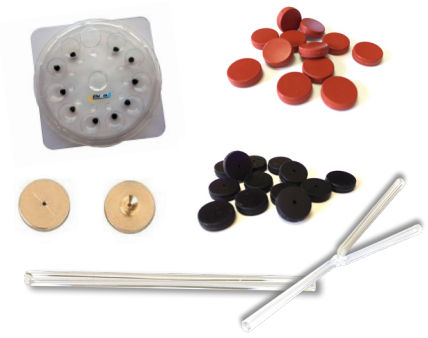
Peaks:	Ret. Times (min):
1. Acetaldehyde	1.07
2. Methanol	1.55
3. Ethanol	2.22
4. Acetone	2.62
5. Isopropanol	27.72
6.n-Propanol	5.10



Did you know?

We sell Gas Chromatography Accessories?

For more information, see pages 32-35



CH-STAR-WAX

ChromGC

- Equivalent to USP G14, G15, G16
- Polyethylene Glycol
- Up to 270°C
- Examples: BTEX, FAMEs, Alcohols, etc.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.10	10	0.10	CHSWAX-101010	-	127-7012	20to250 / 270
		0.20	CHSWAX-101020	-	127-7013	20to250 / 270
	20	0.10	CHSWAX-201010	-	127-7022	20to250 / 270
		0.20	CHSWAX-201020	-	127-7023	20to250 / 270
0.18	10	0.18	CHSWAX-101818	-	121-7012	20to250 / 270
	20	0.18	CHSWAX-201818	-	121-7022	20to250 / 270
		0.30	CHSWAX-201830	-	121-7023	20to250 / 270
	40	0.30	CHSWAX-401830	-	121-7043	20to250 / 270
0.25	15	0.25	CHSWAX-152525	-	122-7012	20to250 / 270
		0.50	CHSWAX-152550	-	122-7013	20to250 / 270
	30	0.15	CHSWAX-302515	-	122-7031	20to250 / 270
		0.25	CHSWAX-302525	10673	122-7032	20to250 / 270
		0.50	CHSWAX-302550	-	122-7033	20to250 / 270
	60	0.15	CHSWAX-602515	-	122-7061	20to250 / 270
		0.25	CHSWAX-602525	-	122-7062	20to250 / 270
		0.50	CHSWAX-602550	-	122-7063	20to250 / 270

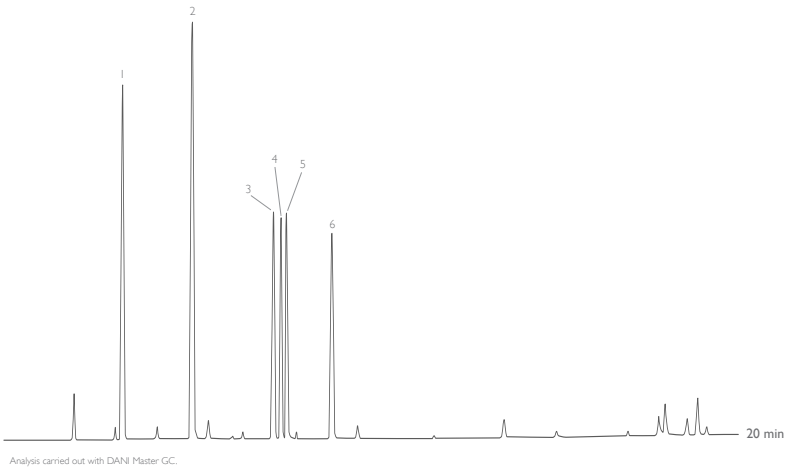
(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.32	15	0.25	CHSWAX-153225	-	123-7012	20to250 / 270
		0.50	CHSWAX-153250	-	123-7013	20to250 / 270
	30	0.15	CHSWAX-303215	-	123-7031	20to250 / 270
		0.25	CHSWAX-303225	10674	123-7032	20to250 / 270
		0.50	CHSWAX-303250	-	123-7033	20to250 / 270
	60	0.25	CHSWAX-603225	-	123-7062	20to250 / 270
		0.50	CHSWAX-603250	-	123-7063	20to250 / 270
0.45	30	0.85	CHSWAX-304585	-	124-7032	20to250 / 270
	15	0.50	CHSWAX-154550	-	125-7017	20to250 / 270
		1.00	CHSWAX-1545100	-	125-7012	20to250 / 270
0.53	30	0.25	CHSWAX-305325	-	125-7031	20to250 / 270
		0.50	CHSWAX-305350	-	125-7037	20to250 / 270
		1.00	CHSWAX-3053100	-	125-7032	20to250 / 270
	60	1.00	CHSWAX-6053100	-	125-7062	20to250 / 270

Benzene and aromatic volatile compounds in air

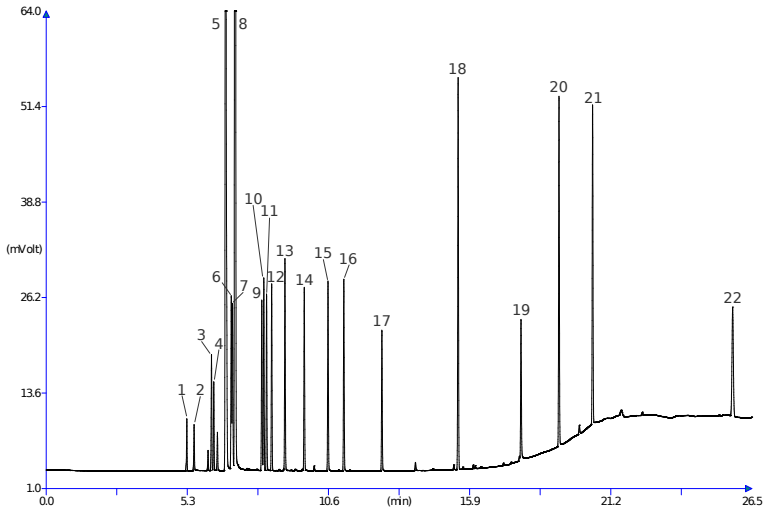
CH-STAR-WAX - 30m, 0.25mm, 0.25µm
CHSWAX-302525
Conditions:
Oven Program: 40°C (5min), 5°C/min, 200°C.
Carrier Gas: Helium, 1.5mL/min, constant flow.
Injector: Thermal Desorber (Tenax GR trap, 300°C),
Split Injector 80°C, split flow 10mL/min.
Detector: FID 200°C.

Peaks:

1. Benzene
2. Toluene
3. Ethylbenzene
4. p-Xylene
5. m-Xylene
6. o-Xylene



Analysis carried out with DANI Master GC.



Vodka

CH-STAR-WAX - 50m, 0.32mm, 0.50µm
CHSWAX-503250
Conditions:
Injection: Split, 250, 1.0µL, 50 mL/min Split Ratio
Detector: FID 250°C
Oven Temp: 60°C(2 min), 10°C /min, 250°C
Carrier Gas: Nitrogen, 0.8 mL/min

Peaks:

1. Diethyl ether
2. Acetaldehyde
3. Acetone
4. Methylacetate
5. Methanol
6. MEK
7. 2-propanol
8. Ethanol
9. Isobutylacetate
10. 2-butanol
11. 1-propanol
12. Ethylbutirate
13. Crotonic aldehyde
14. Isopentanol
15. 1-butanol
16. Isopentanol
17. 1-pentanol
18. Hexanol
19. Benzaldehyde
20. Benzyl alcohol
21. Phenyl alcohol
22. Diethyl phtalate

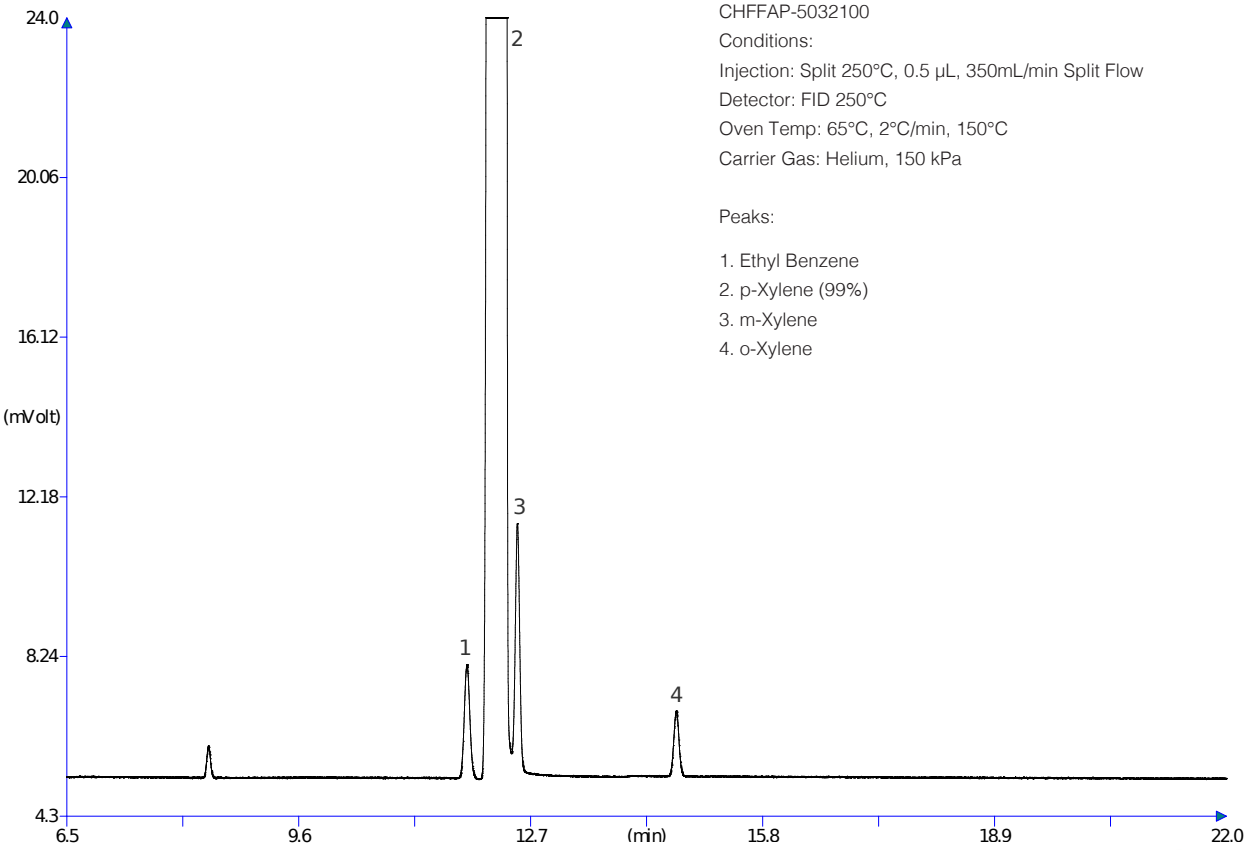
CH-FFAP

ChromGC

- Equivalent to USP G25, G35, G39
- Nitroterephthalic Acid Modified Polyethylene Glycol
- Up to 250°C
- Examples: Free Fatty Acids, FAMEs, BETX, Aromatics, Spirits.

(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.25	15	0.25	CHFFAP-152525	11020	122-3212	40to250
	30	0.25	CHFFAP-302525	11023	122-3232	40to250
		0.50	CHFFAP-302550	11038	122-3233	40to250
0.32	15	0.25	CHFFAP-153225	11021	123-3212	40to250
	30	0.25	CHFFAP-303225	11024	123-3232	40to250
		0.50	CHFFAP-303250	11039	123-3233	40to250
		1.00	CHFFAP-3032100	11054	123-3234	40to250
	50	0.50	CHFFAP-503250	-	123-3253	40to250
	60	0.25	CHFFAP-603225	11027	123-3262	40to250
		0.50	CHFFAP-603250	11042	123-3263	40to250
		1.00	CHFFAP-6032100	11057	123-3264	40to250
0.45	30	0.85	CHFFAP-304585	-	124-3232	40to250
0.53	15	0.50	CHFFAP-155350	11037	125-3217	40to250
		1.00	CHFFAP-1553100	11052	125-3212	40to250
	30	0.25	CHFFAP-305325	11025	125-3231	40to250
		0.50	CHFFAP-305350	11040	125-3237	40to250
		1.00	CHFFAP-3053100	11055	125-3232	40to250
		1.50	CHFFAP-3053150	-	125-3233	40to250

Xylene Isomers (99% p-Xylene)



CH-FFAP - 50m, 0.32mm, 1.00µm
CHFFAP-5032100
Conditions:
Injection: Split 250°C, 0.5 µL, 350mL/min Split Flow
Detector: FID 250°C
Oven Temp: 65°C, 2°C/min, 150°C
Carrier Gas: Helium, 150 kPa

Peaks:

1. Ethyl Benzene
2. p-Xylene (99%)
3. m-Xylene
4. o-Xylene

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CH-88

ChromGC

- Equivalent to USP G5, G8, G48
- Biscyanopropyl polysiloxane
- Up to 250°C
- Examples: CIS/trans FAME Isomers

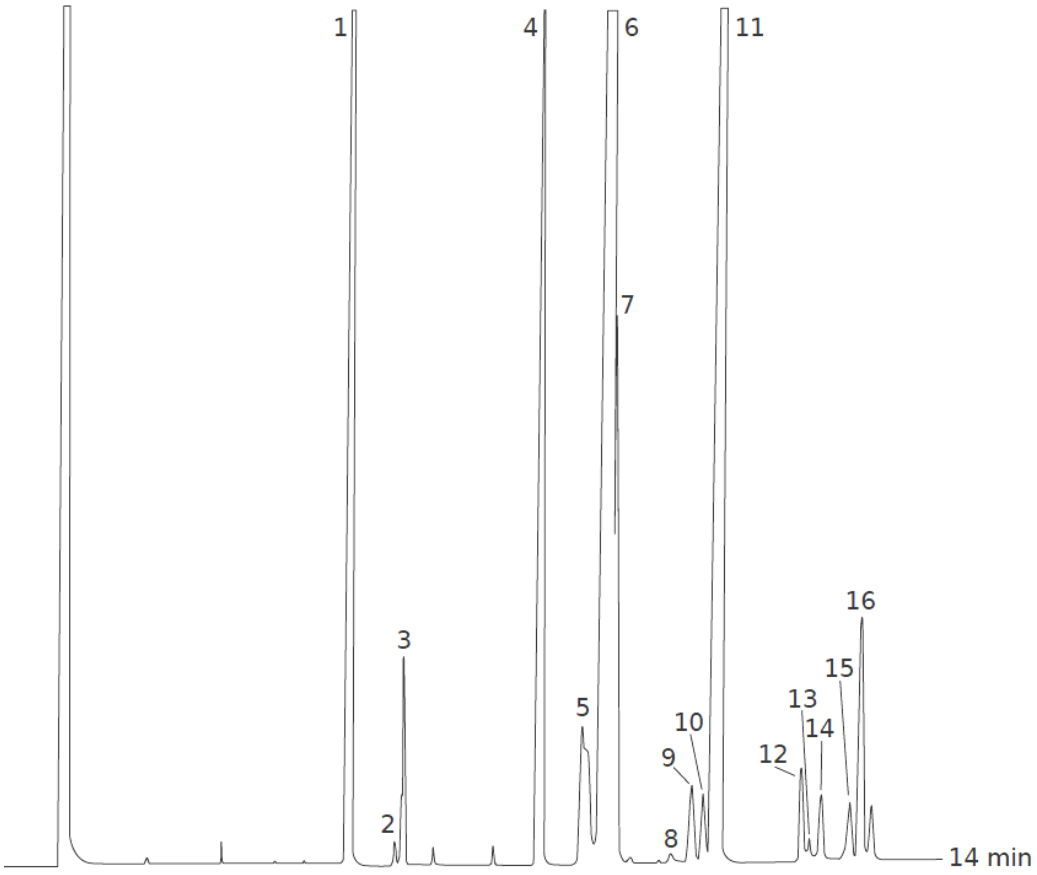
(mm)	(m)	(µm)	Part No.	Restek	J&W	iso/prog. (°C)
0.20	50	0.20	CH88-502020	-		60to250
0.25	50	0.20	CH88-502520	-		60to250
	60	0.20	CH88-602520	-		60to250
	100	0.20	CH88-1002520	13199		60to250

Olive Oil FAMEs (cis/*trans* isomers)

CH-88 - 50m, 0.32mm, 0.25µm
CH88-5032025
Conditions:
Injection: Split 250°C, 1.5 µL, 1:100 Split Ratio
Detector: FID 250°C
Oven Temp: 150°C, 1°C /min, 190°C
Carrier Gas: Hydrogen, 60 kPa

Peaks:

1. Palmitic acid
2. *trans*-palmitoleic acid
3. Palmitoleic acid
4. Stearic Acid
5. *trans*-petroselinic acid
   trans-elaidinic acid
   trans-vaccenic acid
6. Oleic acid
7. *cis*-vaccenic acid
8. *trans-trans*-linoleic acid
9. *cis-trans*-linoleic acid
10. *trans-cis*-linoleic acid
11. Linoleic acid
12. Arachidic acid
13. *trans-cis-trans*-linolenic acid
14. *cis-cis*-linolenic acid
15. *trans-cis-cis*-linolenic acid
16. *cis-cis-cis*-linolenic acid

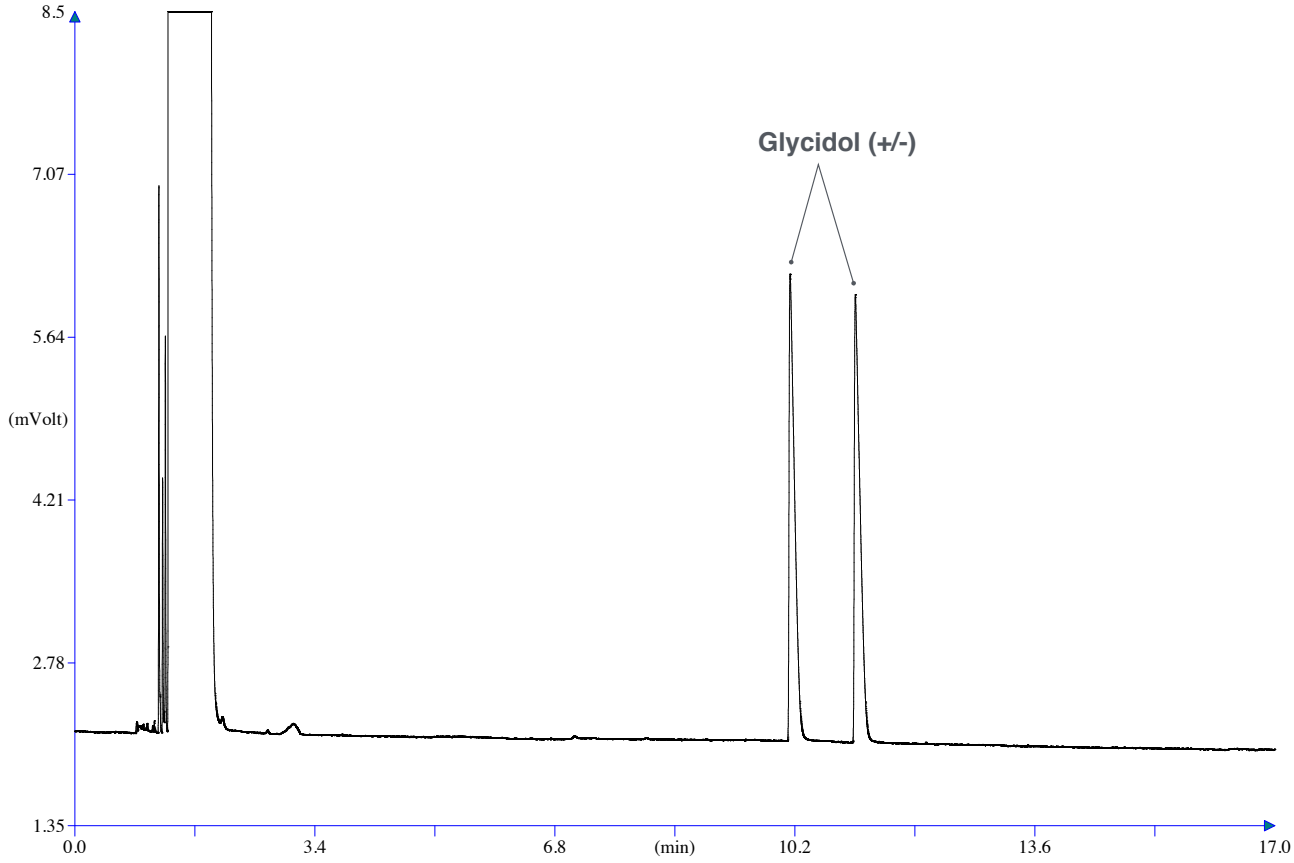


- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 230°C

(mm)	(m)	(µm)	Part No.	iso/prog. (°C)
0.25	15	0.15	CHDEXDEX1-152515	230
	25	0.15	CHDEXDEX1-252515	230
	15	0.25	CHDEXDEX1-152525	230
	0.25	0.25	CHDEXDEX1-252525	230

Glycidol - Enantiomers Separation

CH-DEX-DEX1 - 30m, 0.25mm, 0.25µm
CHDEXDEX1-302525
Conditions:
Oven: 50°C, 2°C/min.
Carrier: 80kPa Hydrogen constant pressure



CH-DEX2
ChromGC

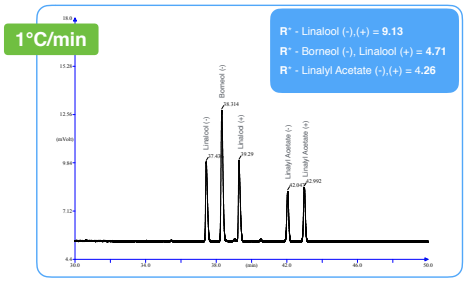
- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 230°C

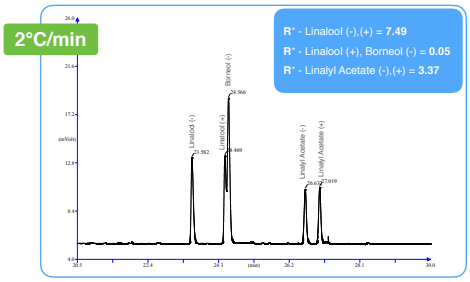
CHIRAL COLUMNS

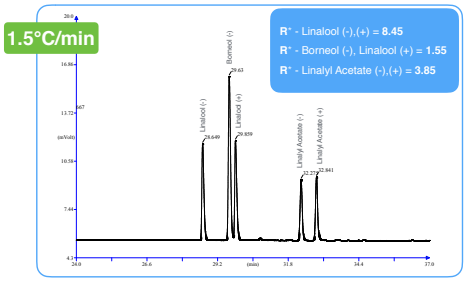
(mm)	(m)	(µm)	Part No.	iso/prog. (°C)
0.25	15	0.15	CHDEXDEX2-152515	230
	25	0.15	CHDEXDEX2-252515	230
	15	0.25	CHDEXDEX2-152525	230
	0.25	0.25	CHDEXDEX2-252525	230

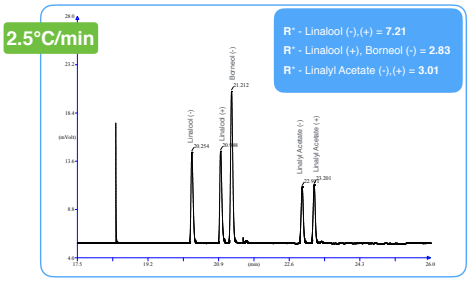
Lavender Essential Oil: GC parameters' effects on chiral separation: Temperation Rate.

CH-DEX-DEX2 - 30m, 0.25mm, 0.25µm
CHDEXDEX2-302525
Conditions:
Oven: 50°C, different Temperature Rates.
Carrier: 75kPa Hydrogen constant pressure.





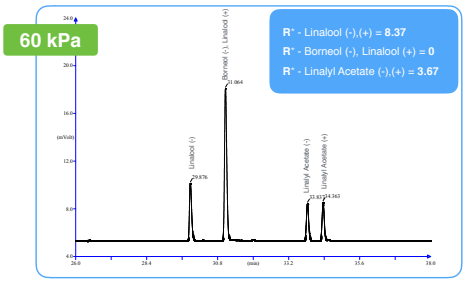


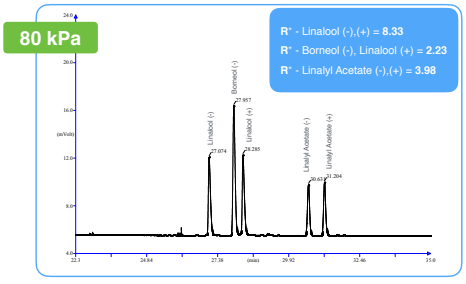


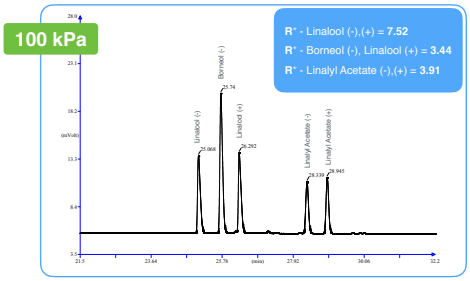
*: **R** is the USP Resolution between two peaks.

Lavender Essential Oil: GC parameters' effects on chiral separation: Pressure/Flow.

CH-DEX-DET2 - 30m, 0.25mm, 0.25µm
CHDEXDET2-302525
Conditions:
Oven: 50°C, 1.5°C/min.
Carrier: different Hydrogen constant pressure





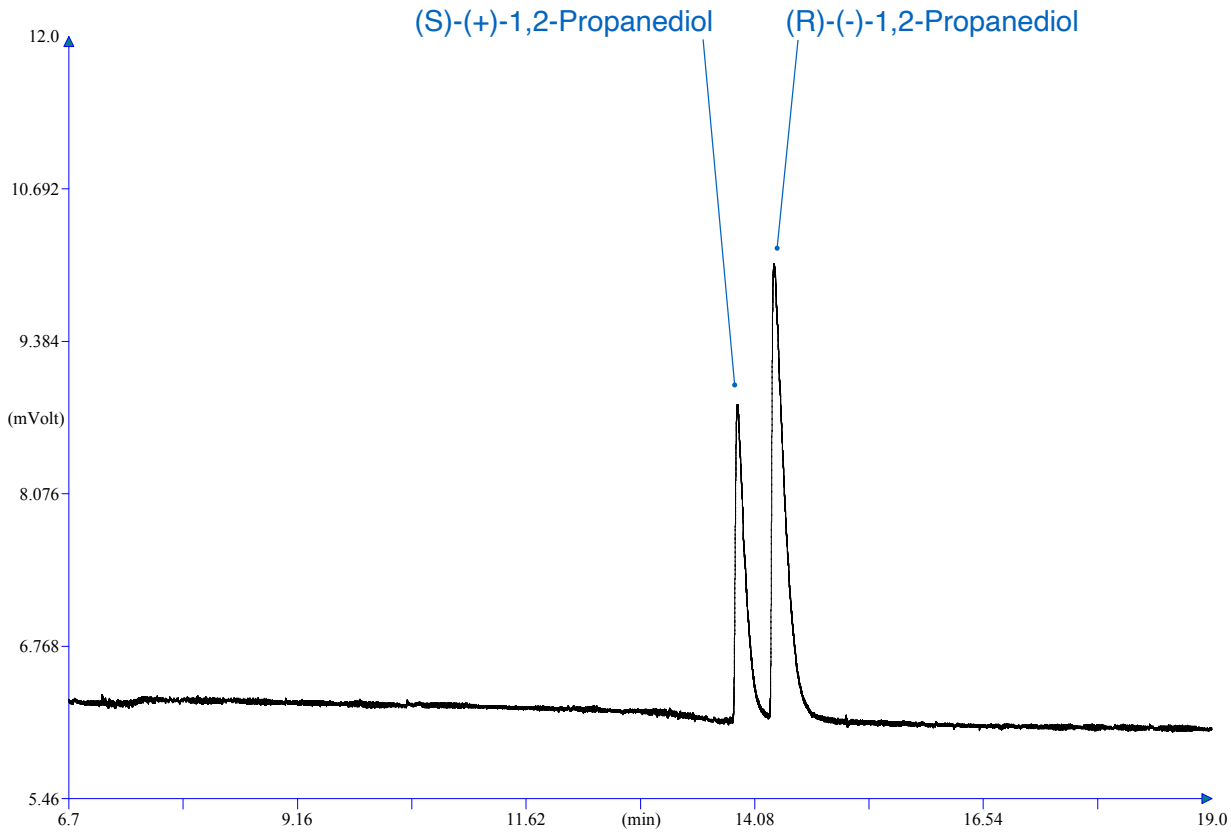


*: **R** is the USP Resolution between two peaks.

(mm)	(m)	(µm)	Part No.	iso/prog. (°C)
0.25	15	0.15	CHDEXDEX3-152515	230
	25	0.15	CHDEXDEX3-252515	230
	15	0.25	CHDEXDEX3-152525	230
	0.25	0.25	CHDEXDEX3-252525	230

(R/S) 1,2-Propanediol

CH-DEX-DEX3 - 30m, 0.25mm, 0.25µm
CHDEXDEX3-302525
Conditions:
Oven: 50°C, 1.5°C/min.
Carrier: 80 kPa, Hydrogen.
Injector: Split, 250°C.
Detector: FID, 250°C.



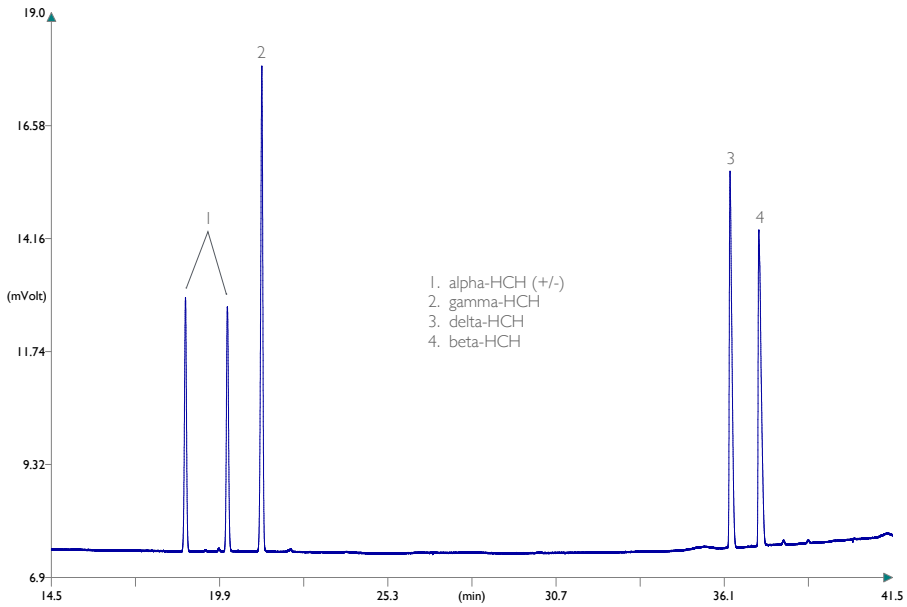
- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 230°C

CHIRAL COLUMNS

(mm)	(m)	(µm)	Part No.	iso/prog. (°C)
0.25	15	0.15	CHDEXDEX4-152515	230
	25	0.15	CHDEXDEX4-252515	230
	15	0.25	CHDEXDEX4-152525	230
	0.25	0.25	CHDEXDEX4-252525	230

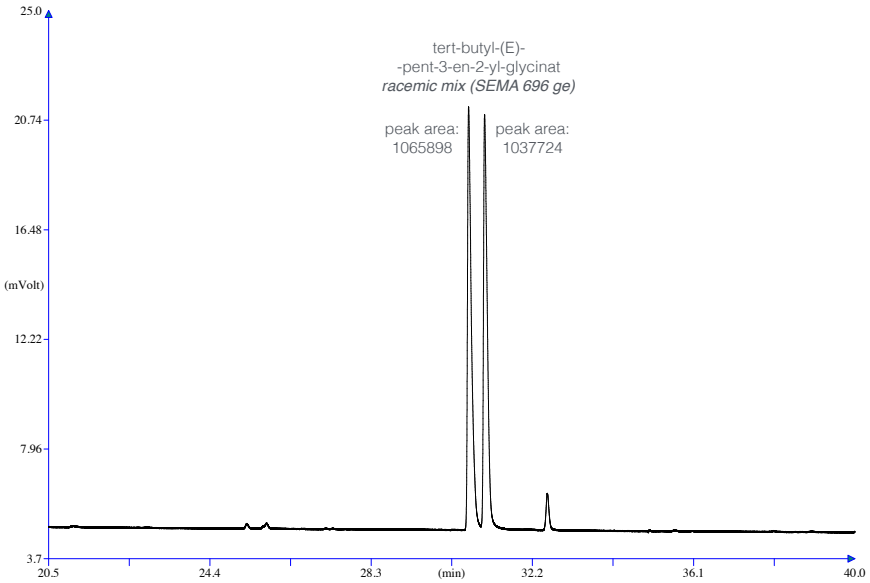
HCHs Pesticides

CH-DEX4 - 30m, 0.25mm, 0.25µm
CHDEX4-302525
Conditions:
Injection: Split 250°C, 20mL/min split flow,
1µL injection volume.
Sample Dilution: 1mg/1mL each compound.
Detector: FID 250°C.
Oven Program: 120°C, 2°C/min.
Carrier Gas: Hydrogen, 120kPa.



Racemic Mix

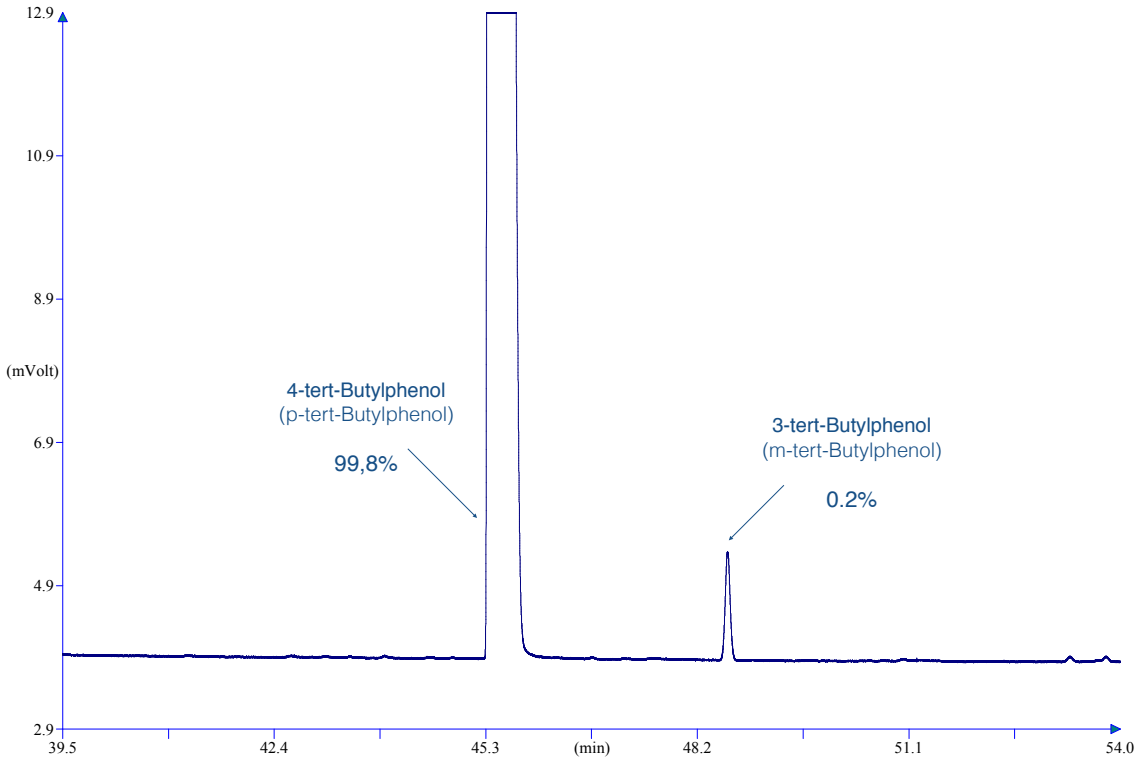
CH-DEX4 - 30m, 0.25mm, 0.25µm
CHDEX4-302525
Conditions:
Injection: Split 250°C, 20mL/min split flow,
1µL injection volume.
Sample Dilution: 1mg/1mL each compound.
Detector: FID 250°C.
Oven Program: 120°C, 2°C/min.
Carrier Gas: Hydrogen, 120kPa.



(mm)	(m)	(µm)	Part No.	iso/prog. (°C)
0.25	15	0.15	CHDEXDEX5-152515	230
	25	0.15	CHDEXDEX5-252515	230
	15	0.25	CHDEXDEX5-152525	230
	0.25	0.25	CHDEXDEX5-252525	230

3 & 4-tert-Butylphenol - Isomers Separation

CH-DEX5 - 25m, 0.25mm, 0.25µm
CHDEX5-252525
Conditions:
Oven: 40°C, 2°C/min
Carrier: 75kPa Hydrogen constant pressure



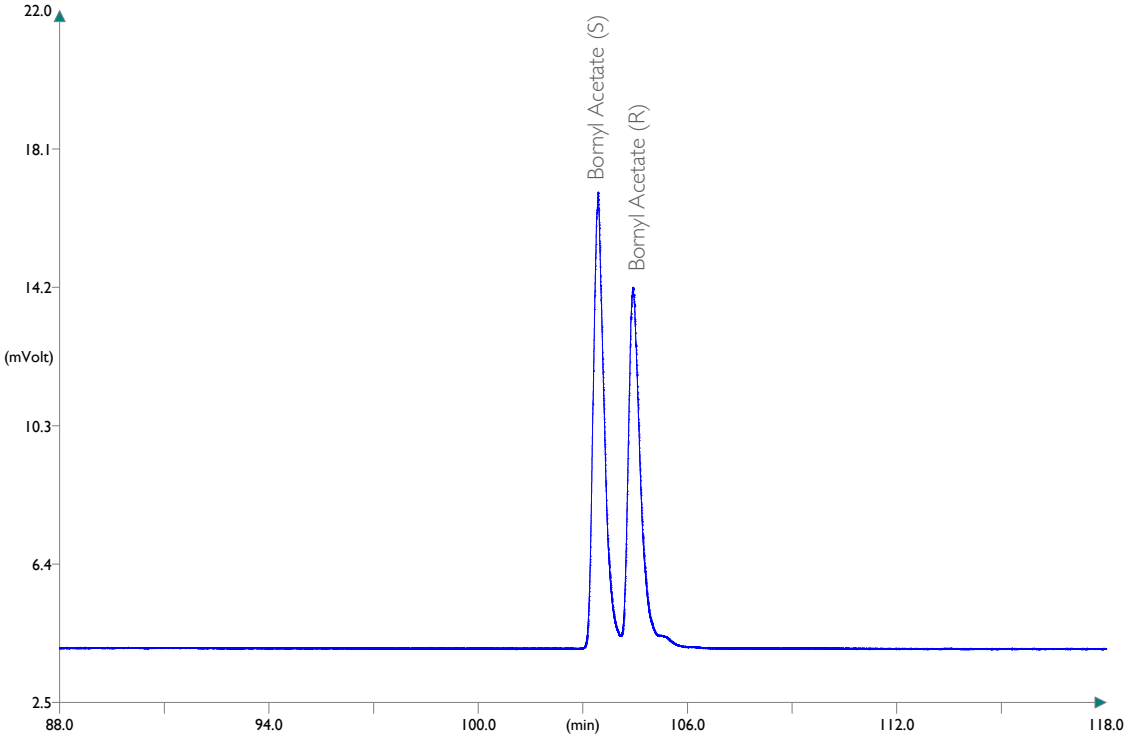
- Equivalent to USP G1, G2, G9, G38
- 100% methyl polysiloxane
- Up to 230°C

(mm)	(m)	(µm)	Part No.	iso/prog. (°C)
0.25	15	0.15	CHDEXDEX6-152515	230
	25	0.15	CHDEXDEX6-252515	230
	15	0.25	CHDEXDEX6-152525	230
	0.25	0.25	CHDEXDEX6-252525	230

Bornyl and Isobornyl Acetate

CH-DEX6 - 60m, 0.25mm, 0.25µm
CHDEX6-602525
Conditions:
Injection: Split, 250°C, 75mL/min split flow, 0.5µL injected volume.
Detector: FID 250°C.
Oven Program: 40°C, 0.5°C/min.
Carrier Gas: Hydrogen, 180kPa (best conditions with Helium carrier gas is 300kPa pressure).
Bornyl Acetate (S)

Sample:
Standard mixture, diluted 1µL/1mL in n-Hexane for each enantiomer.



GC Ferrules | GC Septa | Injection Port Liners for Agilent™ GCs
Inlet Seals | Guard Columns | Fused Silica Connectors

Choosing the Right Ferrule

All ferrules are **thermally conditioned** and ready for immediate high temperature GC use.

Advantages of Graphite Ferrules

Our graphite ferrules fit Swagelok® or Parker® fittings. Graphite ferrules are soft and compliant. They will not stick to glass at higher temperatures. These ferrules are ideal for glass to metal connections. The graphite ferrule can be reused if not over tightened.

Advantages of Polyimide Ferrules

Improved mixing techniques for polyimide ferrules allow for better homogenous mixing of graphite and polyimide resin. One can observe this when looking at a polyimide ferrule. The surfaces are very smooth and exhibit a highly polished or highly shined surface. Polyimide ferrules exhibit a lower coefficient of expansion than other polyimide resins, therefore, reducing the tendency of the column nuts loosening in the heated GC ovens.

Advantages of PTFE Ferrules

The PTFE ferrules are a one piece design
and require no back ferrule.
These ferrules are completely inert.

Maximum Operating Temperatures

100% Graphite ferrules - 450°C
85% Polyimide / 15% Graphite - 400°C
60% Polyimide / 40% Graphite - 400°C
100% Polyimide ferrules - 350°C
100% PTFE ferrules - 250°C

Ferrule Type/Size

1/16" x 0.4mm Capillary tubing with ID of 0.10 to 0.25mm
1/16" x 0.5mm Capillary tubing with ID of 0.28 to 0.35mm
1/16" x 0.8mm Capillary tubing with ID of 0.45 to 0.53mm
1/16" x 1.0mm Capillary tubing with ID of 0.75mm

- No Hole creates custom fittings or for plugs
- 2-Hole Connects 2 pieces of capillary tubing to the same fitting

Ferrule Size	Tubing I.D.	100% Graphite	Agilent™ X-Reference	85% Polyimide 15% Graphite	Agilent™ X-Reference	60% Polyimide 40% Graphite	100% Polyimide	100% PTFE	Pack Size
Capillary Ferrules									
1/16"	0.4mm	OV-GF-04	500-2004	OV-MS-04	5062-3508	OV-GH-04	OV-HF-04	OV-TF-04	10
	0.4mm (HP/Agilent™ Short Style)	OV-GF-04-HP	500-2114	OV-MS-04-HP	5181-3323	OV-GH-04HP	OV-HF-04HP	-	10
	0.5mm	OV-GF-05	-	OV-MS-05	5062-3506	OV-GH-05	OV-HF-05	OV-TF-05	10
	0.5mm (HP/Agilent™ Short Style)	OV-GF-05-HP	5080-8853	OV-MS-05HP	5062-3514	OV-GH-05HP	OV-HF-05HP	-	10
	0.8mm	OV-GF-08	500-2008	OV-MS-08	5062-3538	OV-GH-08	OV-HF-08	OV-TF-08	10
	0.8mm (HP/Agilent™ Short Style)	OV-GF-08-HP	500-2118	OV-MS-08HP	5062-3512	OV-GH-08HP	OV-HF-08HP	-	10
	1.0mm	OV-GF-10	500-2010	OV-MS-10	-	OV-GH-10	OV-HF-10	OV-TF-10	10
	1.0mm (HP/Agilent™ Short Style)	OV-GF-10-HP	5080-8773	OV-MS-10HP	-	-	-	-	10
	1.2mm	OV-GF-12	500-2012	OV-MS-12	-	OV-GH-12	OV-HF-12	OV-TF-12	10
Straight Ferrules									
1/16"	1/16"	OV-GF-01	0100-1326	OV-MS-01	-	OV-GH-01	OV-HF-01	OV-TF-01	10
1/8"	1/8"	OV-GF-02	0100-1325	OV-MS-02	-	OV-GH-02	OV-HF-02	OV-TF-02	10
3/16"	3/16"	OV-GF-316	-	-	-	-		OV-TF-316	10
1/4"	1/4"	OV-GF-03	0100-1324	OV-MS-03	-	OV-GH-03	OV-HF-03	OV-TF-03	10
3/8"	3/8"	OV-GF-138	-	-	-	-	-	OV-TF-138	10
1/2"	1/2"	OV-GF-13	-	-	-	-	-	OV-TF-13	10
Reducing Ferrules									
1/8"	0.4mm	OV-GF-48	-	OV-MS-48	-	OV-GH-48	OV-HF-48	OV-TF-48	10
	0.5mm	OV-GF-58	-	OV-MS-58	-	OV-GH-58	OV-HF-58	OV-TF-58	10
	0.8mm	OV-GF-88	-	OV-MS-88	-	OV-GH-88	OV-HF-88	OV-TF-88	10
	1.0mm	OV-GF-18	-	OV-MS-18	-	OV-GH-18	OV-HF-18	OV-TF-18	10
	1.2mm	OV-GF-38	-	OV-MS-38	-	OV-GH-38	OV-HF-38	OV-TF-38	10
	1/16"	OV-GF-68	0100-1336	OV-MS-68	-	OV-GH-68	OV-HF-68	OV-TF-68	10
1/4"	4.0mm	OV-GF-40	-	OV-MS-40	-	OV-GH-40	OV-HF-40	OV-TF-40	10
	0.4mm	OV-GF-44	-	OV-MS-44	-	OV-GH-44	OV-HF-44	OV-TF-44	10
	0.5mm	OV-GF-45	-	OV-MS-45	-	OV-GH-45	OV-HF-45	OV-TF-45	10
	0.8mm	OV-GF-84	-	OV-MS-84	-	OV-GH-84	OV-HF-84	OV-TF-84	10
	1/16"	OV-GF-64	0100-1335	OV-MS-64	-	OV-GH-64	OV-HF-64	OV-TF-64	10
	1/8"	OV-GF-81	0100-1334	OV-MS-81	-	OV-GH-81	OV-HF-81	OV-TF-81	10
Two-Hole Ferrules									
1/16"	0.4mm	OV-GF-14	-	OV-MS-14	5062-3580	OV-GH-14	OV-HF-14	OV-TF-14	10
	0.5mm	OV-GF-25	-	OV-MS-15	5062-3581	OV-GH-15	OV-HF-15	OV-TF-15	10
1/8"	0.5mm	OV-GF-28	-	OV-MS-28	-	OV-GH-28	OV-HF-28	OV-TF-28	10
	0.8mm	OV-GF-29	-	OV-MS-29	-	OV-GH-29	OV-HF-29	OV-TF-29	10
No-Hole Ferrules									
1/16"	-	OV-GF-01-NH	-	OV-MS-01-NH	5181-3308	OV-GH-01-NH	OV-HF-01-NH	OV-TF-01-NH	10
1/8"	-	OV-GF-02-NH	-	OV-MS-02-NH	-	OV-GH-02-NH	OV-HF-02-NH	OV-TF-02-NH	10
1/4"	-	OV-GF-03-NH	-	OV-MS-03-NH	-	OV-GH-03-NH	OV-HF-03-NH	OV-TF-03-NH	10
3/8"	-	OV-GF-138-NH	-	-	-	-	-	OV-TF-138-NH	10

GC Septa

Septum Selection by Instrument	
Most Common Sizes	**Instrument Brand/Model**
3/8" (9.5 mm)	Bruker/Varian non-capillary injectors Thermo (Finnigan GC)
7/16" (11 mm)	Agilent™ 5880A/5890/6850/6890/7890, PTV GCs Bruker/Varian 1075/1077 Injectors Perkin-Elmer, Thermo
Shimadzu Plug - CHR-HD-S1544	

CHR-GCSP-HT11/50

CHR-GCSPCH-GP11/50

ChromGC GC & GC-MS Septa					
Diameter	**Thickness**	**Maximum Temp.**	**Application**	**Item No.**	**Pack Size**
3/8" (9.5 mm)	3 mm	325°C	General Purpose	CHR-GCSP-GP9.5/50	50
	3 mm	325°C	General Purpose, with Centre Guided Hole	CHR-GCSPCH-GP9.5/50	50
	3 mm	400°C	Red High Temperature	CHR-GCSP-HT9.5/50	50
	3 mm	400°C	Red High Temperature, with Centre Guided Hole	CHR-GCSPCH-HT9.5/50	50
7/16" (11 mm)	3 mm	325°C	General Purpose	CHR-GCSP-GP11/50	50
	3 mm	325°C	General Purpose, with Centre Guided Hole	CHR-GCSPCH-GP11/50	50
	3 mm	400°C	Red High Temperature	CHR-GCSP-HT11/50	50
	3 mm	400°C	Red High Temperature, with Centre Guided Hole	CHR-GCSPCH-HT11/50	50
	3 mm	400°C	Green High Temperature, with Centre Guided Hole		50
	3 mm	400°C	Green High Temperature, with Centre Guided Hole		50

Inlet Gold Seals

Instrument	Description	Pack Size	Part Number
For Agilent™ 7890/6890/6850			
0.8mm Inlet Seal, Gold-plated Splitless, Gold-plated Washers		2	OV-4300
0.8mm Inlet Seal, Gold-plated, Splitless, Gold-plated Washers		10	OV-4300-10
0.8mm Inlet Seal, Gold-plated, Split Double Groove (Cross), Gold-plated Washers		2	OV-4400
0.8mm Inlet Seal, Gold-plated, Split Double Groove (Cross), Gold-plated Washers		10	OV-4400-10
Replacement Gold-plated Washers for Inlet Seal		12	OV-4800

Fused Silica Connectors

- Universal Glass Unions
- One size fits all - Fits 0.18mm to 0.53mm ID tubing
- Tapered interior bore assures a press-tight friction fit.
- Easy to use & quick install installs
- Excellent for repairing broken columns or for connecting guard columns.

OV-ML100D

OV-ML200

Item No.	Description	Pack Size
OV-ML100	Universal Glass Union	5
OV-ML100-25	Universal Glass Union	25
OV-ML100-100	Universal Glass Union	100
OV-ML100D	Universal Glass Union (Deactivated)	5
OV-ML-100D-25	Universal Glass Union (Deactivated)	25
OV-ML-100D-100	Universal Glass Union (Deactivated)	100
OV-ML200	Universal Y-Splitter Glass Union	5
OV-ML200D	Universal Y-Splitter Glass Union (Deactivated)	5

GC Guard Columns

- Inert
- Pretested
- Increased analytical column lifetime

Guard columns consist of 5 meters of deactivated fused silica supplied with high temperature string. All guard columns are extremely inert and each is pretested.

Guard columns are useful in protecting your analytical column from harmful non-volatile contaminates that are commonly found in many environmental and industrial samples.

Item No.	Length	I.D. mm
OV6180-5	5 Meters	0.18
OV6250-5	5 Meters	0.25
OV6320-5	5 Meters	0.32
OV6530-5	5 Meters	0.53

*1M, 10M, 15M, 30M, 60M, 105M length or custom length also available

Attaching the guard column to the front of the analytical column using fused silica connectors, or zero dead volume union, will extend your column's lifetime. The non-volatile contaminants are deposited onto the guard column.

Inlet Liners (Injection Port Liners)

- Deactivated for maximum inertness
- Meets or exceeds original manufacturers' specifications

Description	ID (mm)	OD (mm)	Length (mm)	Glass Type	Deactivated	Agilent™ X-Reference	Part Number
Deactivated Injection Port Liners							
Splitless, single tapered Liner 	4.0	6.45	78.5	Borosilicate	Yes	5181-3316	IS-4209
Splitless, single tapered Liner w/wool* 	4.0	6.45	78.5	Borosilicate	Yes	5062-3587	IS-4210
Splitless, double tapered Liner 	4.0	6.45	78.5	Borosilicate	Yes	5181-3315	IS-4211
Split, straight Liner, w/wool* 	4.0	6.3	78.5	Borosilicate	Yes	19251-60540	IS-4212
Split, straight Liner, with cup for manual injections + 	4.0	6.3	78.5	Borosilicate	No	18740-80190	IS-4202
DIrect Liner 	1.5	6.45	78.5	Borosilicate	Yes	18740-80200	IS-4215
Direct Connect double tapered Liner, w/bottom hole 	4.0	6.3	78.5	Borosilicate	Yes	G1544-80700	IS-4217
Split, single tapered Liner, low pressure drop, w/wool* 	4.0	6.3	78.5	Borosilicate	Yes	5183-4647	IS-4220
Split, single tapered Liner, w/wool* 	4.0	6.3	78.5	Borosilicate	Yes	5183-4711	IS-4221

+ The Cup Split Liner (IS-4202) contain small amounts of packing (10% CH-1 on 80/100 Chromosorb-WHP) retained by silanized glasswool.
* Containing deactivated quartz wool packing to ensure vaporization of your sample before reaching the column entrance. The liner is made of borosilicate glass.

**** O-Ring not included. Viton O-Ring are sold in pack of 10 (Item No. LS-HPVOR)**

Orange Inlet Liners (Injection Port Liners)

Cleanliness - Optimized cleanliness for maximum lab throughput.
Deactivation - Accomplishing precise low and accurage levels of your GC Analysis
Reproducibility - Optimized quality control process to enhance reproducibility

Description	ID (mm)	OD (mm)	Length (mm)	Glass Type	Proprietary Deactivation	Part Number
Deactivated Injection Port Liners						
Splitless, single tapered Liner 	4.0	6.45	78.5	Borosilicate	Yes	IP-D209
Splitless, single tapered Liner w/wool* 	4.0	6.45	78.5	Borosilicate	Yes	IP-D210
Split, straight Liner, w/wool* 	4.0	6.3	78.5	Borosilicate	Yes	IP-D212
DIrect Liner 	1.5	6.45	78.5	Borosilicate	Yes	IP-D215
Split, single tapered Liner, low pressure drop, w/wool* 	4.0	6.3	78.5	Borosilicate	Yes	IP-D220

* Available for a variety of instruments.
** Available Q1 2021

Compound	Column
Acetal - Ethyl Acetate	CH-STAR-WAX
Acetic Acid monitoring	CH-FFAP (inquire)
Alcohol Ethoxylates	CH-5HT
Alkyl Naphthalens	CH-5
Anaesthetics Basic Drugs	CH-5
Aroclor 1254 - 1260 PCBs Quick Screening	CH-5
Basic Drugs Underivatized	CH-5
Benzene aromatic volatile compounds in air	CH-STAR-WAX
Benzyl Alcohol impurities	CH-FFAP (inquire)
Bergamot Oil FAST-GC	CH-1701
Bergamot Oil FAST-GC	CH-WAX (inquire)
Biodiesel - EN 14105 - ASTM D6584	CH-BIO
Biodiesel FAMEs	CH-BIO
Biodiesel Glycerin - Triglycerides	CH-BIO
Blood Alcohol (Headspace)	CH-BAC1 & CH-BAC2
Blood Alcohols - HS	CH-BAC1 & CH-BAC2
Blood Alcohols - HS dual column	CH-BAC1 & CH-BAC2
BTEX FAST-GC	CH-624
Butter Triglycerides	CH-1
Chamomile Essential Oil FAST-GC	CH-STAR-WAX (inquire)
Chamomile Essential Oil FAST-GC Comparison	CH-1701
Chlorinated Hydrocarbons	CH-5 - EPA Method 612
Critical Flavor & Fragrances Compounds	CH-FFAP
Cyclic Hydrocarbons	CH-1
Determination of mineral oil hydrocarbons in vegetable oils	CH-1HT
Diethylene Glycol and Diols	CH-FFAP
Dimethylanilines	CH-STAR-WAX
Dioxins and Furans GC-MS	CH-5MS
Drugs and Adulterants	CH-5 (inquire by GC-MS)
Drugs of Abuse - Basic Drugs	CH-1
Drugs of Abuse - Cannabinoids	CH-1
Drugs Precursors	CH-5
FAMEs (Fatty Acid Methyl Esters) C4 - C18	CH-STAR-WAX
FAMEs (Fatty Acid Methyl Esters) C6 - C24	CH-STAR-WAX
FAMEs (Fatty Acid Methyl Esters) Standard Mixture	CH-88
FAMEs (Fatty Acid Methyl Esters) Standard Mixture FAST-GC	CH-88 (inquire)
FAMEs and CLA isomers	CH-88
FAMEs cis trans Isomers	CH-88
Flavor & Fragrances Compounds	CH-FFAP
Food Packaging Residual Solvents	CH-1701
Fragrance Allergens FAST-GC	CH-1701 (inquire)
Fragrance Allergens FAST-GC	CH-STAR-WAX (inquire)
Free Acids	CH-FFAP
Free Fatty Acids in Whisky	CH-FFAP

Compound	Column
Haloethers	CH-5 - EPA Method 611-8110
Halogenated Volatiles	CH-624 - EPA Method 551
Ketones	CH-1
Natural Gas Hydrocarbons	CH-1
Nitrogen-Phosphorus Pesticides Herbicides (Triazines)	CH-STAR-WAX EPA Method 619
Nitrosamines	CH-5 - EPA Method 607
Nitrosamines	CH-STAR-WAX
Olive Oil FAMEs (Fatty Acid Methyl Esters) Cis-Trans Isomers -	CH-88
Organic Acids	CH-FFAP
Organochlorine Pesticides	CH-5 - EPA Method 608-8081
Organophosphorus Pesticides	CH-1 and CH-1701
PAH Polycyclic Aromatic Hydrocarbons	CH-PAH - EPA Method 610-8100
PAHs	CH-5MS - EPA 610 - 8100 - 8270
PAHs	CH-PAH (inquire) EPA Methods 610 - 8100 - 8270
PAHs	CH-PAH (inquire)
PAHs EPA 8270 - Helium Carrier Gas	CH-PAH
PAHs FAST-GC	CH-PAH (inquire)
Pesticides FAST-GC	CH-1701 (inquire)
Phenols	CH-1
Phenols	CH-5 - EPA Method 604
Phthalate Esters	CH-1 - EPA Method 606
Purgeable Aromatics	CH-STAR-WAX EPA Method 602
Residual Solvents UPS 467	CH-624
Serum Volatiles Control	CH-BAC1
Solvents	CH-WAX
Sulfur compounds in coffee aroma	CH-FFAP
USP 467 Residual Solvents (OVIs) FAST-GC Headspace	CH-624 (inquire) (G43 Phase)
VOCs in Drinking Water	CH-624 - EPA Method 524-3
Vodka	CH-STAR-WAX
Volatile Acidic Compounds	CH-FFAP
Volatile Free Acids	CH-FFAP
Whisky direct split injection	CH-624
Xylene Isomers	CH-FFAP

AVAILABLE NOW!
SAMPLE HANDLING ESSENTIALS

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