

Equity™ Capillary GC Columns

The **performance** you demand...
the **service** you deserve...
from the **company** you trust.



Updated with:

- NEW Equity-1701 columns
- New Applications

Choose Equity for consistent, reproducible performance with:

- Special Purpose GC/MS Analyses
- Demanding Environmental Methods
- General Purpose Applications

Table of Contents

Equity Column Quick Look-Up Guide 3
 The Resolution You Need 4
 The Analyte Response You Require 6
 The Low Bleed You Expect 8
 The Column Life You Count On 10

Equity Applications

Alcohols –
 Blood Alcohol (SPME/GC) 12
 Hydrocarbons and Alcohols (GC) 12
 Fusel Oils in Vodka (GC) 13
Alditol Acetates (GC) 14
Amines (GC) 15
 Low Molecular Weight (GC) 15
Anilines (GC) 16
BAMEs – Bacterial Acid Methyl Esters (GC) 17
Dioxin and Furans (GC/MS) 17
Drugs – Drug Screen on Equity-5 (GC/MS) 18
 Drug Screen on Equity-1701 (GC/MS) 19
Foods, Flavors and Fragrances –
 Distilled Lime Oil (GC) 20
 Cold Pressed Lemon Oil (GC) 21
Fuels – Fuel Oils 1, 2 (GC) 22
 Fuel Oils 3,4,6 (GC) 23
Glycols – Glycols and Diols (GC) 24
Haloacetic Acids –
 US EPA Method 552.2 Haloacetic Acids (GC) 24
Herbicides –
 US EPA Method 515 Chlorinated Acids (GC) 25
Hydrocarbons –
 Simple Hydrocarbons (GC) 26
 Hydrocarbons and Alcohols (GC) 26
 Diesel Fuel (GC) 27
 Unleaded Gasoline (GC) 27

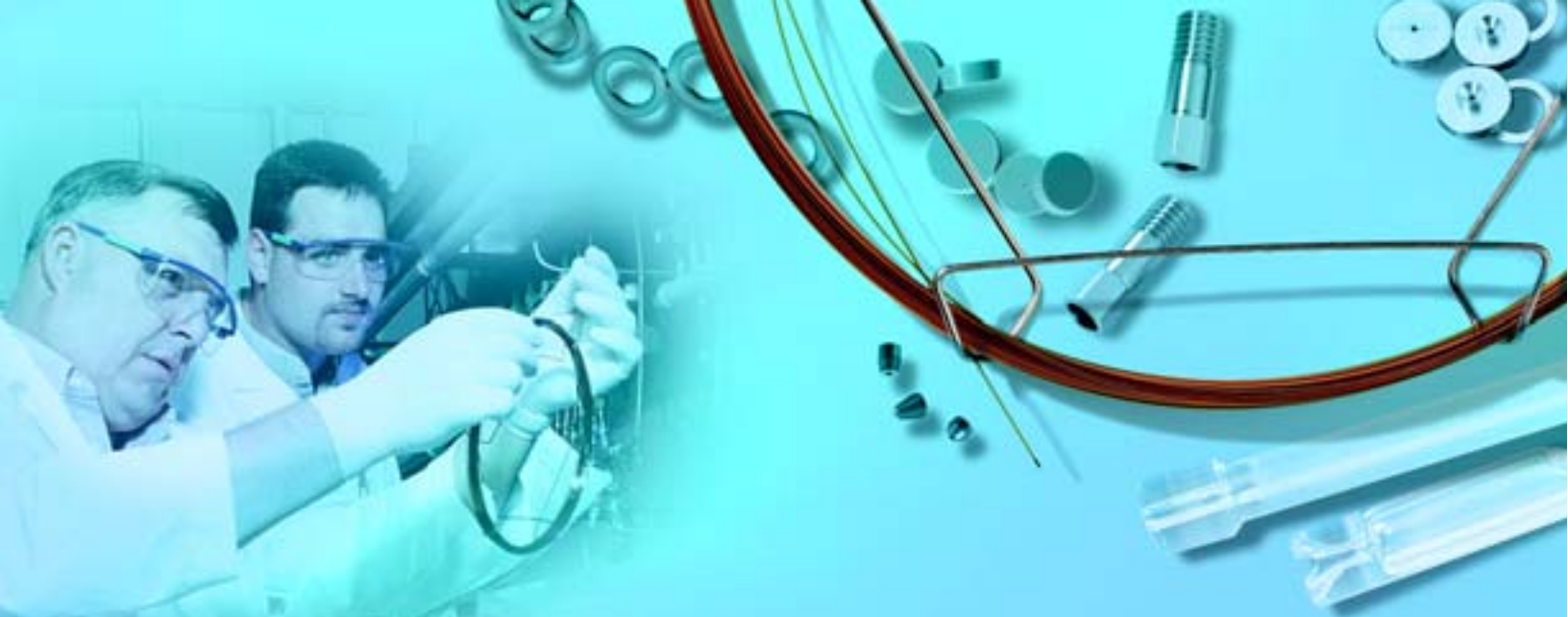
Ketones – Impurities in Methyl Ethyl Ketone (GC) 28
Odors – Trace Odors in Drinking Water (SPME/GC) 29
PCBs –
 US EPA Method 8082 Polychlorinated Biphenyls (GC) 30
 US EPA Method 8082 Polychlorinated Biphenyls (Fast GC) 31
Pesticides –
 US EPA Method 508 Chlorinated Pesticides (GC) 32
 US EPA Method 8081 Chlorinated Pesticides (Fast GC) 32
 US EPA Method 8081 Chlorinated Pesticides (GC) 33
 US EPA Method 8141 Organophosphorus Pesticides (GC) 34
 US EPA Method 8141 Organophosphorus Pesticides (GC/MS) 35
Phenols –
 US EPA Method 8041 Phenols (GC) 36
 US EPA Method 8041 Methylated Phenols (GC) 36
Semivolatiles –
 Phthalate Esters (GC) 37
 US EPA Method 8270 Semivolatile Compounds (GC/MS),
 Primary Analyte List 38
 US EPA Method 8270 Semivolatile Compounds (GC/MS),
 Supplemental Appendix IX List 39
Solvents –
 Industrial Solvents (GC) 40
 Pharmaceutical Solvents, Class 1 (GC) 41
 Pharmaceutical Solvents, Class 2 (GC) 42
 Pharmaceutical Solvents, Class 3 (GC) 43
 Residual Solvents (GC) 44
Volatiles – Indoor Air (GC/MS) 45

Popular GC Accessories

Agilent Technologies Instruments 46
 PerkinElmer Instruments 48
 Varian Instruments 49

Services and Support 50

Ordering Information 51



Supelco's new and improved line of capillary GC columns consistently deliver the **resolution** you need, the **low bleed** you expect, and the **column life** you count on.

Supelco's new and improved Equity Capillary GC Columns deliver the capillary GC column performance you demand for your nonpolar applications.

Significant improvements in the polymer chemistry are at the heart of the enhanced performance you will receive with our new Equity Capillary GC Columns. The polymer improvements result in better cross-linking, higher thermal stability, and superior product reproducibility.

The consistent resolution, analyte response, low bleed, and column life from one Equity column to the next will allow you to reliably transfer methods between sites or instruments within the same site. Also, maintain the expected column performance over time within the same instrument when you need to replace your column. The reproducible performance Equity provides will minimize time consuming method adjustments and troubleshooting with column changes. This equals more tests run with higher confidence.

Equity Capillary GC Column Quick Look-Up Guide

The following table provides an overview of the current capillary GC columns available in the new Equity line. For more detailed ordering information please refer to page 51 of this brochure.

	Equity-1	Equity-5	Equity-1701
Phase	bonded; poly(dimethylsiloxane)	bonded; poly (5% diphenyl/ 95% dimethylsiloxane)	bonded; poly (14% cyanopropylphenyl/ 86% dimethylsiloxane)
Temperature Limits	0.25 and 0.32mm ID: -60°C to 325/350°C 0.53mm ID: -60°C to 300/320°C (<=1.5µm df) -60°C to 260/280°C (>1.5µm df)	0.25 and 0.32mm ID: -60°C to 325/350°C 0.53mm ID: -60°C to 300/320°C (<=1.5µm df) -60°C to 260/280°C (>1.5µm df)	0.25 and 0.32mm ID: subambient to 280°C 0.53mm ID: subambient to 260°C
Column IDs	0.20, 0.25, 0.32, and 0.53mm IDs	0.10, 0.20, 0.25, 0.32, and 0.53mm IDs	0.10, 0.25, 0.32, and 0.53mm IDs,
Column Lengths	varies; 10 to 100 meters	varies; 12 to 60 meters	varies; 15 to 60 meters
Column Film Thickness	varies; 0.10 to 5.0µm	varies; 0.10 to 5.0µm	varies; 0.25 to 1.5µm
Custom Dimensions	yes; please inquire for details on custom dimensions	yes; please inquire for details on custom dimensions	yes; please inquire for details on custom dimensions

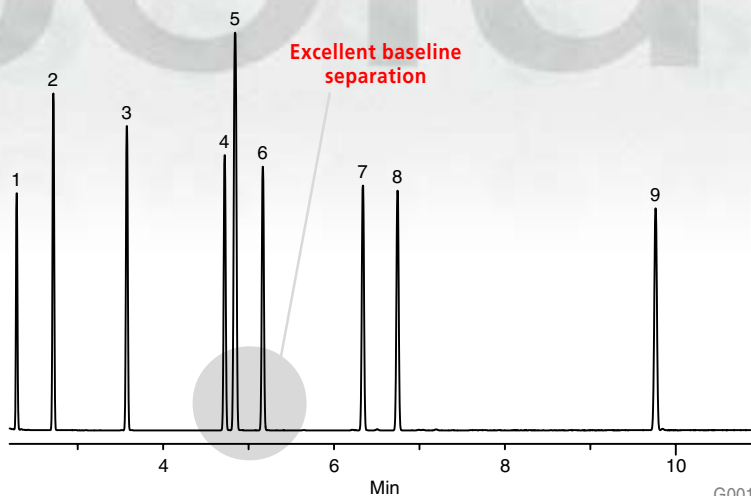
The Resolution You Need

Equity-1

Resolution of Aromatics

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28046-U
Oven: 50°C, 10°C/min to 200°C (5 min)
Inj.: 200°C
Det.: FID, 250°C
Carrier Gas: Helium, 30cm/sec @ 50°C
Injection: 1 μ L, 100:1 split
Sample: UST Modified Gasoline Range Organics (Cat. No. 48167)

1. Methyl tert-butyl ether
2. Benzene
3. Toluene
4. Ethylbenzene
5. m/p-Xylene
6. o-Xylene
7. 1,3,5-Trimethylbenzene
8. 1,2,4-Trimethylbenzene
9. Naphthalene



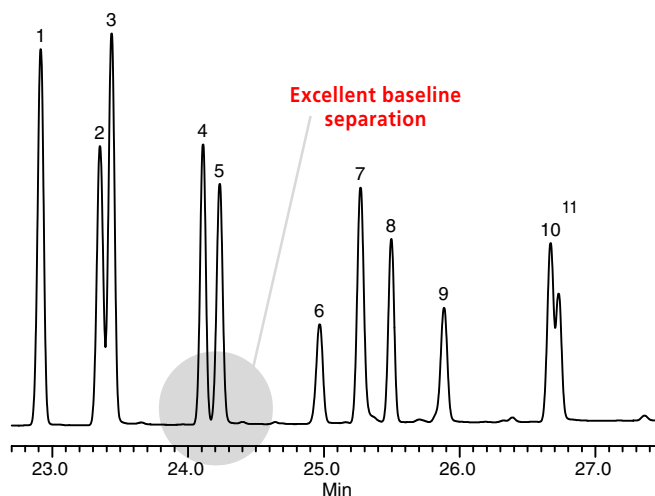
G001597

Equity-5

Resolution of Pesticides

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28089-U
Oven: 125°C (4 min), 6°C/min to 300°C (5 min)
Inj.: 225°C
Det.: ECD, 300°C
Carrier Gas: Helium, 25cm/sec @ 300°C
Injection: 1 μ L, splitless
Sample: 50pg on-column of a 22 component EPA Method 8081 pesticide standard

- | | |
|------------------------|------------------------|
| 1. γ -Chlordane | 7. Endosulfan II |
| 2. Endosulfan I | 8. 4,4'-DDD |
| 3. α -Chlordane | 9. Endrin aldehyde |
| 4. 4,4'-DDE | 10. Endosulfan sulfate |
| 5. Dieldrin | 11. 4,4'-DDT |
| 6. Endrin | |



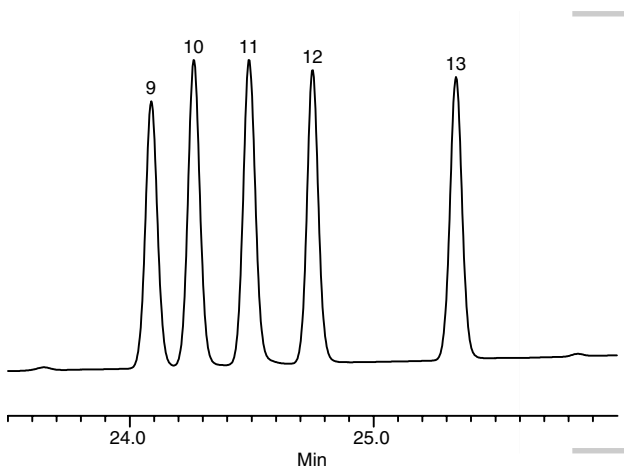
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Equity-1701

Resolution of Pesticides

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28372-U
Oven: 100°C (2 min), 15°C/min to 160°C, 5°C/min to 280°C (10 min)
Inj.: 225°C
Det.: ECD, 310°C
Carrier Gas: Helium, 22cm/sec @ 115°C
Injection: 2 μ L, splitless (0.5 min)
Sample: 50ppb of a 22 component chlorinated pesticide standard (Cat. No. 46845-U)

Peak ID's on page 5



G001950

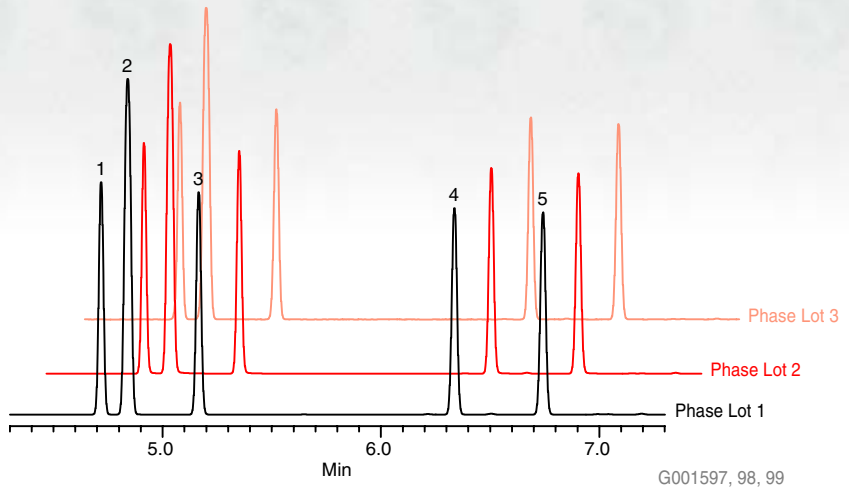
For accurate identification, reliable quantitation, and confidence in your results, choose Equity Capillary GC columns. The consistently high resolution you demand and the service you deserve.

Equity-1

Reproducible Resolution Across Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28046-U
 Oven: 50°C, 10°C/min to 200°C (5 min)
 Inj.: 200°C
 Det.: FID, 250°C
 Carrier Gas: Helium, 30cm/sec @ 50°C
 Injection: 1µL, 100:1 split
 Sample: UST Modified Gasoline Range Organics (Cat. No. 48167)

1. Ethylbenzene
2. m/p-Xylene
3. o-Xylene
4. 1,3,5-Trimethylbenzene
5. 1,2,4-Trimethylbenzene



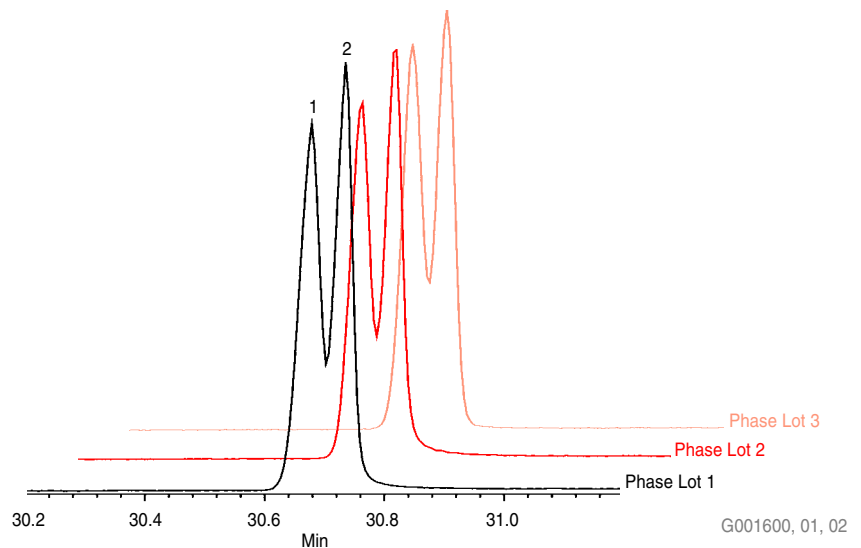
G001597, 98, 99

Equity-5

Reproducible Resolution Across Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28089-U
 Oven: 40°C (4 min), 10°C/min to 325°C (5 min)
 Inj.: 250°C
 MSD Interface: 325°C
 Scan Range: 45-450m/z
 Carrier Gas: Helium, 45cm/sec @ 40°C
 Injection: 1µL, splitless
 Sample: 25ng on-column of a 16 component semivolatiles standard

1. Benzo(b)fluoranthene
2. Benzo(k)fluoranthene



G001600, 01, 02

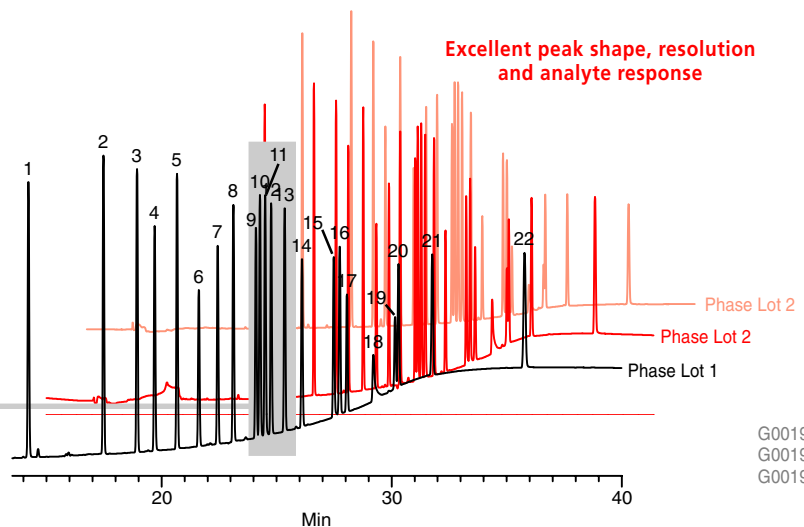
5

Equity-1701

Reproducible Resolution Across Phase Lots and Manufacturing Batches

- | | |
|---|--------------------------------|
| 1. 2,4,5,6-Tetrachloro-m-xylene (surr.) | 14. Endrin |
| 2. α-BHC | 15. 4,4'-DDD |
| 3. γ-BHC | 16. Endosulfan II |
| 4. Heptachlor | 17. 4,4'-DDT |
| 5. Aldrin | 18. Endrin aldehyde |
| 6. β-BHC | 19. Methoxychlor |
| 7. δ-BHC | 20. Endosulfan sulfate |
| 8. Heptachlor epoxide | 21. Endrin ketone |
| 9. Endosulfan I | 22. Decachlorobiphenyl (surr.) |
| 10. γ-Chlordane | |
| 11. α-Chlordane | |
| 12. 4,4'-DDE | |
| 13. Dieldrin | |

Run conditions same as page 4.



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 G001951
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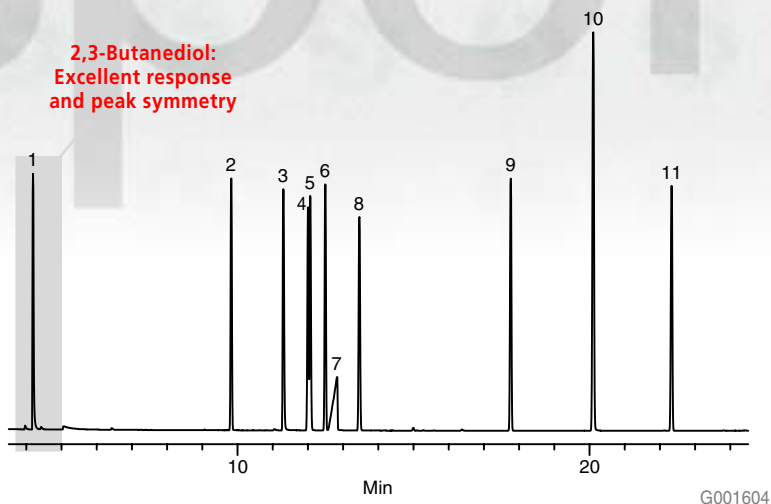
The Analyte Response You Require

Equity-1

Excellent Analyte Response

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28046-U
Oven: 40°C, 6°C/min to 230°C (1 min)
Inj.: 250°C
Det.: FID, 360°C
Carrier Gas: Helium, 30cm/sec @ 40°C
Injection: 1 μ L, 60:1 split
Sample: Grob Test Mix (Cat. No. 47304)

1. 2,3-Butanediol
2. Decane
3. Octanol
4. 2,6-Dimethylphenol
5. Nonanal
6. Undecane
7. 2-Ethyl hexanoic acid
8. 2,6-Dimethylaniline
9. Methyl decanoate
10. Methyl undecanoate
11. Methyl dodecanoate

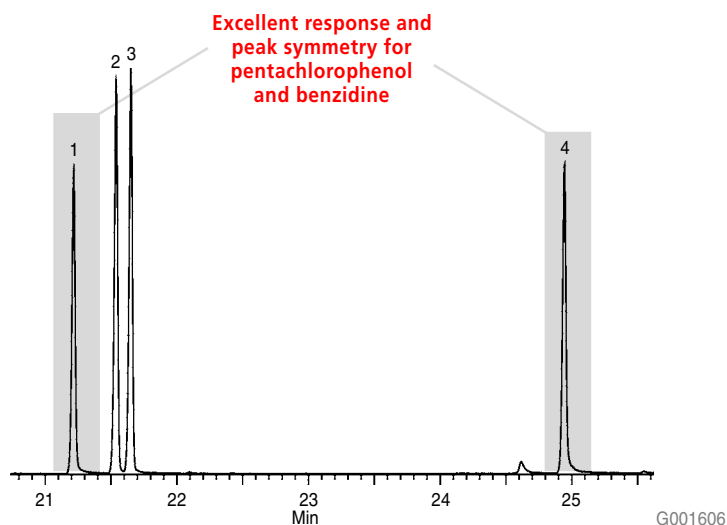


Equity-5

Excellent Analyte Response

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28089-U
Oven: 40°C (4 min), 10°C/min to 325°C (5 min)
Inj.: 250°C
MSD Interface: 325°C
Scan Range: 45-450m/z
Carrier Gas: Helium, 27cm/sec @ 40°C
Injection: 1 μ L, splitless
Sample: 25ng on-column of a 16 component semivolatile standard

1. Pentachlorophenol
2. Phenanthrene
3. Anthracene
4. Benzidine

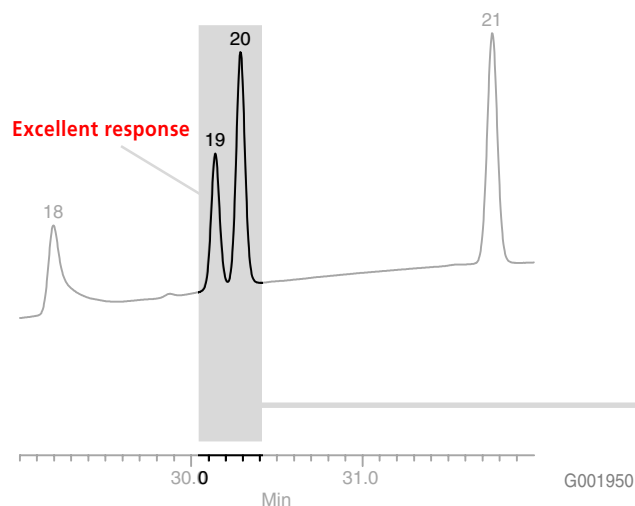


Equity-1701

Excellent Analyte Response

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28372-U
Oven: 100°C (2 min), 15°C/min to 160°C, 5°C/min to 280°C (10 min)
Inj.: 225°C
Det.: ECD, 310°C
Carrier Gas: Helium, 22cm/sec @ 115°C
Injection: 2 μ L, splitless (0.5 min)
Sample: 50ppb of a 22 component chlorinated pesticide standard (Cat. No. 46845-U)

Peak ID's on page 7



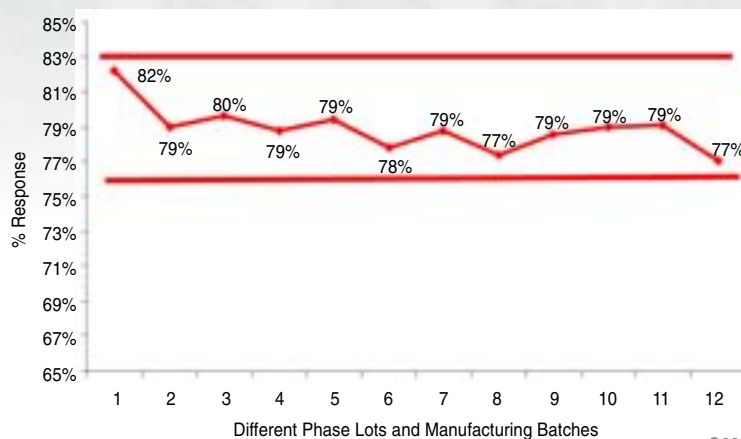
For lower detection limits and less instrument downtime, you can depend on Equity Capillary GC columns. The reproducible analyte response you demand and the service you deserve.

Equity-1

Reproducible Analyte Response Across Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28046-U
 Oven: 110°C (14 min), 15°C/min to 325°C (15 min)
 Inj.: 250°C
 Det.: FID, 360°C
 Carrier Gas: Helium, 30cm/sec @ 110°C
 Injection: 1.0µL, 100:1 split
 Sample: Nonpolar Column Test Mix (Cat. No. 47300-U)
 % Response: Calculated relative to the predicted hydrocarbon response at the same retention time

Consistent Response for 1-Octanol



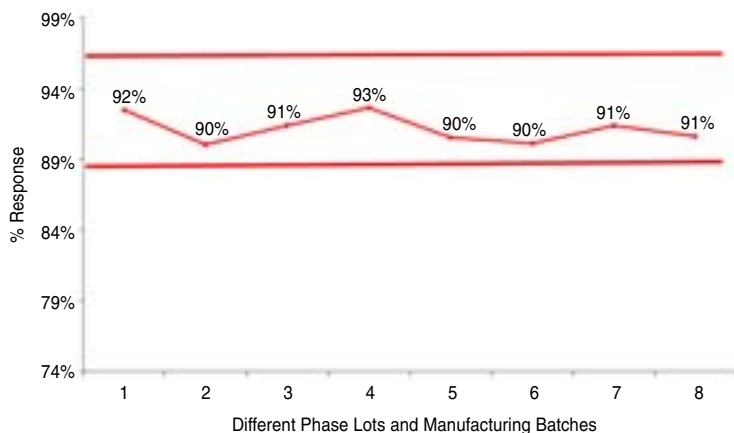
G001605

Equity-5

Reproducible Analyte Response Across Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
 Oven: 110°C (14 min), 15°C/min to 325°C (15 min)
 Inj.: 250°C
 Det.: FID, 360°C
 Carrier Gas: Helium, 30cm/sec @ 110°C
 Injection: 1µL, 100:1 split
 Sample: Nonpolar Column Test Mix (47300-U)
 %Response: Calculated relative to the predicted hydrocarbon response at the same retention time

Consistent Response for 2,6-Dimethylaniline



G001607

Equity-1701

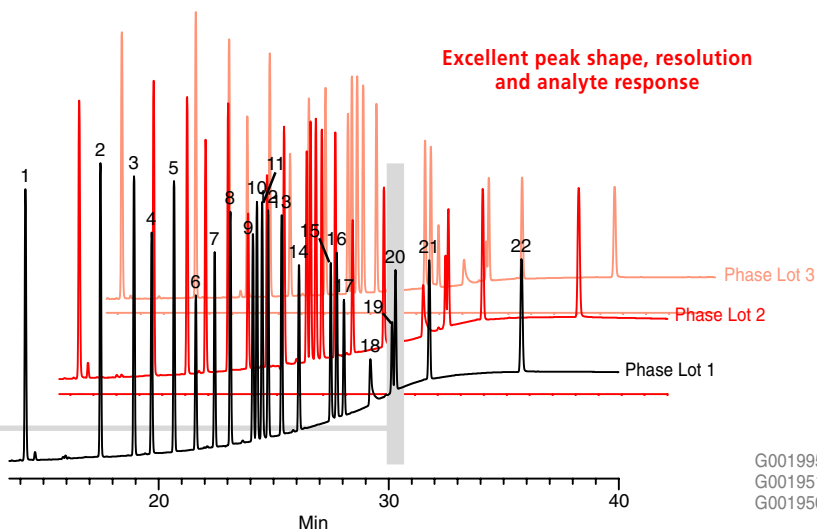
Reproducible Analyte Response Across Phase Lots and Manufacturing Batches

1. 2,4,5,6-Tetrachloro-m-xylene (surr.)
2. α-BHC
3. γ-BHC
4. Heptachlor
5. Aldrin
6. β-BHC
7. δ-BHC
8. Heptachlor epoxide
9. Endosulfan I
10. γ-Chlordane
11. α-Chlordane
12. 4,4'-DDE
13. Dieldrin
14. Endrin
15. 4,4'-DDD
16. Endosulfan II
17. 4,4'-DDT
18. Endrin aldehyde

19. Methoxychlor
20. Endosulfan sulfate

21. Endrin ketone
22. Decachlorobiphenyl (surr.)

Excellent peak shape, resolution and analyte response



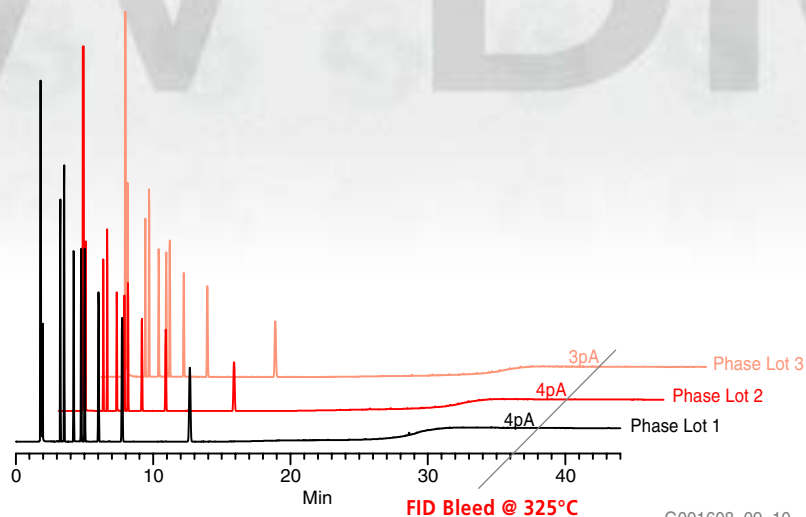
G001995
 G001951
 G001950

The Low Bleed You Expect

Equity-1

Reproducible Low Column Bleed Across
Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28046-U
Oven: 110°C (14 min), 15°C/min to 325°C
(15 min)
Inj.: 250°C
Det.: FID, 360°C
Carrier Gas: Helium, 30cm/sec @ 110°C
Injection: 1 μ L, 100:1 split
Sample: Nonpolar Column Test Mix (Cat. No. 47300-U)

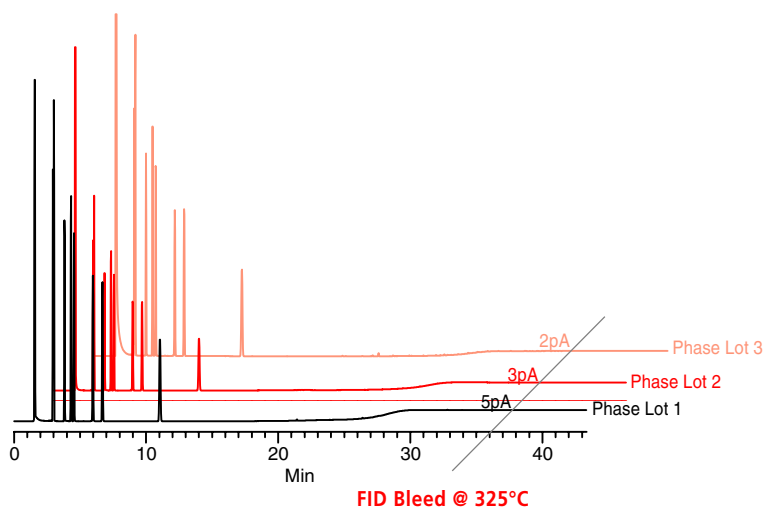


G001608, 09, 10

Equity-5

Reproducible Low Column Bleed Across
Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28089-U
Oven: 110°C (14 min), 15°C/min to 325°C
(15 min)
Inj.: 250°C
Det.: FID, 360°C
Carrier Gas: Helium, 30cm/sec @ 110°C
Injection: 1 μ L, 100:1 split
Sample: Nonpolar Column Test Mix (Cat. No. 47300-U)

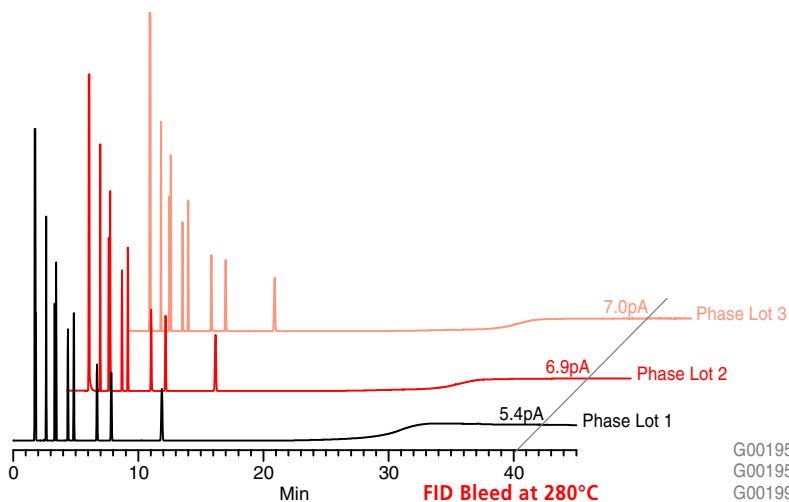


G001612, 13, 14

Equity-1701

Reproducible Low Column Bleed Across
Phase Lots and Manufacturing Batches

Column: 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28372-U
Oven: 115°C (20 min), 15°C/min to 280°C (15 min)
Inj.: 250°C
Det.: FID, 290°C
Carrier Gas: Helium, 30cm/sec @ 115°C
Injection: 1 μ L, 100:1 split
Sample: Modified intermediate polarity test mix



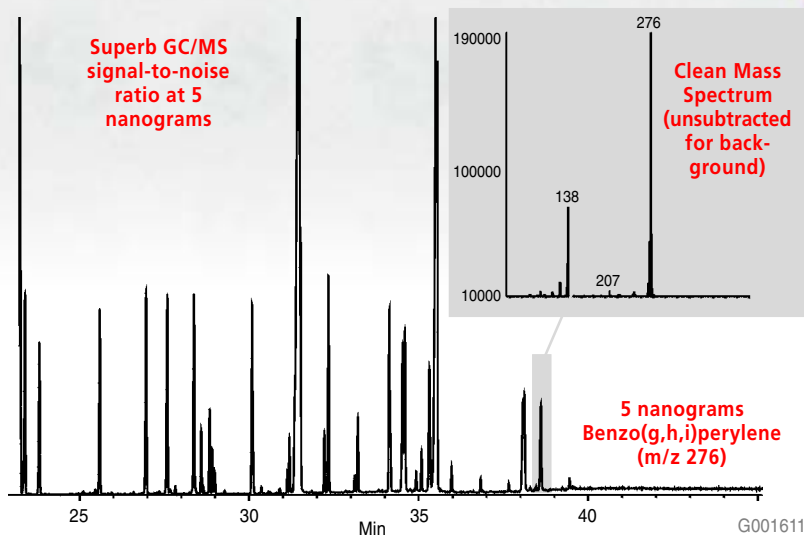
G001955
G001954
G001996

For great sensitivity, reliable identification, and increased sample throughput, rely on Equity Capillary GC columns. The consistent low bleed performance you demand and the service you deserve.

Equity-1

Low GC/MS Column Bleed

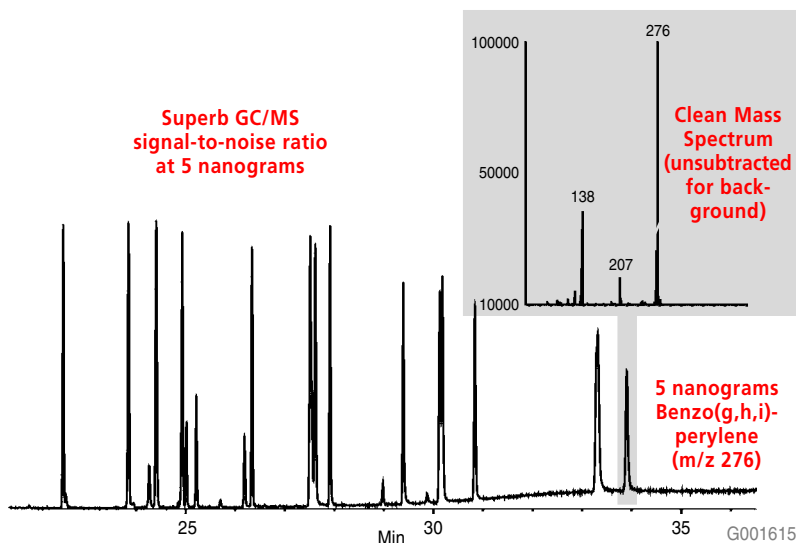
Column: 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28046-U
 Oven: 40°C (3 min), 10°C/min to 100°C (2 min), 8°C/min to 325°C (5 min)
 Inj.: 250°C
 MSD Interface: 325°C
 Scan Range: 45-450m/z
 Carrier Gas: Helium, 45cm/sec @ 40°C
 Injection: 1µL, pulsed splitless (pulsed to 40psi for 0.25 min)
 Sample: 5ng on-column of a 76 component EPA Method 8270 standard



Equity-5

Low GC/MS Column Bleed

Column: 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28089-U
 Oven: 40°C (3 min), 10°C/min to 100°C (2 min), 8°C/min to 325°C (5 min)
 Inj.: 250°C
 MSD Interface: 325°C
 Scan Range: 45-450m/z
 Carrier Gas: Helium, 45cm/sec @ 40°C
 Injection: 1µL, pulsed splitless (pulsed to 40psi for 0.25 min)
 Sample: 5ng on-column of a 76 component EPA Method 8270 semivolatile standard

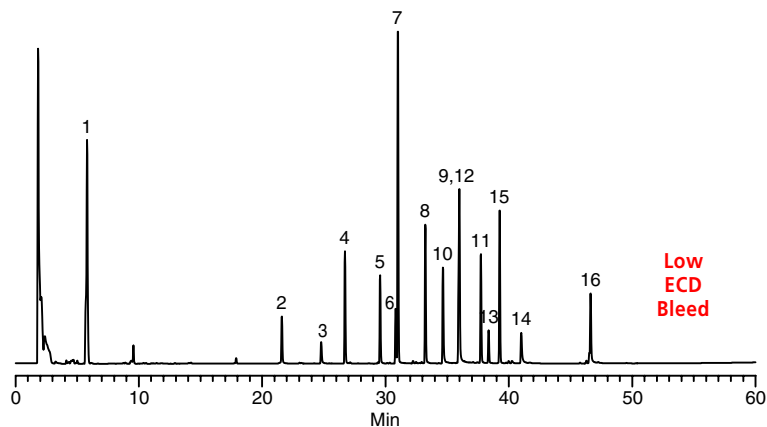


Equity-1701

Low ECD Column Bleed

Column: 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28372-U
 Oven: 60°C, 4°C/min to 280°C (5 min)
 Inj.: 250°C
 Det.: ECD, 320°C
 Carrier Gas: Helium, 30cm/sec @ 60°C
 Injection: 2µL, splitless (0.45 min)
 Liner: 4mm ID double taper
 Sample: Custom mix in MTBE diluted and derivatized with diazomethane

- | | |
|-------------------------|-----------------|
| 1. Dalapon | 9. Chloramben |
| 2. 3,5-Dichlorobenzoate | 10. 2,4,5-T |
| 3. 4-Nitrophenol | 11. Dinoseb |
| 4. Dicamba | 12. 2,4-DB |
| 5. Dichloroprop | 13. Bentazon |
| 6. 2,4-D | 14. Picloram |
| 7. Pentachlorophenol | 15. Dacthal |
| 8. 2,4,5-TP | 16. Acifluorfen |



The Column Life You Count On

Equity-1

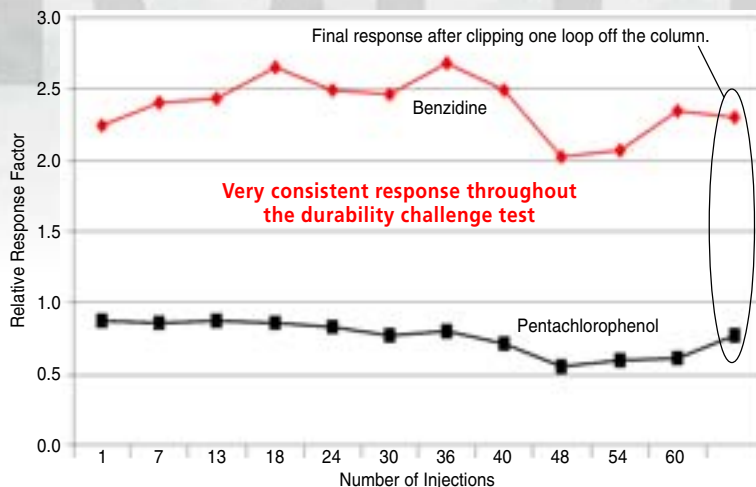
Durability Challenge

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28046-U
 Oven: 35°C (4 min), 10°C/min to 325°C (15 min)
 Inj.: 250°C
 Det.: FID, 360°C
 Carrier Gas: Helium, 35cm/sec @ 325°C
 Injection: 1µL, 100:1 split
 Sample: Test Mix – 2.5 to 5ng on-column of a 16 component semivolatiles standard; the column challenge mix is a high concentration waste sample.

Response factor is calculated relative to the internal standard 2,2'-Difluorobiphenyl

Durability Test

The column durability and life were challenged for over 60 injections by alternating injections of the 1µL test mix followed by 5 consecutive 2µL splitless injections of the high concentration waste sample. Column maintenance was performed at the end of the test before a final test mix was injected.



G001620

Equity-5

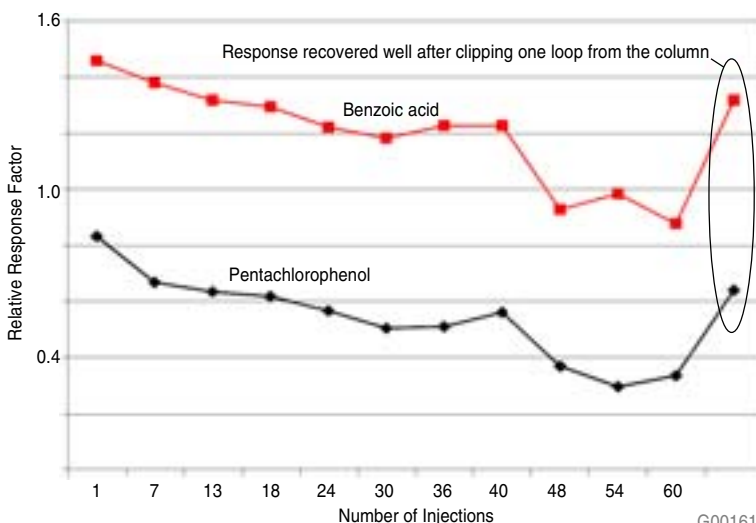
Durability Challenge

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
 Oven: 35°C (4 min), 10°C/min to 325°C (15 min)
 Inj.: 250°C
 Det.: FID, 360°C
 Carrier Gas: Helium, 35cm/sec @ 325°C
 Injection: 1µL, 100:1 split
 Sample: Test Mix – 2.5 to 5ng on-column of a 16 component semivolatiles standard; the column challenge mix is a high concentration waste sample.

Response factor is calculated relative to the internal standard 2,2'-Difluorobiphenyl

Durability Test

The column durability and life were challenged for over 60 injections by alternating injections of the 1µL test mix followed by 5 consecutive 2µL splitless injections of the high concentration waste sample. Column maintenance was performed at the end of the test before a final test mix was injected.



G001616

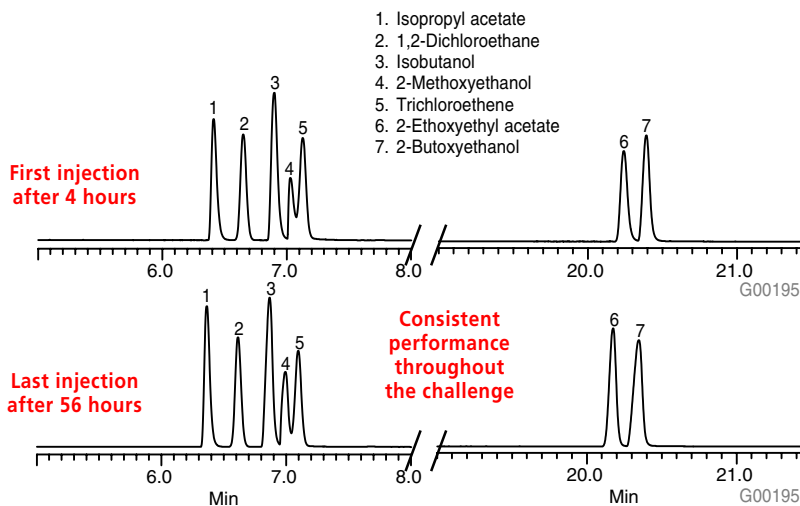
Equity-1701

Durability Challenge

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28372-U
 Oven: 35°C (8 min), 4°C/min to 90°C
 Inj.: 220°C
 Det.: FID, 290°C
 Carrier Gas: Helium, 22cm/sec @ 35°C
 Injection: 1µL, 200:1 split
 Sample: Test Mix-1% each solvent by weight in methanol

Durability Test

The column durability and life were challenged by repeatedly ramping the GC oven up to 280°C and holding for four hours. After each four-hour increment, a solvent standard was analyzed. This sequence was repeated until the column had experienced a total of 56 hours at 280°C.



G001956

G001957

To increase your productivity and reduce your instrument downtime, use Equity Capillary GC columns. The durable, consistent column life you demand and the service you deserve.

Equity-1

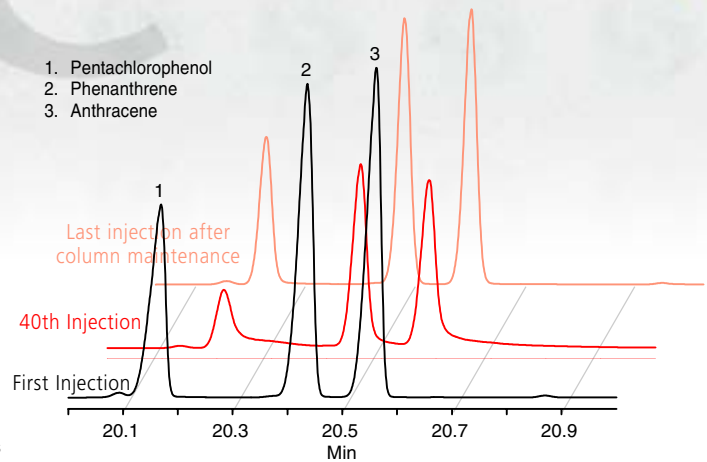
Durable Analyte Response

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28046-U
Oven: 35°C (4 min), 10°C/min to 325°C (15 min)
Inj.: 250°C
Det.: FID, 360°C
Carrier Gas: Helium, 35cm/sec @ 325°C
Injection: 1µL, 100:1 split
Sample: Test Mix – 2.5 to 5ng on-column of a 16 component semivolatle standard; the column challenge mix is a high concentration waste sample.

Response factor is calculated relative to the internal standard 2,2'-Difluorobiphenyl

Durability Test

The column durability and life were challenged for over 60 injections by alternating injections of the 1µL test mix followed by 5 consecutive 2µL splitless injections of the high concentration waste sample. Column maintenance was performed at the end of the test before a final test mix was injected.



G001621, 22, 23

Equity-5

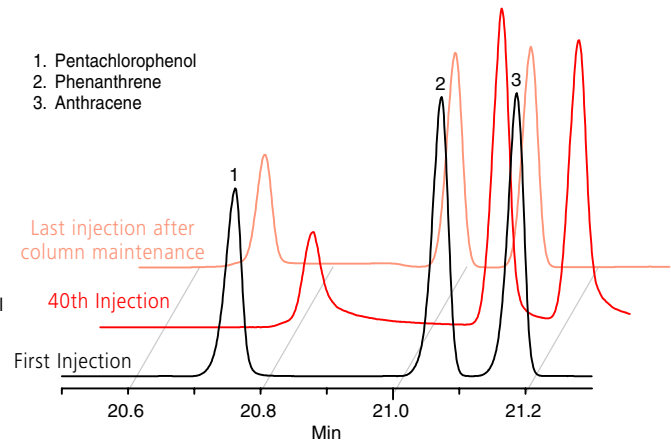
Durable Analyte Response

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
Oven: 35°C (4 min), 10°C/min to 325°C (15 min)
Inj.: 250°C
Det.: FID, 360°C
Carrier Gas: Helium, 35cm/sec @ 325°C
Injection: 1µL, 100:1 split
Sample: Test Mix – 2.5 to 5ng on-column of a 16 component semivolatle standard; the column challenge mix is a high concentration waste sample.

Response factor is calculated relative to the internal standard 2,2'-Difluorobiphenyl

Durability Test

The column durability and life were challenged for over 60 injections by alternating injections of the 1µL test mix followed by 5 consecutive 2µL splitless injections of the high concentration waste sample. Column maintenance was performed at the end of the test before a final test mix was injected.



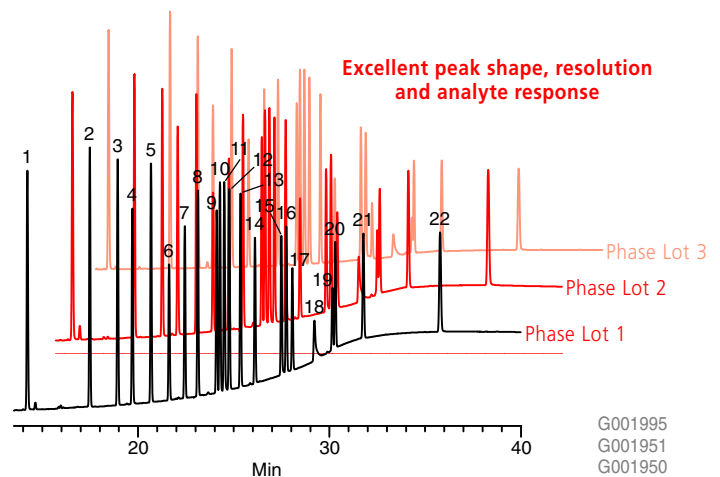
G001617, 18, 19

Equity-1701

Durable Analyte Response

Column: 30m x 0.25mm ID, 0.25µm
Cat. No.: 28372-U
Oven: 100°C (2 min), 15°C/min to 160°C, 5°C/min to 280°C (10 min)
Inj.: 225°C
Det.: ECD, 310°C
Carrier Gas: Helium, 22cm/sec @ 115°C
Injection: 2µL, splitless (0.5 min)
Sample: 50ppb of a 22 component chlorinated pesticide standard (Cat. No. 46845-U)

- | | | |
|---|-------------------|--------------------------------|
| 1. 2,4,5,6-Tetrachloro-m-xylene (surr.) | 9. Endosulfan I | 18. Endrin aldehyde |
| 2. α-BHC | 10. γ-Chlordane | 19. Methoxychlor |
| 3. γ-BHC | 11. α-Chlordane | 20. Endosulfan sulfate |
| 4. Heptachlor | 12. 4,4'-DDE | 21. Endrin ketone |
| 5. Aldrin | 13. Dieldrin | 22. Decachlorobiphenyl (surr.) |
| 6. β-BHC | 14. Endrin | |
| 7. δ-BHC | 15. 4,4'-DDD | |
| 8. Heptachlor epoxide | 16. Endosulfan II | |
| | 17. 4,4'-DDT | |

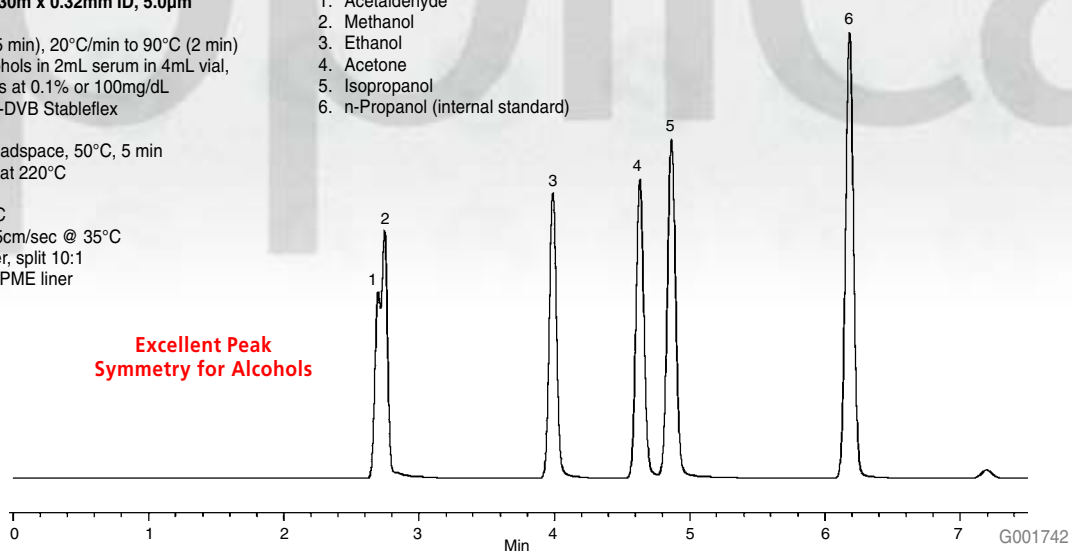


G001995
G001951
G001950

Alcohols - Blood Alcohol (SPME/GC)

Column: Equity-1, 30m x 0.32mm ID, 5.0µm
Cat. No.: 28062-U
 Oven: 35°C (2.75 min), 20°C/min to 90°C (2 min)
 Sample: Blood alcohols in 2mL serum in 4mL vial,
 all analytes at 0.1% or 100mg/dL
 SPME Fiber: Carbowax-DVB Stableflex
 Cat. No.: 57336-U
 Extraction: Heated headspace, 50°C, 5 min
 Desorption: 3 minutes at 220°C
 Inj.: 220°C
 Det.: FID, 250°C
 Carrier Gas: Helium, 25cm/sec @ 35°C
 Injection: SPME fiber, split 10:1
 Liner: 0.75mm SPME liner

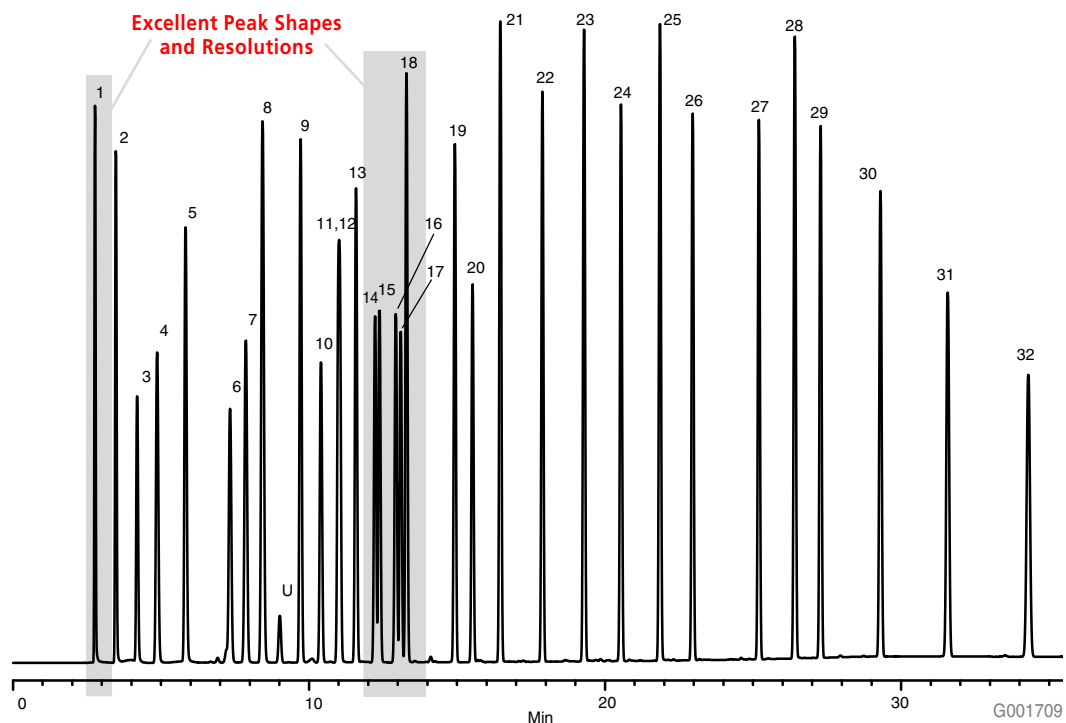
1. Acetaldehyde
2. Methanol
3. Ethanol
4. Acetone
5. Isopropanol
6. n-Propanol (internal standard)



Alcohols - Hydrocarbons and Alcohols (GC)

Column: Equity-1, 30m x 0.53mm ID, 3.0µm
Cat. No.: 28076-U
 Oven: 40°C (5 min), 8°C/min to 225°C (10 min)
 Inj.: 250°C
 Det.: FID, 275°C
 Carrier Gas: Helium, 30cm/sec @ 40°C
 Injection: 0.10µL, split 100:1
 Liner: Split, cup design
 Sample: 32 component mixed solvent
 sample, equal by weight

- | | | | |
|----------------|------------------------|-------------------------|-----------------|
| 1. Methanol | 8. Isobutanol | 14. 3-Methyl-1-butanol | 21. Hexanol |
| 2. Ethanol | U. Unknown | 15. 2-Methyl-1-butanol | 22. Nonane |
| 3. Isopropanol | 9. Butanol | 16. 3-Methyl-3-pentanol | 23. Heptanol |
| 4. t-Butanol | 10. 3-Methyl-2-butanol | 17. 4-Methyl-2-pentanol | 24. Decane |
| 5. Propanol | 11. 2-Pentanol | 18. Pentanol | 25. Octanol |
| 6. 2-Butanol | 12. 3-Pentanol | 19. Octane | 26. Undecane |
| 7. Hexane | 13. Heptane | 20. 4-Methyl-1-pentanol | 27. Dodecane |
| | | | 28. Decanol |
| | | | 29. Tridecane |
| | | | 30. Tetradecane |
| | | | 31. Pentadecane |
| | | | 32. Hexadecane |



Alcohols - Fusel Oils in Vodka (GC)

Column: Equity-1701, 30m x 0.32mm ID, 1.0 μ m

Cat. No.: 28387-U

Oven: 40°C (5 min), 4°C/min to 85°C (5 min)

Inj.: 150°C

Det.: FID, 210°C

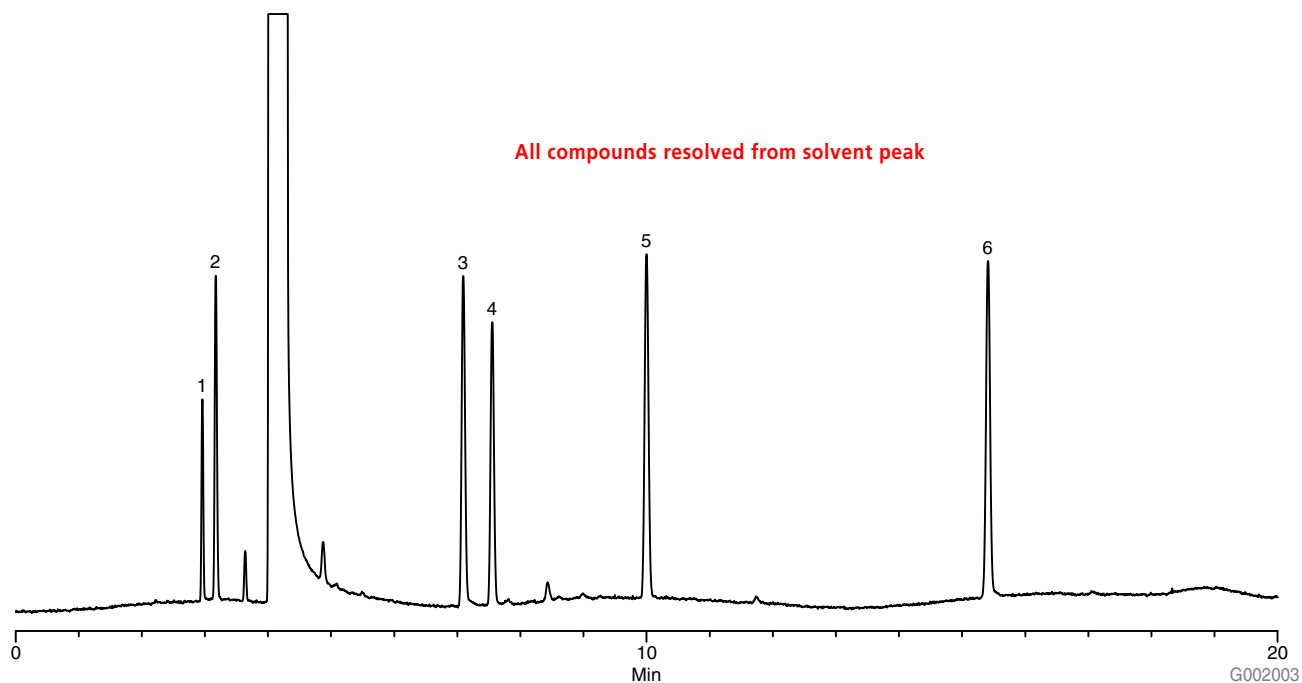
Carrier Gas: Helium, 30cm/sec @ 40°C

Injection: 1 μ L, split 100:1

Liner: 4mm ID single tapered

Sample: 1000ppm in 95% undenatured ethanol

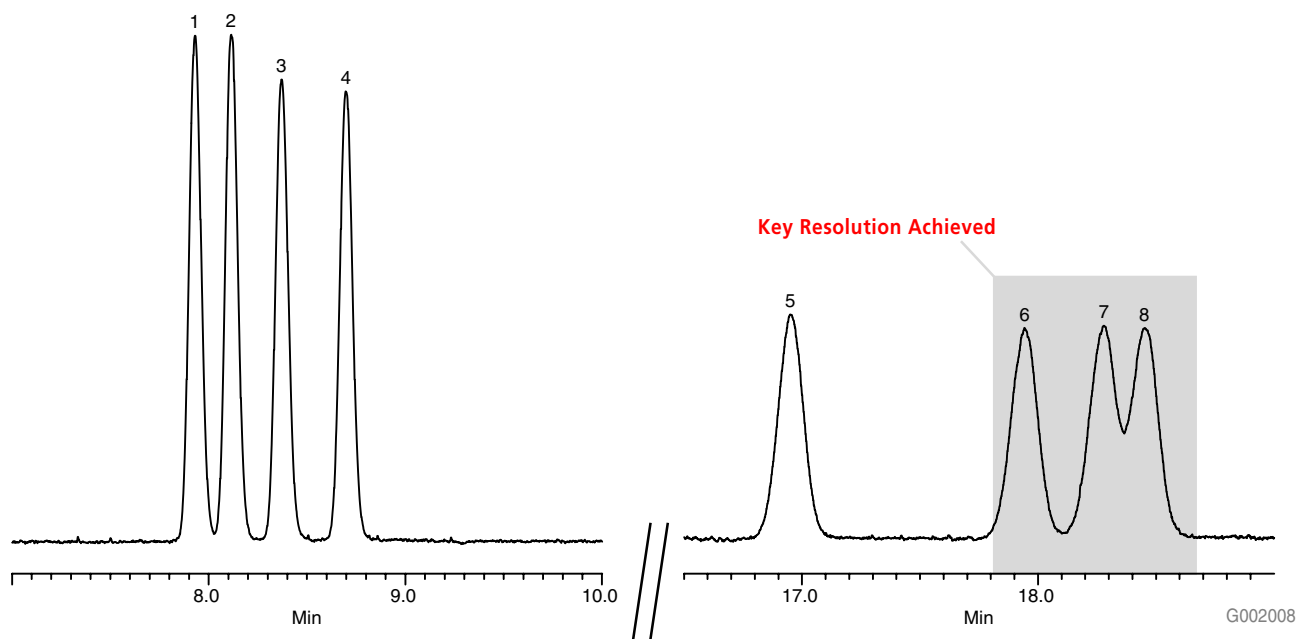
1. Acetaldehyde
2. Methanol
3. n-Propanol
4. Ethyl acetate
5. Isobutanol
6. Isoamyl alcohol



Alditol Acetates (GC)

Column: Equity-1701, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28372-U
Oven: 220°C isothermal
Inj: 220°C
Det.: FID, 260°C
Carrier Gas: Helium, 20cm/sec @ 220°C
Injection: 1µL, 25:1 split
Liner: split cup design
Sample: Alditol acetate mixes @ 500ppm in methylene chloride
(Cat. Nos. 47880-U & 47881)

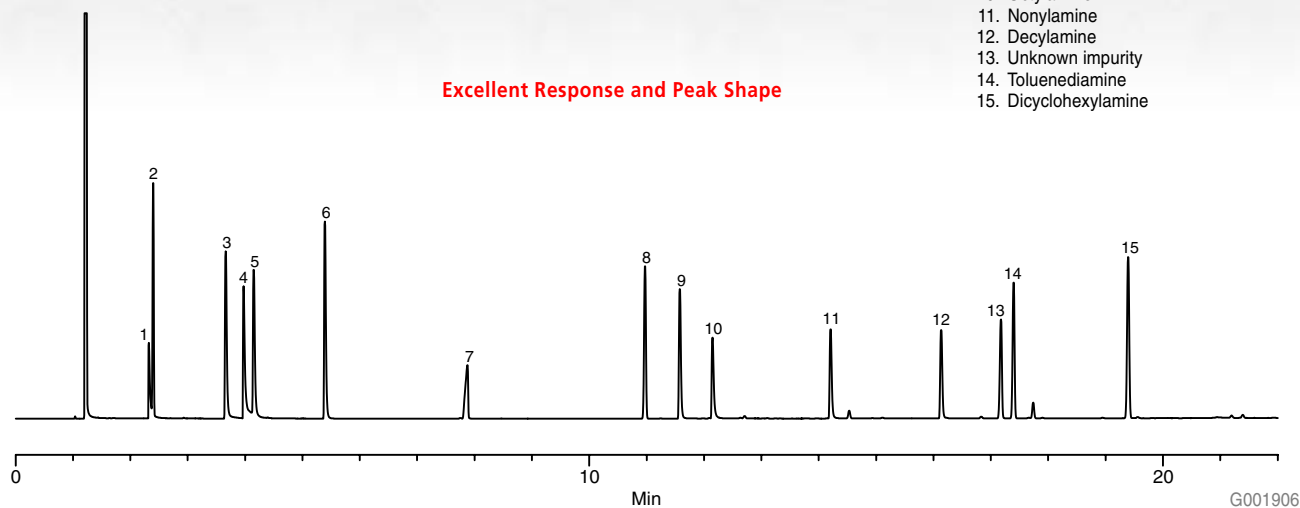
1. Rhamnitol
2. Fucitol
3. Ribitol
4. Arabinitol
5. Inositol
6. Mannitol
7. Glucitol
8. Galactitol



Amines (GC)

Column: Equity-5, 30m x 0.25mm ID, 1.0 μ m
Cat. No.: 28094-U
Oven: 45°C (2 min), 8°C/min to 275°C
Inj.: 250°C
Det.: FID, 300°C
Carrier Gas: Helium, 3mL/min @45°C
Injection: 1 μ L, split 300:1
Liner: 2mm ID, straight
Sample: 500ppm each amine in methanol

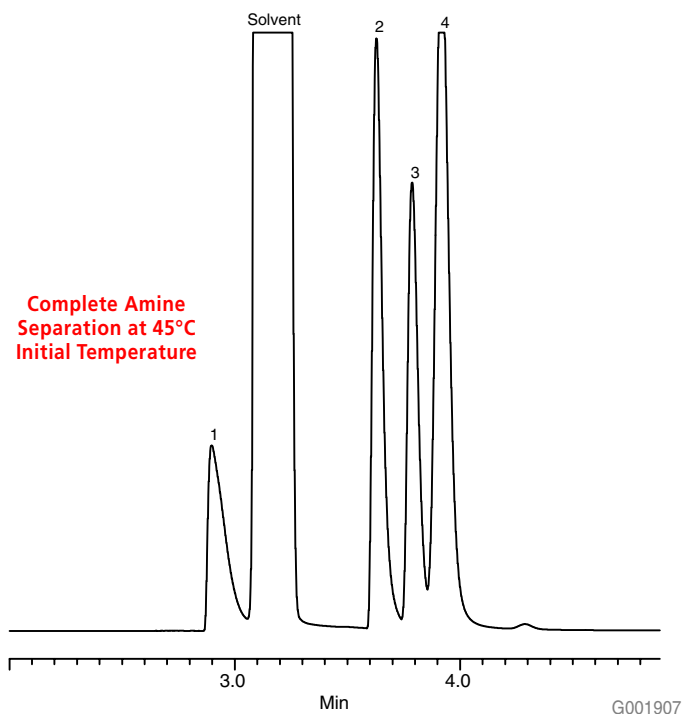
1. Propionitrile
2. Diethylamine
3. Diisopropylamine
4. 1-Methyl-pyrrolidine
5. Triethylamine
6. Pyridine
7. Acrylamide
8. Benzotrile
9. Benzylamine
10. Octylamine
11. Nonylamine
12. Decylamine
13. Unknown impurity
14. Toluenediamine
15. Dicyclohexylamine



Amines - Low Molecular Weight (GC)

Column: Equity-1, 30m x 0.32mm ID, 5.0 μ m
Cat. No.: 28062-U
Oven: 45°C (1 min), 10°C/min to 75°C
Inj.: 250°C
Det.: FID, 300°C
Carrier Gas: Helium, 2mL/min @45°C
Injection: 1 μ L, split 200:1
Liner: 2mm ID, straight
Sample: 500ppm each amine in methanol

1. Methylamine
2. Dimethylamine
3. Ethylamine
4. Trimethylamine



Anilines (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm

Cat. No.: 28089-U

Oven: 50°C (2 min), 10°C/min to 200°C, 15°C/min to 325°C (5 min)

Inj.: 250°C

Det.: FID, 325°C

Carrier Gas: Helium, 1.3mL/min, constant

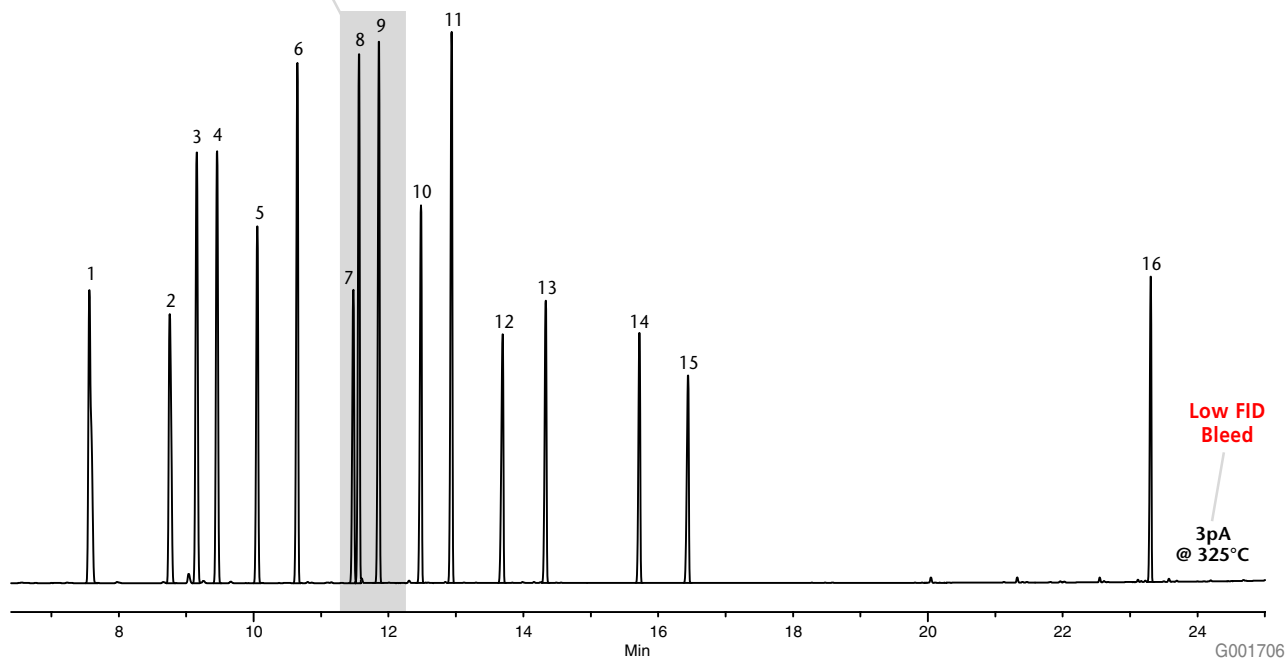
Injection: 1.0µL, splitless (0.5 min)

Liner: Splitless, 4mm ID single taper

Sample: 50ng on-column of a custom anilines mix

- | | |
|-----------------------------|------------------------------|
| 1. Aniline | 9. 2-Methyl-6-ethylaniline |
| 2. 3-Aminobenzotrifluoride | 10. 3-Chloro-4-methylaniline |
| 3. o-Toluidine | 11. 2,6-Diethylaniline |
| 4. N,N-Dimethylaniline | 12. 2,4-Diaminotoluene |
| 5. 2-Chloroaniline | 13. 3,4-Dichloroaniline |
| 6. 2,6-Dimethylaniline | 14. 2,4,5-Trichloroaniline |
| 7. 3-Chloro-4-fluoroaniline | 15. 4-Chloro-2-nitroaniline |
| 8. 4-Isopropylaniline | 16. 3,3'-Dichlorobenzidine |

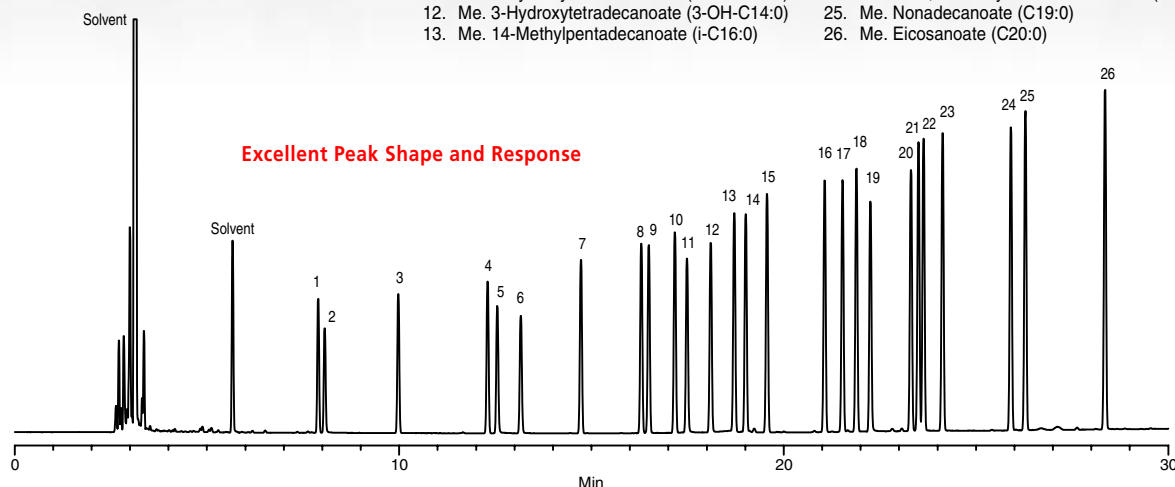
Excellent Peak Shapes
and Resolutions



BAMEs - Bacterial Acid Methyl Esters (GC)

Column: Equity-1, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28046-U
Oven: 150°C (4 min), 4°C/min to 250°C (5 min)
Inj.: 250°C
Det.: FID, 280°C
Carrier Gas: Helium, 20cm/sec @ 150°C
Injection: 1.0µL, split 100:1
Liner: Split, cup design
Sample: 100ng on-column of a 26 component BAME standard (Cat. No. 47080-U)

1. Me. Undecanoate (C11:0)
2. Me. 2-Hydroxydodecanoate (2-OH-C10:0)
3. Me. Dodecanoate (C12:0)
4. Me. Tridecanoate (C13:0)
5. Me. 2-Hydroxydodecanoate (2-OH-C12:0)
6. Me. 3-Hydroxydodecanoate (3-OH-C12:0)
7. Me. Tetradecanoate (C14:0)
8. Me. 13-Methyltetradecanoate (i-C15:0)
9. Me. 12-Methyltetradecanoate (α-C15:0)
10. Me. Pentadecanoate (C15:0)
11. Me. 2-Hydroxytetradecanoate (2-OH-C14:0)
12. Me. 3-Hydroxytetradecanoate (3-OH-C14:0)
13. Me. 14-Methylpentadecanoate (i-C16:0)
14. Me. cis-9-Hexadecenoate (C16:1⁹)
15. Me. Hexadecanoate (C16:0)
16. Me. 15-Methylhexadecanoate (i-C17:0)
17. Me. cis-9,10-Methylenehexadecanoate (C17:0Δ)
18. Me. Heptadecanoate (C17:0Δ)
19. Me. 2-Hydroxyhexadecanoate (2-OH-C16:0)
20. Me. cis 9, 12-Octadecadienoate (C18:2^{9,12})
21. Me. cis-9-Octadecanoate (C18:1⁹ Cis)
22. Me. trans-9-Octadecanoate (C18:1⁹ trans)
23. Me. Octadecanoate (C18:0)
24. Me. cis-9,10-Methyleneoctadecanoate (C19:0Δ)
25. Me. Nonadecanoate (C19:0)
26. Me. Eicosanoate (C20:0)

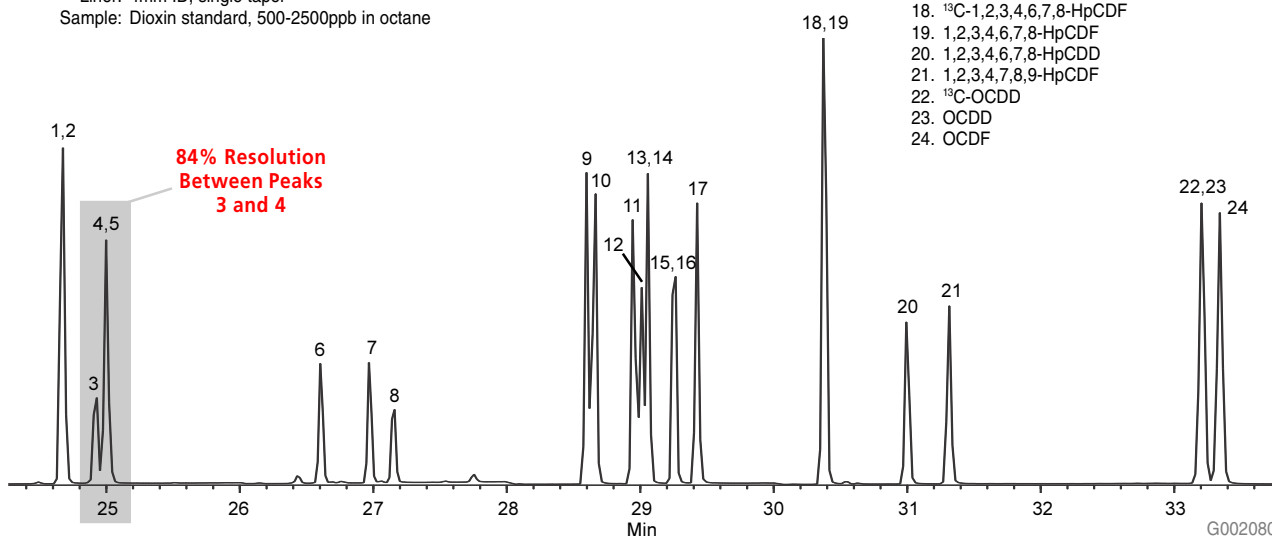


Dioxin and Furans (GC/MS)

Separation of all 17 Target Analytes

Column: Equity-5, 60m x 0.25mm ID x 0.25µm
Cat. No.: 28090-U
Oven: 170°C (1 min), 8°C/min to 325°C (15 min)
Inj.: 250°C
MSD Interface: 325°C
Scan Range: SIM
Carrier Gas: Helium, 37cm/sec, constant
Injection: 1µL, splitless (1 min)
Liner: 4mm ID, single taper
Sample: Dioxin standard, 500-2500ppb in octane

1. ¹³C-2,3,7,8-TCDF
2. 2,3,7,8-TCDF
3. ¹³C-1,2,3,4-TCDD
4. ¹³C-2,3,7,8-TCDD
5. 2,3,7,8-TCDD
6. 1,2,3,7,8-PCDF
7. 2,3,4,7,8-PCDF
8. 1,2,3,7,8-PCDD
9. 1,2,3,4,7,8-HxCDF
10. 1,2,3,6,7,8-HxCDF
11. 2,3,4,6,7,8-HxCDF
12. 1,2,3,4,7,8-HxCDD
13. ¹³C-1,2,3,6,7,8-HxCDD
14. 1,2,3,6,7,8-HxCDD
15. ¹³C-1,2,3,7,8,9-HxCDD
16. 1,2,3,7,8,9-HxCDD
17. 1,2,3,7,8,9-HxCDF
18. ¹³C-1,2,3,4,6,7,8-HpCDF
19. 1,2,3,4,6,7,8-HpCDF
20. 1,2,3,4,6,7,8-HpCDD
21. 1,2,3,4,7,8,9-HpCDF
22. ¹³C-OCDD
23. OCDD
24. OCDF



Drugs - Drug Screen (GC/MS)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm

Cat. No.: 28089-U

Oven: 45°C (2 min), 25°C/min to 110°C, 15°C/min to 200°C, 6°C/min to 280°C (3 min)

Inj.: 250°C

MSD Interface: 325°C

Scan Range: 40-450m/z

Carrier Gas: Helium, 0.7mL/min @ 45°C

Injection: 0.3µL pulsed splitless (pulsed to 40psi until 0.2 min) split open at 0.5 min

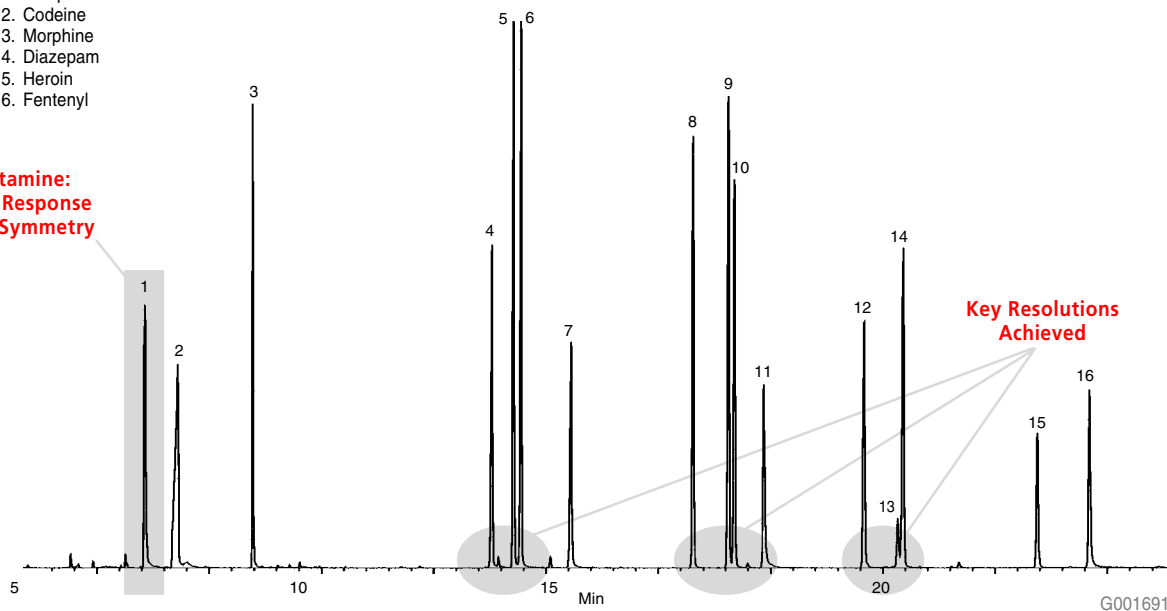
Liner: 2mm ID, straight

Sample: ~15ng on-column of a 16 component drug standard

1. Amphetamine
2. Methamphetamine
3. Nicotine
4. Caffeine
5. Diphenhydramine
6. Lidocaine
7. Phenobarbital
8. Methadone
9. Amitriptyline
10. Cocaine
11. Desipramine
12. Codeine
13. Morphine
14. Diazepam
15. Heroin
16. Fentanyl

Amphetamine:
Excellent Response
and Peak Symmetry

Key Resolutions
Achieved



Drugs - Drug Screen (GC/MS)

Column: Equity-1701, 30m x 0.25mm ID, 0.25 μ m

Cat. No.: 28372-U

Oven: 45°C (2 min), 25°C/min to 110°C, 15°C/min to 200°C, 6°C/min to 280°C (3 min)

Inj.: 250°C

MSD Interface: 280°C

Scan Range: 40-450m/z

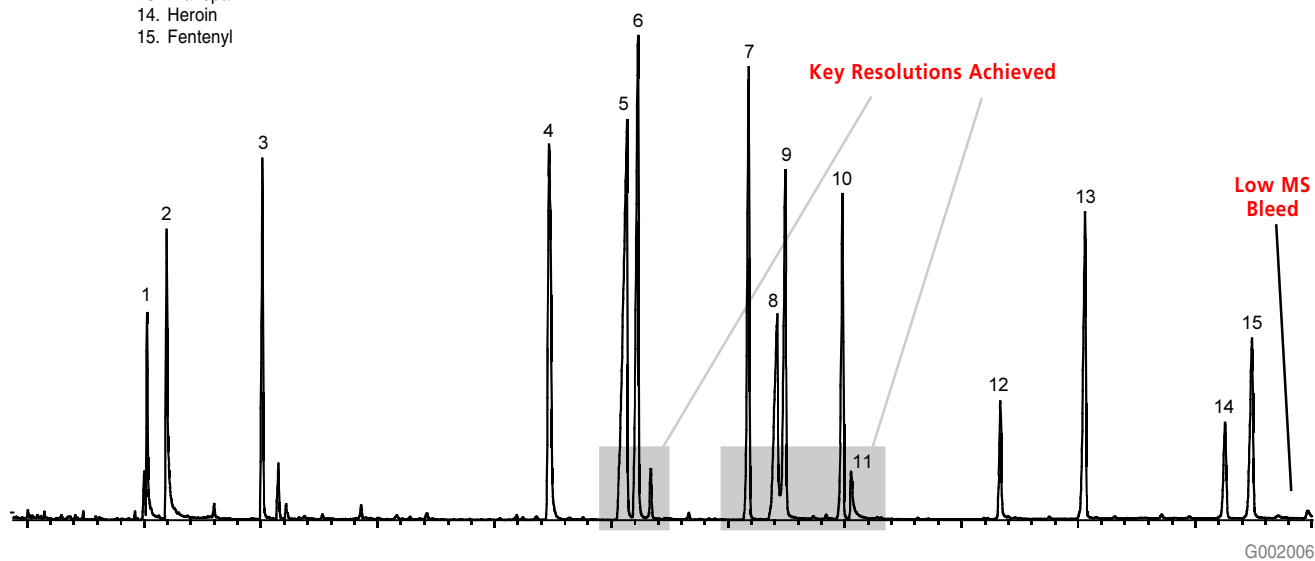
Carrier Gas: Helium, 0.7mL/min constant flow

Injection: 0.4 μ L pulsed splitless (pulsed to 40psi for 0.3 min) split open at 0.5 min

Liner: 2mm ID straight

Sample: 40ppm drug standard in methanol

1. Amphetamine
2. Methamphetamine
3. Nicotine
4. Diphenhydramine
5. Caffeine
6. Lidocaine
7. Methadone
8. Phenobarbital
9. Amitriptyline
10. Cocaine
11. Desipramine
12. Codiene
13. Diazepam
14. Heroin
15. Fentanyl

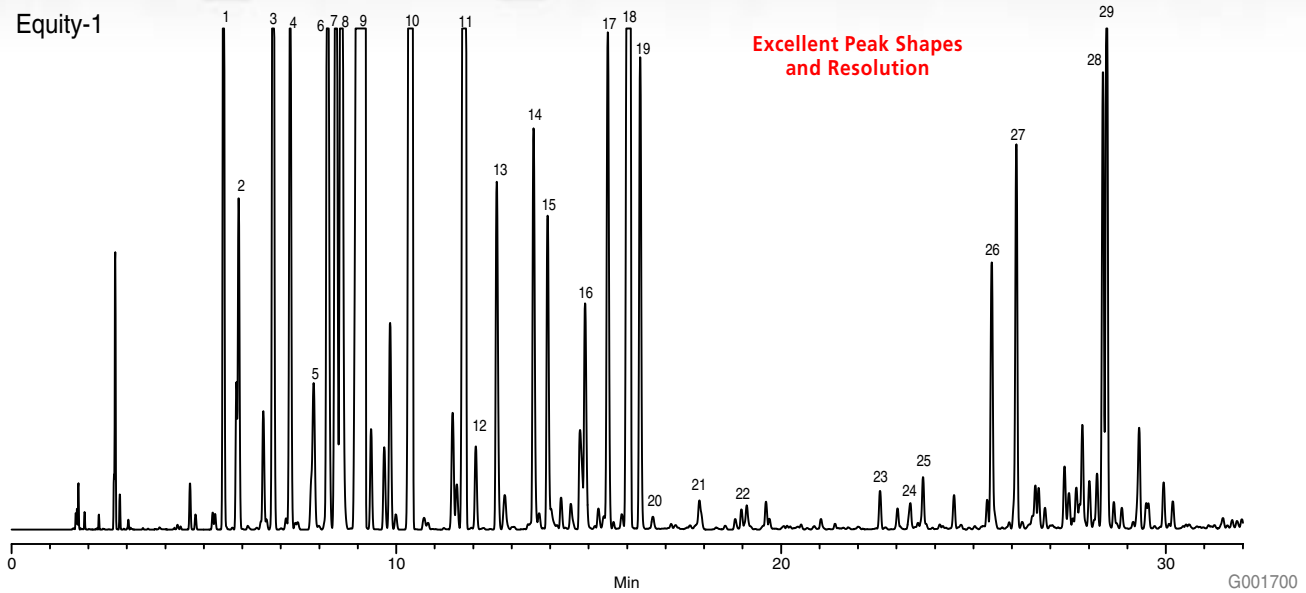


Foods, Flavors and Fragrances - Distilled Lime Oil (GC)

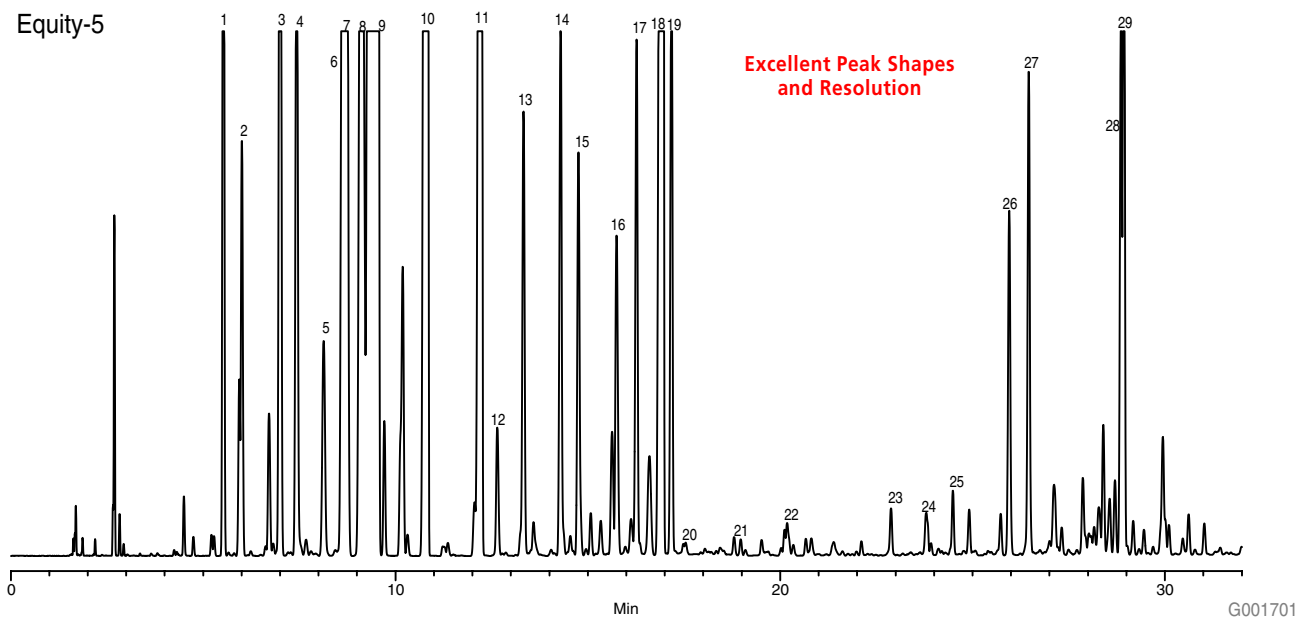
Column: Equity-1, 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28046-U
Column: Equity-5, 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28089-U
Oven: 75°C (8 min), 4°C/min to 200°C (10 min)
Inj.: 250°C
Det.: FID, 250°C
Carrier Gas: Helium, 30cm/sec @ 110°C
Injection: Wet needle, split 100:1
Liner: Split, cup design
Sample: Distilled lime oil

- | | | |
|---------------------------|-------------------------------|----------------------------------|
| 1. α -Pinene | 11. Terpinolene | 21. Neral |
| 2. Camphene | 12. Linalool | 22. Geranial |
| 3. β -Pinene | 13. α -Fenchyl alcohol | 23. Neral acetate |
| 4. Myrcene | 14. Terpinen-1-ol | 24. Geranyl acetate |
| 5. α -Phellandrene | 15. β -Terpineol | 25. Dodecanal |
| 6. 1,4-Cineole | 16. Borneol | 26. β -Caryophyllene |
| 7. α -Terpinene | 17. Terpinen-4-ol | 27. trans- α -Bergamotene |
| 8. p-Cymene | 18. α -Terpineol | 28. trans- α -Farnesene |
| 9. d-Limonene | 19. γ -Terpineol | 29. β -Bisabolene |
| 10. γ -Terpinene | 20. Decanal | |

Equity-1



Equity-5



Foods, Flavors and Fragrances - Cold Pressed Lemon Oil (GC)

Column: Equity-1, 30m x 0.25mm ID, 0.25 μ m

Cat. No.: 28046-U

Column: Equity-5, 30m x 0.25mm ID, 0.25 μ m

Cat. No.: 28089-U

Oven: 75°C (8 min), 4°C/min to 200°C (10 min)

Inj.: 250°C

Det.: FID, 250°C

Carrier Gas: Helium, 30cm/sec @ 110°C

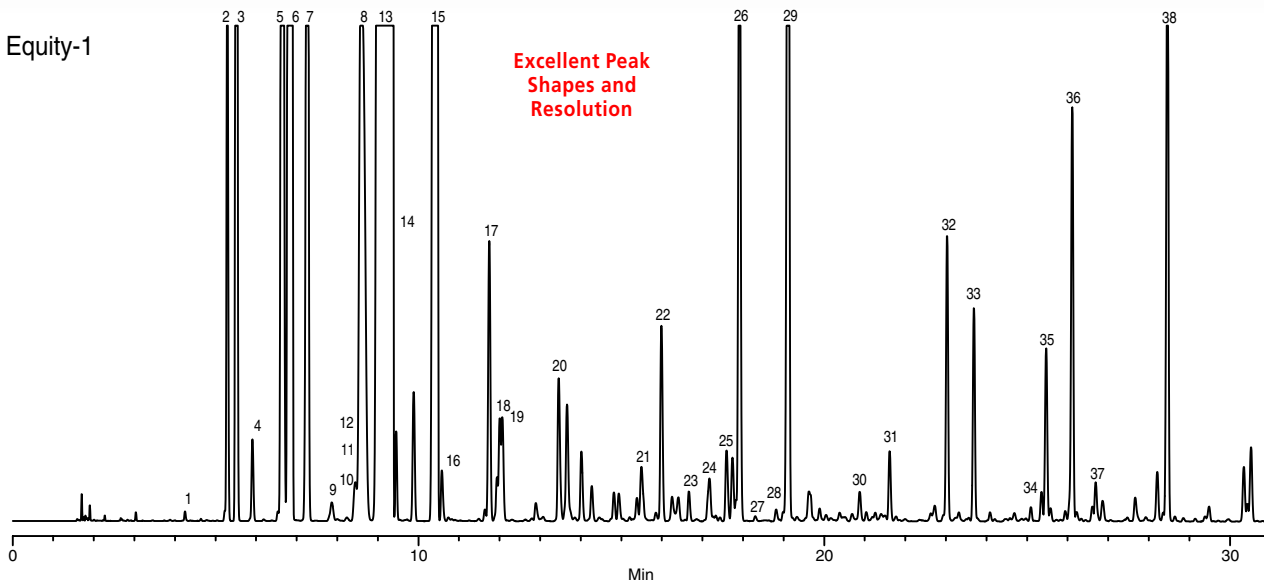
Injection: Wet needle, split 100:1

Liner: Split, cup design

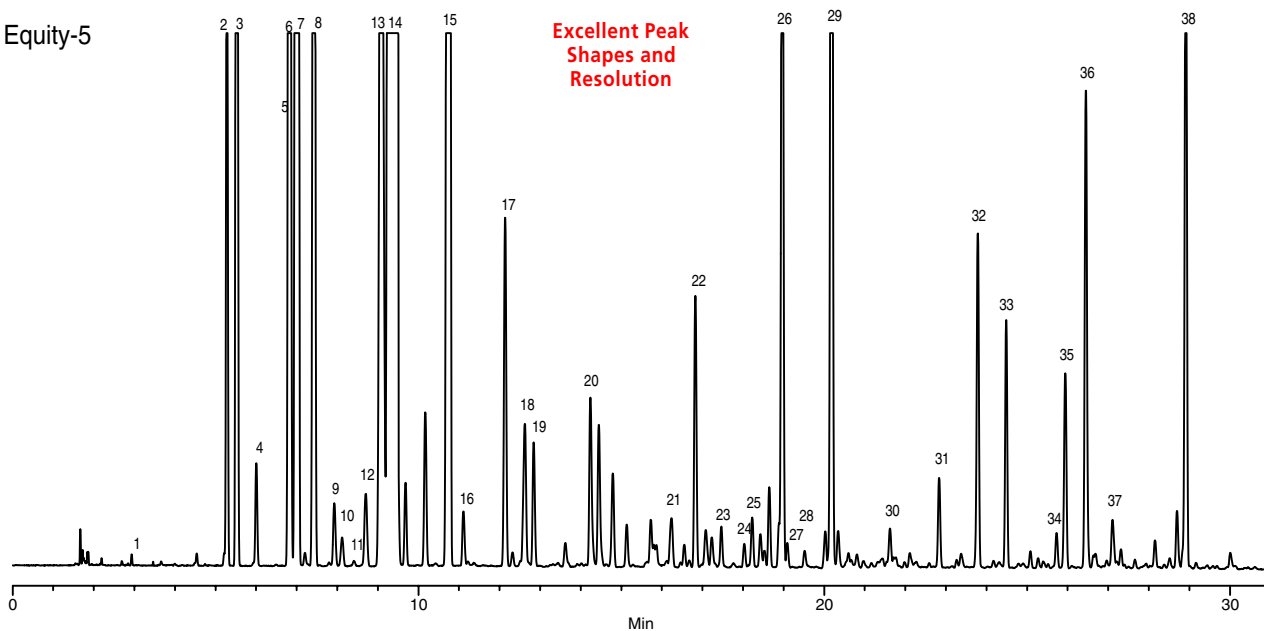
Sample: Cold pressed lemon oil

- | | | |
|----------------------------|-------------------------|----------------------------------|
| 1. Heptanal | 14. d-Limonene | 27. Carvone |
| 2. α -Thujene | 15. γ -Terpinene | 28. Geraniol |
| 3. α -Pinene | 16. Octanol | 29. Geranial |
| 4. Camphene | 17. Terpinolene | 30. Nonyl acetate |
| 5. Sabinene | 18. Linalool | 31. Citronellyl acetate |
| 6. β -Pinene | 19. Nonanal | 32. Neryl acetate |
| 7. 6-Methy-5-heptene-2-one | 20. Citronellal | 33. Geranyl acetate |
| 8. Myrcene | 21. Terpinen-4-ol | 34. Dodecanal |
| 9. Octanal | 22. α -Terpineol | 35. β -Caryophyllene |
| 10. α -Phellandrene | 23. Decanal | 36. trans- α -Bergamotene |
| 11. 3-Carene | 24. Octyl acetate | 37. α -Humelene |
| 12. α -Terpinene | 25. Nerol | 38. β -Bisabolene |
| 13. p-Cymene | 26. Neral | |

Equity-1



Equity-5



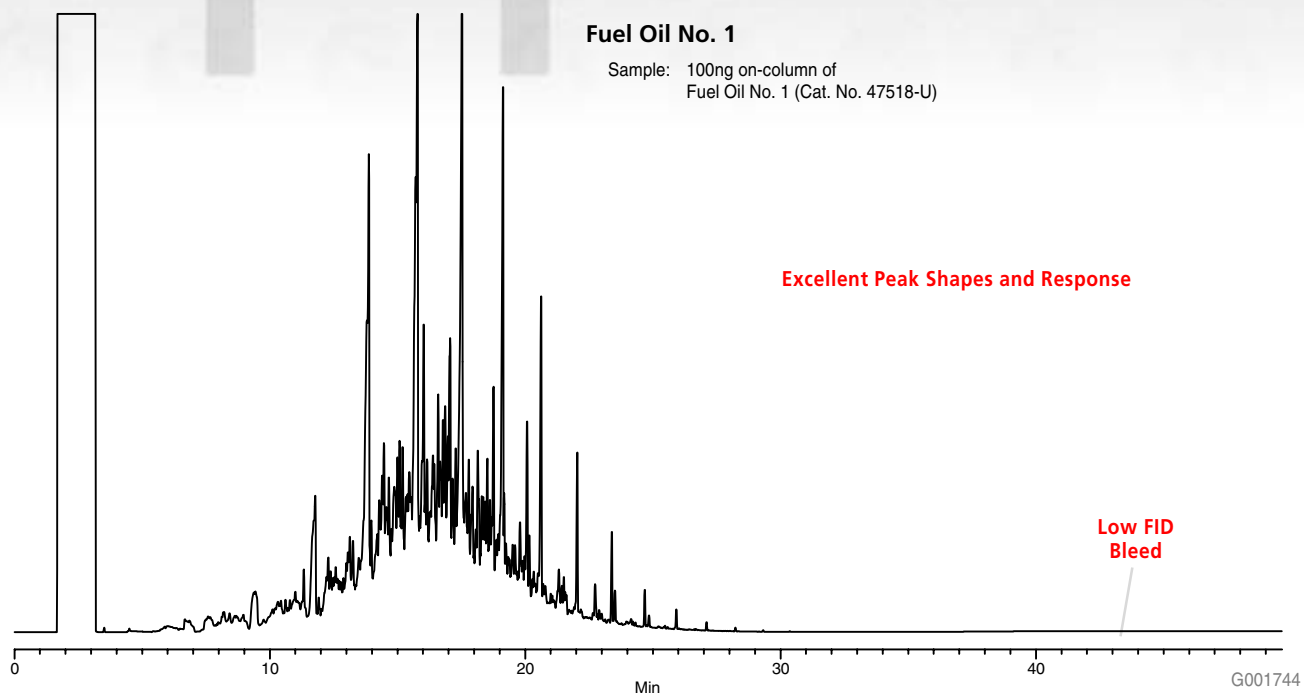
G001702, G001703

Fuels - Fuel Oils 1, 2 (GC)

Column: Equity-1, 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28046-U
Oven: 40°C (4 min), 8°C/min to 325°C (10 min)
Inj.: 275°C
Det.: FID, 325°C
Carrier Gas: Helium, 30cm/sec, constant
Injection: 1.0 μ L, split 200:1
Liner: 4mm ID single taper

Fuel Oil No. 1

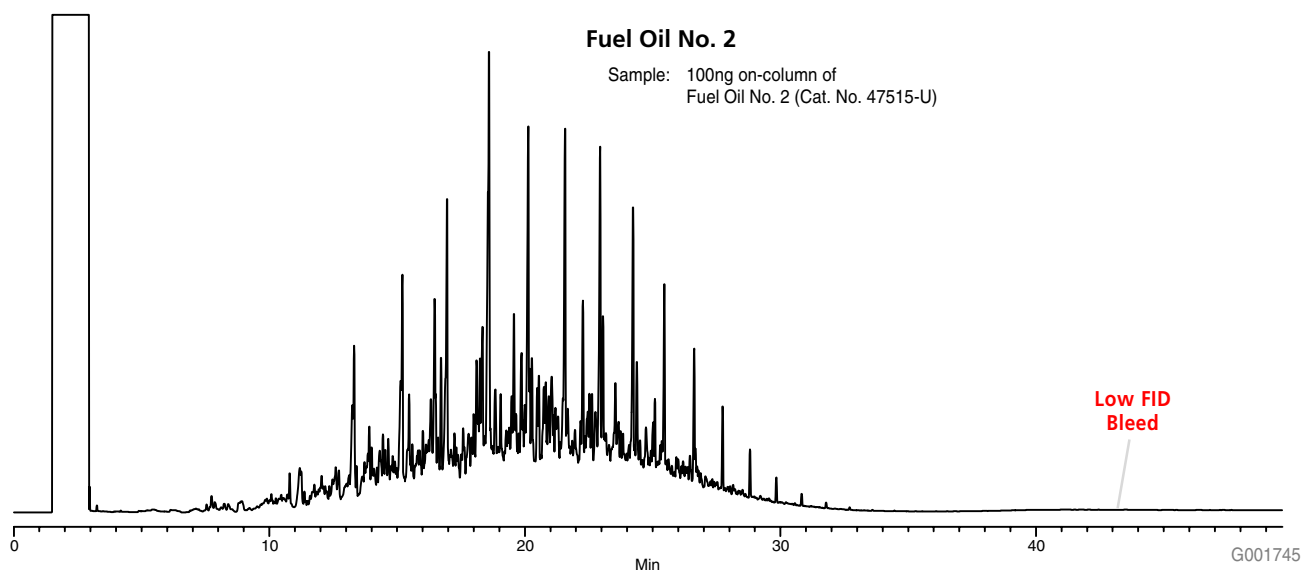
Sample: 100ng on-column of
Fuel Oil No. 1 (Cat. No. 47518-U)



22

Fuel Oil No. 2

Sample: 100ng on-column of
Fuel Oil No. 2 (Cat. No. 47515-U)



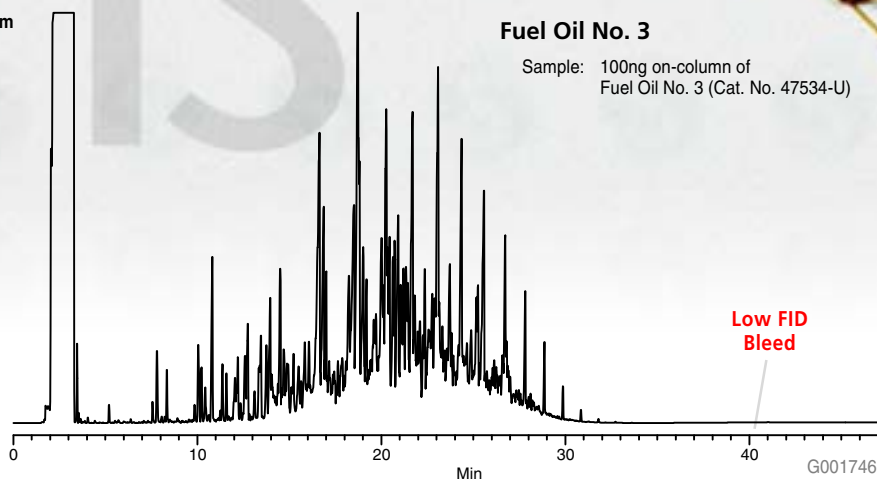
Fuels - Fuel Oils 3, 4, 6 (GC)

Excellent Peak Shapes and Response

Column: Equity-1, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28046-U
Oven: 40°C (4 min), 8°C /min to 325°C
(10 min)
Inj.: 275°C
Det.: FID, 325°C
Carrier Gas: Helium, 30cm/sec, constant
Injection: 1.0µL, split 500:1
Liner: 4mm ID single taper

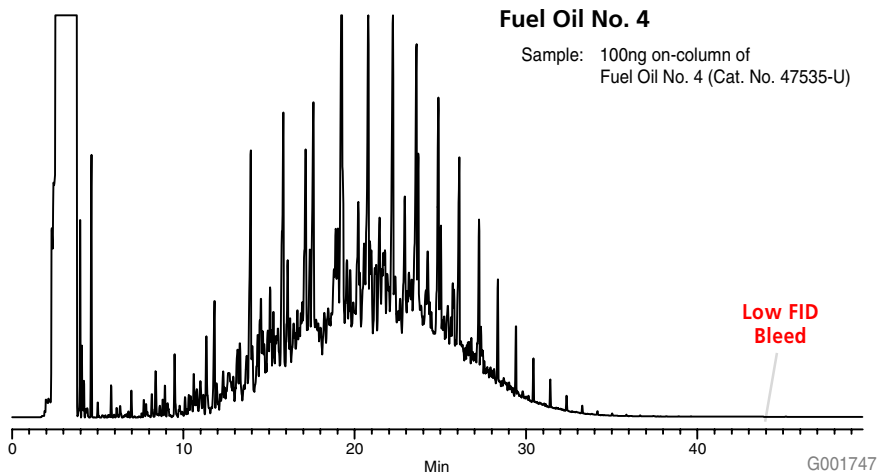
Fuel Oil No. 3

Sample: 100ng on-column of
Fuel Oil No. 3 (Cat. No. 47534-U)



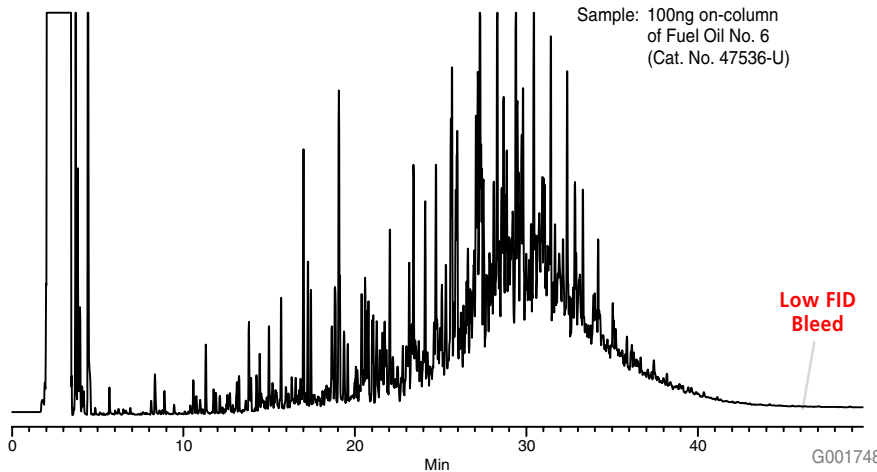
Fuel Oil No. 4

Sample: 100ng on-column of
Fuel Oil No. 4 (Cat. No. 47535-U)



Fuel Oil No. 6

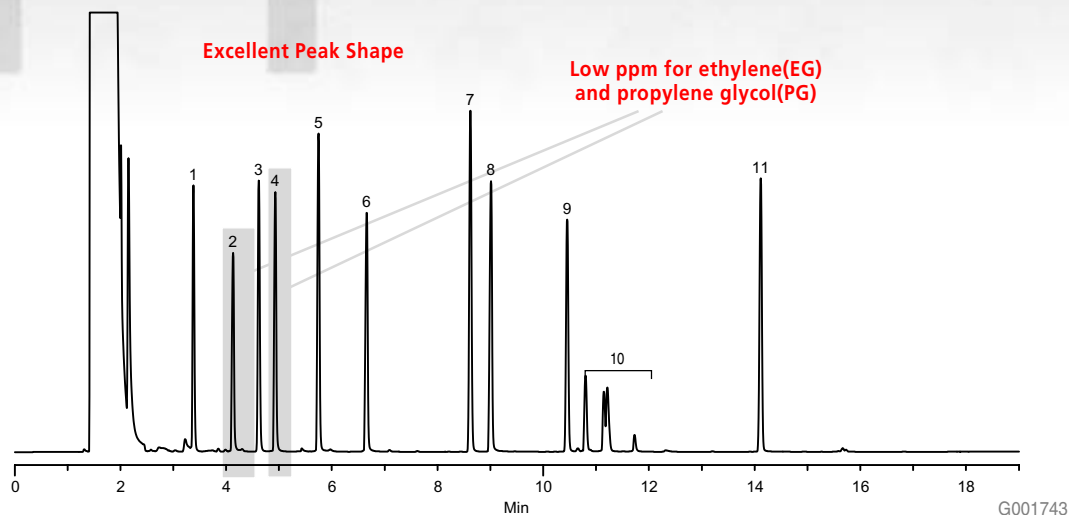
Sample: 100ng on-column
of Fuel Oil No. 6
(Cat. No. 47536-U)



Glycols - Glycols and Diols (GC)

Column: Equity-1, 30m x 0.53mm ID, 1.5µm
 Cat. No.: 28073-U
 Oven: 50°C (2 min), 8°C/min to 200°C (2 min)
 Inj.: 250°C
 Det.: FID, 300°C
 Carrier gas: Helium, 37cm/sec, constant
 Injection: 1µL, pulsed splitless, (pulsed to 10psi until 0.10 min) split open at 0.75 min
 Liner: 2mm ID, straight
 Sample: 100ppm glycol standard in methanol

- | | |
|---|---|
| 1. 2-Methoxyethanol (Methyl cellosolve) | 7. 2-Butoxyethanol (Butyl cellosolve) |
| 2. Ethylene glycol | 8. 1,4-Butanediol |
| 3. 2-Ethoxyethanol (Cellosolve) | 9. 2-(2-Ethoxyethoxy) ethanol (Carbitol) |
| 4. Propylene glycol | 10. Dipropylene glycol |
| 5. 2,3-Butanediol | 11. 2-(2-Butoxyethoxy) ethanol (Butyl carbitol) |
| 6. 1,3-Propanediol | |



24

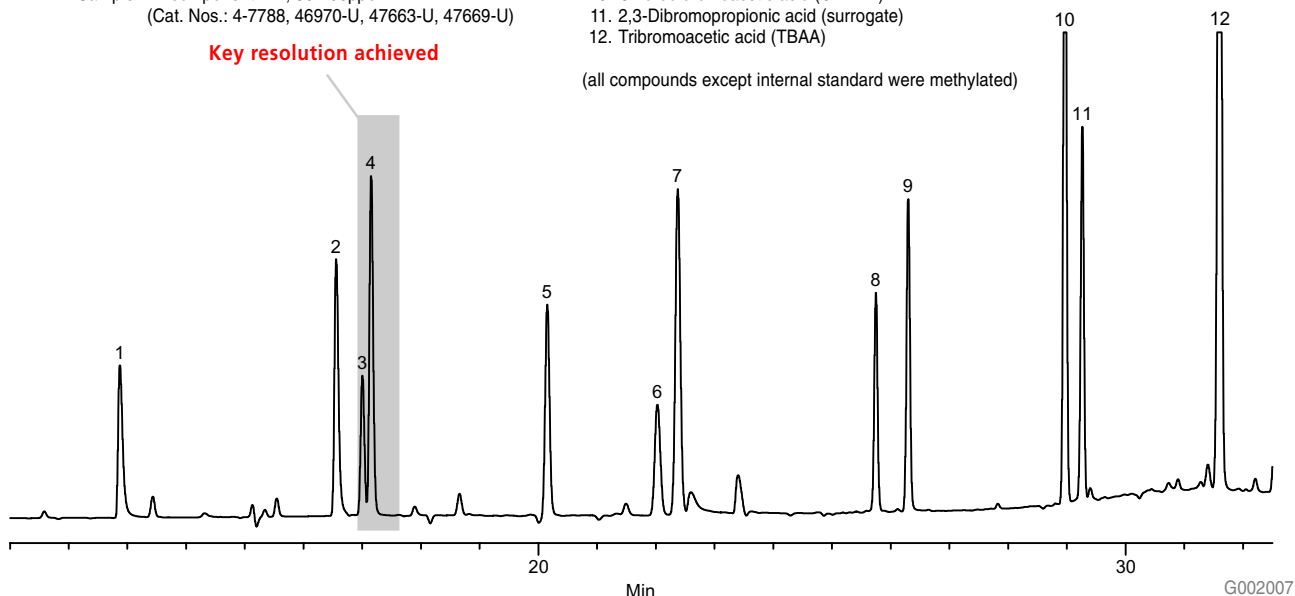
Haloacetic Acids - US EPA Method 552.2 Haloacetic Acids (GC)

Column: Equity-1701, 30m x 0.25mm ID, 0.25mm
 Cat. No.: 28372-U
 Oven: 40°C (10 min), 5°C/min to 75°C (5 min), 10°C/min to 150°C (5 min)
 Inj.: 200°C
 Det.: ECD, 260°C
 Carrier gas: Helium, 25cm/sec @ 35°C
 Injection: 2µL, splitless (0.5 min)
 Liner: 4mm ID single taper
 Sample: 12 component mix, 30-200ppb in MTBE (Cat. Nos.: 4-7788, 46970-U, 47663-U, 47669-U)

- | |
|---|
| 1. Monochloroacetic acid (MCAA) |
| 2. Monobromoacetic acid (MBAA) |
| 3. Dalapon |
| 4. Dichloroacetic acid (DCAA) |
| 5. Trichloroacetic acid (TCAA) |
| 6. 1,2,3-Trichloropropane (internal standard) |
| 7. Bromochloroacetic acid (BCAA) |
| 8. Bromodichloroacetic acid (BDCAA) |
| 9. Dibromoacetic acid (DBAA) |
| 10. Chlorodibromoacetic acid (CDBAA) |
| 11. 2,3-Dibromopropionic acid (surrogate) |
| 12. Tribromoacetic acid (TBAA) |

Key resolution achieved

(all compounds except internal standard were methylated)



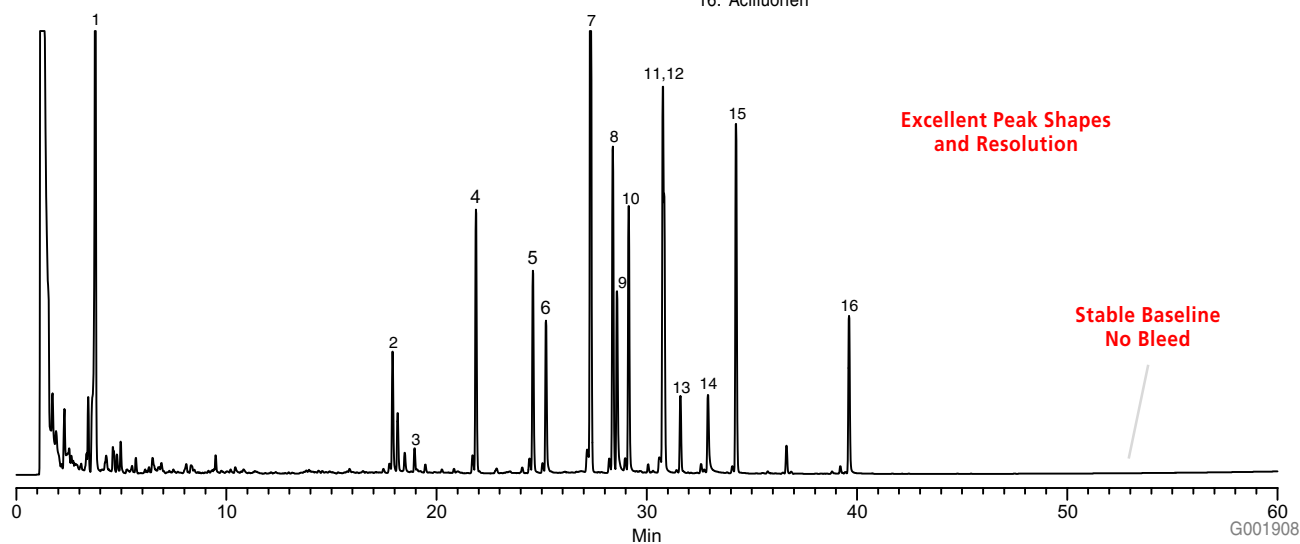
Herbicides - US EPA Method 515 Chlorinated Acids (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
Column: Equity-1701, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28372-U

Oven: 60°C, 4°C/min to 300°C
Inj.: 250°C
Det.: ECD, 320°C
Carrier gas: Helium, 30cm/sec @ 60°C
Injection: 2µL, splitless (0.45 min)
Liner: 4mm ID double taper
Sample: Custom mix in MTBE diluted and derivatized with diazomethane

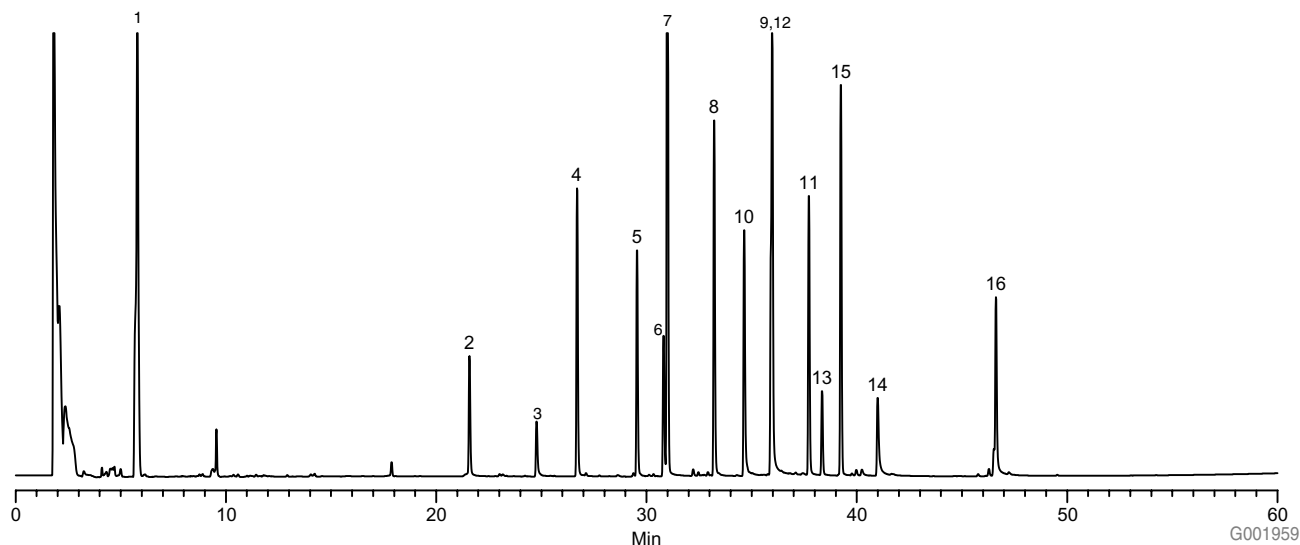
1. Dalapon
2. 3,5-Dichlorobenzoate
3. 4-Nitrophenol
4. Dicamba
5. Dichloroprop
6. 2,4-D
7. Pentachlorophenol
8. 2,4,5-TP
9. Chloramben
10. 2,4,5-T
11. Dinoseb
12. 2,4-DB
13. Bentazon
14. Picloram
15. Dacthal
16. Acifluorfen

Equity-5



Equity-1701

program ends at 280°C



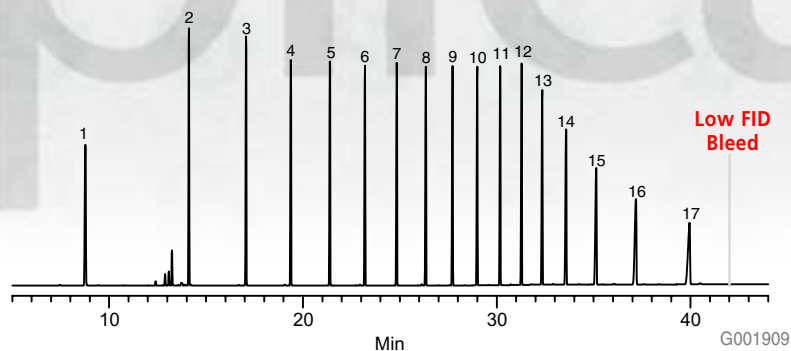
Hydrocarbons - Simple Hydrocarbons (GC)

Column: Equity-1, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28046-U
Column: Equity-5, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
 Oven: 40°C (8 min), 12°C/min to 325°C (16 min)
 Inj.: Track oven
 Det.: FID, 325°C
 Carrier gas: Helium, 1.2mL/min, constant
 Injection: 0.50µL, cold on column
 Liner: Not applicable
 Sample: 100ng on-column of a 17 component
 n-hydrocarbon standard (Cat. No. 46855-U)

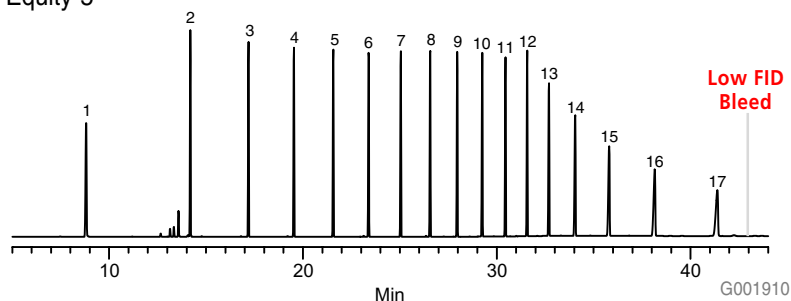
1. C8
2. C10
3. C12
4. C14
5. C16
6. C18
7. C20
8. C22
9. C24
10. C26
11. C28
12. C30
13. C32
14. C34
15. C36
16. C38
17. C40

Equity-1

Excellent Peak Shape and Response



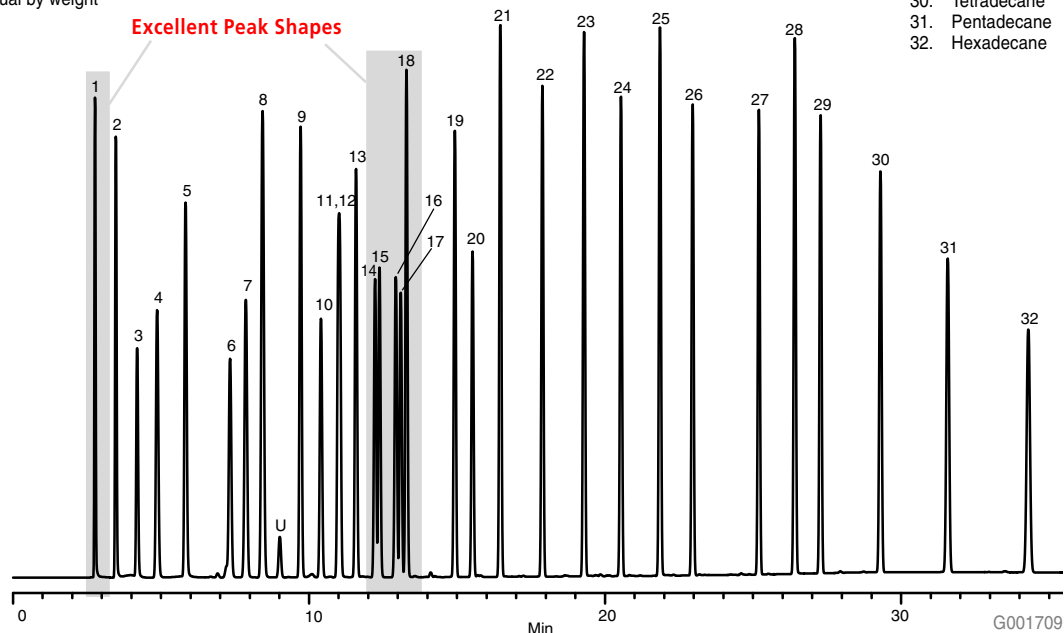
Equity-5



26 Hydrocarbons - Hydrocarbons and Alcohols (GC)

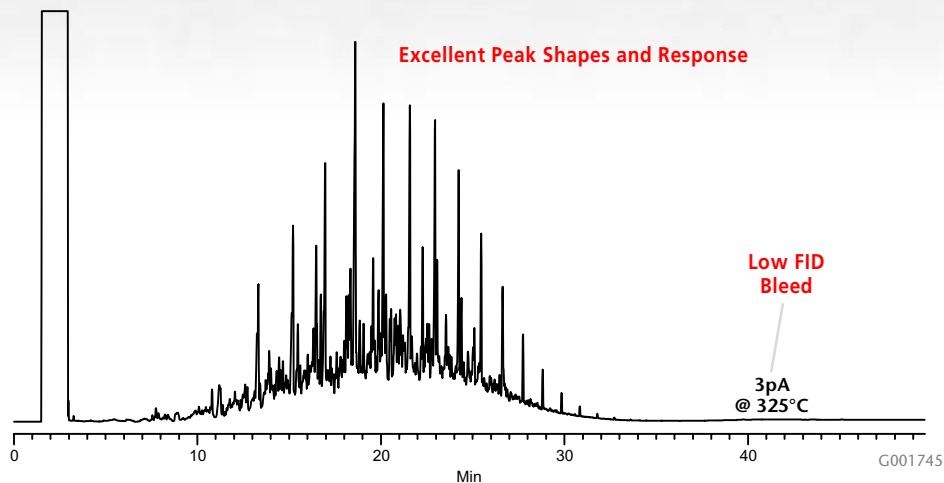
Column: Equity-1, 30m x 0.53mm ID, 3.0µm
Cat. No.: 28076-U
 Oven: 40°C (5 min), 8°C/min to 225°C (5 min)
 Inj.: 250°C
 Det.: FID, 275°C
 Carrier gas: Helium, 30cm/sec @ 40°C
 Injection: 0.10µL, split 100:1
 Liner: Split, cup design
 Sample: 32 component mixed solvent
 sample, equal by weight

- | | | | |
|----------------|------------------------|-------------------------|-----------------|
| 1. Methanol | 8. Isobutanol | 14. 3-Methyl-1-butanol | 21. Hexanol |
| 2. Ethanol | U. Unknown | 15. 2-Methyl-1-butanol | 22. Nonane |
| 3. Isopropanol | 9. Butanol | 16. 3-Methyl-3-pentanol | 23. Heptanol |
| 4. t-Butanol | 10. 3-Methyl-2-butanol | 17. 4-Methyl-2-pentanol | 24. Decane |
| 5. Propanol | 11. 2-Pentanol | 18. Pentanol | 25. Octanol |
| 6. 2-Butanol | 12. 3-Pentanol | 19. Octane | 26. Undecane |
| 7. Hexane | 13. Heptane | 20. 4-Methyl-1-pentanol | 27. Dodecane |
| | | | 28. Decanol |
| | | | 29. Tridecane |
| | | | 30. Tetradecane |
| | | | 31. Pentadecane |
| | | | 32. Hexadecane |



Hydrocarbons - Diesel Fuel (GC)

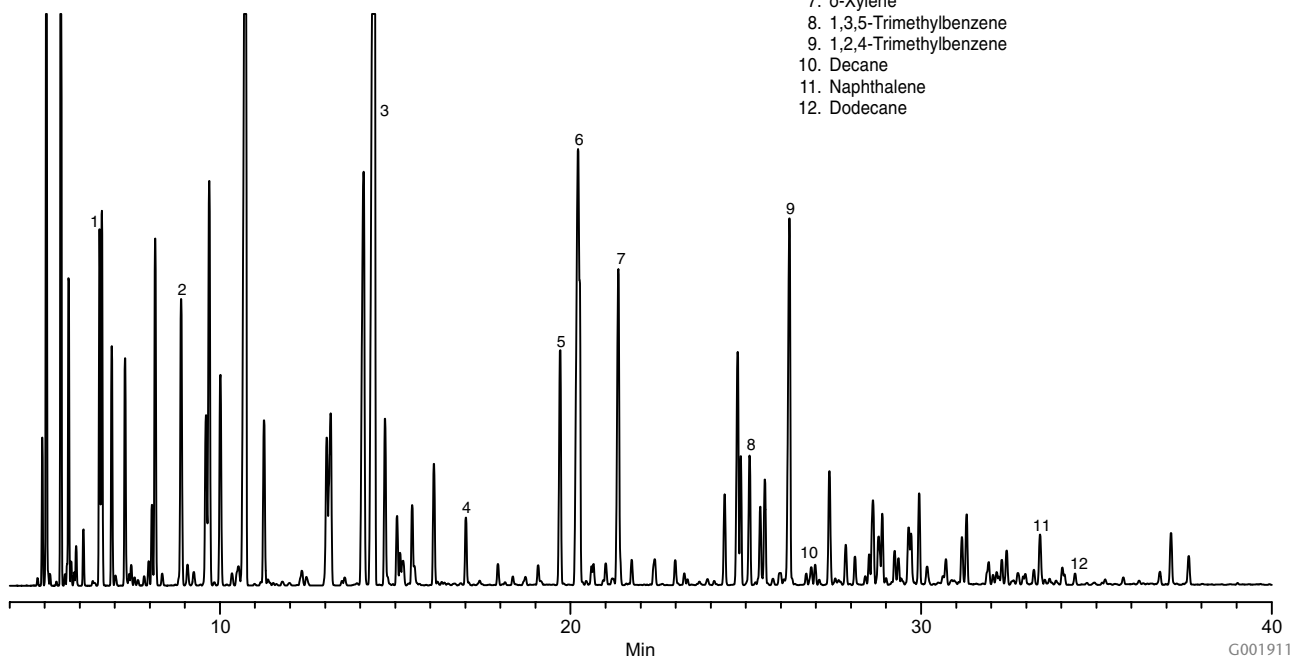
Column: Equity-1, 30m x 0.25mm ID, 0.25 μ m
Cat. No.: 28046-U
Oven: 40°C (4 min), 8°C/min to 325°C (5 min)
Inj.: 275°C
Det.: FID, 325°C
Carrier gas: Helium, 30cm/sec, constant
Injection: 1.0 μ L, split 200:1
Liner: 4mm ID single taper
Sample: 100ng on-column of a No. 2 Fuel Oil standard (Cat. No. 47515-U)



Hydrocarbons - Unleaded Gasoline (GC)

Column: Equity-1, 60m x 0.25mm ID, 0.25 μ m
Cat. No.: 28047-U
Oven: 40°C (10 min), 5°C/min to 300°C
Inj.: 250°C
Det.: FID, 350°C
Carrier gas: Helium, 23cm/sec, @ 40°C
Injection: 1 μ L, 300:1 split
Liner: Split, cup design
Sample: Unleaded gasoline, neat

1. Methyl-t-butyl ether
2. Benzene
3. Toluene
4. Octane
5. Ethylbenzene
6. m/p-Xylenes
7. o-Xylene
8. 1,3,5-Trimethylbenzene
9. 1,2,4-Trimethylbenzene
10. Decane
11. Naphthalene
12. Dodecane

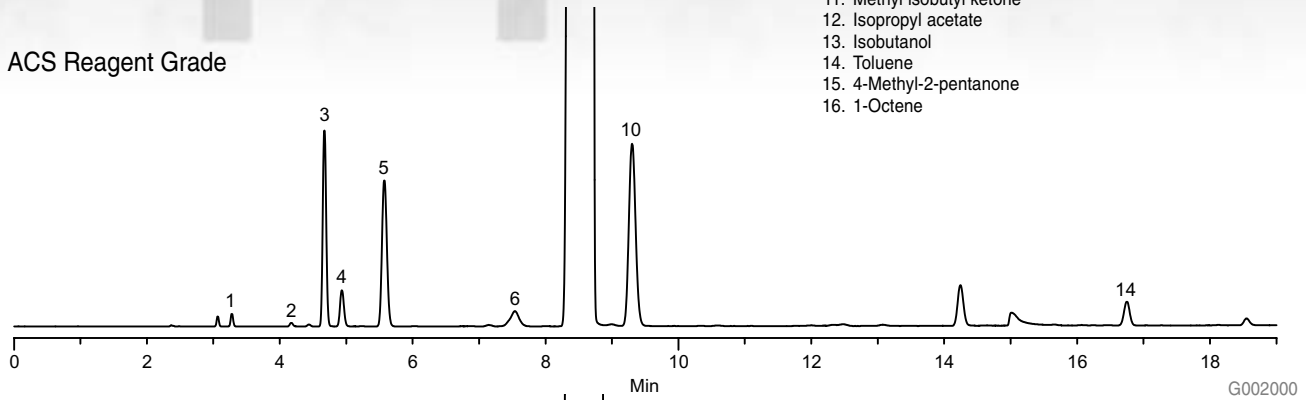


Ketones - Impurities in Methyl Ethyl Ketone (GC)

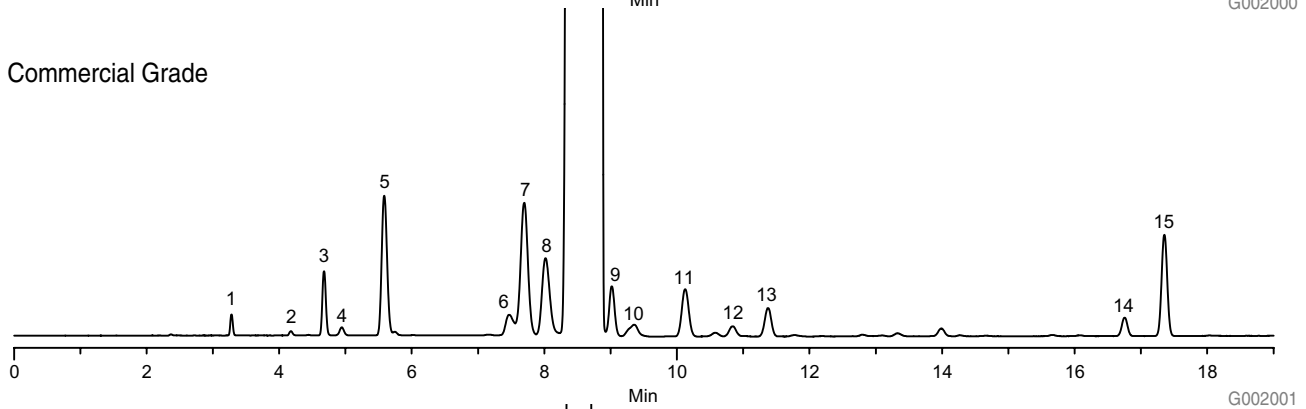
Column: Equity-1701, 30m x 0.53mm ID, 1.5µm
Cat. No.: 28396-U
Oven: 35°C (10 min), 5°C/min to 100°C
Inj.: 250°C
Det.: FID, 250°C
Carrier gas: Helium, 25cm/sec @ 35°C
Injection: 1µL, 50:1 split
Liner: 4mm ID cup style
Sample: Methyl ethyl ketone of various purity levels

1. Methanol
2. Ethanol
3. Acetone
4. Isopropanol
5. t-Butanol
6. n-Propanol
7. n-Butanol
8. Ethyl acetate
9. Diethoxymethane
10. sec-Butanol
11. Methyl isobutyl ketone
12. Isopropyl acetate
13. Isobutanol
14. Toluene
15. 4-Methyl-2-pentanone
16. 1-Octene

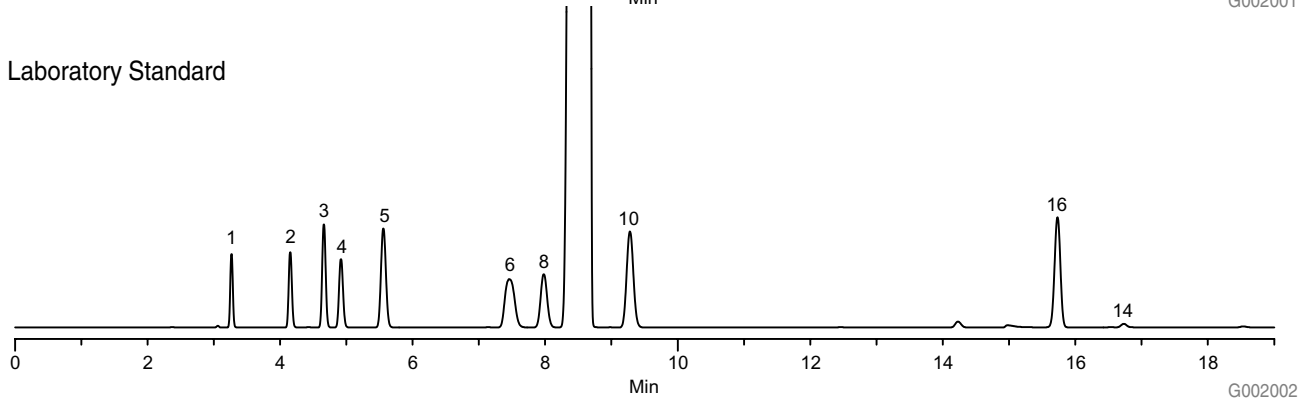
ACS Reagent Grade



Commercial Grade



Laboratory Standard



Odors - Trace Odors in Drinking Water (SPME/GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25 μ m

Cat. No.: 28089-U

Sample: 25mL of water containing 25% NaCl and drinking water odors kit, Cat. No. 47529-U

SPME Fiber: 2cm StableFlex coated with 50/30 μ m DVB/Carboxen/PDMS

Cat. No.: 57348-U

Extraction: headspace, 65°C (30 min)

Desorption: 3 min at 260°C

Oven: 60°C (2 min), 8°C/min to 200°C

Liner: 0.75mm SPME liner

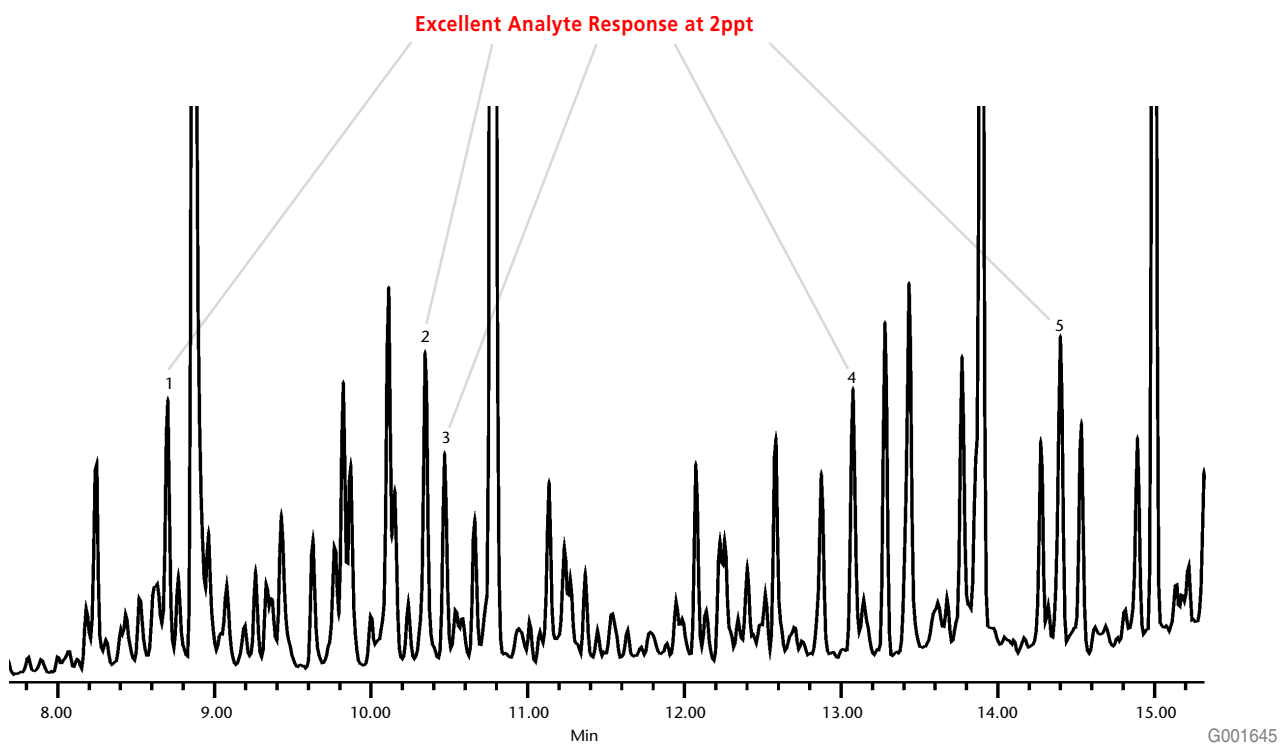
MSD Interface: 280°C

Scan Range: Selected m/z (SIM) 95, 112, 124, 137, 197

Carrier gas: Helium, 1mL/min, constant

Injection: SPME fiber, splitless, opened after 1 min @ 50mL/min

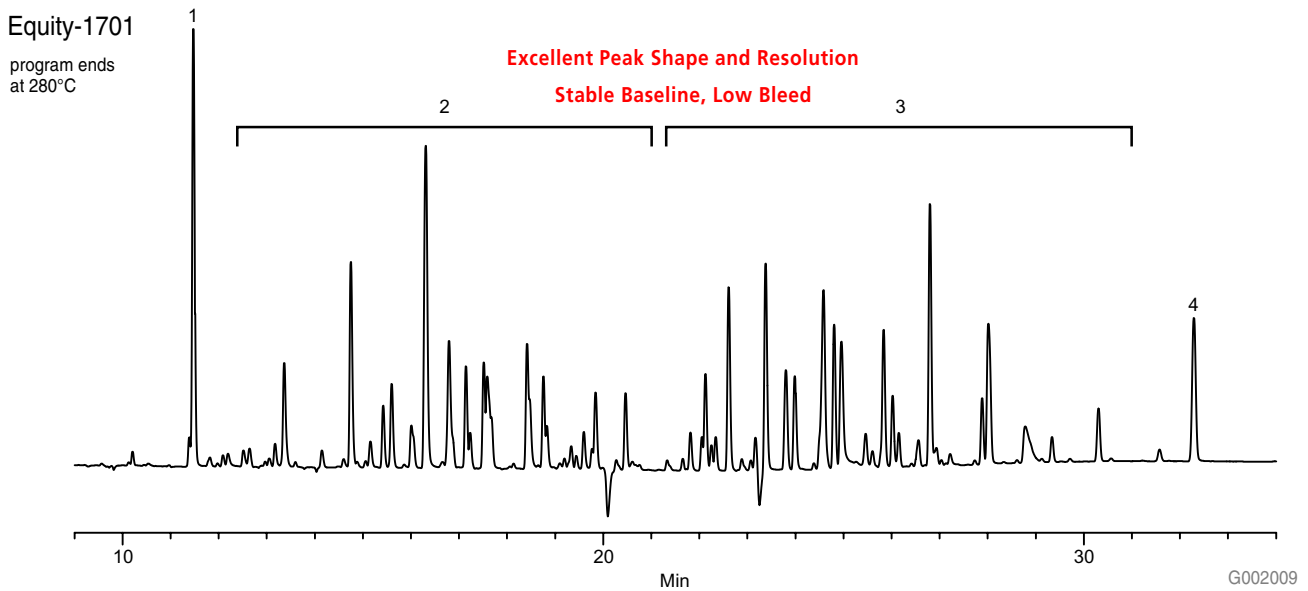
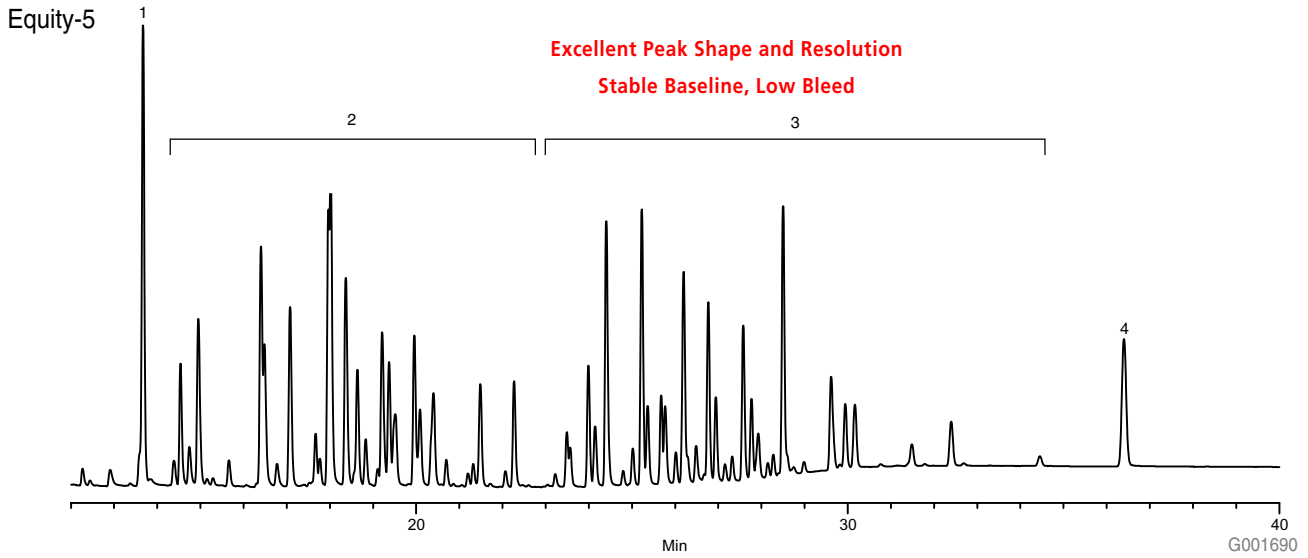
1. 2-Isopropyl-3-methoxypyrazine, 2ppt
2. 2-Isobutyl-3-methoxypyrazine, 2ppt
3. 2-Methylisoborneol, 2ppt
4. 2,4,6-Trichloroanisole (Internal Standard), 8ppt
5. (\pm)Geosmin, 2ppt



PCBs - US EPA Method 8082 Polychlorinated Biphenyls (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
Column: Equity-1701, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28372-U
Oven: 100°C (2 min), 15°C/min to 160°C, 5°C/min to 300°C (10 min)
Inj.: 225°C
Det.: ECD, 310°C
Carrier gas: Helium, 30cm/sec @ 100°C
Injection: 2.0µL, splitless (0.5 min)
Liner: 4mm ID double taper
Sample: 75ppb of Aroclors® 1016 & 1260 with surrogates at 7.5ppb (Cat. No. 46846-U)

1. 2,4,5,6-Tetrachloro-m-xylene (surr.), 7.5ppb
2. Aroclor 1016, 75ppb
3. Aroclor 1260, 75ppb
4. Decachlorobiphenyl (surr.), 7.5ppb



PCBs - US EPA Method 8082 Polychlorinated Biphenyls (Fast GC)

Column: Equity-5, 15m x 0.10mm ID, 0.10 μ m

Cat. No.: 28083-U

Oven: 100°C, 50°C/min to 200°C, 35°C/min to 360°C (1 min)

Inj.: 225°C

Det.: ECD, 360°C

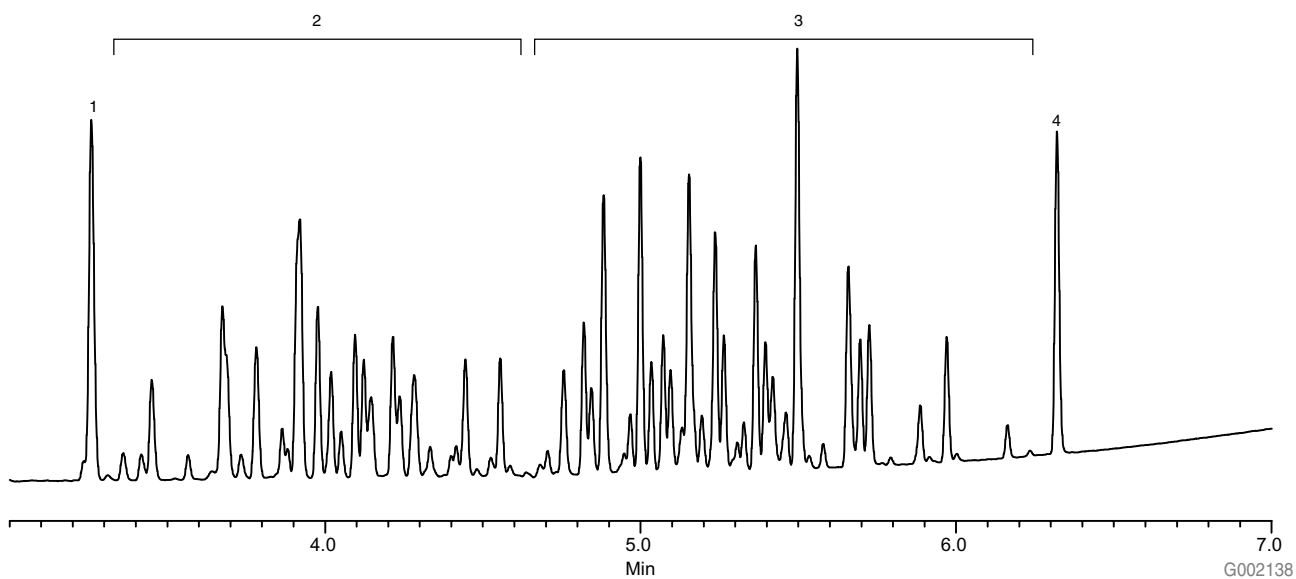
Carrier gas: Hydrogen, 30cm/sec, constant

Injection: 2 μ L, splitless (0.75 min)

Liner: 4mm ID single taper

Sample: 200ppb of Aroclors® 1016 & 1260 with surrogates at 20ppb (Cat. No. 46846-U)

1. 2,4,5,6-Tetrachloro-m-xylene (surr.), 20ppb
2. Aroclor 1016, 200ppb
3. Aroclor 1260, 200ppb
4. Decachlorobiphenyl (surr.), 20ppb

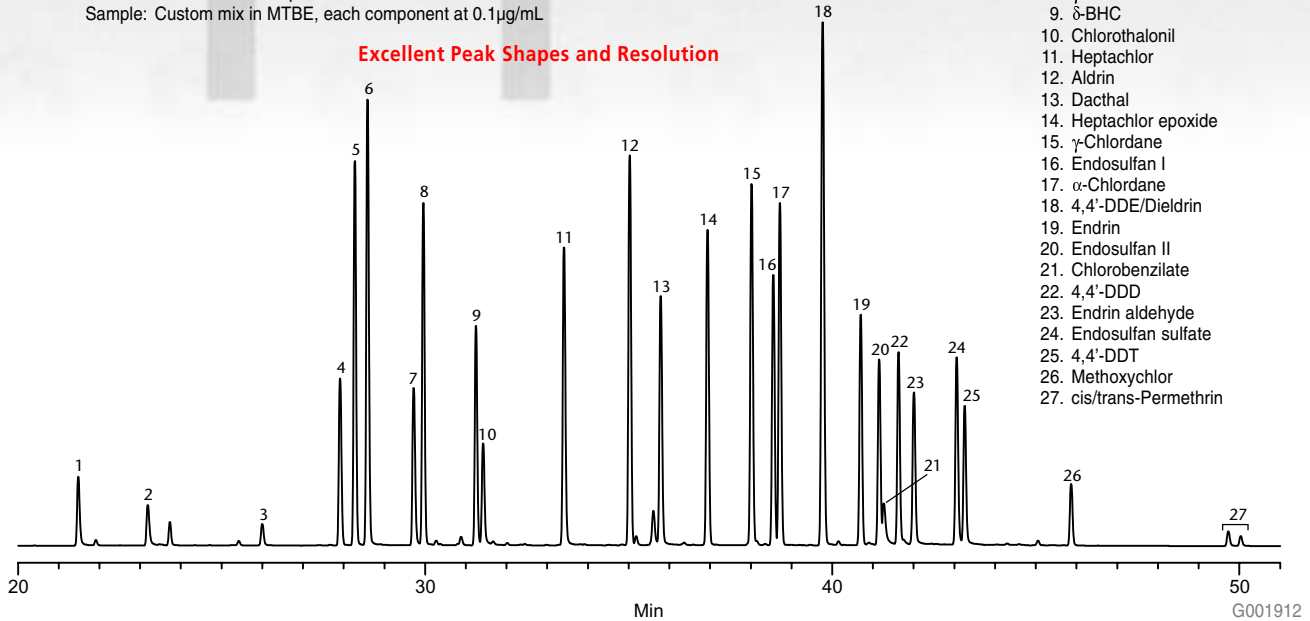


G002138

Pesticides - US EPA Method 508 Chlorinated Pesticides (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28089-U
 Oven: 60°C, 4°C/min to 300°C
 Inj.: 250°C
 Det.: ECD, 320°C
 Carrier gas: Helium, 30cm/sec @ 60°C
 Injection: 2µL, splitless (0.45 min)
 Liner: 4mm ID double taper
 Sample: Custom mix in MTBE, each component at 0.1µg/mL

1. Etridiazole
2. Chlorneb
3. Propachlor
4. Trifluralin
5. α-BHC
6. Hexachlorobenzene
7. β-BHC
8. γ-BHC
9. δ-BHC
10. Chlorothalonil
11. Heptachlor
12. Aldrin
13. Dacthal
14. Heptachlor epoxide
15. γ-Chlordane
16. Endosulfan I
17. α-Chlordane
18. 4,4'-DDE/Dieldrin
19. Endrin
20. Endosulfan II
21. Chlorobenzilate
22. 4,4'-DDD
23. Endrin aldehyde
24. Endosulfan sulfate
25. 4,4'-DDT
26. Methoxychlor
27. cis/trans-Permethrin

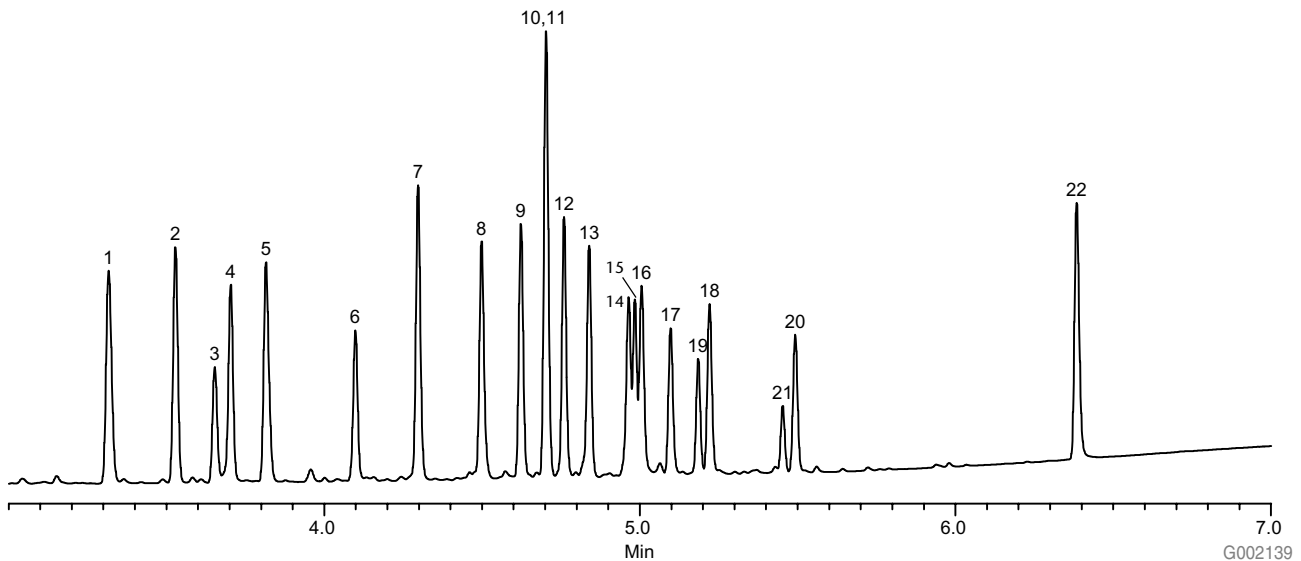


32

Pesticides - US EPA Method 8081 Chlorinated Pesticides (Fast GC)

Column: Equity-5, 15m x 0.10mm ID, 0.10µm
 Cat. No.: 28083-U
 Oven: 100°C, 50°C/min to 200°C, 35°C/min to 360°C (1 min)
 Inj.: 225°C
 Det.: ECD, 360°C
 Carrier Gas: Hydrogen, 30cm/sec, constant
 Injection: 2µL, splitless (0.75 min)
 Liner: 4mm ID single taper
 Sample: 50ppb of a 22 component chlorinated pesticide standard
 (Cat. No. 46845-U)

- | | |
|---|--------------------------------|
| 1. 2,4,5,6-Tetrachloro-m-xylene (surr.) | 12. 4,4'-DDE |
| 2. α-BHC | 13. Dieldrin |
| 3. β-BHC | 14. Endrin |
| 4. γ-BHC | 15. Endosulfan II |
| 5. δ-BHC | 16. 4,4'-DDD |
| 6. Heptachlor | 17. Endrin aldehyde |
| 7. Aldrin | 18. Endosulfan sulfate |
| 8. Heptachlor epoxide | 19. 4,4'-DDT |
| 9. γ-Chlordane | 20. Endrin ketone |
| 10. Endosulfan I | 21. Methoxychlor |
| 11. α-Chlordane | 22. Decachlorobiphenyl (surr.) |



Pesticides - US EPA Method 8081 Chlorinated Pesticides (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm

Cat. No.: 28089-U

Column: Equity-1701, 30m x 0.25mm ID, 0.25µm

Cat. No.: 28372-U

Column: SPB-1608, 30m x 0.25mm ID, 0.25µm

Cat. No.: 24103-U

Oven: 100°C (2 min), 15°C/min to 160°C, 5°C/min to 300°C (10 min)

Inj.: 225°C

Det.: ECD, 310°C

Carrier gas: Helium, 30cm/sec @ 100°C

Injection: 2.0µL, splitless (0.5 min)

Liner: 4mm ID double taper

Sample: 50ppb of a 22 component chlorinated pesticide standard
(Cat. No. 46845-U)

1. 2,4,5,6-Tetrachloro-m-xylene (surr.)

2. α-BHC

3. β-BHC

4. γ-BHC

5. δ-BHC

6. Heptachlor

7. Aldrin

8. Heptachlor epoxide

9. γ-Chlordane

10. Endosulfan I

11. α-Chlordane

12. 4,4'-DDE

13. Dieldrin

14. Endrin

15. Endosulfan II

16. 4,4'-DDD

17. Endrin aldehyde

18. Endosulfan sulfate

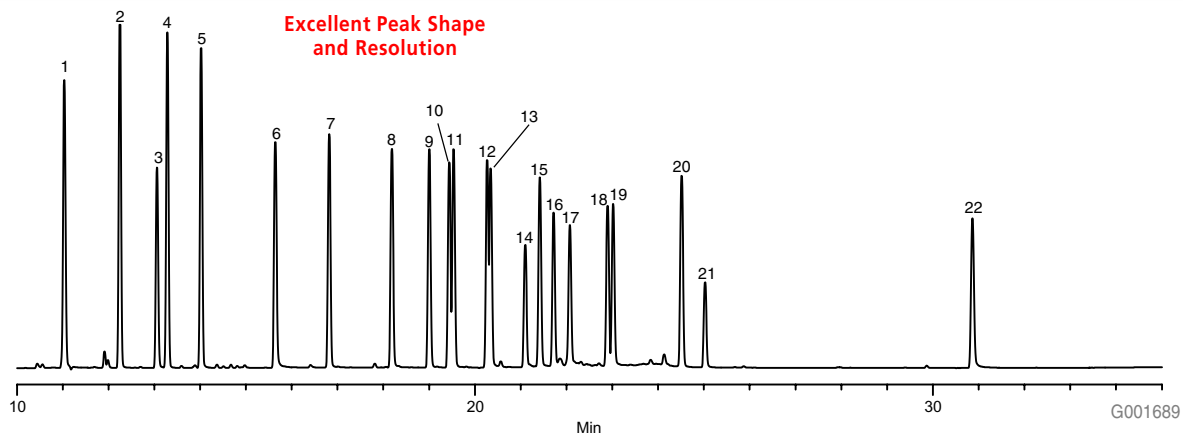
19. 4,4'-DDT

20. Endrin ketone

21. Methoxychlor

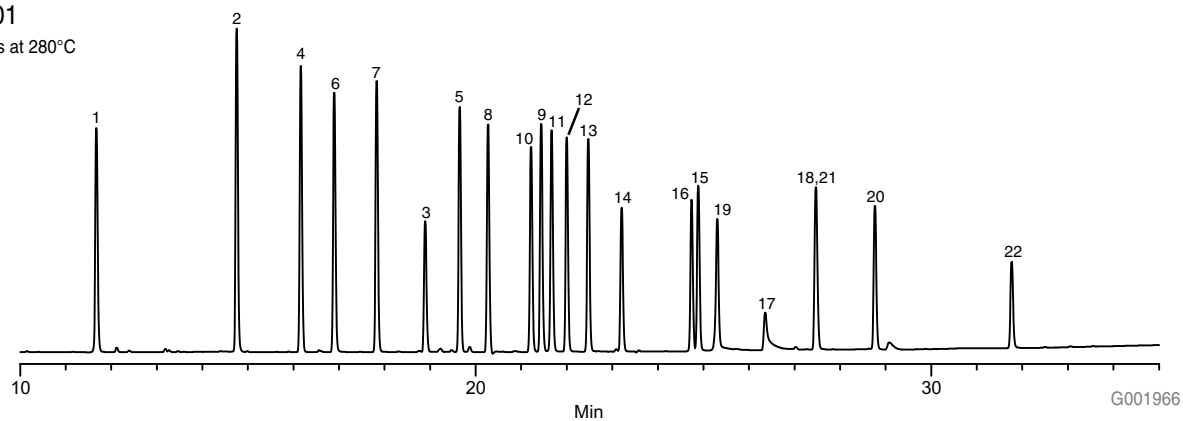
22. Decachlorobiphenyl (surr.)

Equity-5

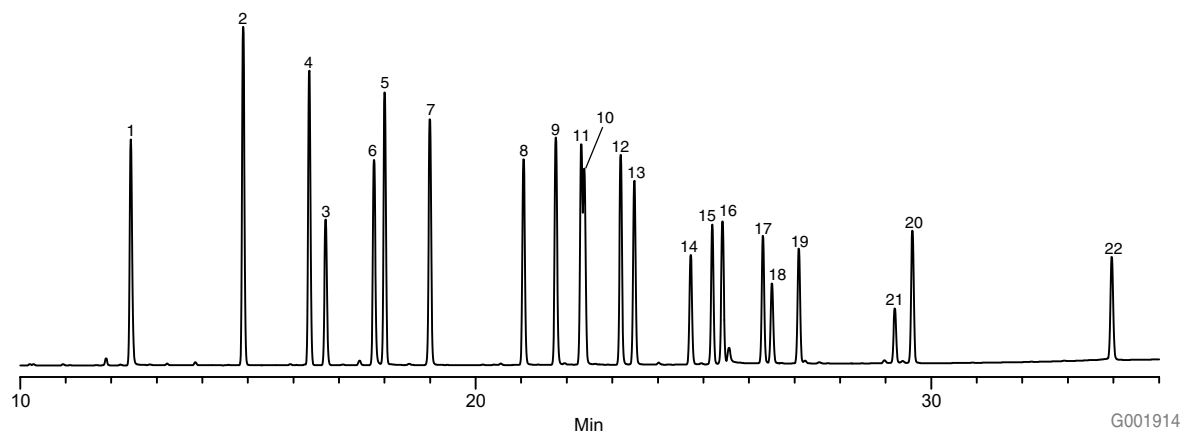


Equity-1701

program ends at 280°C



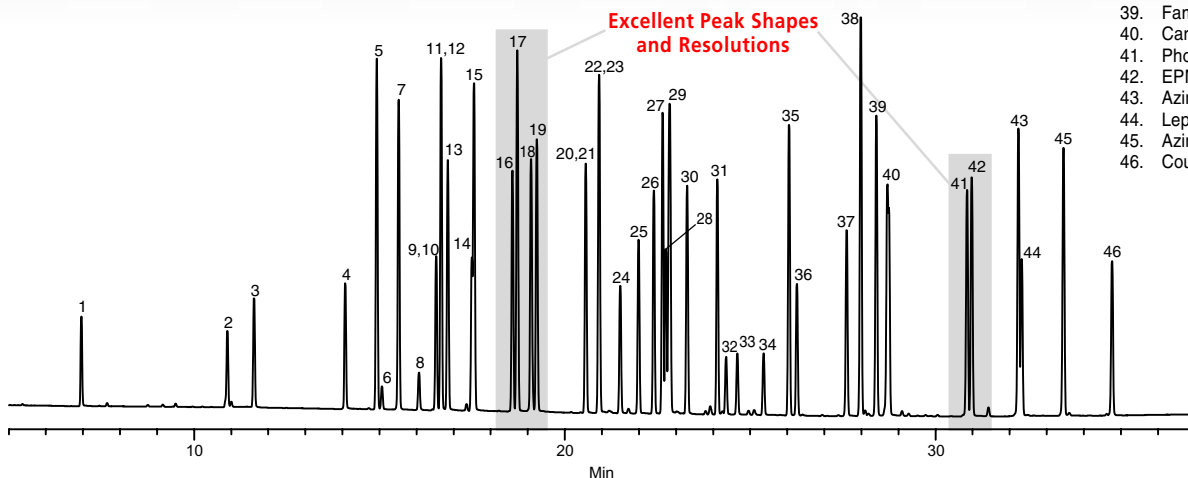
SPB-608



Pesticides - US EPA Method 8141 Organophosphorus Pesticides (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28089-U
 Oven: 120°C (3 min), 5°C/min to 300°C
 Inj.: 250°C
 Det.: NPD, 320°C
 Carrier gas: Helium, 25cm/sec @ 120°C
 Injection: 1.0µL, splitless (0.5 min)
 Liner: 4mm ID double taper
 Sample: 40ng on-column of a custom organophosphorus pesticides mix

- | | | |
|---------------------|-------------------------|---------------------|
| 1. Dichlorvos | 13. Phorate | 25. Fenitrothion |
| 2. Mevinphos | 14. Demeton S | 26. Malathion |
| 3. Trichlorfon | 15. Dimethoate | 27. Aspon |
| 4. TEPP | 16. Terbufos | 28. Chlorpyrifos |
| 5. Thionazin | 17. Fonophos | 29. Fenthion |
| 6. Demeton O | 18. Diazinon | 30. Trichloronate |
| 7. Ethoprop | 19. Disulfoton | 31. Chlorfenvinphos |
| 8. Naled | 20. Dichlorofenthion | 32. Crotoxyphos |
| 9. Dicrotophos | 21. Phosphamidon | 33. Strophos |
| 10. Monocrotophos | 22. Chlorpyrifos methyl | 34. Tokuthion |
| 11. Sulfotepp | 23. Methyl parathion | 35. Merphos |
| 12. Carbophenothion | 24. Ronnel | 36. Fensulfothion |

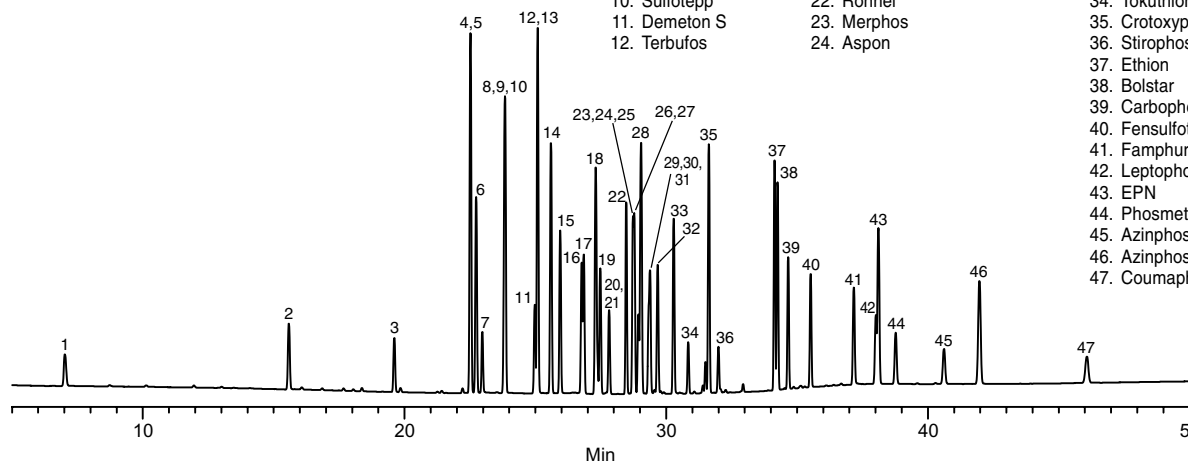


G001704

34

Column: Equity-1701, 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28372-U
 Oven: 120°C (3 min), 5°C/min to 280°C (15 min)
 Inj.: 250°C
 Det.: NPD, 300°C
 Carrier gas: Helium, 25cm/sec @ 120°C
 Injection: 2µL, splitless (0.5 min)
 Liner: 4mm double taper
 Sample: Custom mix diluted to 40ppm (hexane/acetone 85:15)

- | | | |
|----------------|-------------------------|-------------------------|
| 1. Dichlorvos | 13. Diazinon | 25. Chlorpyrifos |
| 2. Mevinphos | 14. Fonophos | 26. Methyl parathion |
| 3. Trichlorfon | 15. Dicrotophos | 27. Trichloronate |
| 4. Demeton O | 16. Disulfoton | 28. Phosphamidon isomer |
| 5. Thionazin | 17. Dichlorofenthion | 29. Malathion |
| 6. Ethoprop | 18. Monocrotophos | 30. Fenitrothion |
| 7. TEPP | 19. Chlorpyrifos methyl | 31. Fenthion |
| 8. Naled | 20. Dimethoate | 32. Ethyl Parathion |
| 9. Phorate | 21. Phosphamidon isomer | 33. Chlorfenvinphos |
| 10. Sulfotepp | 22. Ronnel | 34. Tokuthion |
| 11. Demeton S | 23. Merphos | 35. Crotoxyphos |
| 12. Terbufos | 24. Aspon | 36. Stirophos |

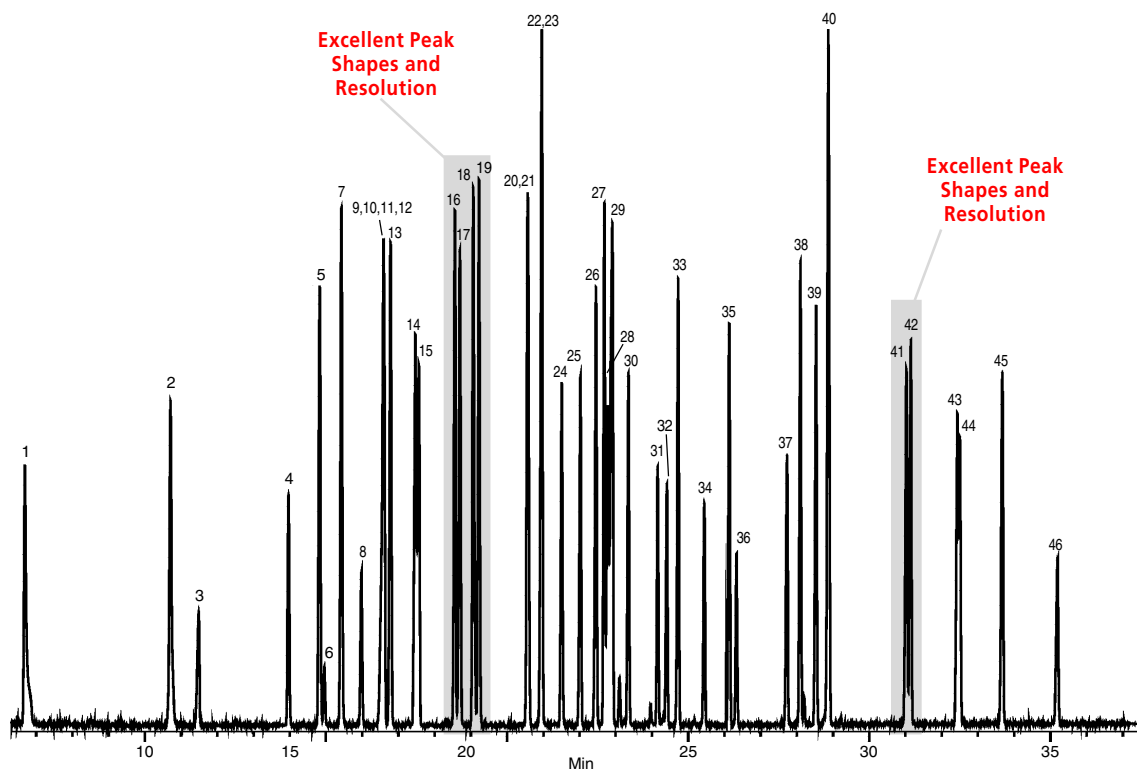


G002005

Pesticides - US EPA Method 8141 Organophosphorus Pesticides (GC/MS)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
Oven: 120°C (3 min), 5°C/min to 270°C (5 min)
Inj.: 250°C
MSD Interface: 325°C
Scan Range: 45-450m/z
Carrier gas: Helium, 30cm/sec @ 120°C
Injection: 1.0µL, splitless (0.3 min)
Liner: 4mm ID double taper
Sample: 40ng on-column of a custom organophosphorus pesticides mix

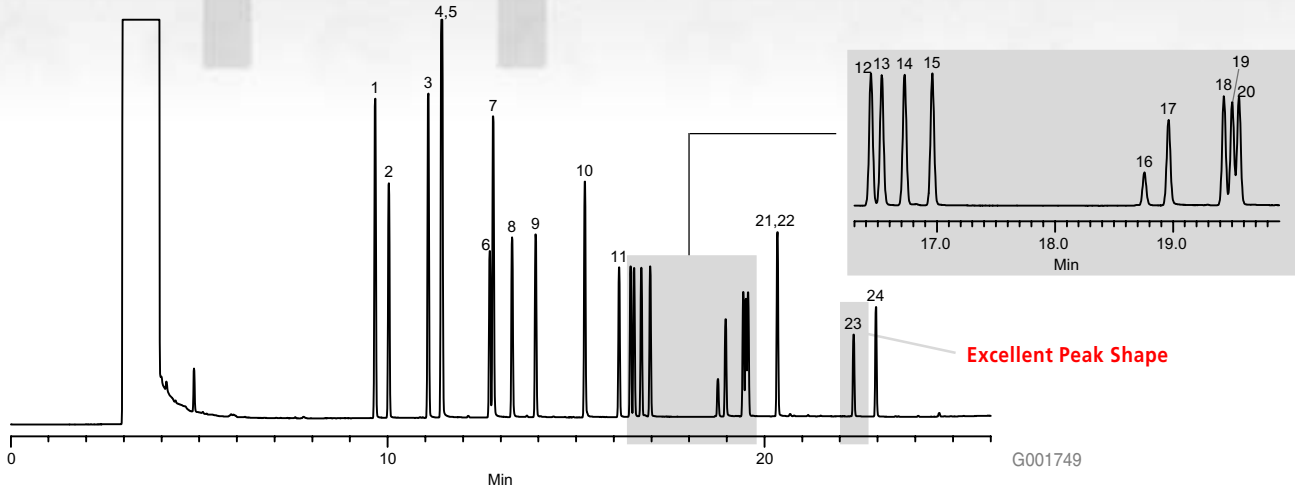
- | | | | |
|---------------------|-------------------------|---------------------|---------------------|
| 1. Dichlorvos | 13. Phorate | 25. Fenitrothion | 37. Ethion |
| 2. Mevinphos | 14. Demeton S | 26. Malathion | 38. Bolstar |
| 3. Trichlorfon | 15. Dimethoate | 27. Aspon | 39. Famphur |
| 4. TEPP | 16. Terbufos | 28. Chlorpyrifos | 40. Carbophenothion |
| 5. Thionazin | 17. Fonophos | 29. Fenthion | 41. Phosmet |
| 6. Demeton O | 18. Diazinon | 30. Trichloronate | 42. EPN |
| 7. Ethoprop | 19. Disulfoton | 31. Chlorfenvinphos | 43. Azinphos-methyl |
| 8. Naled | 20. Dichlorofenthion | 32. Crotoxyphos | 44. Leptophos |
| 9. Dicrotophos | 21. Phosphamidon | 33. Stirophos | 45. Azinphos-ethyl |
| 10. Monocrotophos | 22. Chlorpyrifos methyl | 34. Tokuthion | 46. Coumaphos |
| 11. Sulfotepp | 23. Methyl parathion | 35. Merphos | |
| 12. Carbophenothion | 24. Ronnel | 36. Fensulfothion | |



Phenols - US EPA Method 8041 Phenols (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
Oven: 40°C, 8°C/min to 300°C
Inj.: 225°C
Det.: FID, 340°C
Carrier gas: Helium, 25cm/sec @ 60°C
Injection: 1.0µL, 100:1 split
Liner: Split, cup design
Sample: Phenols Mix, 10µg/mL each component (Cat. No. 47899)

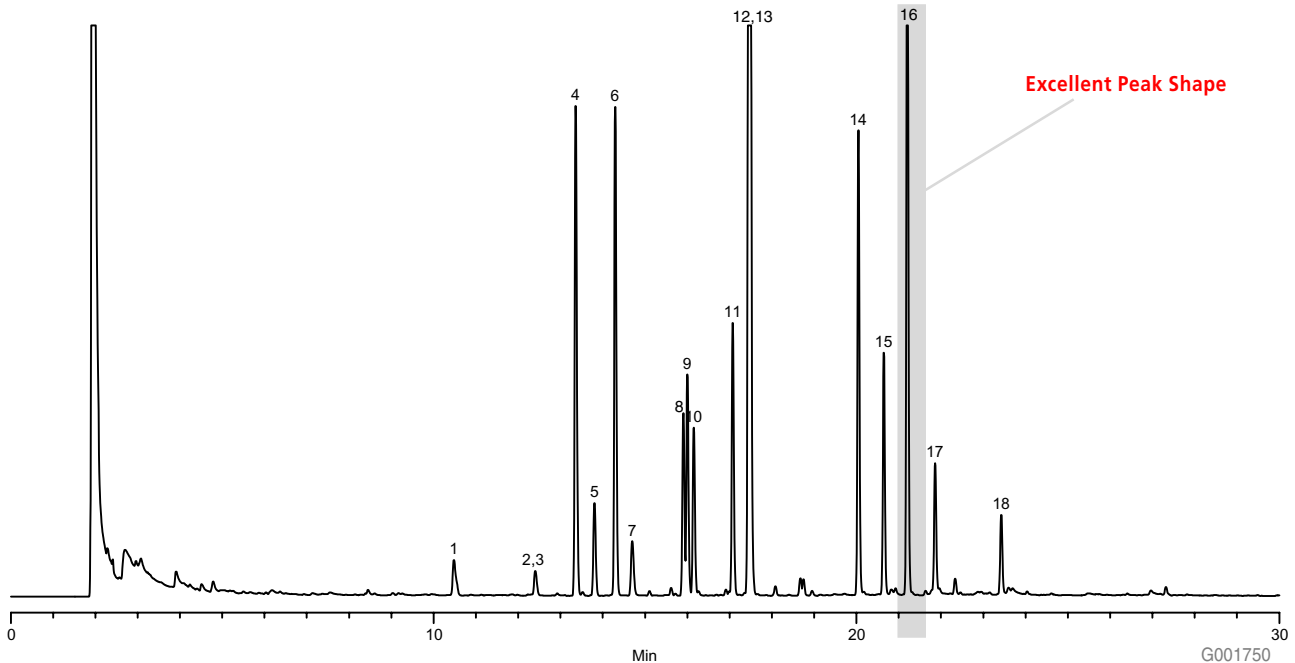
- | | | |
|-----------------------|-----------------------------|--------------------------------|
| 1. Phenol | 9. 2,6-Dichlorophenol | 17. 4-Nitrophenol |
| 2. 2-Chlorophenol | 10. 4-Chloro-3-methylphenol | 18. 2,3,5,6-Tetrachlorophenol |
| 3. 2-Methylphenol | 11. 2,3,5-Trichlorophenol | 19. 2,3,4,5-Tetrachlorophenol |
| 4. 3-Methylphenol | 12. 2,4,6-Trichlorophenol | 20. 2,3,4,6-Tetrachlorophenol |
| 5. 4-Methylphenol | 13. 2,4,5-Trichlorophenol | 21. 2-Methyl-4,6-dinitrophenol |
| 6. 2-Nitrophenol | 14. 2,3,4-Trichlorophenol | 22. 3,4,5-Trichlorophenol |
| 7. 2,4-Dimethylphenol | 15. 2,3,6-Trichlorophenol | 23. Pentachlorophenol |
| 8. 2,4-Dichlorophenol | 16. 2,4-Dinitrophenol | 24. Dinoseb |



Phenols - US EPA Method 8041 Methylated Phenols (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
Cat. No.: 28089-U
Oven: 80°C (1.5 min), 6°C/min to 300°C
Inj.: 260°C
Det.: ECD, 310°C
Carrier gas: Helium, 25cm/sec @ 80°C
Injection: 2.0µL, splitless (0.5 sec)
Liner: 4mm ID double taper, splitless (0.5 sec)
Sample: 4µg/mL Phenols Mix (400µL of a 10µg/mL mix/500µL Diazomethane)

- | | |
|----------------------------|--------------------------------|
| 1. 2,4-Dichlorophenol | 10. 2,3,6-Trichlorophenol |
| 2. 4-Chloro-3-methylphenol | 11. 3,4,5-Trichlorophenol |
| 3. 2,6-Dichlorophenol | 12. 2,3,5,6-Tetrachlorophenol |
| 4. 2,3,4-Trichlorophenol | 13. 2,3,4,5-Tetrachlorophenol |
| 5. 2-Nitrophenol | 14. 2,3,4,6-Tetrachlorophenol |
| 6. 2,4,6-Trichlorophenol | 15. 2,4-Dinitrophenol |
| 7. 4-Nitrophenol | 16. Pentachlorophenol |
| 8. 2,4,5-Trichlorophenol | 17. 2-Methyl-4,6-dinitrophenol |
| 9. 2,3,4-Trichlorophenol | 18. Dinoseb |



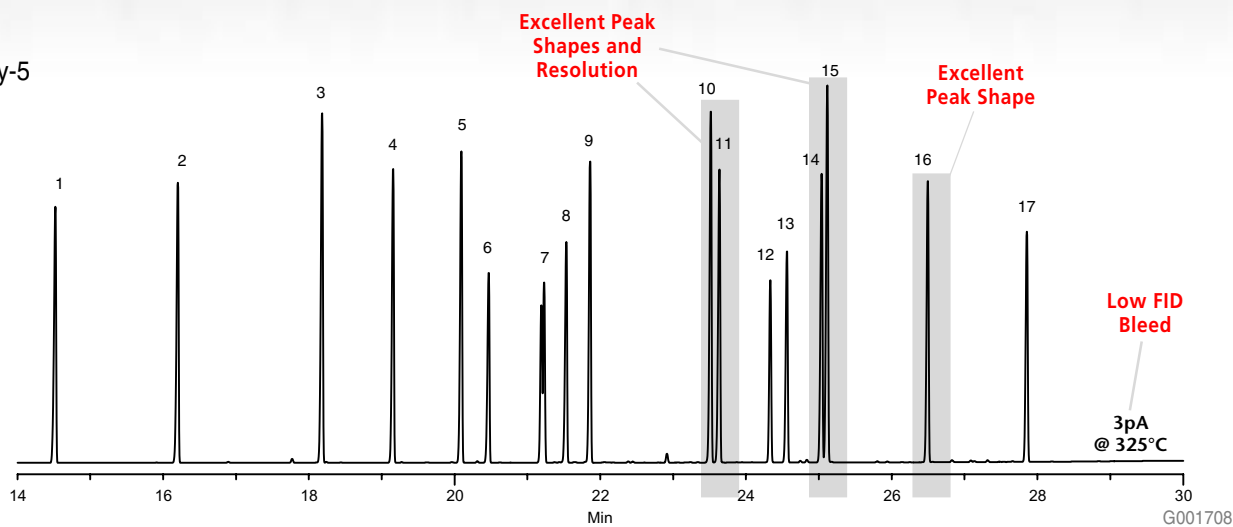
Semivolatiles - Phthalate Esters (GC)

Column: Equity-5, 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28089-U
 Column: Equity-1701, 30m x 0.25mm ID, 0.25µm
 Cat. No.: 28372-U

Oven: 40°C (1 min), 10°C/min to 325°C (1 min)
 Inj.: 250°C
 Det.: FID, 325°C
 Carrier gas: Helium, 1.3mL/min, constant
 Injection: 1.0µL, splitless (0.75 min)
 Liner: 4mm ID single taper
 Sample: 50ng on-column of a custom phthalate ester mix

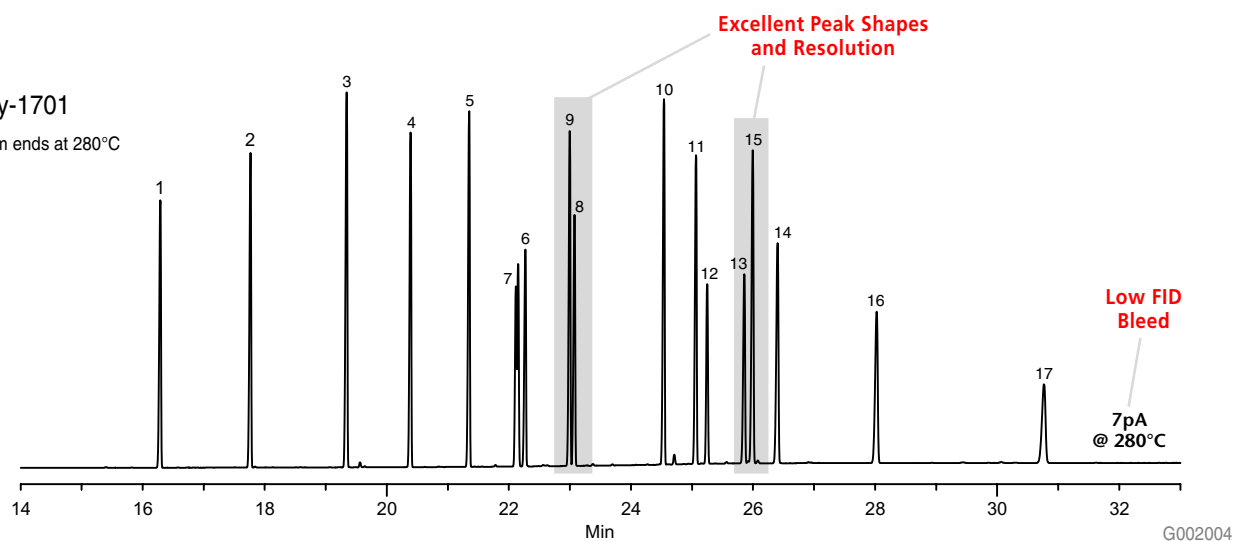
- | | |
|---|----------------------------------|
| 1. Dimethyl phthalate | 10. Di-n-hexyl phthalate |
| 2. Diethyl phthalate | 11. Butyl benzyl phthalate |
| 3. Benzyl benzoate | 12. Hexyl-2-ethylhexyl phthalate |
| 4. Diisobutyl phthalate | 13. Bis(2-Butoxyethyl)phthalate |
| 5. Dibutyl phthalate | 14. Dicyclohexyl phthalate |
| 6. Bis(2-Methoxyethyl)phthalate | 15. Bis(2-Ethylhexyl)phthalate |
| 7. Bis(4-Methyl-2-pentyl)phthalate isomer | 16. Di-n-octyl phthalate |
| 8. Bis(2-Ethoxyethyl)phthalate | 17. Di-n-nonyl phthalate |
| 9. Diamyl phthalate | |

Equity-5



Equity-1701

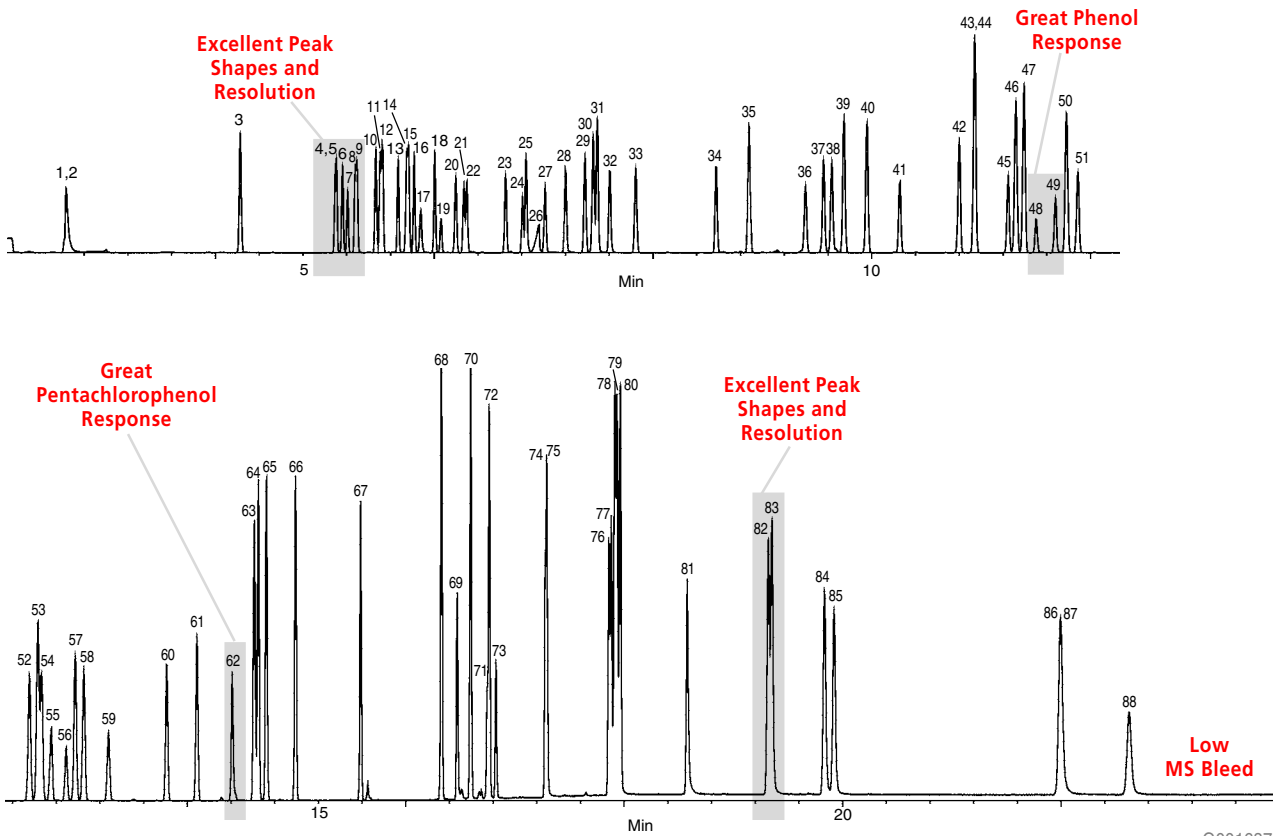
program ends at 280°C



Semivolatiles - US EPA Method 8270 Semivolatile Compounds (GC/MS), Primary Analyte List

Column: Equity-5, 30m x 0.25mm ID, 0.5µm
Cat. No.: 28092-U
Oven: 40°C (2 min), 50°C/min to 100°C, 10°C/min to 200°C, 30°C/min to 325°C (7.5 min)
Inj.: 280°C
MSD Interface: 325°C
Scan Range: 45-450m/z
Carrier gas: Helium, pressure programmed, 20psi (0.0 min), ramp to 80psi (0.0 min), ramp to 16.5psi (3 min), ramp to 25psi (hold for remainder of run)
Injection: 1.0µL, splitless (0.61 min)
Liner: 4mm ID single taper
Sample: 50ng on-column of a 74 component semivolatile standard, 6 internal standards, and 8 surrogates

- | | | | |
|--|--------------------------------|----------------------------------|---------------------------------|
| 1. Pyridine | 23. Isophorone | 45. 3-Nitroaniline | 67. Di-n-butyl phthalate |
| 2. N-Nitrosodimethylamine | 24. 2-Nitrophenol | 46. Acenaphthene-d10 (Int. Std.) | 68. Fluoranthene |
| 3. 2-Fluorophenol (Surr.) | 25. 2,4-Dimethylphenol | 47. Acenaphthene | 69. Benzidine |
| 4. Phenol-d6 (Surr.) | 26. Benzoic acid | 48. 2,4-Dinitrophenol | 70. Pyrene |
| 5. Phenol | 27. Bis(2-Chloroethoxy)methane | 49. 4-Nitrophenol | 71. Aramite#1 |
| 6. Aniline | 28. 2,4-Dichlorophenol | 50. Dibenzofuran | 72. Terphenyl-d14 (Surr.) |
| 7. Bis(2-Chloroethyl)ether | 29. 1,2,4-Trichlorobenzene | 51. 2,4-Dinitrotoluene | 73. Aramite#2 |
| 8. 2-Chlorophenol-d4 (Surr.) | 30. Naphthalene-d8 (Int. Std.) | 52. Diethyl phthalate | 74. 3,3'-Dimethylbenzidine |
| 9. 2-Chlorophenol | 31. Naphthalene | 53. Fluorene | 75. Butylbenzyl phthalate |
| 10. 1,3-Dichlorobenzene | 32. 4-Chloroaniline | 54. 4-Chlorophenyl phenyl ether | 76. 3,3'-Dichlorobenzidine |
| 11. 1,4-Dichlorobenzene-d4 (Int. Std.) | 33. Hexachlorobutadiene | 55. 4-Nitroaniline | 77. Bis(2-Ethylhexyl) phthalate |
| 12. 1,4-Dichlorobenzene | 34. 4-Chloro-3-methylphenol | 56. 2-Methyl-4,6-dinitrophenol | 78. Benzo(a)anthracene |
| 13. Benzyl alcohol | 35. 2-Methylnaphthalene | 57. N-Nitrosodiphenylamine | 79. Chrysene-d12 (Int. Std.) |
| 14. 1,2-Dichlorobenzene-d4 (Surr.) | 36. Hexachlorocyclopentadiene | 58. Azobenzene | 80. Chrysene |
| 15. 1,2-Dichlorobenzene | 37. 2,4,6-Trichlorophenol | 59. 2,4,6-Tribromophenol (Surr.) | 81. Di-n-octyl phthalate |
| 16. 2-Methylphenol | 38. 2,4,5-Trichlorophenol | 60. 4-Bromophenyl phenyl ether | 82. Benzo(b)fluoranthene |
| 17. Bis(2-Chloroisopropyl)ether | 39. 2-Fluorobiphenyl (Surr.) | 61. Hexachlorobenzene | 83. Benzo(k)fluoranthene |
| 18. 4-Methylphenol | 40. 2-Chloronaphthalene | 62. Pentachlorophenol | 84. Benzo(a)pyrene |
| 19. N-Nitroso-di-n-propylamine | 41. 2-Nitroaniline | 63. Phenanthrene-d10 (Int. Std.) | 85. Perylene-d12 (Int. Std.) |
| 20. Hexachloroethane | 42. Dimethyl phthalate | 64. Phenanthrene | 86. Indeno(1,2,3-cd)pyrene |
| 21. Nitrobenzene-d5 (Surr.) | 43. Acenaphthylene | 65. Anthracene | 87. Dibenz(a,h)anthracene |
| 22. Nitrobenzene | 44. 2,6-Dinitrotoluene | 66. Carbazole | 88. Benzo(g,h,i)perylene |

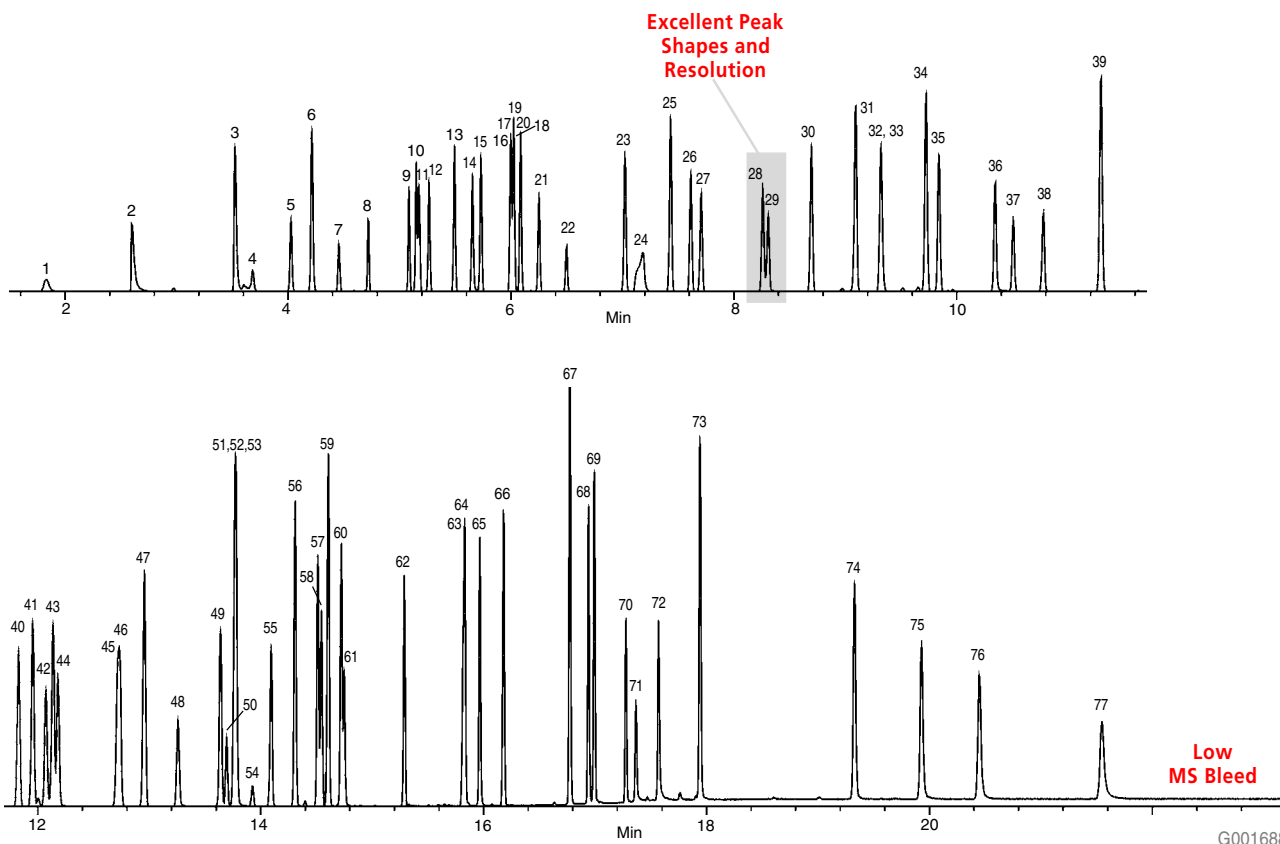


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Semivolatiles - US EPA Method 8270 Semivolatile Compounds (GC/MS), Supplemental Appendix IX List

Column: Equity-5, 30m x 0.25mm ID, 0.5µm
 Cat. No.: 28092-U
 Oven: 40°C (2 min), 50°C/min to 100°C, 10°C/min to 200°C, 30°C/min to 325°C (7.5 min)
 Inj.: 280°C
 MSD Interface: 325°C
 Scan Range: 45-450m/z
 Carrier gas: Helium, pressure programmed, 20psi (0.0 min), ramp to 80psi (0.0 min), ramp to 16.5psi (3 min), ramp to 25psi (hold for remainder of run)
 Injection: 1.0µL, splitless (0.61 min)
 Liner: 4mm ID single taper
 Sample: 50ng on-column of a 62 component semivolatile standard, 6 internal standards, and 8 surrogates

- | | | | |
|--|------------------------------------|---------------------------------|--------------------------------------|
| 1. 1,4-Dioxane | 20. o-Toluidine | 39. Acenaphthene-d10 | 58. Pentachloronitrobenzene |
| 2. Pyridine | 21. Nitrobenzene-d5 (surr) | 40. Pentachlorobenzene | 59. Phenanthrene-d10 (internal std.) |
| 3. 2-Picoline | 22. N-Nitrosopiperidine | 41. 1-Naphthylamine | 60. Disulfoton |
| 4. N-Nitroso-methylethylamine | 23. o,o,o-Triethylphosphorothioate | 42. 2,3,5,6-Tetrachlorophenol | 61. Dinoseb |
| 5. Methyl methanesulfonate | 24. α,α-Dimethylphenethylamine | 43. 2-Naphthylamine | 62. Methyl parathion |
| 6. 2-Fluorophenol (surr) | 25. Naphthalene-d8 (internal std.) | 44. 2,3,4,6-Tetrachlorophenol | 63. 4-Nitroquinoline-1-oxide |
| 7. N-Nitrosodiethylamine | 26. 2,6-Dichlorophenol | 45. 5-Nitro-o-toluidine | 64. Parathion |
| 8. Ethyl methanesulfonate | 27. Hexachloropropene-1 | 46. Thionazin | 65. Methapyrilene |
| 9. Phenol-d6 (surr) | 28. Phenylenediamine | 47. Diphenylamine | 66. Isodrin |
| 10. Aniline | 29. N-Nitrosodibutylamine | 48. 2,4,6-Tribromophenol (surr) | 67. p-Terphenyl-d14 (surr) |
| 11. Pentachloroethane | 30. Safole | 49. Sulfotep | 68. 4-Dimethylaminoazobenzene |
| 12. 2-Chlorophenol-d4 (surr) | 31. 1-Methylnaphthalene | 50. 1,3,5-Trinitrobenzene | 69. Chlorobenzilate |
| 13. 1,4-Dichlorobenzene-d4 (internal std.) | 32. 1,2,4,5-Tetrachlorobenzene | 51. Diallate-1 | 70. Famphur |
| 14. Benzyl alcohol | 33. Isosafrole | 52. Phorate | 71. Kepone |
| 15. 1,2-Dichlorobenzene-d4 (surr) | 34. 2-Fluorobiphenyl (surr) | 53. Phenacetin | 72. 2-Acetylaminofluorene |
| 16. 3-Methylphenol | 35. Isosafrole-2 | 54. Diallate-2 | 73. Chrysene-d12 (internal std.) |
| 17. N-Nitrosopyrrolidine | 36. 1,4-Naphthoquinone | 55. Dimethoate | 74. 7,12-Dimethylbenz(a)anthracene |
| 18. Acetophenone | 37. 1,3-Dinitrobenzene | 56. 4-Aminobiphenyl | 75. Perylene-d12 (internal std.) |
| 19. N-Nitrosomorpholine | 38. 1,4-Dinitrobenzene | 57. Pronamide | 76. 3-Methylcholanthrene |
| | | | 77. Dibenzo(a,j)acridine |

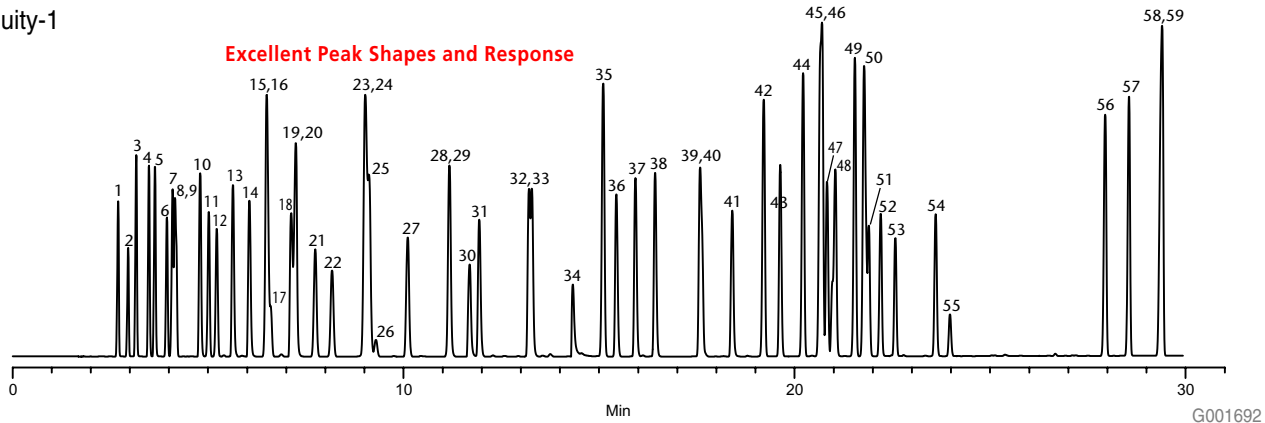


Solvents - Industrial Solvents (GC)

Column: Equity-1, 30m x 0.32mm ID, 1.0µm
Cat. No.: 28057-U
Column: SUPELCOWAX 10, 30m x 0.32mm ID, 1.0µm
Cat. No.: 24211
Column: Equity-1701, 30m x 0.32mm ID, 1.0µm
Cat. No.: 28199-U
 Oven: 35°C (8 min), 4°C/min to 130°C (2 min)
 Inj.: 250°C
 Det.: FID, 250°C
 Carrier gas: Helium, 25cm/sec @ 35°C
 Injection: 0.5µL, split 200:1
 Liner: Split, cup design
 Sample: 0.5µL of a 59 component neat solvent mixture

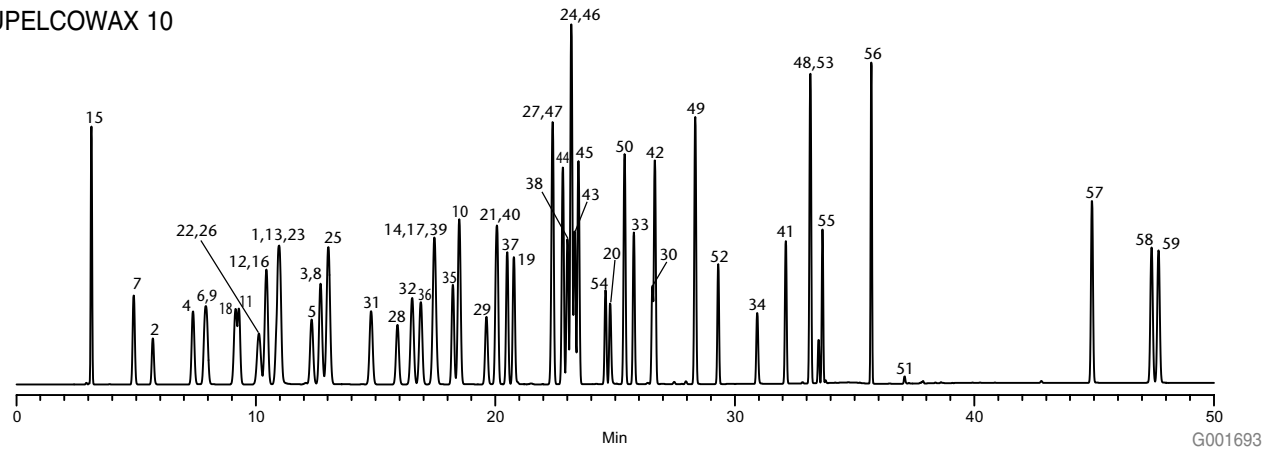
- | | | |
|--------------------------------|----------------------------------|-------------------------------|
| 1. Methanol | 21. 1,2-Dichloroethane | 41. Diacetone alcohol |
| 2. Methyl formate | 22. 1,1,1-Trichloroethane | 42. Chlorobenzene |
| 3. Ethanol | 23. Isopropyl acetate | 43. 5-Methyl-2-hexanone |
| 4. Acetone | 24. n-Butanol | 44. Ethyl benzene |
| 5. 2-Propanol | 25. Benzene | 45. m-Xylene |
| 6. Ethyl formate | 26. Carbon tetrachloride | 46. p-Xylene |
| 7. 1,1-Dichloroethylene | 27. 2-Nitropropane | 47. Isoamyl acetate |
| 8. Methylene chloride | 28. Trichloroethylene | 48. Cyclohexanol |
| 9. Methyl acetate | 29. 1,4-Dioxane | 49. Styrene |
| 10. 1-Propanol | 30. 2-Ethoxyethanol (cellosolve) | 50. o-Xylene |
| 11. trans-1,2-Dichloroethylene | 31. n-Propyl acetate | 51. 1,1,2,2-Tetrachloroethane |
| 12. 1,1-Dichloroethane | 32. 4-Methyl-2-pentanone | 52. 2-Ethoxyethyl acetate |
| 13. 2-Butanone | 33. Isoamyl alcohol | 53. Butyl cellosolve |
| 14. sec-Butanol | 34. Dimethylformamide | 54. n-Amyl acetate |
| 15. Hexane | 35. Toluene | 55. 2-Methylcyclohexanol |
| 16. Ethyl acetate | 36. Isobutyl acetate | 56. 1,2-Dichlorobenzene |
| 17. Chloroform | 37. 2-Hexanone | 57. 2-Methylphenol |
| 18. Tetrahydrofuran | 38. Mesityl oxide | 58. 3-Methylphenol |
| 19. Isobutanol | 39. Tetrachloroethene | 59. 4-Methylphenol |
| 20. 2-Methoxyethanol | 40. n-Butyl acetate | |

Equity-1

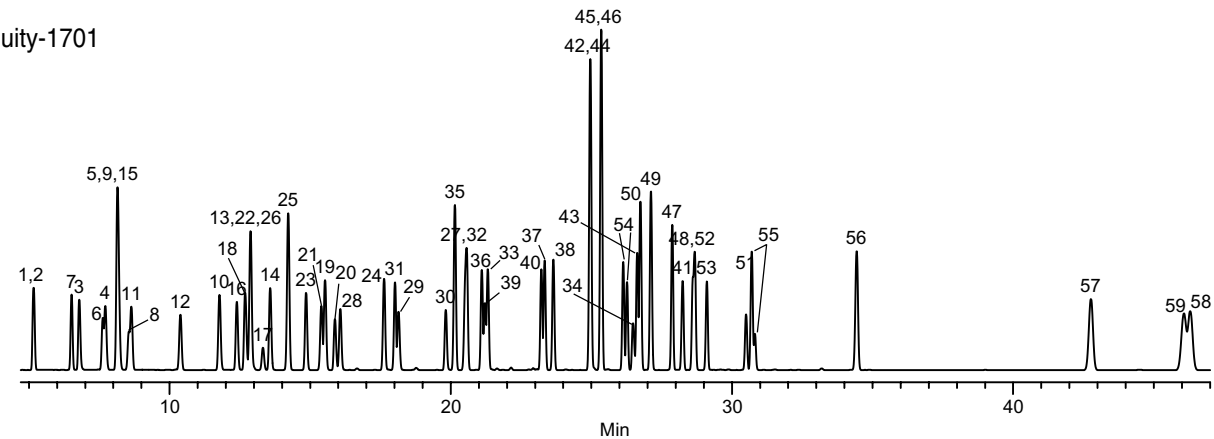


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SUPELCO WAX 10



Equity-1701



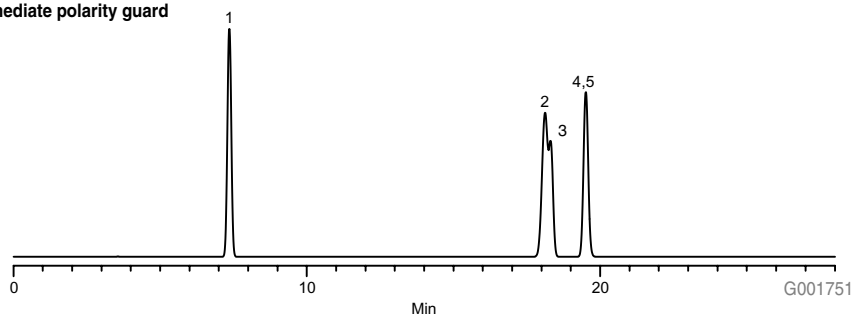
Solvents - Pharmaceutical Solvents, Class 1 (GC)

Oven: 35°C (15 min), 5°C/min to 200°C
Inj.: 225°C
Det.: FID, 250°C
Carrier gas: Helium, 30cm/sec, constant
Injection: 1µL, split 33:1
Liner: 4mm ID single taper
Sample: Class I: 1000-5000ppm in DMSO (Cat. No. 861255)

Class I Identification	Concentration (µg/mL)	Retention Time		
		Equity-5	SUPELLOWAX 10	OVI-G43
1. 1,1-Dichloroethylene	4000	7.35	2.97	7.21
2. 1,1,1-Trichloroethane	5000	18.11	5.54	17.35
3. 1,2-Dichloroethane	2500	18.29	17.55	19.22
4. Carbon tetrachloride	2000	19.50	5.54	18.12
5. Benzene	1000	19.50	7.78	19.06

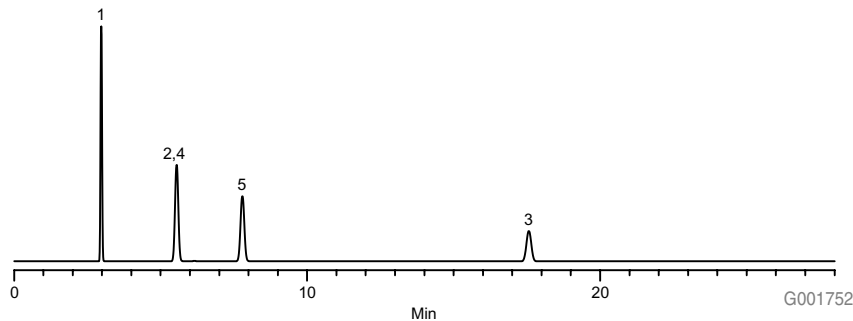
Class 1 Solvents on Equity-5

Column: 30m x 0.53mm ID, 5.0µm w/5m intermediate polarity guard
Cat. No.: 28279-U



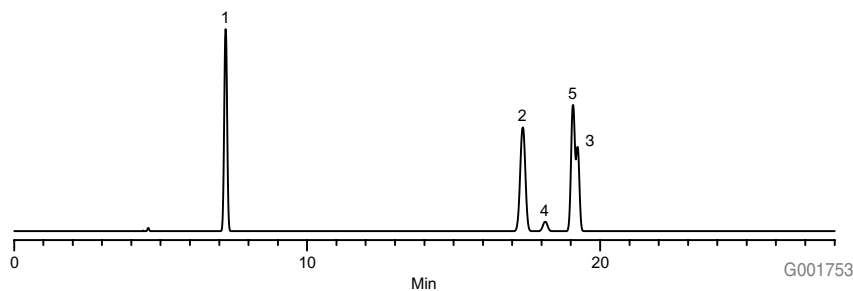
Class 1 Solvents on SUPELLOWAX 10

Column: 30m x 0.53mm ID, 1.0µm
Cat. No.: 25301-U



Class 1 Solvents on OVI-G43

Column: 30m x 0.53mm ID x 3.0µm w/5m intermediate polarity guard
Cat. No.: 25396



Solvents - Pharmaceutical Solvents, Class 2 (GC)

Oven: 35°C (15 min), 5°C/min to 200°C
 Inj.: 225°C
 Det.: FID, 250°C
 Carrier gas: Helium, 30cm/sec, constant

Injection: 1µL, split 33:1
 Liner: 4mm ID single taper
 Sample: Class II: (Cat. No. 861256) + n-Methylpyrrolidone, 250-1000ppm in DMSO

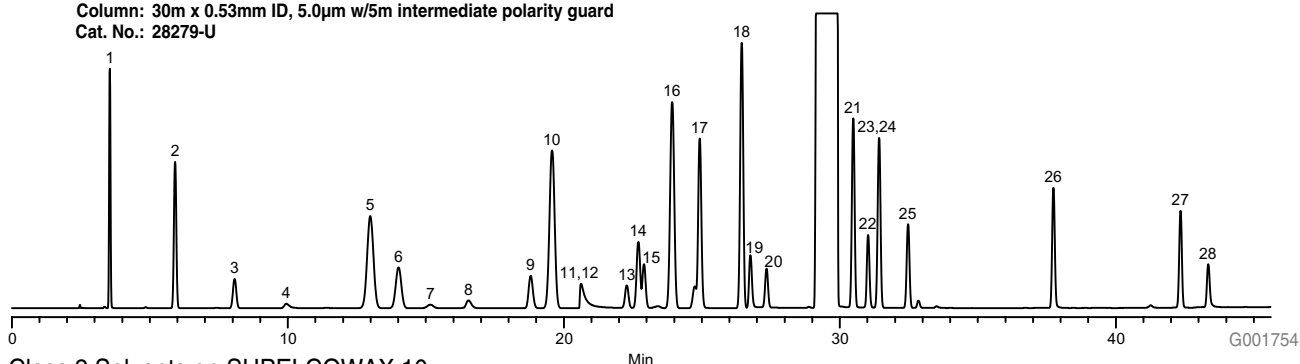
Class II Identification	Concentration (µg/mL)	Retention Time			Class II Identification	Concentration (µg/mL)	Retention Time		
		Equity-5	SUPELLOWAX 10	OVI-G43			Equity-5	SUPELLOWAX 10	OVI-G43
1. Methanol	1000	3.54	6.04	4.56	15. 2-Ethoxyethanol	800	22.89	25.37	24.47
2. Acetonitrile	1000	5.91	11.80	8.30	16. Methylcyclohexane	1000	23.92	3.30	22.34
3. Methylene chloride	1000	8.06	7.60	8.84	17. Pyridine	1000	24.91	23.59	25.80
4. Nitromethane	250	9.94	22.91	NI	18. Toluene	1000	26.44	14.28	26.12
5. Hexane	1000	12.98	2.24	11.08	19. Dimethylformamide	1000	26.75	28.99	29.73
6. cis-1,2-Dichloroethylene	1000	14.00	10.97	14.74	20. Methyl butyl ketone	250	27.33	18.01	28.32
7. Chloroform	300	15.16	13.28	16.67	21. Chlorobenzene	1000	30.48	25.15	30.35
8. 2-Methoxyethanol	250	16.54	23.59	19.38	22. Dimethylacetamide	1000	31.01	31.24	33.76*
9. 1,2-Dimethoxyethane	500	18.79	7.06	19.38	23. m-Xylene	333	31.41	21.75	31.08
10. Cyclohexane	1000	19.56	2.87	17.54	24. p-Xylene	333	31.41	21.41	31.08
11. Ethylene glycol	1000	20.62	36.92	29.44	25. o-Xylene	333	32.46	23.83	32.21
12. Formamide	1000	20.62	40.49	29.90	26. n-Methylpyrrolidone	5000	37.73	38.07	39.93
13. Trichloroethylene	400	22.27	10.97	21.73	27. Tetralin	500	42.33	34.70	41.98
14. 1,4-Dioxane	1000	22.69	16.31	23.13	28. Sulfolane	800	43.34	49.53	46.53

NI = not integrated

*coelutes w/solvent

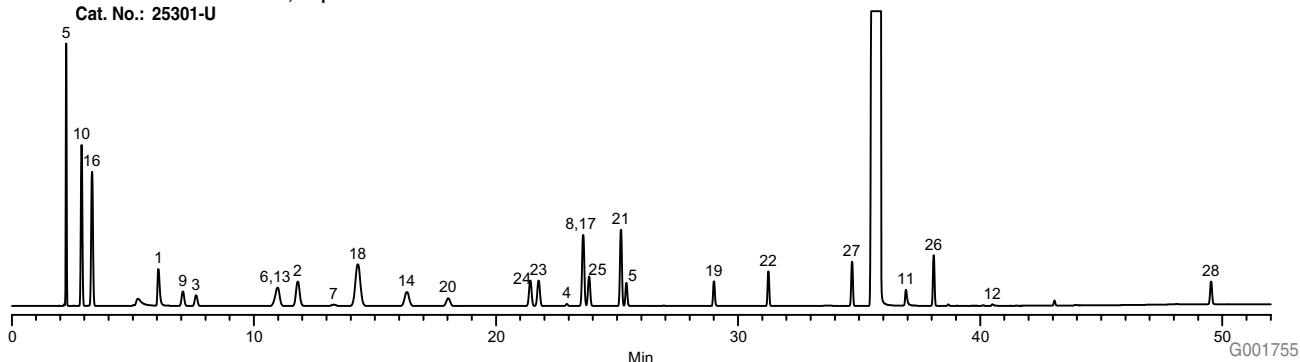
Class 2 Solvents on Equity-5

Column: 30m x 0.53mm ID, 5.0µm w/5m intermediate polarity guard
 Cat. No.: 28279-U



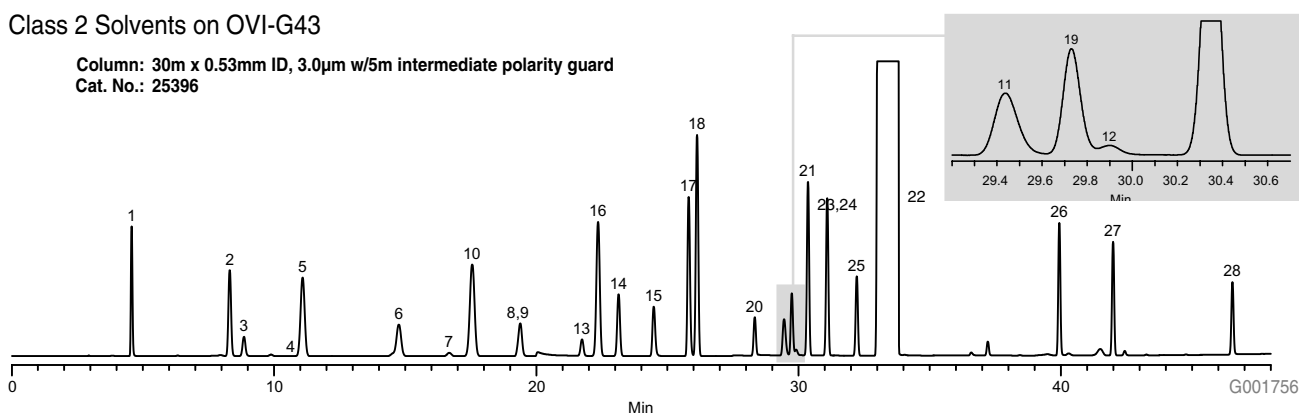
Class 2 Solvents on SUPELLOWAX 10

Column: 30m x 0.53mm ID, 1.0µm
 Cat. No.: 25301-U



Class 2 Solvents on OVI-G43

Column: 30m x 0.53mm ID, 3.0µm w/5m intermediate polarity guard
 Cat. No.: 25396



Solvents - Pharmaceutical Solvents, Class 3 (GC)

Oven: 35°C (15 min), 5°C/min to 200°C
 Inj.: 225°C
 Det.: FID, 250°C
 Carrier gas: Helium, 30cm/sec, constant

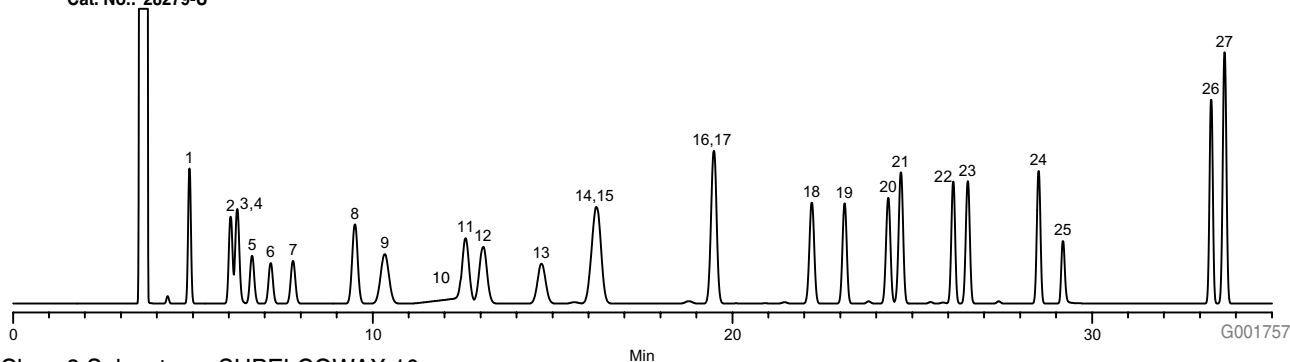
Injection: 1µL, split 33:1
 Liner: 4mm ID single taper
 Sample: Class III: custom mix, approx. 3000ppm in MeOH

Class III Identification	Concentration (µg/mL)	Retention Time			Class III Identification	Concentration (µg/mL)	Retention Time		
		Equity-5	SUPELCO WAX 10	OVI-G43			Equity-5	SUPELCO WAX 10	OVI-G43
1. Ethanol	3000	4.90	7.56	6.29	15. Iso-Butanol	3000	16.21	19.23	19.39
2. Acetone	3000	6.04	4.06	6.58	16. n-Butanol	3000	19.48	22.19	22.02
3. 2-Propanol	3000	6.23	7.26	7.92	17. Isopropyl acetate	3000	19.48	6.14	19.89
4. Pentane	3000	6.23	2.06	5.99	18. Heptane	3000	22.20	2.65	20.47
5. Ethyl ether	3000	6.64	2.32	6.29	19. Propyl acetate	3000	23.11	9.71	23.52
6. Ethyl formate	3000	7.16	7.06	7.39	20. Isoamyl alcohol	3000	24.33	24.91	26.16
7. Methyl acetate	3000	7.78	4.31	8.54	21. 4-Methyl-2-pentanone	3000	24.68	11.62	25.72
8. 1-Propanol	3000	9.50	14.76	12.60	22. n-Amyl alcohol	3000	26.13	26.49	27.73
9. Methyl-t-butyl ether	3000	10.33	2.65	9.92	23. Isobutyl acetate	3000	26.54	12.34	26.84
10. Acetic acid	3000	NI	33.02	21.53	24. Butyl acetate	3000	28.51	17.72	28.79
11. 2-Butanone	3000	12.57	6.14	15.01	25. Dimethyl sulfoxide	3000	29.18	35.51	33.02
12. sec-Butanol	3000	13.07	13.45	16.47	26. Anisole	3000	33.30	29.65	33.54
13. Ethyl acetate	3000	14.68	5.78	15.58	27. Cumene	3000	33.68	23.38	33.29
14. Tetrahydrofuran	3000	16.21	4.93	16.35					

NI = not integrated

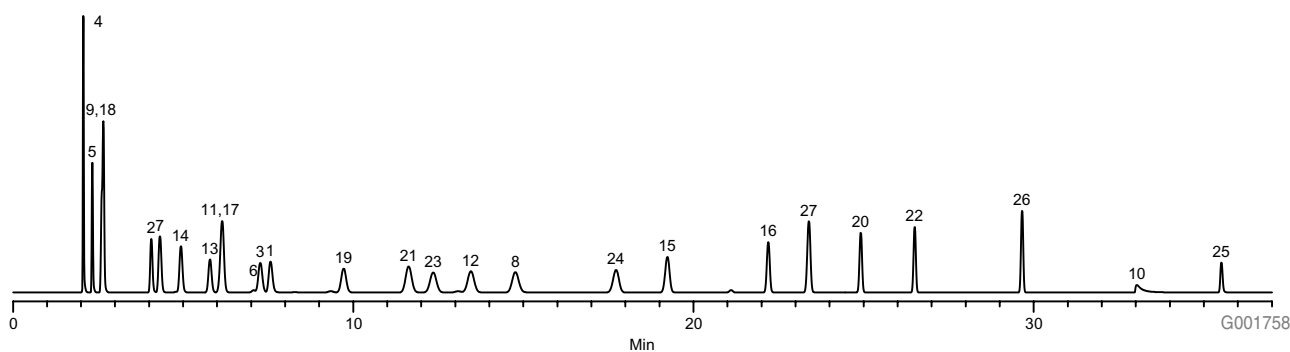
Class 3 Solvents on Equity-5

Column: 30m x 0.53mm ID, 5.0µm w/5m intermediate polarity guard
 Cat. No.: 28279-U



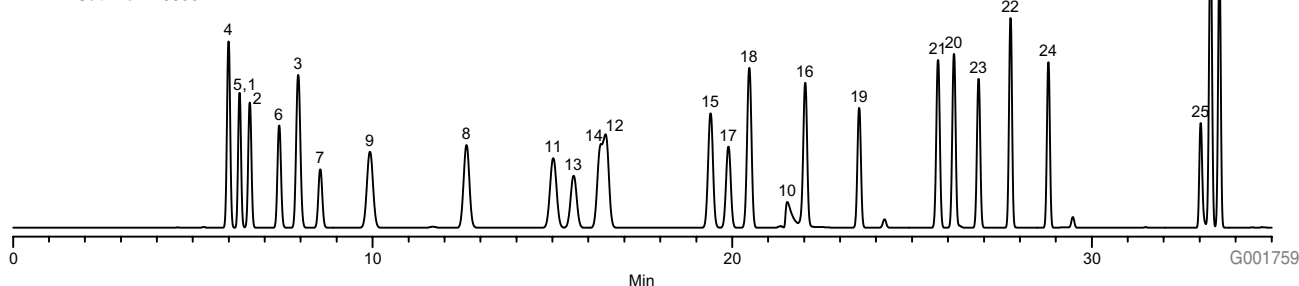
Class 3 Solvents on SUPELCO WAX 10

Column: 30m x 0.53mm ID, 1.0µm
 Cat. No.: 25301-U



Class 3 Solvents on OVI-G43

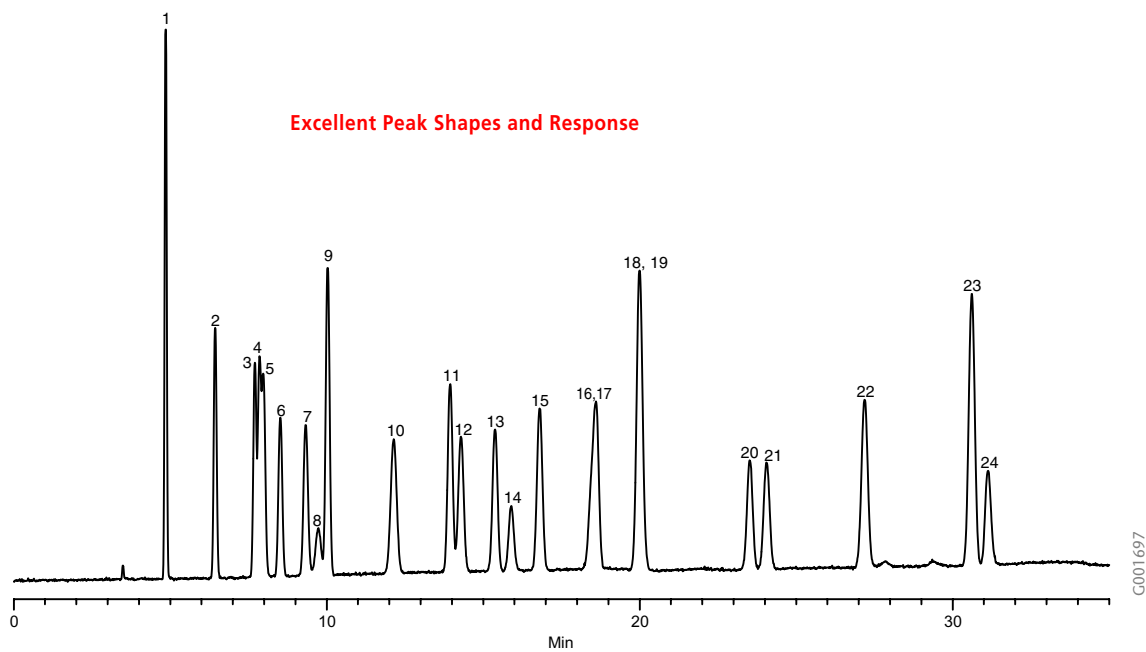
Column: 30m x 0.53mm ID, 3.0µm w/5m intermediate polarity guard
 Cat. No.: 25396



Solvents - Residual Solvents (GC)

Column: Equity-5, 30m x 0.53mm ID, 5.0 μ m
Cat. No.: 28279-U
Oven: 40°C (6 min), 2°C/min to 100°C
Inj.: 225°C
Det.: FID, 250°C
Carrier gas: Helium, 20cm/sec @ 40°C
Injection: 1.0 μ L, split 10:1
Liner: Split, cup design
Sample: 5ng on-column of a 24 component solvent standard in DMSO

1. Methanol
2. Ethanol
3. Acetonitrile
4. Acetone
5. 2-Propanol
6. Ethyl ether
7. 1,1-Dichloroethylene
8. Freon 113
9. Methylene chloride
10. Methyl-t-butyl ether
11. 2-Butanone
12. Hexane
13. Ethyl acetate
14. Chloroform
15. Tetrahydrofuran
16. 1,1,1-Trichloroethane
17. 1,2-Dichloroethane
18. Carbon tetrachloride
19. Benzene
20. Trichloroethylene
21. 1,4-Dioxane
22. 4-Methyl-2-pentanone
23. Toluene
24. Dimethylformamide



Volatiles - Indoor Air (GC/MS)

Column: Equity-1, 30m x 0.25mm ID, 1.0µm

Cat. No.: 28049-U

Oven: 35°C (3 min), 8°C/min to 100°C, 20°C/min to 250°C (10 min)

Inj.: 250°C

MSD Interface: 280°C

Scan Range: 33-350 m/z

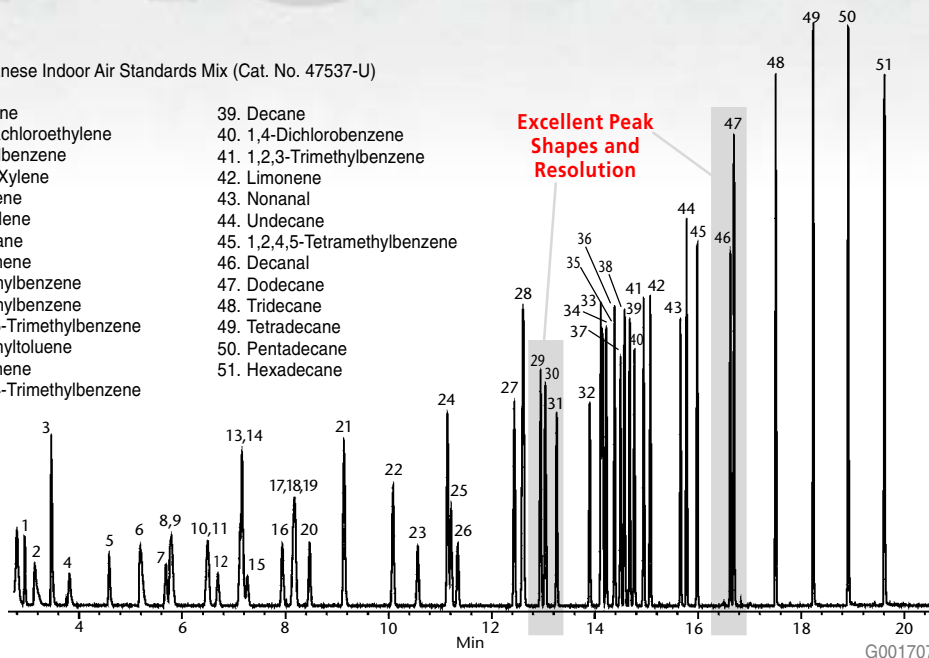
Carrier gas: Helium, 30cm/sec @ 35°C

Injection: 1.0µL, 10:1 split

Liner: Split, cup design

Sample: 10ng on-column of the Japanese Indoor Air Standards Mix (Cat. No. 47537-U)

- | | | |
|---------------------------|----------------------------|--------------------------------|
| 1. Ethanol | 25. Octane | 39. Decane |
| 2. Acetone | 26. Tetrachloroethylene | 40. 1,4-Dichlorobenzene |
| 3. 2-Propanol | 27. Ethylbenzene | 41. 1,2,3-Trimethylbenzene |
| 4. Methylene chloride | 28. m/p-Xylene | 42. Limonene |
| 5. 1-Propanol | 29. Styrene | 43. Nonanal |
| 6. 2-Butanone | 30. o-Xylene | 44. Undecane |
| 7. Hexane | 31. Nonane | 45. 1,2,4,5-Tetramethylbenzene |
| 8. Ethyl acetate | 32. α-Pinene | 46. Decanal |
| 9. Chloroform | 33. 3-Ethylbenzene | 47. Dodecane |
| 10. 1,2-Dichloroethane | 34. 4-Ethylbenzene | 48. Tridecane |
| 11. 2,4-Dimethylpentane | 35. 1,3,5-Trimethylbenzene | 49. Tetradecane |
| 12. 1,1,1-Trichloroethane | 36. 2-Ethyltoluene | 50. Pentadecane |
| 13. Benzene | 37. β-Pinene | 51. Hexadecane |
| 14. 1-Butanol | 38. 1,2,4-Trimethylbenzene | |
| 15. Carbon tetrachloride | | |
| 16. 1,2-Dichloropropane | | |
| 17. Bromodichloromethane | | |
| 18. Isooctane | | |
| 19. Trichloroethene | | |
| 20. Heptane | | |
| 21. 4-Methyl-2-pentanone | | |
| 22. Toluene | | |
| 23. Chlorodibromomethane | | |
| 24. n-Butyl acetate | | |



Column: Equity-1, 60m x 0.25mm ID, 1.0µm

Cat. No.: 28050-U

Oven: 35°C, (4 min), 3°C/min to 100°C, 8°C/min to 250°C (10 min)

Inj.: 250°C

MSD Interface: 300°C

Scan Range: 35-350 m/z

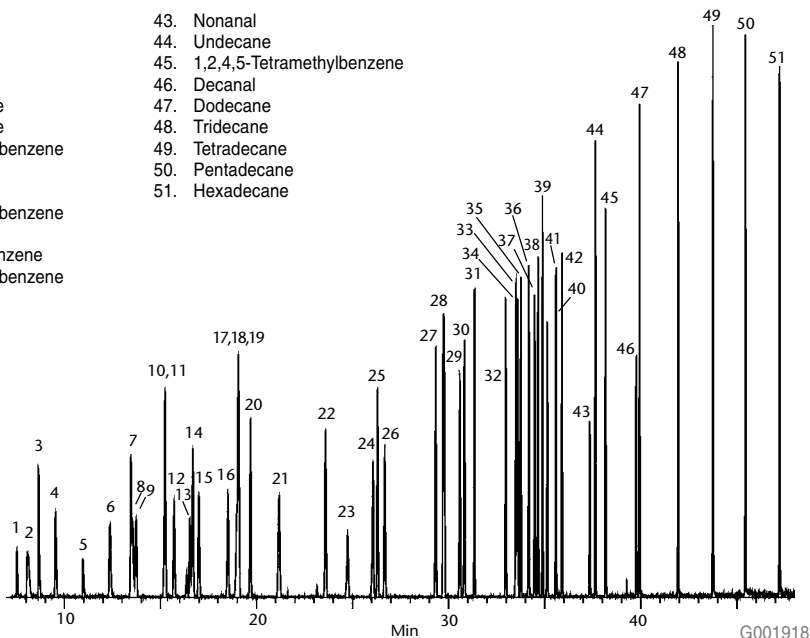
Carrier gas: Helium, 24cm/sec, constant

Injection: 1.0µL, 10:1 split

Liner: Dual tapered

Sample: 100ng on-column of the Japanese Indoor Air Standards Mix (Cat. No. 47537-U)

- | | | |
|--------------------------------------|----------------------------|--------------------------------|
| 1. Ethanol | 29. Styrene | 43. Nonanal |
| 2. Acetone | 30. o-Xylene | 44. Undecane |
| 3. 2-Propanol | 31. Nonane | 45. 1,2,4,5-Tetramethylbenzene |
| 4. Methylene chloride | 32. α-pinene | 46. Decanal |
| 5. 1-Propanol | 33. 3-Ethylbenzene | 47. Dodecane |
| 6. 2-Butanone | 34. 4-Ethylbenzene | 48. Tridecane |
| 7. Hexane | 35. 1,3,5-Trimethylbenzene | 49. Tetradecane |
| 8. Ethyl acetate | 36. 2-Ethyl toluene | 50. Pentadecane |
| 9. Chloroform | 37. β-Pinene | 51. Hexadecane |
| 10. 1,2-Dichloroethane | 38. 1,2,4-Trimethylbenzene | |
| 11. 2,4-Dimethyl pentane | 39. Decane | |
| 12. 1,1,1-Trichloroethane | 40. 1,4-Dichlorobenzene | |
| 13. 1-Butanol | 41. 1,2,3-Trimethylbenzene | |
| 14. Benzene | 42. Limonene | |
| 15. Carbon tetrachloride | | |
| 16. 1,2-Dichloropropane | | |
| 17. Bromodichloroethane | | |
| 18. Iso-octane | | |
| 19. Trichloroethene | | |
| 20. Heptane | | |
| 21. 4-Methyl-2-pentanone | | |
| 22. Toluene | | |
| 23. Chlorodibromomethane | | |
| 24. n-Butyl acetate | | |
| 25. Octane | | |
| 26. Tetrachloroethylene | | |
| 27. Ethyl benzene | | |
| 28. m/p-Xylenes (partially resolved) | | |



GC Accessories

Agilent Technologies Instruments

Supeltex Capillary Column Ferrules (Short)

Use with original Agilent/HP nut or Supelco replacement nut (P/N 24833-U).

We offer the short style ferrules for Agilent/HP GC's. This design will fit the standard Agilent/HP capillary nut. They are offered in M-2A (85% polyamide/15% graphite), M-4 (100% graphite), and CapSeal (graphite/aluminum) versions.



Ferrule Type	Temp. Limit	Qty.	Cat. No.
0.20-0.25mm column ID x 0.4mm ferrule ID			
M-2A	400°C	10	24803-U
		50	24807-U
M-4	450°C	10	24811-U
		50	24819-U
CapSeal Bullet	450°C	10	23864
		50	23867
0.32mm column ID x 0.5mm ferrule ID			
M-2A	400°C	10	24802-U
		50	24806-U
M-4	450°C	10	24809-U
		50	24813-U
CapSeal Bullet	450°C	10	23865
		50	23868
0.53mm column ID x 0.8mm ferrule ID			
M-2A	400°C	10	24801-U
		50	24804-U
M-4	450°C	10	24808-U
		50	24812-U
CapSeal Bullet	450°C	10	23866
		50	23869

Column Nuts for Agilent/HP

Use with short Supeltex ferrules (see above).

These column nuts are replacements for damaged or misplaced original Agilent/HP nuts. They are to be used with the shorter design ferrules for Agilent/HP GC's.



Description	Cat. No.
Column Nuts (pk. of 2)	24833-U

Accessory Case for Agilent/HP GC Capillary Products

We offer a clear plastic storage case with a foam insert. The foam easily stores your capillary accessories. The foam has been cut out to hold your Pk/5 inlet liners, Pk/50 septa, Pk/50 ferrules, Pk/25 Therm-O-Rings, Column nuts, and Pk/10 Inlet Seals.

Description	Cat. No.
GC Accessory Case for Agilent Technologies	28035-U

Supeltex Capillary Column Ferrules (General Purpose)

Use with Supelco Ferrule Nut Adapter (P/N 22470-U or 22509).

These are the original Supeltex ferrules. Use these ferrules if you have replaced the original Agilent/HP nut with Supelco's Ferrule Nut Adapter. They are offered in M-1 (ceramic-filled Teflon), M-2A (85% polyamide/15% graphite), M-2B (75% polyamide/25% graphite), M-4 (100% graphite), and CapSeal (graphite/aluminum) versions.



Ferrule Type	Temp. Limit	Qty.	Cat. No.
0.20-0.25mm column ID x 0.4mm ferrule ID			
M-2A	400°C	10	503258
		50	22474
M-2A 2-hole	400°C	5	22467
M-2A Indented Blank ¹	400°C	10	22488
M-2B	350°C	10	22510-U
M-4	450°C	10	22498
		50	22480-U
CapSeal Bullet	450°C	12	23480-U
		48	23485
0.32mm column ID x 0.5mm ferrule ID			
M-2A	400°C	10	22461
M-2A 2-hole	400°C	5	22463
M-2A Indented Blank ¹	400°C	10	22488
M-2B	350°C	10	22511
M-4	450°C	10	22462
		50	22412
CapSeal Bullet	450°C	12	23481
		48	23486
0.53mm column ID x 0.8mm ferrule ID			
M-1	250°C	10	22499
M-2A	400°C	10	22489
		50	22473
M-2A Indented Blank ¹	400°C	10	22488
M-2B	350°C	10	22512
M-4	450°C	10	20628
		50	22479
CapSeal Bullet	450°C	12	23482
		48	23487
0.75mm column ID x 1.0mm ferrule ID			
M-2A Indented Blank ¹	400°C	10	22488
M-4	450°C	10	22494
0.50-0.75mm column id x 1.2mm ferrule id			
M-2A	400°C	10	22459
M-2A Indented Blank ¹	400°C	10	22488
M-4	450°C	10	22460

¹ Drill to fit your column.

Supelco Ferrule Nut Adapters

Use with general purpose Supeltex ferrules (see above).

Install fused silica capillary columns without restrictions on ferrule choice. These adapters enable you to use general purpose Supeltex and other 1/16" compression capillary ferrules in your Agilent/HP 5710, 5790, 5840, 5880, 5890, or 6890 system.



Description	Cat. No.
Adapters (pk. of 2)	22470-U
Adapters, Knurled (pk. of 2)	22509

Supeltex Capillary Ferrules (Long)

Use with original Agilent/HP MSD Source Nut, SSNE Style Nut (P/N 28034-U), or Supelco MSD Source Nut (P/N 22517).

We offer a preconditioned ferrule for Agilent/HP GC/MS applications in M-2A material (85% polyamide/15% graphite).



Description	Qty.	Cat. No.
0.20-0.25mm column ID x 0.4mm ferrule ID	10 50	24826-U 28022-U
0.32mm column ID x 0.5mm ferrule ID	10 50	24824-U 28023-U
0.53mm column ID x 0.8mm ferrule ID	10 50	24823-U 28024-U

Column Nut for Agilent/HP MSD

Use with long Supeltex ferrules.

These column nuts are replacements for damaged or misplaced original Agilent/HP MSD nuts. They are to be used with the longer design ferrules for Agilent/HP GC's.



Description	Qty.	Cat. No.
SSNE style columns nut	5	28034-U

MSD Source Nut for GC/MS Interface

Use with long or generalpurpose Supeltex ferrules.

These column nuts can be used to replace damaged or misplaced original Agilent/HP source nuts. The nuts are made of brass to prevent damage to MSD source threads. An enlarged knurled end allows easy finger tightening for a leak tight seal.



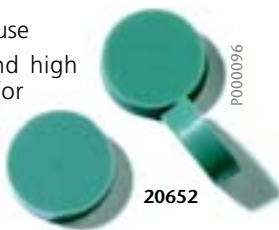
Description	Cat. No.
MSD Source Nut	22517

Thermogreen LB-2 Septa

Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use
- Easier needle penetration and high puncture tolerance – ideal for autosamplers
- Rubber formulation exclusive to Supelco

(Pk. of 50).



Description	Diameter	Cat. No.
5880A, 5890	11mm (7/16")	20654
5700 Series, 5880	9.5mm (3/8")	20652
5880/90, 6890, OCI Ports	5mm (3/16")	20638

Inlet Seals

The inlet seal on an Agilent/HP GC must be regularly changed to prevent sample adsorption due to accumulation of sample residue and/or septum fragments. We manufacture replacement seals of high quality stainless steel for analyses of non-reactive compounds, and stainless steel seals plated with *pure gold* for applications requiring more inertness. No brighteners are used in the plating process. Stainless steel washers are included with each type of seal.



Description	Cat. No.
Stainless Steel Inlet Seals (pk. of 2)	23316-U
Stainless Steel Inlet Seals (pk. of 10)	23317-U
Stainless Steel Inlet Seals, 100 Seals w/50 washers	23363-U
Gold Plated Inlet Seals (pk. of 2)	23318-U
Gold Plated Inlet Seals (pk. of 10)	23319-U

Therm-O-Ring Seals for Capillary Inlet Liners

Exclusive from Supelco. New high temperature O-ring seals can be used with inlet temperatures up to 375°C without sticking or fragmenting. Fit both 6.3mm OD (split) and 6.5mm OD (splitless) Agilent/HP capillary liners, and any 1/4" OD capillary liner that uses an O-ring seal. Superior replacement for Viton O-rings.



Description	Cat. No.
Therm-O-Ring Seals (pk. of 10)	21003-U
Therm-O-Ring Seals (pk. of 25)	21004-U

Deactivated Glass Inlet Liners

Our liners feature:

- High temperature silanization, to ensure inertness
- Consistent dimensions, tolerances and quality
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

All Models, 4890, 5880, 5890, 6890. (pk/5).

Description	Cat. No.
Split Injection	
78.5 x 6.3mm, 4mm ID, wool packed	2048605
78.5 x 6.3mm, cup design	2051005
78.5 x 6.3mm, cup design, wool packed	2048205
Splitless	
78.5 x 6.5mm, tapered	2046605
78.5 x 6.5mm, tapered, wool packed	2047805
78.5 x 6.5mm, 2mm ID	2051305
78.5 x 6.5mm, dual tapered	2048505
Direct/Wire-Bore	
78.5 x 6.5mm, 1.5mm ID	2051705
78.5 x 6.3mm, 0.75mm ID, SPME	2637505

GC Accessories

PerkinElmer Instruments

Supeltex Capillary Column Ferrules

24826-U



Use with original PerkinElmer 1/16" or SSNE Style Nuts (p/n 28034-U).

Ferrule Type	Temp. Limit	Qty.	Cat. No.
0.20-0.25mm column ID x 0.4mm ferrule ID			
M-2A	400°C	10	24826-U
		50	28022-U
M-4	450°C	10	28025-U
		50	28028-U
CapSeal Bullet	450°C	12	23488
		48	23493
0.32mm column ID x 0.5mm ferrule ID			
M-2A	400°C	10	24824-U
		50	28023-U
M-4	450°C	10	28026-U
		50	28031-U
CapSeal Bullet	450°C	12	23489
		48	23494-U
0.53mm column ID x 0.8mm ferrule ID			
M-2A	400°C	10	24823-U
		50	28024-U
M-4	450°C	10	28027-U
		50	28032-U
CapSeal Bullet	450°C	12	23490
		48	23495
0.50-0.75mm column ID x 1.0mm ferrule ID			
CapSeal Bullet	450°C	12	23491-U

Supeltex Capillary Column Ferrules (General Purpose)

Use with 1/16" compression nuts.



503258

Ferrule Type	Temp. Limit	Qty.	Cat. No.
0.20-0.25mm column ID x 0.4mm ferrule ID			
M-2A	400°C	10	503258
		50	22474
M-4	450°C	10	22498
		50	22480-U
0.32mm column ID x 0.5mm ferrule ID			
M-2A	400°C	10	22461
		10	22462
M-4	450°C	10	22412
		50	22412
0.53mm column ID x 0.8mm ferrule ID			
M-2A	400°C	10	22489
		50	22473
M-4	450°C	10	20628
		50	22479

Swagelok 1/16" Compression Nut

These nuts permit use of general purpose Supeltex and other 1/16" compression capillary ferrules.

Description	Qty.	Cat. No.
Swagelok 1/16" brass nut	10	22021

Inlet Liners

(Pk/5). Our liners feature:

- High temperature silanization, to ensure inertness
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

Description	Cat. No.
Auto System 9000 Split/Splitless Capillary Injector	
Split Injection	
92mm x 0.25", 4mm ID	2630905
92mm x 0.25", 4mm ID	2631005
Splitless	
92mm x 0.25", 2mm ID	2631105
92mm x 0.25", 0.75mm ID, SPME	2631205
PPS (Programmed Split/Splitless)	
Split Injection	
86mm x 4mm, 2mm ID	2631305
Splitless	
86mm x 4mm, 1mm ID	2631405
Direct/On-Column/Other	
86mm x 4mm, On-Column	2631505

Accessory Cases for PerkinElmer GC Capillary Products

We offer a clear plastic storage case with a foam insert. The foam easily stores your capillary accessories. The foam has been cut out to hold your Pk/5 inlet liners, Pk/50 septa, Pk/50 ferrules, Pk/25 Therm-O-Rings, and Column nuts.

Description	Cat. No.
GC Accessory Case for PerkinElmer	28037-U

48

SSNE Style Column Nut

Description	Qty.	Cat. No.
SSNE Style Column Nut	5	28034-U

Therm-O-Ring Seals

Exclusive from Supelco. New high temperature O-ring seals can be used with inlet temperatures up to 375°C without sticking or fragmenting. They fit 1/4" capillary liners.

Description	Qty.	Cat. No.
Therm-O-Ring Seals	25	21004-U

Thermogreen LB-2 Septa

Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use
- Easier needle penetration and high puncture tolerance – ideal for autosamplers
- Rubber formulation exclusive to Supelco

Sigma series, 900 & 990, 8000 Auto Sampler

Description	Qty.	Cat. No.
11.0mm	50	20654

GC Accessories Varian Instruments

Supeltex Capillary Column Ferrules

Use with Varian Nut (p/n 28033-U).

24826-U



Ferrule Type	Temp. Limit	Qty.	Cat. No.
0.20-0.25mm column ID x 0.4mm ferrule ID			
M-2A	400°C	10	24826-U
		50	28022-U
M-4	450°C	10	28025-U
		50	28028-U
CapSeal Bullet	450°C	12	23488
		48	23493
0.32mm column ID x 0.5mm ferrule ID			
M-2A	400°C	10	24824-U
		50	28023-U
M-4	450°C	10	28026-U
		50	28031-U
CapSeal Bullet	450°C	12	23489
		48	23494-U
0.53mm column ID x 0.8mm ferrule ID			
M-2A	400°C	10	24823-U
		50	28024-U
M-4	450°C	10	28027-U
		50	28032-U
CapSeal Bullet	450°C	12	23490
		48	23495
0.50-0.75mm column ID x 1.0mm ferrule ID			
CapSeal Bullet	450°C	12	23491-U

Column Nuts

Description	Cat. No.
Column Nut for Varian GC (pk. of 5)	28033-U

Thermogreen LB-2 Septa

Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use

Description	Diameter	Cat. No.
1177 Injectors	9mm	28021-U
Packed column injectors	9.5mm	20652
SPI	11mm	20654
Capillary Injectors	11mm	20654
	11.5mm	23154
Saturn GC/MS	11.5mm	23154

Accessory Case for Varian GC Capillary Products

We offer a clear plastic storage case with a foam insert. The foam easily stores your capillary accessories. The foam has been cut out to hold your Pk/5 inlet liners, Pk/50 septa, Pk/50 ferrules, and Column nuts.

Description	Cat. No.
GC Accessory Case for Varian	28036-U

Deactivated Glass Inlet Liners

(Pk/5). Our liners feature:

- High temperature silanization, to ensure inertness
- Consistent dimensions, tolerances and quality
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

Description	Cat. No.
Model 1177 CP Injector	
Split Injection	
78.5 x 6.3mm, 4mm ID, wool packed	2048605
78.5 x 6.3mm, cup design	2051005
78.5 x 6.3mm, cup design, wool packed	2048205
78.5 x 6.3mm, cup design, 10% OV-1 on Chromosorb packed	2055105
Splitless	
78.5 x 6.5mm, tapered	2046605
78.5 x 6.5mm, tapered, wool packed	2047805
78.5 x 6.5mm, 2mm ID	2051305
78.5 x 6.5mm, dual taper	2048505
Direct/On-Column	
78.5 x 6.5mm, 1.5mm ID	2051705
SPME	
78.5 x 6.3mm, 0.75mm ID	2637505
Model 1075/1077 Injector	
Split Injection	
72 x 6.3mm, with frit	2050505
72 x 6.3mm, Packed with 10% OV-1 on Chromosorb packed	2055505
72 x 6.3, unpacked	2636105
72 x 6.3mm, with baffle	2050105
72 x 6.3mm, wool packed	2636005
72 x 6.3mm, w/cup unpacked	2049805
Splitless	
74 x 6.3mm, straight	2050205
74 x 6.35mm, SPME, 0.75mm ID	2635805
Direct/On-Column	
72 x 6.3mm, fused silica	2636205
73 x 0.25", universal flash, 0.53mm ID columns	2636805
Model 1093-94 SPI	
Direct/On-Column	
54 x 4.6mm, direct injection,	2636305
54 x 5mm, 3.4mm ID, frit	2636405
54 x 4.6mm, wool packed	2636505
Model 1078 Injector	
Split Injection	
54 x 5mm, 3.4mm ID, unpacked	2637105
54 x 5mm, 3.4mm ID, frit	2637205
54 x 5mm, 3.4mm ID, packed	2637305
54 x 5mm, 2mm ID, split/splitless, wool packed	2637705
Splitless	
54 x 5mm, 2mm ID, unpacked	2637405
54 x 5mm, 0.8mm ID, unpacked	2637805
54 x 5mm, 0.5mm ID, temp ramp mode	2637605

Service

*"We are committed to the success of our Customers, Employees, and Shareholders through leadership in **Life Science, High Technology, and Service**"*

The Service You Deserve...

Easy Ordering

Supelco offers many ways to easily place your order or inquire about an existing order. You can call, fax, or visit our web site 24 hours a day, 7 days a week.

In the USA and Canada, please contact us at:

Phone : 800-247-6628 / 800-325-3010

Fax: 814-359-5459

Web: sigma-aldrich.com/supelco

Other countries, contact your local Sigma-Aldrich representative. For more information, visit sigma-aldrich.com

Ready to order products? Searching for Material Safety Data Sheets or other product information? Need a new catalog? Many of your questions can be answered at our award winning web site. Go to sigma-aldrich.com/supelco to search for products, check up-to-the-minute availability, place orders, check order status, or directly trace the order shipment with a tracking number that is hot linked to the carrier's web site. You can check status and trace an order in two clicks!

On-Time Delivery

Still waiting for capillary GC columns that you ordered last week or last month? Not getting responsive customer service? Get the service you deserve today with products that meet your performance demands and are delivered when you need them.

Same day shipping is our mission. Supelco's aim is to ship all stock products ordered by 6PM Eastern Time on the same day.

Superior Support

When you want additional information about a product, or help with a problem, our knowledgeable Technical Service chemists and our extensive library of free technical literature are just a telephone call, fax message, or email away. We are always ready to respond to your questions, suggestions, criticisms, and changing needs.

In the USA and Canada: please contact us at the following telephone numbers Monday - Friday during the hours of 8AM - 8PM Eastern Time

Phone: 800-359-3041 / 814-359-3041

Fax: 800-359-3044 / 814-359-5468

Email: techservice@sial.com

Other countries, contact your local Sigma-Aldrich representative. For more information, visit sigma-aldrich.com

**...from the Company
You Trust**

Equity Capillary GC Columns

Ordering Information

Equity-1 Capillary GC Columns

Phase: bonded; poly(dimethylsiloxane)
Temp. Limits: 0.25 and 0.32mm ID: -60°C to 325/350°C
 0.53mm ID: -60°C to 300/320°C (<=1.5µm d)
 -60°C to 260/280°C (>1.5µm d)

Length (m)	d _i (µm)	Cat. No.
0.20mm ID		
12	0.33	28041-U
25	0.33	28042-U
10	1.2	28043-U
0.25mm ID		
30	0.10	28044-U
15	0.25	28045-U
30	0.25	28046-U
60	0.25	28047-U
15	1.0	28048-U
30	1.0	28049-U
60	1.0	28050-U
100	1.0	28052-U
0.32mm ID		
30	0.10	28053-U
15	0.25	28054-U
30	0.25	28055-U
60	0.25	28056-U
30	1.0	28057-U
60	1.0	28058-U
100	1.0	28060-U
30	2.0	28061-U
30	5.0	28062-U
60	5.0	28063-U
0.53mm ID		
15	0.10	28064-U
30	0.10	28065-U
15	0.5	28067-U
30	0.5	28068-U
15	1.0	28069-U
30	1.0	28071-U
15	1.5	28072-U
30	1.5	28073-U
60	1.5	28074-U
15	3.0	28075-U
30	3.0	28076-U
60	3.0	28077-U
15	5.0	28079-U
30	5.0	28081-U
60	5.0	28082-U

Trademarks

Agilent - Agilent Technologies
 Aroclor - Monsanto Co.
 CapSeal Bullet, Equity, SPB, Supelco, SUPELCOWAX, Supeltext,
 Therm-O-Ring, Thermogreen - Sigma Aldrich Co.
 Chromsorb - Manville Corp.
 OV - Ohio Valley Specialty Chemical Co.
 PerkinElmer - PerkinElmer Corp.
 Swagelok - Crawford Fitting Co.
 Viton - E.I. duPont de Nemours

Equity-5 Capillary GC Columns

Phase: bonded; poly(5% diphenyl/95% dimethylsiloxane)
Temp. Limits: 0.25 and 0.32mm ID: -60°C to 325/350°C
 0.53mm ID: -60°C to 300/320°C (<=1.5µm d) -60°C
 to 260/280°C (>1.5µm d)

Length (m)	d _i (µm)	Cat. No.
0.10mm ID		
15	0.10	28083-U
0.20mm ID		
15	0.20	28084-U
30	0.20	28085-U
60	0.20	28086-U
12	0.33	28087-U
0.25mm ID		
15	0.25	28088-U
30	0.25	28089-U
60	0.25	28090-U
30	0.5	28092-U
15	1.0	28093-U
30	1.0	28094-U
60	1.0	28095-U
0.32mm ID		
15	0.25	28096-U
30	0.25	28097-U
60	0.25	28098-U
30	0.32	28099-U
30	0.5	28195-U
30	1.0	28199-U
60	1.0	28251-U
0.53mm ID		
15	0.5	28252-U
30	0.5	28259-U
60	0.5	28263-U
30	1.0	28264-U
15	1.5	28265-U
30	1.5	28267-U
30	3.0	28268-U
60	3.0	28269-U
15	5.0	28278-U
30	5.0	28279-U
60	5.0	28293-U

Equity-1701 Capillary GC Columns

Phase: bonded; poly(14% cyanopropylphenyl/86% dimethylsiloxane)
Temp. Limits: 0.25 and 0.32mm ID: subambient to 280°C
 0.53mm ID: subambient to 260°C

Length (m)	d _i (µm)	Cat. No.
0.10mm ID		
15	0.10	28343-U
0.25mm ID		
15	0.25	28371-U
30	0.25	28372-U
60	0.25	28373-U
15	1.0	28374-U
30	1.0	28378-U
60	1.0	28379-U
0.32mm ID		
15	0.25	28381-U
30	0.25	28382-U
60	0.25	28384-U
15	1.0	28386-U
30	1.0	28387-U
60	1.0	28388-U
0.53mm ID		
15	0.5	28389-U
30	0.5	28391-U
15	1.0	28393-U
30	1.0	28394-U
15	1.5	28395-U
30	1.5	28396-U

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