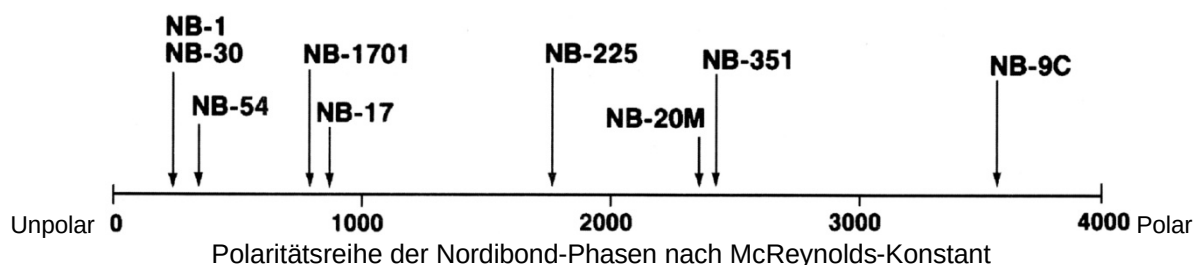


Nordibond Fused-Silika GC Kapillarsäulen



Nordibond Phasen

NB-1, NB-30	100% Methylpolysiloxan
NB-54	5% Phenyl-, 1% Vinyl-Methylpolysiloxan
NB-5, NB-5ms	5% Phenyl-, 1% Vinyl-Methylpolysiloxan
NB-311	Modifiziertes Methylpolysiloxan
NB-1701	7% Phenyl-, 7% Cyanopropyl-Methylsiloxan
NB-20M	Polyethylenglycol (PEG)
NB-351	Nitroterephthalat modifiziertes PEG
NB17	50% Phenyl-Methylpolysiloxan
NB-9C	68% Cyanopropyl-Methylsiloxan
NS-BDS	Butadienolsuccinat
NS-Amin	Polyethylenglycol
NB-225	25% Phenyl-, 25% Cyanopropyl-Methylsiloxan

Äquivalente Phasen

NORDION	HP / AGILENT	SGE	J&W / AGILENT	ALLTECH	RESTEK	CHROMPACK	SUPELCO	QUADREX	OHIO VALLEY	PHENO- MENEX
NB-1, NB-30	HP-1, Ultra-1	BP1	DB-1, SE30	AT-1	Rtx-1	CP-SIL 5CB	SPB-1	007-1	OV-1	ZB-1
NB-5ms	HP-5ms		DB-5ms		Rtx-5ms		SLB-5ms			ZB-5ms
NB-54	HP-5, Ultra-2	BP5	DB-5, SE54	AT-5	Rtx-5	CP-SIL 8CB	SPB-5, PTE-5	007-2	OV-1701	ZB-5
NB-311	HP-Voc	BP624	DB-624	AT-624	Rtx-624	CP-Select-624CB	Vocol	007-624		ZB-624
NB-1701	HP-1701	BP10	DB-1701	AT-1701	Rtx-1701	CP-SIL 19CB	SPB-1701	007-1701		ZB-1701
NB-20M	HP-Innowax	BP20	DB-WAX	AT-WAX	Stabilwax	CP-WAX 52CB	Suplecowax10	007-CW	Carbowax	ZB-WAX
NB-351	HP-FFAP	BP21	DB-FFAP	AT-1000	Stabilw.DA	CP-WAX 58CB	CNUKOL	007-FFAP	OV-351	ZB-FFAP
NB-17	HP-17	BPX-50	DB-17	AT-50	Rtx-50	CP-SIL 24CB	SPB-50	007-17	OV-17	ZB-50
NB-9C							SP-2330	007-23		
NB-225	HP225	BP15	DB-225	AT-225	Rtx-225	CP-SIL 43 CB	SPB-225	007-225	OV-225	

Artikel-Nummer

Phase	Film	ID 0.20 mm			0.25 mm		0.32 mm					0.53 mm	
		15m	25m	50m	30m	60m	15m	25m	30m	50m	60m	15m	25m
NB-1	0.10 µ	906000	906010	906020	906011	906021	906030	906040	906041	906050	906051	-	-
	0.25 µ	-	-	-	910411	910421	-	-	910441	-	910451	-	-
	1.00 µ	-	-	-	910481	910491	-	-	910501	-	910511	-	-
NB-30	0.25 µ	906060	906070	906080	906071	906081	906090	906100	906101	906110	906111	-	-
	0.50 µ	-	-	-	916141	916151	-	905850	916171	906800	916181	-	-
	1.00 µ	906120	906130	-	906131	906141	906150	906160	906161	906170	906171	909030	909040
	3.00 µ	-	-	-	916211	916221	906155	906165	906166	-	906176	-	-
NB-5 = NB-54	0.10 µ	90618	906190	906200	906191	906201	906210	906220	906221	906230	906231	-	-
	0.25 µ	906240	906250	906260	906251	906261	906270	906280	906281	906290	906291	-	-
	0.50 µ	-	-	-	916251	916261	-	905860	916271	-	916281	-	-
	1.00 µ	906300	906310	-	906311	906321	906330	906340	906341	906350	906351	909150	909160
	3.00 µ	-	-	-	-	-	906355	906345	-	-	-	909170	909180
	5.00 µ	-	-	-	-	-	-	-	-	-	-	909190	909200
NB-5ms	0.10 µ	-	-	-	906195	906205	-	-	906225	-	906235	-	-
	0.25 µ	-	-	-	906255	906265	-	-	906285	-	906295	-	-
	0.50 µ	-	-	-	916255	916265	-	-	916275	-	916285	-	-
	1.00 µ	-	-	-	906315	906325	-	-	906345	-	906355	-	-
NB-311	0.50 µ	-	-	-	-	-	906945	906955	-	-	-	-	-
	1.00 µ	-	-	-	-	-	906960	906970	-	-	-	-	-
	1.40 µ	-	-	-	916311	916321	-	-	-	-	-	-	-
	1.50 µ	-	-	-	-	-	-	-	-	-	-	909290	909300
	1.80 µ	-	-	-	-	-	-	-	906971	-	906976	-	-
	3.00 µ	-	-	-	-	-	906980	906990	-	-	-	909310	909320
NB-1701	0.10 µ	906360	906370	906380	906371	906381	906390	906400	906401	906410	906411	-	-
	0.25 µ	906420	906430	906440	906431	906441	906450	906460	906461	906470	906471	-	-
	1.00 µ	906480	906490	-	906491	906501	906510	906520	906521	906530	906531	-	-
NB-20M	0.20 µ	906660	906670	906680	-	-	906690	906700	-	906710	-	-	-
	0.25 µ	-	-	-	906671	906681	-	-	906701	-	906711	-	-
	0.35 µ	-	-	-	-	-	-	-	-	906830	-	-	-
	0.50 µ	906720	906730	-	906731	906741	906750	906760	906761	906770	906771	-	-
	1.00 µ	-	-	-	-	-	906755	906765	-	-	-	909450	909460
NB-351	0.20 µ	906840	906850	906860	906851	906861	906870	906880	906881	906890	906891	-	-
	0.50 µ	906900	906910	-	906911	906921	906930	906940	906941	906950	906951	-	-
	1.00 µ	-	-	-	-	-	-	-	-	-	-	909650	909660
NB-17	0.10 µ	910000	910010	-	910011	910021	910030	910040	910041	910050	910051	-	-
	0.25 µ	910060	910070	-	910071	910081	910090	910100	910101	910110	910111	-	-
	0.50 µ	-	-	-	916461	916471	-	-	916491	-	916501	-	-
	1.00 µ	-	-	-	916551	916561	-	-	916581	-	916591	-	-
NB-9C	0.10 µ	910120	910130	910140	910131	910141	910150	910160	910161	910170	910171	-	-
	0.20 µ	-	-	-	910193	910203	910210	910220	910223	910230	910233	-	-
	0.25 µ	-	-	-	910191	910201	-	-	910221	-	910231	909540	909550
	0.50 µ	-	-	-	-	-	-	-	-	-	-	-	-
NS-BDS	0.20 µ	907360	907370	906380	-	-	907390	842.-	-	907410	-	-	-
NS-Amin	0.20 µ	907560	907570	907580	-	-	907590	842.-	-	907610	-	-	-
NB-225	0.10 µ	906540	906550	906560	-	-	906570	842.-	-	906590	-	-	-
	0.25 µ	906600	906610	906620	-	-	906630	842.-	-	906650	-	-	-

Applikationen

Substanzgruppen	Substanzen	Empfohlene Nordibond GC-Säulen
Pestizide	Pestizide aus Karottenextrakten	NB-54, 25m x 0.32mm ID x 0.25µ Film
		NB-1701, 25m x 0.32mm ID x 0.25µ Film
	Organophosphat-Pestizide	NB-1701, 25m x 0.32mm ID x 0.25µ Film
	Chlorinierte Pestizide (EPA 608)	NB-311, 25m x 0.32mm ID x 0.50µ Film
	Herbizide im ppm-Bereich	NB-1701, 25m x 0.32mm ID x 0.25µ Film
		NB-54, 25m x 0.32mm ID x 0.25µ Film
	Triazine	NB-54, 25m x 0.32mm ID x 0.25µ Film
Phenols	Phenols in Wasser	NB-20M, 25m x 0.32mm ID x 0.20µ Film
	Acetyl. Chlorphenols	NB-54E, 25m x 0.32mm ID x 0.25µ Film
	Freie Chlorphenols	NB-351, 25m x 0.32mm ID x 0.20µ Film
PCB's	PCB congeners	NB-9C, 25m x 0.32mm ID x 0.20µ Film
	PCB's in Fischleber	NB-54, 25m x 0.32mm ID x 0.25µ Film
		NB-1701, 25m x 0.32mm ID x 0.25µ Film
	Trihalomethanes	NB-1701, 25m x 0.53mm ID x 1.0µ Film
		NB-311, 15m x 0.53mm ID x 1.50µ Film
	Arochlor 1254	NB-9C, 25m x 0.32mm ID x 0.20µ Film
PAH's	Polyzyklische aromatische KW	NB-54, 25m x 0.32mm ID x 0.10µ Film
		NB-1701, 25m x 0.32mm ID x 0.10µ Film
Aromaten	Aromaten	NB-20M, 25m x 0.32mm ID x 0.50µ Film
		NB-311, 25m x 0.32mm ID x 1.00µ Film
		NB-20M, 25m x 0.32mm ID x 0.20µ Film
Halogenierte KW	Chlorbenzole	NB-20M, 25m x 0.32mm ID x 0.50µ Film
	Halogenierte Kohlenwasserstoffe	NB-20M, 25m x 0.32mm ID x 0.50µ Film
		NB-20M, 25m x 0.32mm ID x 1.0µ Film
Formaline	Formalin	NB-20M, 25m x 0.32mm ID x 1.0µ Film
Lösungsmittel, Alkohole	Lösungsmittel	NB-1701, 25m x 0.32mm ID x 1.0µ Film
		NB-54, 25m x 0.32mm ID x 1.0µ Film
		NB-20M, 25m x 0.32mm ID x 0.20µ Film
Arzneimittel	Alkohole in Wasser	NB-20M, 25m x 0.32mm ID x 0.50µ Film
	Drugs	NB-54, 25m x 0.32mm ID x 0.25µ Film
	Benzodiazepine	NB-54, 25m x 0.32mm ID x 1.0µ Film
		NB-1701, 25m x 0.32mm ID x 0.1µ Film
	Antidepressiva	NB-54, 15m x 0.32mm ID x 0.25µ Film
		NB-1701, 15m x 0.32mm ID x 0.25µ Film
	Antiepileptica	NB-54, 25m x 0.32mm ID x 0.10µ Film
		NB-1701, 25m x 0.32mm ID x 0.1µ Film
Steroide	Barbiturate	NB-1701, 25m x 0.32mm ID x 0.25µ Film
	Amine	NS-Amine, 25m x 0.32mm ID x 0.20µ Film
Fettsäuren	Steroide	NB-54, 25m x 0.32mm ID x 0.10µ Film
	Fischöl, FAME	NB-351, 25m x 0.32mm ID x 0.20µ Film
	FAME	NB-9C, 25m x 0.32mm ID x 0.20µ Film
Harze	Freie Fettsäuren in Wasser	NB-351, 25m x 0.32mm ID x 0.20µ Film
	Methylierte Harze	NB-9C, 25m x 0.32mm ID x 0.20µ Film
		NS-BDS, 50m x 0.32mm ID x 0.20µ Film

NB-54

25 m x 0.32 mm, 0.25 µm

NB-1701

25 m x 0.32 mm, 0.25 µm

Carrot Extract

Program: 50° (2 min) → 20°/min 150° → 6°/min 270° (5 min)

Splitless time: 45 s

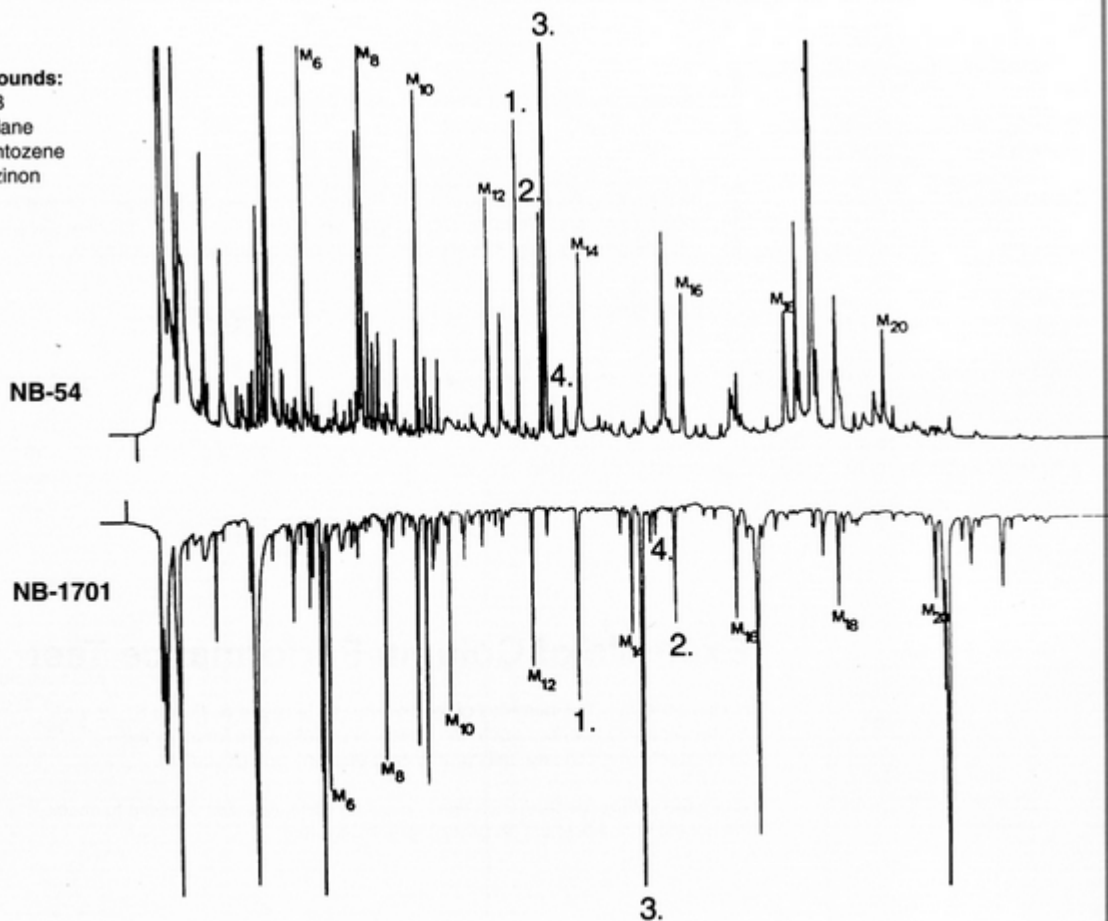
Carrier gas: He 2.0 ml/min

Detectors: 2 x ECD

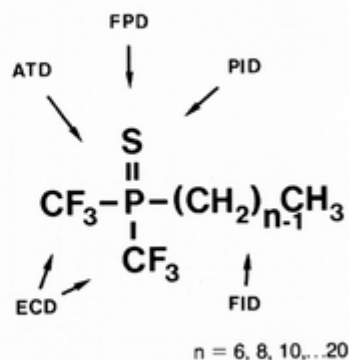
Analysis time: 30 min

Compounds:

1. HCB
2. Lindane
3. Quintozene
4. Diazinon

**M-series**

HNU-NORDION has designed and synthesized a homologous series of retention index compounds. These compounds can be used with all common gas chromatographic detectors and they generate an ideal retention scale for GC-analysis.



n-Alkylbis(trifluoromethyl)phosphine sulfides

NB-1701

25 m x 0.32 mm, 0.25 µm

Organophosphorus Pesticides

Program: 50° (2 min) → 20°/min 150° → 6°/min 280° (10 min)

Splitless time: 45 s

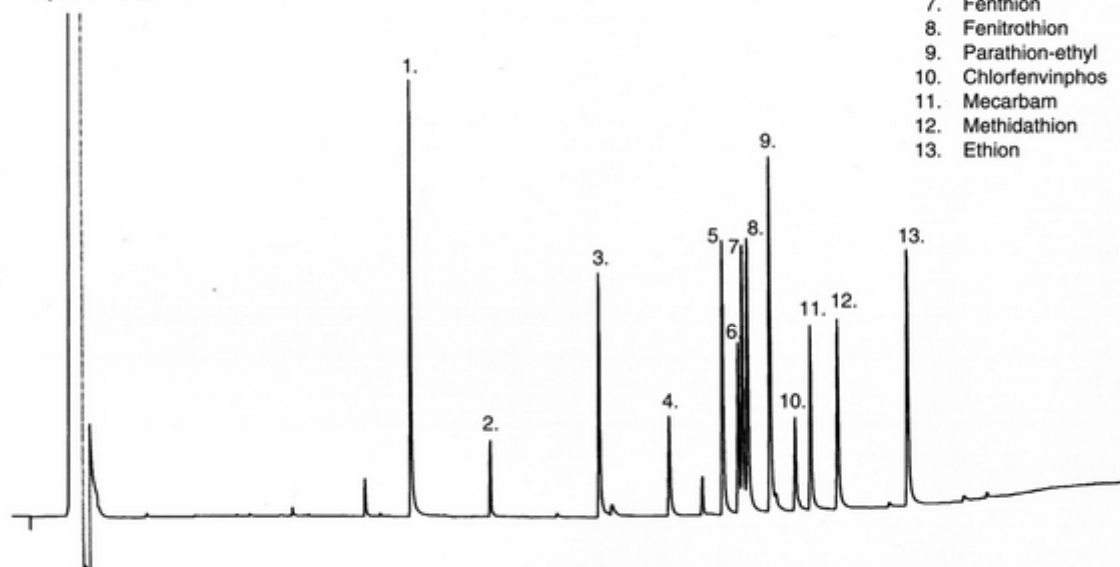
Carrier gas: He 2 ml/min

Detector: ATD (NPD)

Analysis time: 26 min

Compounds:

1. Chlormephos
2. Azobenzene
3. Diazinon
4. Dimethoate
5. Parathion-methyl
6. Malathion
7. Fenthion
8. Fenitrothion
9. Parathion-ethyl
10. Chlorfenvinphos
11. Mecarbam
12. Methidathion
13. Ethion



NB-311

25 m x 0.32 mm, 0.50 µm

Chlorinated Pesticides (EPA 608)

Program: 50° (2 min) → 20°/min 200° → 6°/min 260°

Splitless time: 45 s

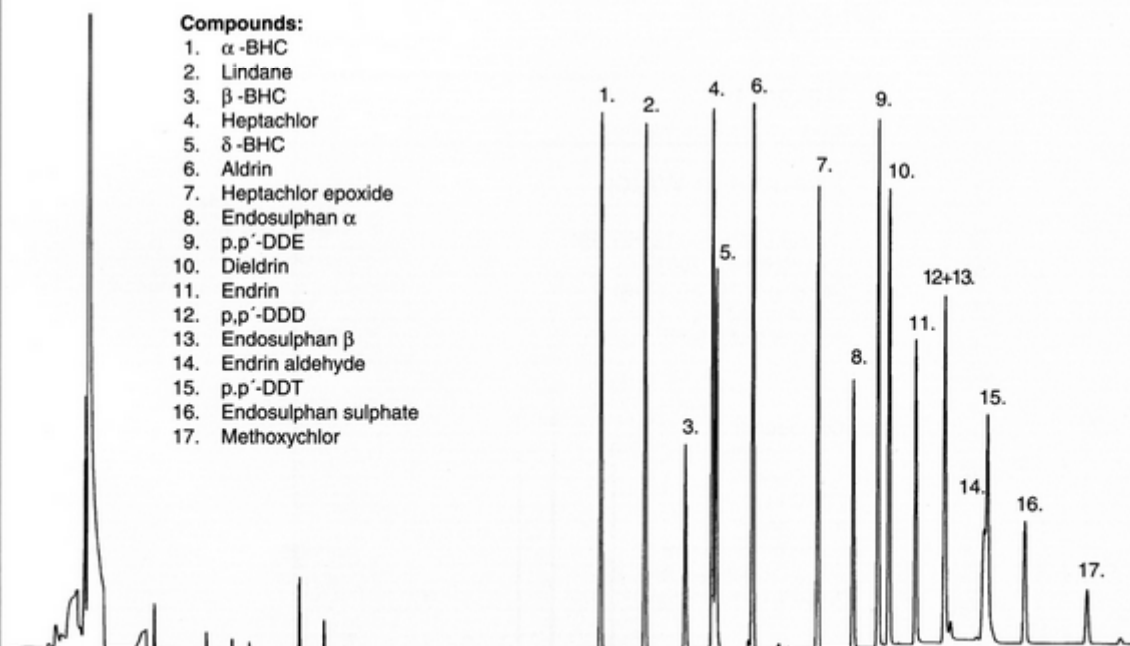
Carrier gas: He 2 ml/min

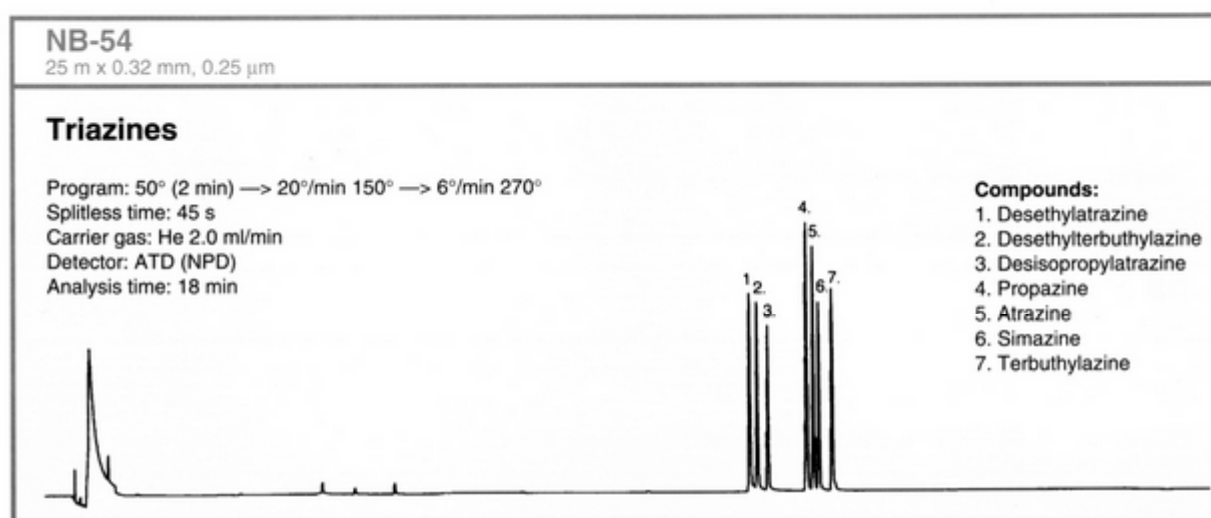
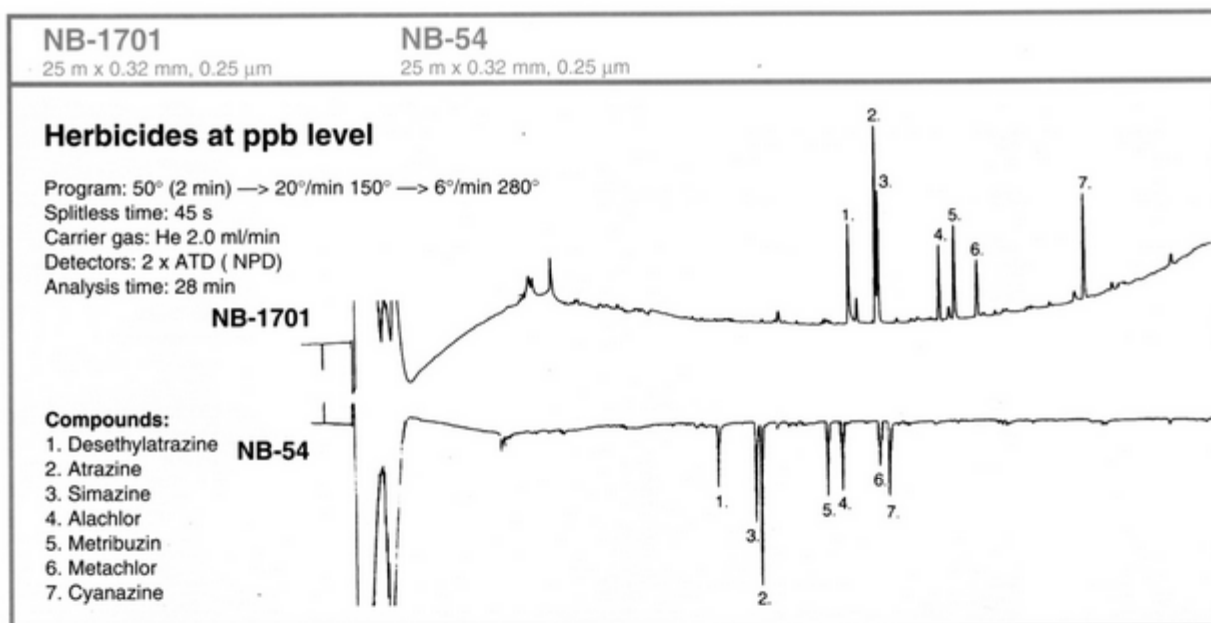
Detector: ECD

Analysis time: 32 min

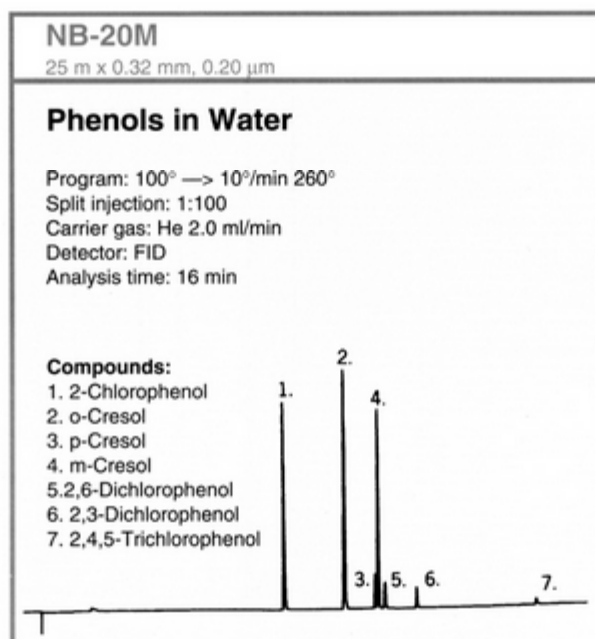
Compounds:

1. α-BHC
2. Lindane
3. β-BHC
4. Heptachlor
5. δ-BHC
6. Aldrin
7. Heptachlor epoxide
8. Endosulphan α
9. p,p'-DDE
10. Dieldrin
11. Endrin
12. p,p'-DDD
13. Endosulphan β
14. Endrin aldehyde
15. p,p'-DDT
16. Endosulphan sulphate
17. Methoxychlor





PHENOLS



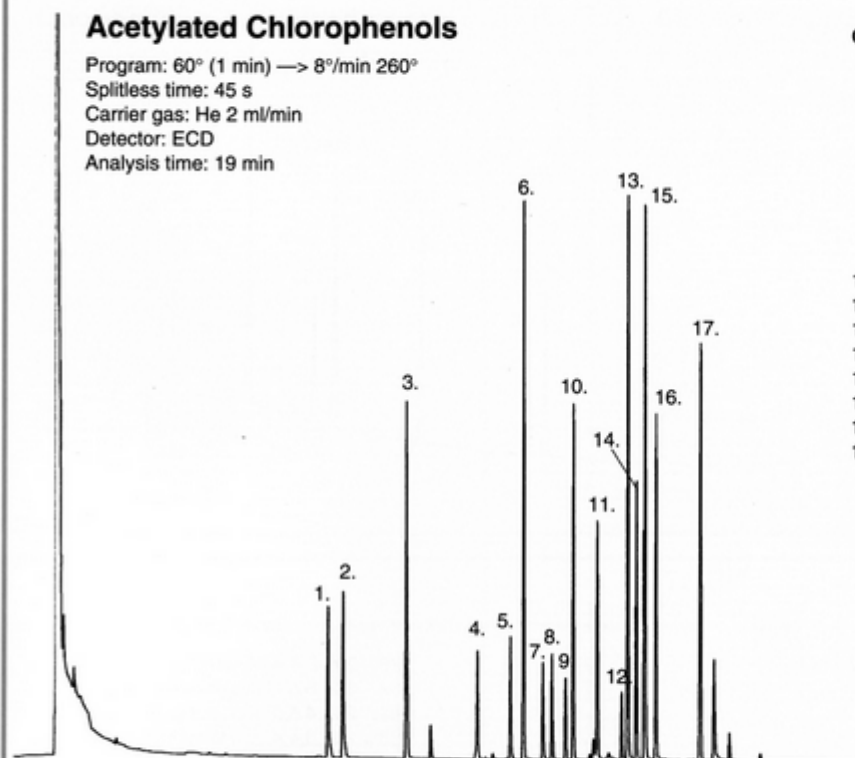
NB-54E25 m x 0.32 mm, 0.25 μ m**Acetylated Chlorophenols**Program: 60° (1 min) $\rightarrow$ 8°/min 260°

Splitless time: 45 s

Carrier gas: He 2 ml/min

Detector: ECD

Analysis time: 19 min

**Compounds:**

1. 2,6-Dichlorophenol
2. 2,4-Dichlorophenol
3. 2,4,6-Trichlorophenol
4. 4,6-Dichloroquaiacol
5. 4,5-Dichloroquaiacol
6. 2,3,4,6-Tetrachlorophenol
7. 6-Monochlorovanillin
8. 3,4-Dichlorocatechol
9. 4,5-Dichlorocatechol
10. 3,4,5-Trichloroquaiacol
11. 4,5,6-Trichloroquaiacol
12. 5,6-Dichlorovanillin
13. Pentachlorophenol
14. 3,4,5-Trichlorocatechol
15. Tetrachloroquaiacol
16. 3,4,5-Trichlorodimethoxyphenol
17. Tetrachlorocatechol

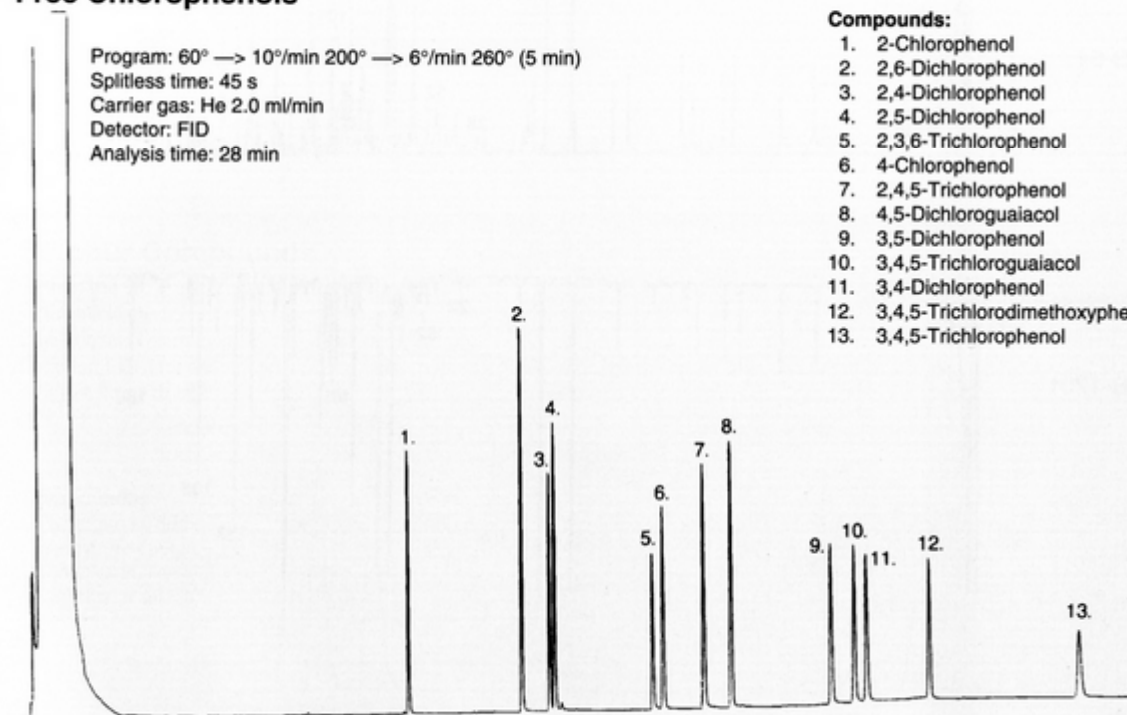
NB-35125 m x 0.32 mm, 0.20 μ m**Free Chlorophenols**Program: 60° $\rightarrow$ 10°/min 200° $\rightarrow$ 6°/min 260° (5 min)

Splitless time: 45 s

Carrier gas: He 2.0 ml/min

Detector: FID

Analysis time: 28 min

**Compounds:**

1. 2-Chlorophenol
2. 2,6-Dichlorophenol
3. 2,4-Dichlorophenol
4. 2,5-Dichlorophenol
5. 2,3,6-Trichlorophenol
6. 4-Chlorophenol
7. 2,4,5-Trichlorophenol
8. 4,5-Dichloroquaiacol
9. 3,5-Dichlorophenol
10. 3,4,5-Trichloroquaiacol
11. 3,4-Dichlorophenol
12. 3,4,5-Trichlorodimethoxyphenol
13. 3,4,5-Trichlorophenol

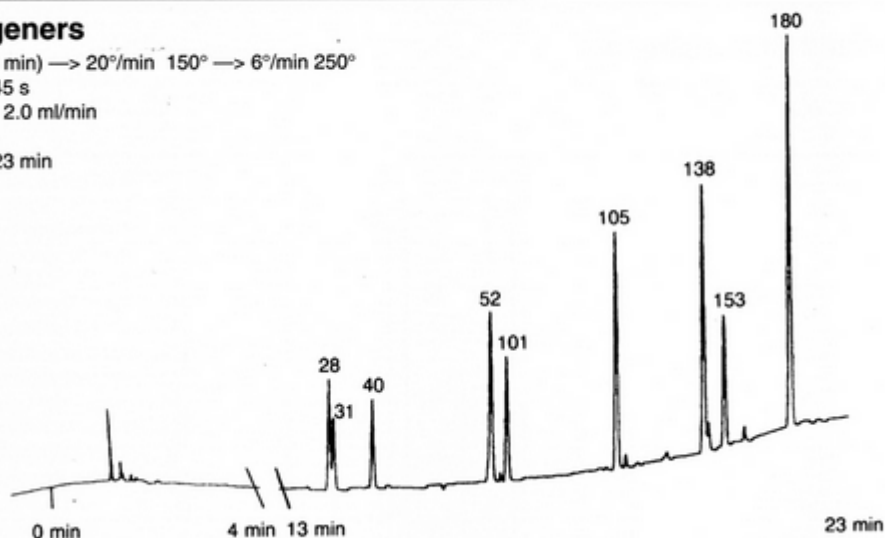
NB-9C25 m x 0.32 mm, 0.20 μ m**PCB congeners**Program: 60° (1 min) $\rightarrow$ 20°/min 150° $\rightarrow$ 6°/min 250°

Splitless time: 45 s

Carrier gas: He 2.0 ml/min

Detector: ECD

Analysis time: 23 min

**NB-54**25 m x 0.32 mm, 0.25 μ m**NB-1701**25 m x 0.32 mm, 0.25 μ m**PCB's in Cod Liver Oil**Program: 60° (1 min) $\rightarrow$ 25°/min 120° $\rightarrow$ 6°/min 270°

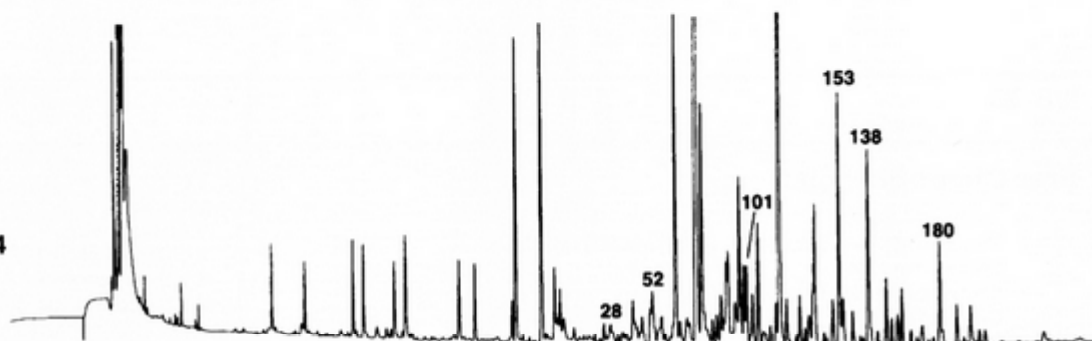
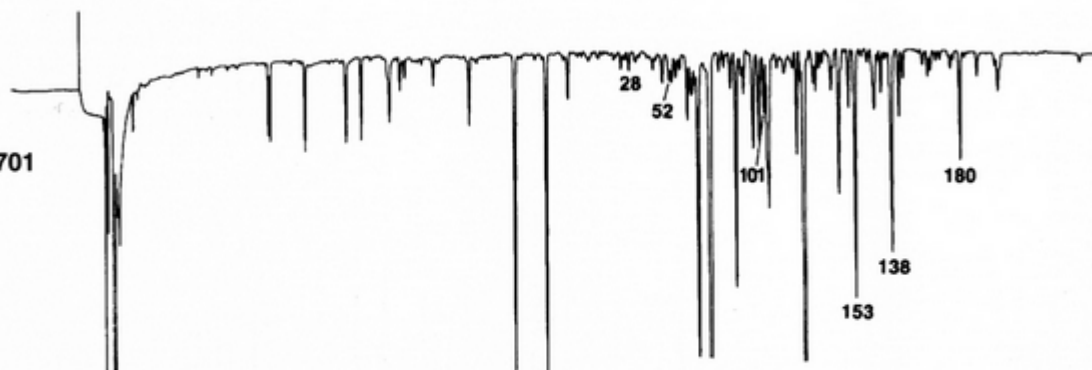
Splitless time: 45 s

Carrier gas: He 2.5 ml/min

Detectors: 2 x ECD

Analysis time: 22 min

- 28. 2,4,4'-Trichlorobiphenyl
- 52. 2,2',5,5'-Tetrachlorobiphenyl
- 101. 2,2',4,5,5'-Pentachlorobiphenyl
- 138. 2,2',3,4,4',5'-Hexachlorobiphenyl
- 153. 2,2',4,4',5,5'-Hexachlorobiphenyl
- 180. 2,2',3,4,4',5,5'-Heptachlorobiphenyl

NB-54**NB-1701**

NB-9C

25 m x 0.32 mm, 0.20 µm

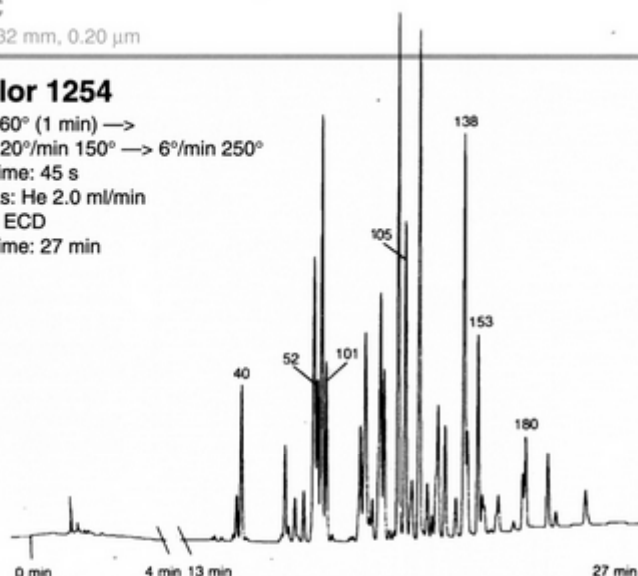
Arochlor 1254Program: 60° (1 min) →
20°/min 150° → 6°/min 250°

Splitless time: 45 s

Carrier gas: He 2.0 ml/min

Detector: ECD

Analysis time: 27 min

**PAH's****NB-54**

25 m x 0.32 mm, 0.10 µm

NB-1701

25 m x 0.32 mm, 0.10 µm

Polycyclic Aromatic Hydrocarbons

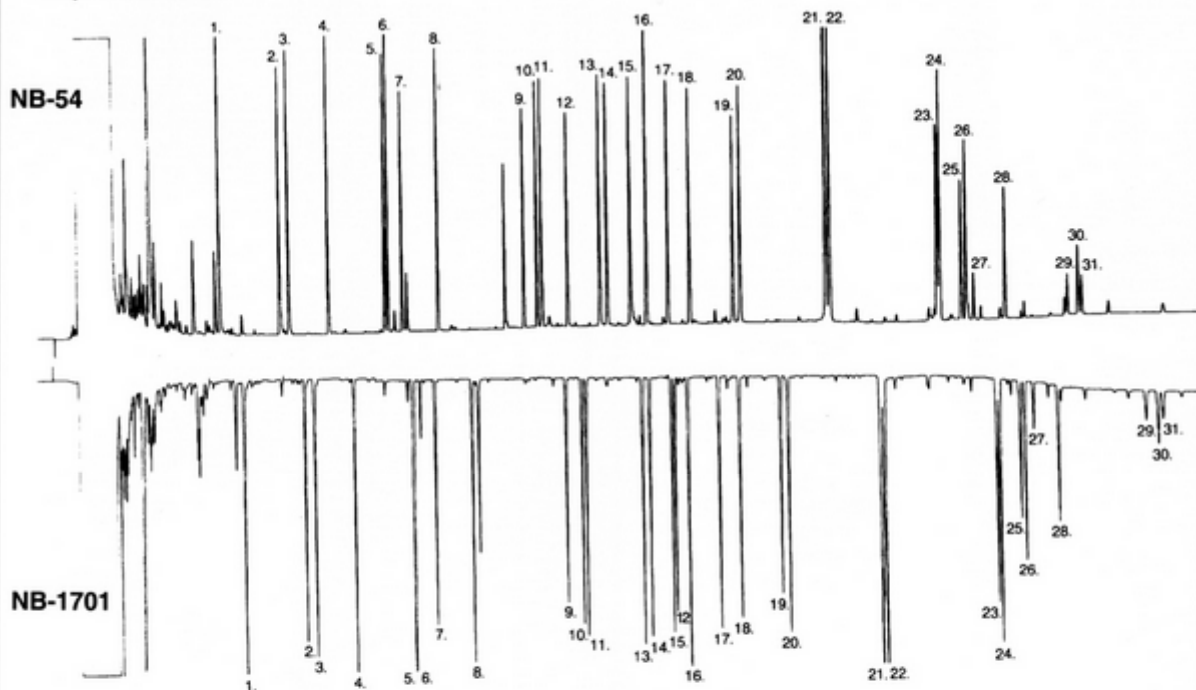
Program: 60° → 6°/min 300° (10 min)

Splitless time: 1 min

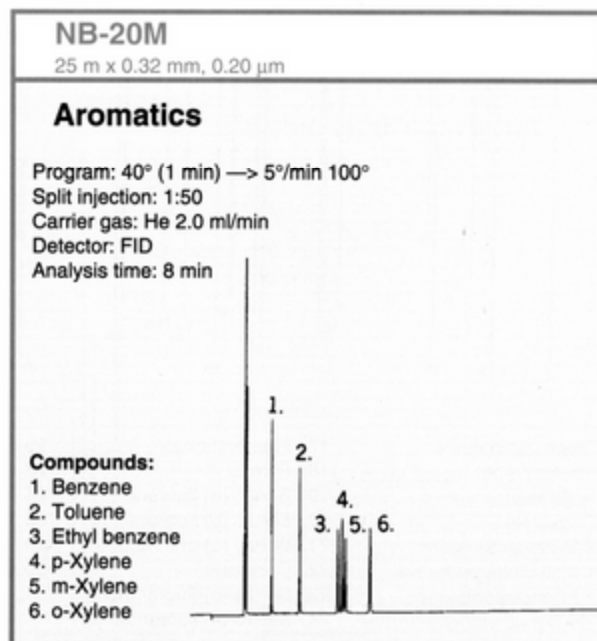
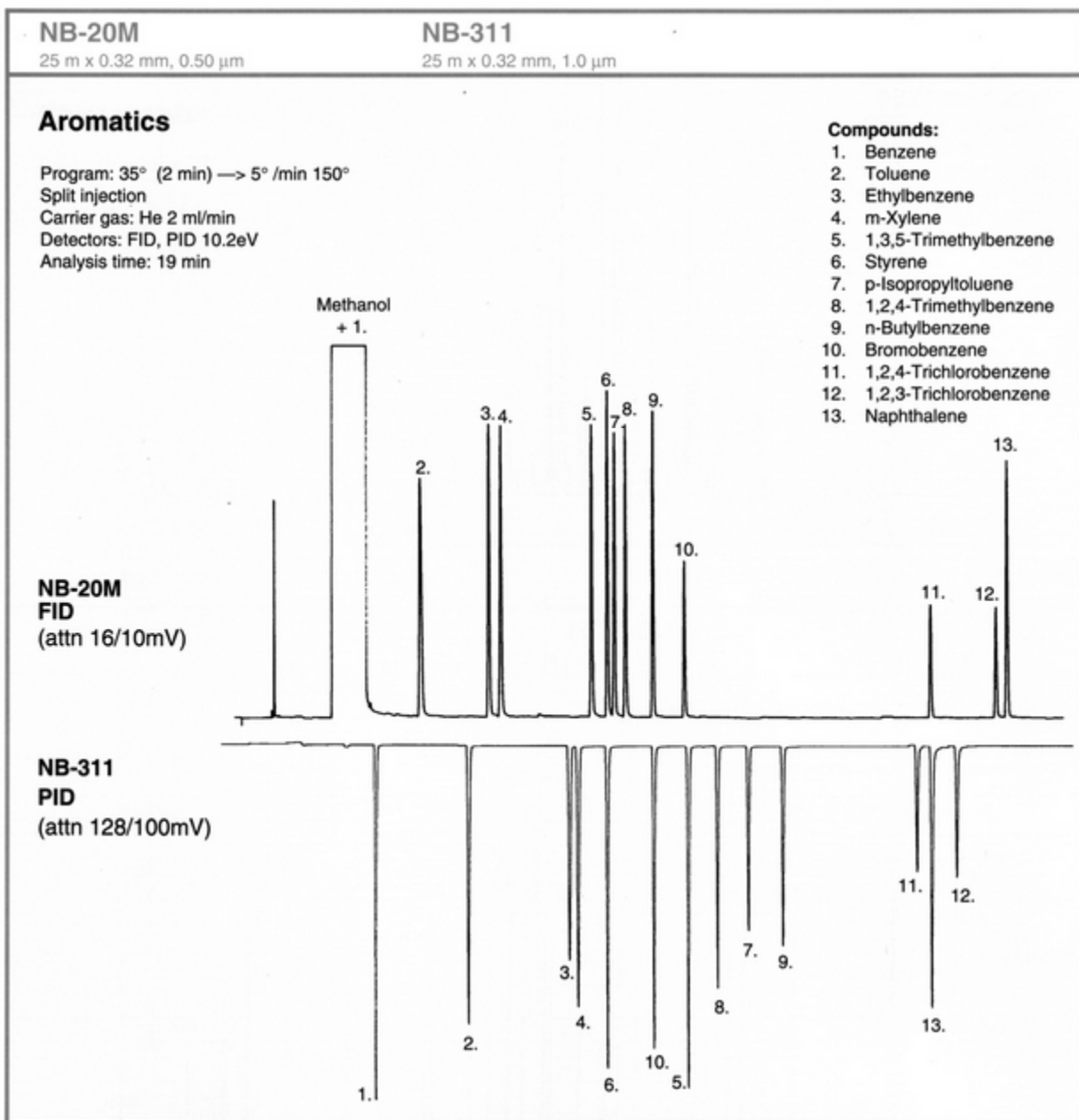
Carrier gas: He 2.5 ml/min

Detectors: 2 x FID

Analysis time: 49 min

**Compounds:**

- | | | | |
|------------------------|------------------------------|----------------------------|-------------------------------|
| 1. Naphthalene | 9. Dibenzothiophene | 17. Fluoranthene | 25. Benzo (e) pyrene |
| 2. 2-Methylnaphthalene | 10. Phenanthrene | 18. Pyrene | 26. Benzo (a) pyrene |
| 3. 1-Methylnaphthalene | 11. Anthracene | 19. Benzo (a) fluorene | 27. Perylene |
| 4. Biphenyl | 12. Carbazole | 20. Benzo (b) fluorene | 28. 3-Methylchloanthrene |
| 5. Acenaphthene | 13. 2-Methylanthracene | 21. Benzo (a) anthracene | 29. Dibenzo (a, h) anthracene |
| 6. 6-Methylbiphenyl | 14. 1-Methylphenanthrene | 22. Chrycene | 30. Picene |
| 7. Dibenzofuran | 15. 2-Phenylnaphthalene | 23. Benzo (b) fluoranthene | 31. Benzo (g, h, i) perylene |
| 8. Fluorene | 16. 3,6-Dimethylphenanthrene | 24. Benzo (k) fluoranthene | |



NB-20M25 m x 0.32 mm, 0.50 μ m**NB-311**25 m x 0.32 mm, 1.0 μ m**Aromatics**Program: 35° (2 min) $\rightarrow$ 5°/min 150°

Split injection

Carrier gas: He 2 ml/min

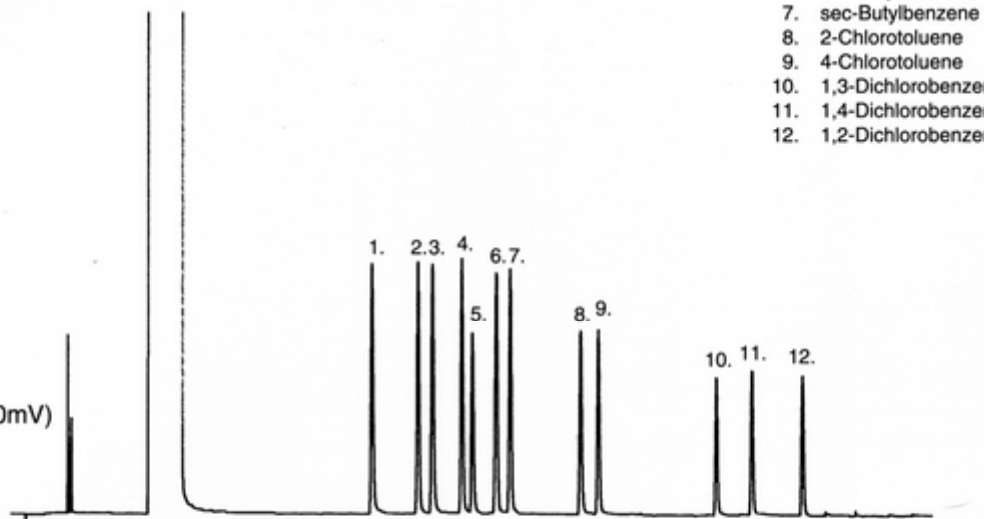
Detectors: FID, PID 10.2eV

Analysis time: 19 min

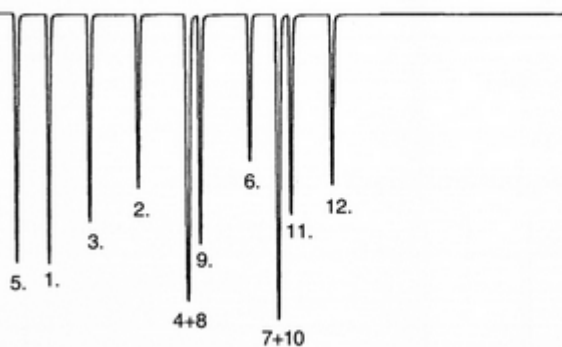
Compounds:

1. p-Xylene
2. Isopropylbenzene
3. o-Xylene
4. n-Propylbenzene
5. Chlorobenzene
6. tert-Butylbenzene
7. sec-Butylbenzene
8. 2-Chlorotoluene
9. 4-Chlorotoluene
10. 1,3-Dichlorobenzene
11. 1,4-Dichlorobenzene
12. 1,2-Dichlorobenzene

NB-20M
FID
(attn 16/10mV)



NB-311
PID
(attn 128/100mV)



NB-20M25 m x 0.32 mm, 0.50 μ m**Halogenated Hydrocarbons**Program: 35° (5 min) $\rightarrow$ 15°/min 150°

Split injection

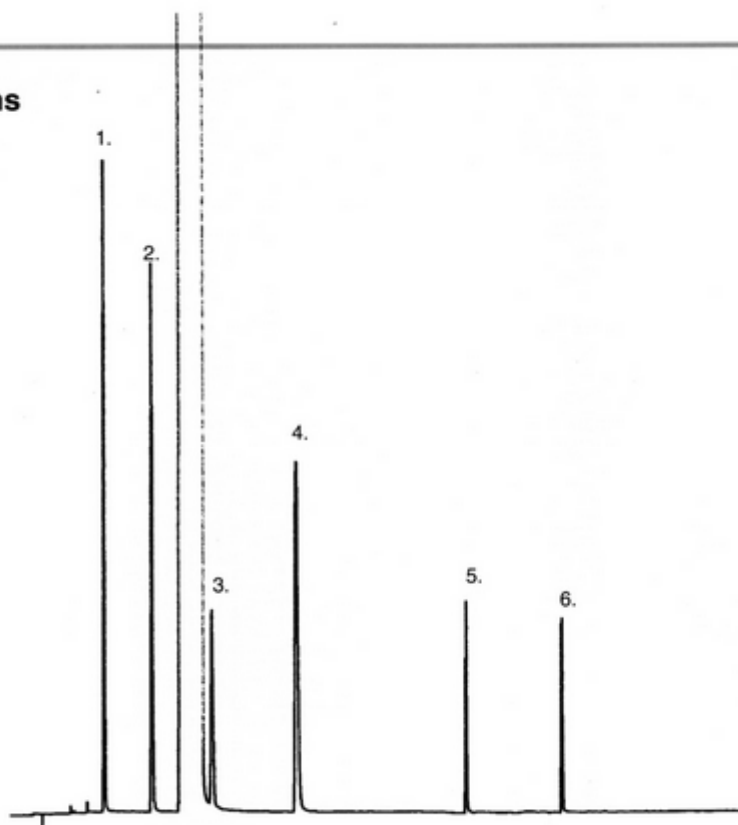
Carrier gas: He 2 ml/min

Detector: FID

Analysis time: 11 min

Compounds:

1. 1,1-Dichloroethylene
2. trans-1,2-Dichloroethylene
3. Dichloromethane
4. cis-1,2-Dichloroethylene
5. Bromodichloromethane
6. Dibromochloromethane

**NB-20M**25 m x 0.32 mm, 0.50 μ m**Halogenated Hydrocarbons**Program: 35° (2 min) $\rightarrow$ 5°/min 180°

Split injection

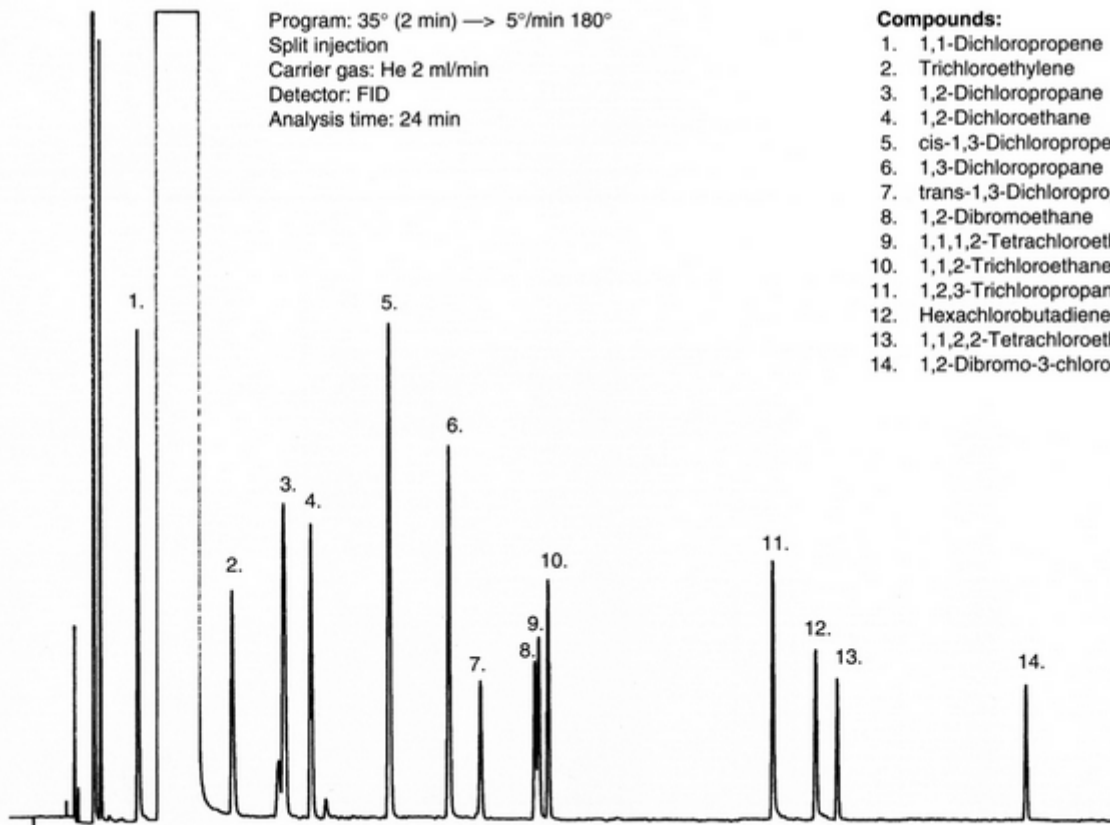
Carrier gas: He 2 ml/min

Detector: FID

Analysis time: 24 min

Compounds:

1. 1,1-Dichloropropene
2. Trichloroethylene
3. 1,2-Dichloropropane
4. 1,2-Dichloroethane
5. cis-1,3-Dichloropropene
6. 1,3-Dichloropropane
7. trans-1,3-Dichloropropene
8. 1,2-Dibromoethane
9. 1,1,1,2-Tetrachloroethane
10. 1,1,2-Trichloroethane
11. 1,2,3-Trichloropropane
12. Hexachlorobutadiene
13. 1,1,2,2-Tetrachloroethane
14. 1,2-Dibromo-3-chloropropane



NB-20M25 m x 0.32 mm, 0.50 μ m**Chlorobenzenes**Program: 40° (2 min) $\rightarrow$ 8°/min 220°

Split injection

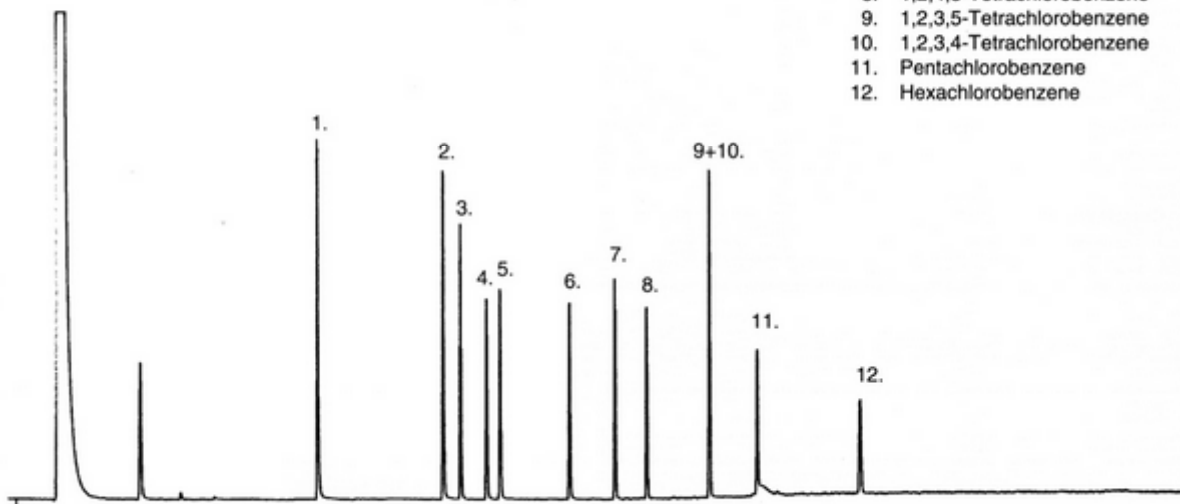
Carrier gas: He 2.0 ml/min

Detector: FID

Analysis time: 22 min

Compounds:

1. Chlorobenzene
2. 1,3-Dichlorobenzene
3. 1,4-Dichlorobenzene
4. 1,2-Dichlorobenzene
5. 1,3,5-Trichlorobenzene
6. 1,2,4-Trichlorobenzene
7. 1,2,3-Trichlorobenzene
8. 1,2,4,5-Tetrachlorobenzene
9. 1,2,3,5-Tetrachlorobenzene
10. 1,2,3,4-Tetrachlorobenzene
11. Pentachlorobenzene
12. Hexachlorobenzene

**NB-54**25 m x 0.32 mm, 1.0 μ m**Halogenated Hydrocarbons**Program: 30° (5 min) $\rightarrow$ 10°/min 200°

Split injection

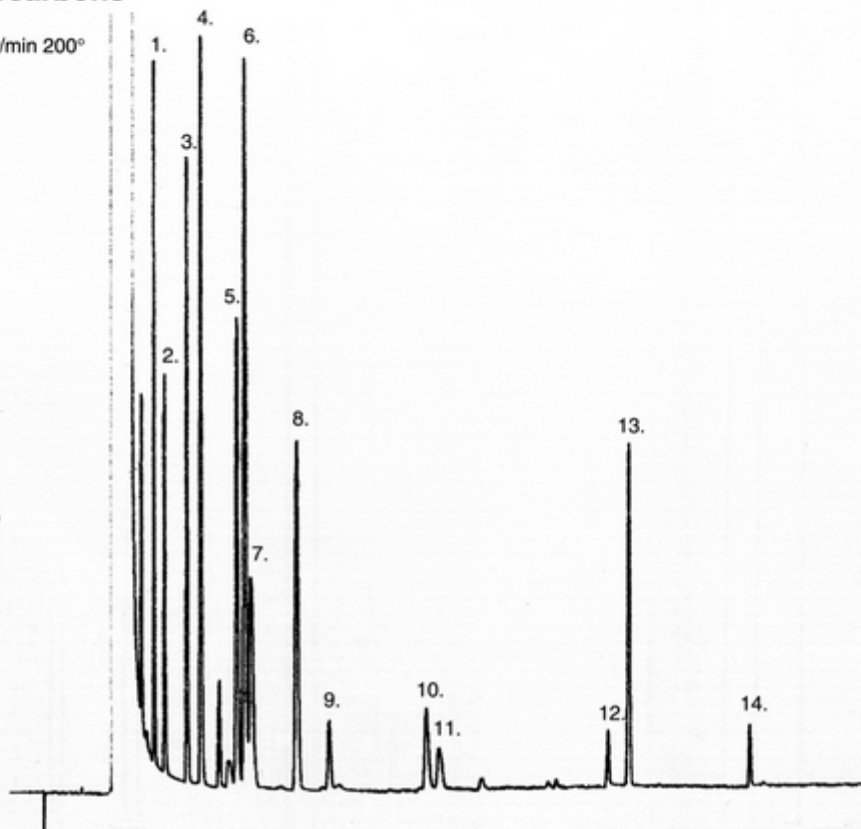
Carrier gas: He 2.0 ml/min

Detector: FID

Analysis time: 12 min

Compounds:

1. 1,1-Dichloroethylene
2. Dichloromethane
3. trans-1,2-Dichloroethylene
4. 1,1-Dichloroethane
5. cis-1,2-Dichloroethylene
6. 2,2-Dichloropropane
7. Chloroform
8. 1,1,1-Trichloroethane
9. Carbontetrachloride
10. Dibromomethane
11. Bromodichloromethane
12. Dibromochloromethane
13. Tetrachloroethylene
14. Bromoform



NB-20M25 m x 0.32 mm, 1.0 μ m**Formaline**Program: 45° (2 min) $\rightarrow$ 10°/min 150°

Split injection

Carrier gas: He 12 ml/min

Detector: PID 11.7 eV

Analysis time: 4 min

Compounds:

1. Formaldehyde
2. Methanol

**ALCOHOLS AND OTHER SOLVENTS****NB-1701**25 m x 0.32 mm, 1.0 μ m**Solvents**

Isothermal temperature 50°

Split injection

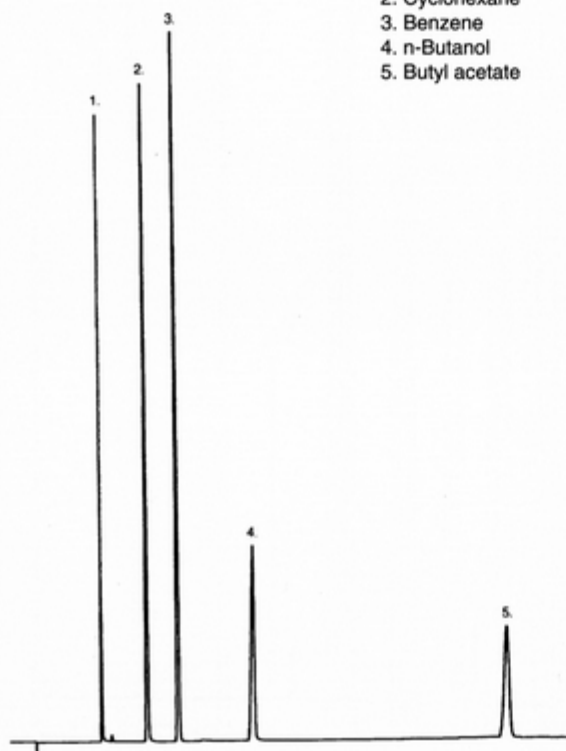
Carrier gas: He 1.5 ml/min

Detector: FID

Analysis time: 13 min

Compounds:

1. Ethanol
2. Cyclohexane
3. Benzene
4. n-Butanol
5. Butyl acetate

**NB-20M**25 m x 0.32 mm, 0.20 μ m**Alcohols in Water**Program: 32° (2 min) $\rightarrow$ 5°/min 80°

Split injection: 1:100

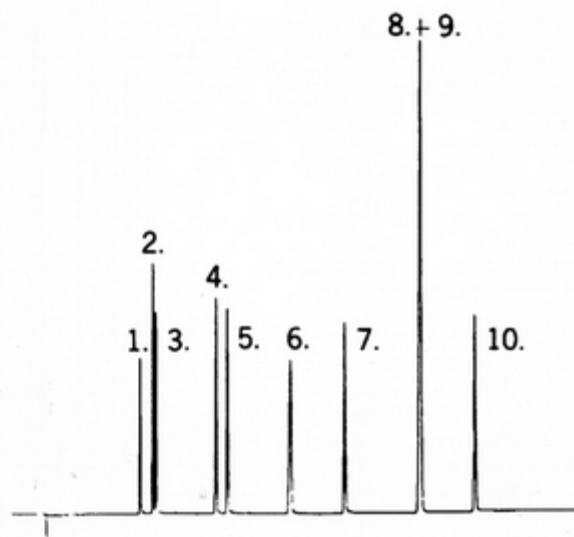
Carrier gas: He 2.0 ml/min

Detector: FID

Analysis time: 10 min

Compounds:

1. Methanol
2. 2-Propanol
3. Ethanol
4. 2-Butanol
5. 1-Propanol
6. 2-Methyl-1-propanol
7. 1-Butanol
8. 2-Methyl-1-butanol
9. 3-Methyl-1-butanol
10. 1-Pentanol



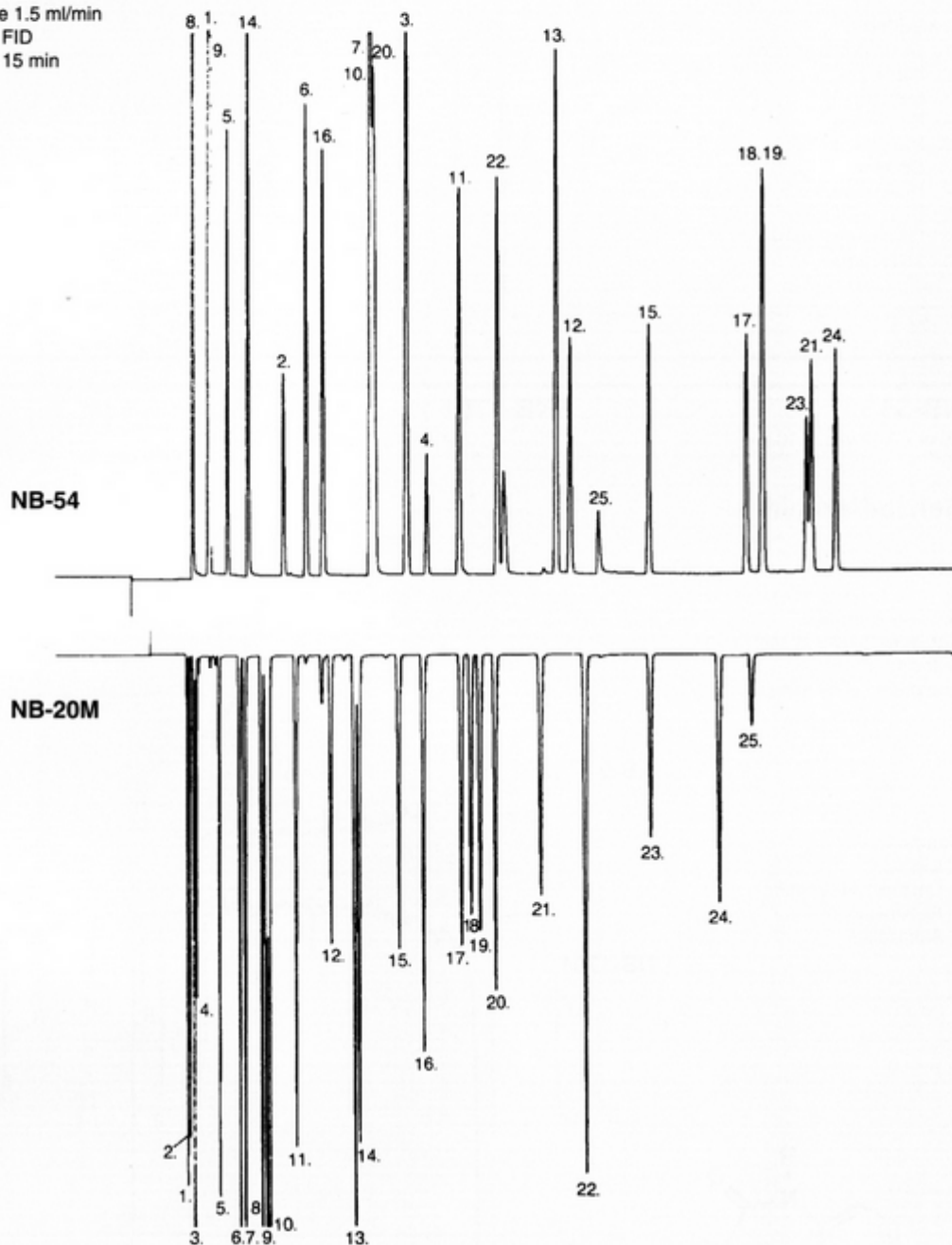
NB-5425 m x 0.32 mm, 1.0 μ m**NB-20M**25 m x 0.32 mm, 0.50 μ m**Solvents**Program: 35° (3 min) $\rightarrow$ 5°/min 100°

Split injection: 1:20

Carrier gas: He 1.5 ml/min

Detectors: 2 x FID

Analysis time: 15 min

**Compounds:**

- | | | |
|---------------------|---------------------|---------------------------|
| 1. Pentane | 10. Benzene | 19. m-Xylene |
| 2. Hexane | 11. Propyl acetate | 20. n-Butanol |
| 3. i-Octane | 12. i-Butyl acetate | 21. o-Xylene |
| 4. Heptane | 13. Toluene | 22. 3-Methyl-1-butanol |
| 5. Methyl acetate | 14. n-Propanol | 23. Styrene |
| 6. Ethyl acetate | 15. Butyl acetate | 24. Cellosolve acetate |
| 7. i-Propyl acetate | 16. i-Butanol | 25. N,N-dimethylformamide |
| 8. Ethanol | 17. Ethyl benzene | |
| 9. i-Propanol | 18. p-Xylene | |

NB-54

25 m x 0.32 mm, 0.25 µm

Drugs

Program: 120° → 10°/min 270° (10 min)

Split injection

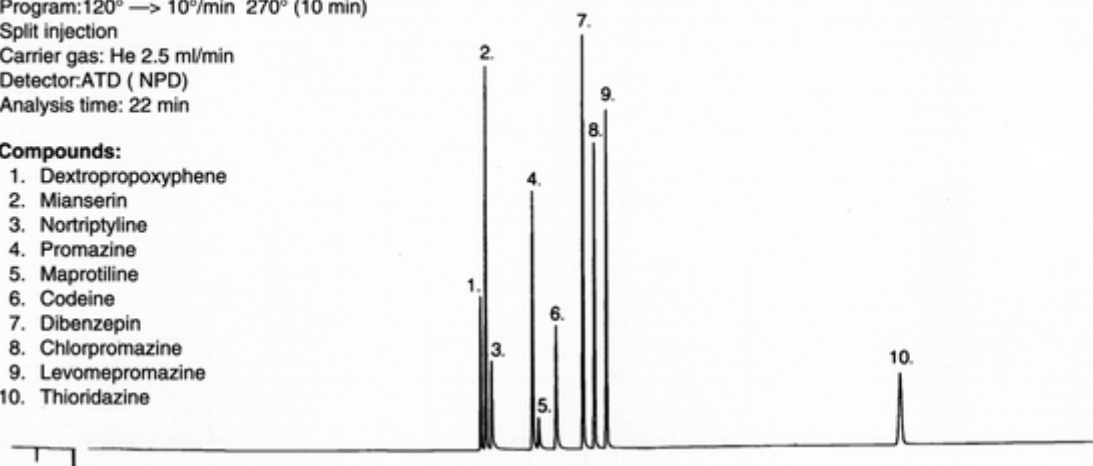
Carrier gas: He 2.5 ml/min

Detector: ATD (NPD)

Analysis time: 22 min

Compounds:

1. Dextropropoxyphene
2. Mianserin
3. Nortriptyline
4. Promazine
5. Maprotiline
6. Codeine
7. Dibenzepin
8. Chlorpromazine
9. Levomepromazine
10. Thioridazine

**NB-54**

25 m x 0.32 mm, 0.10 µm

NB-1701

25 m x 0.32 mm, 0.10 µm

BenzodiazepinesProgram: 130° (0.6 min) → 25°/min 225°
→ 10°/min 290° (4 min)

Splitless time: 36 s

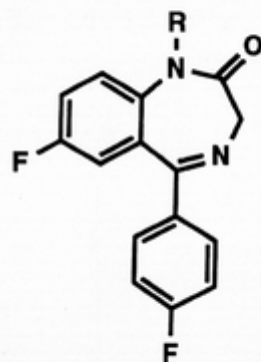
Carrier gas: He 2 ml/min

Detector: 2 x ECD

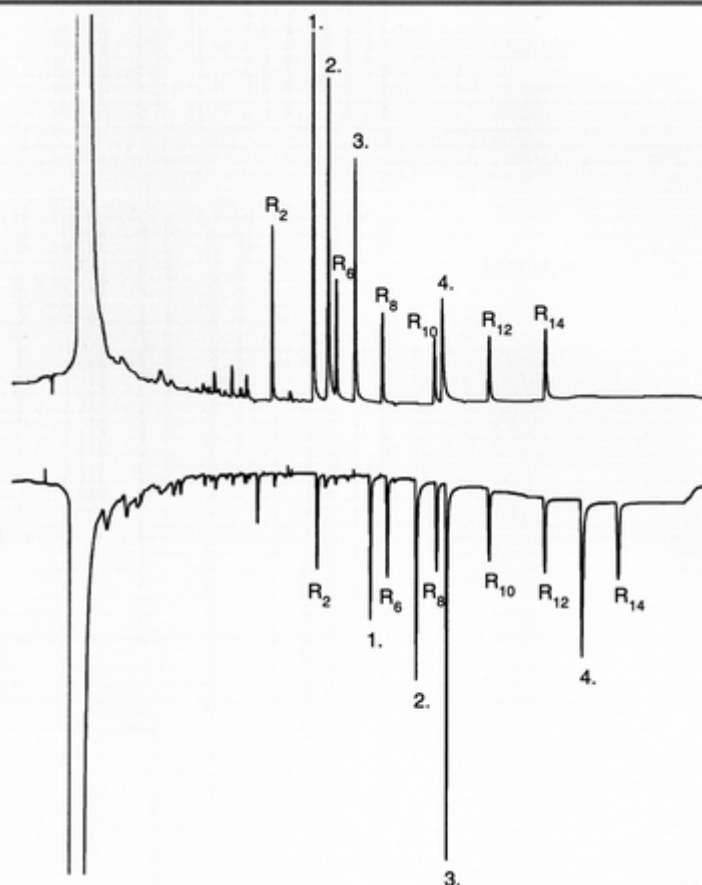
Analysis time: 14 min

Compounds:

1. Diazepam
2. Desmethyldiazepam
3. Flunitrazepam
4. Alprazolam



R = -(CH)_n CH₃
n = 1, 5, 7, 9, 11, 13

NB-54**NB-1701****R-series**

A homologous series of retention index compounds has been designed and synthesized especially for benzodiazepine analysis

NB-5415 m x 0.32 mm, 0.25 μ m**NB-1701**15 m x 0.32 mm, 0.25 μ m**Antidepressant Drugs**Program: 100° $\rightarrow$ 15°/min 290° (7 min)

Split injection

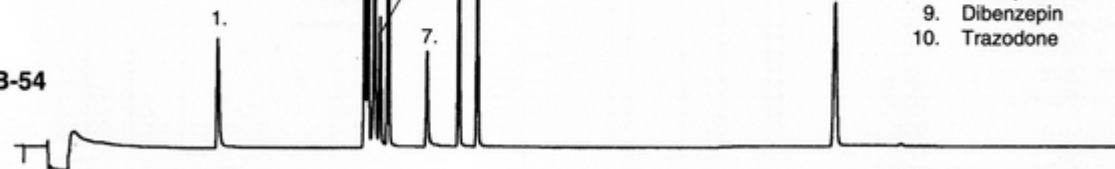
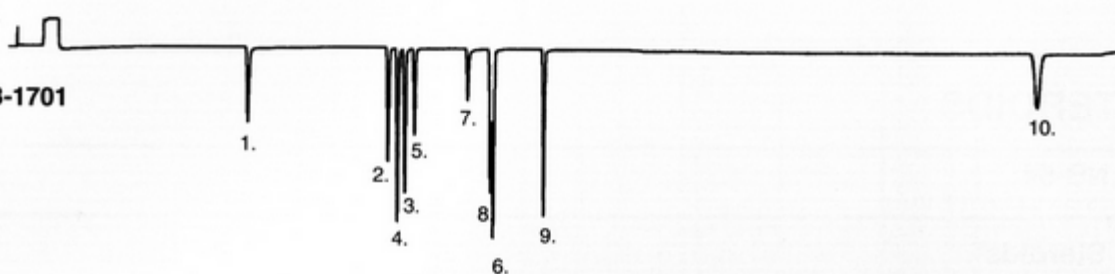
Carrier gas: He 2.5 ml/min

Detector: 2 x ATD (NPD)

Analysis time: 18 min

Compounds:

1. Fluoxetine
2. Amitriptyline
3. Mianserin
4. Trimipramine
5. Doxepin
6. Moclobemide
7. Maprotiline
8. Clomipramine
9. Dibenzepin
10. Trazodone

NB-54**NB-1701****NB-54**25 m x 0.32 mm, 0.10 μ m**NB-1701**25 m x 0.32 mm, 0.10 μ m**Antiepileptic Drugs**Program: 100° $\rightarrow$ 15°/min 280°

Split injection

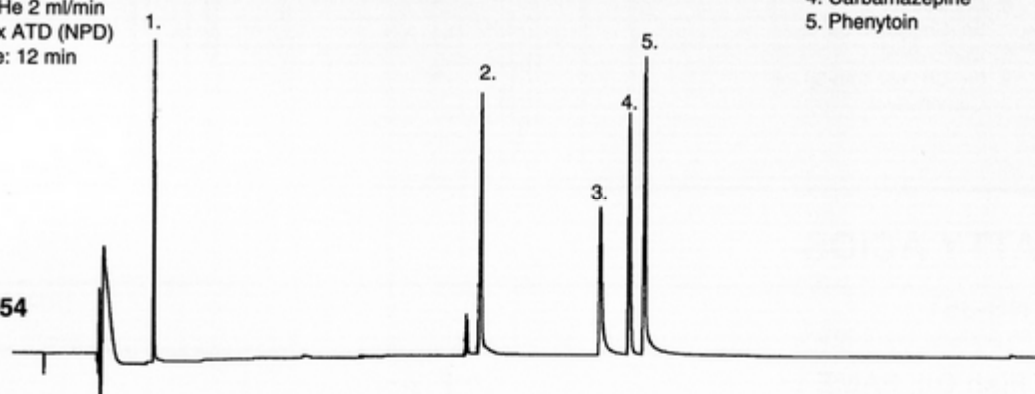
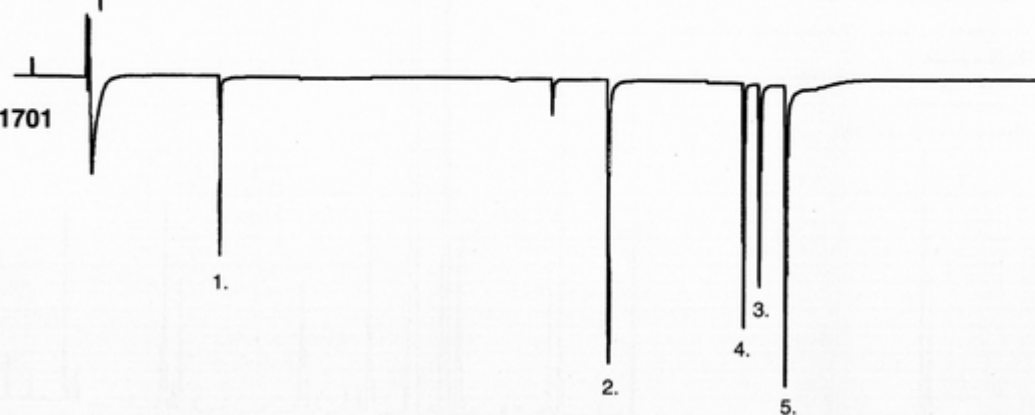
Carrier gas: He 2 ml/min

Detector: 2 x ATD (NPD)

Analysis time: 12 min

Compounds:

1. Ethosuximide
2. Phenobarbital
3. Primidone
4. Carbamazepine
5. Phenytoin

NB-54**NB-1701**

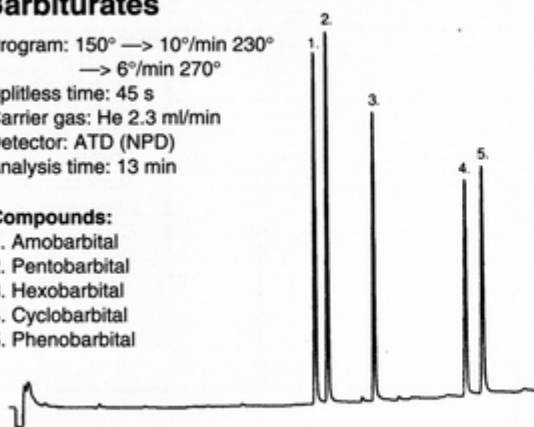
NB-170125 m x 0.32 mm, 0.25 μ m**Barbiturates**

Program: 150° $\rightarrow$ 10°/min 230°
 $\rightarrow$ 6°/min 270°

Splitless time: 45 s
 Carrier gas: He 2.3 ml/min
 Detector: ATD (NPD)
 Analysis time: 13 min

Compounds:

1. Amobarbital
2. Pentobarbital
3. Hexobarbital
4. Cyclobarbital
5. Phenobarbital

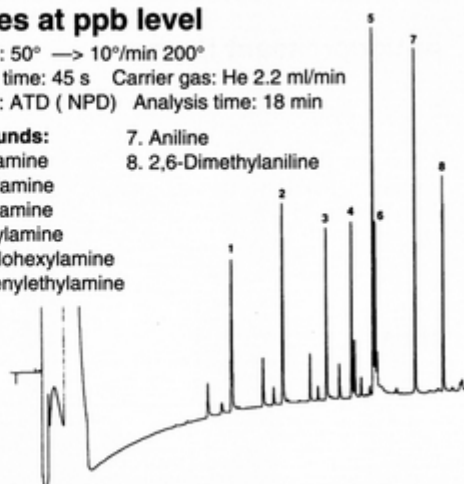
**NS-AMINE**25 m x 0.32 mm, 0.20 μ m**Amines at ppb level**

Program: 50° $\rightarrow$ 10°/min 200°

Splitless time: 45 s Carrier gas: He 2.2 ml/min
 Detector: ATD (NPD) Analysis time: 18 min

Compounds:

- | | |
|-----------------------|------------------------|
| 1. Octylamine | 7. Aniline |
| 2. Nonylamine | 8. 2,6-Dimethylaniline |
| 3. Decylamine | |
| 4. Benzylamine | |
| 5. Dicyclohexylamine | |
| 6. 2-Phenylethylamine | |

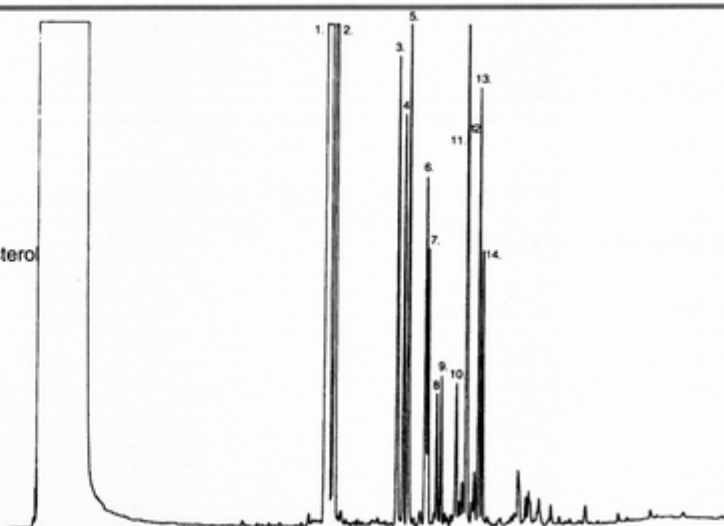
**STEROIDS****NB-54**25 m x 0.32 mm, 0.10 μ m**Steroids**

Program: 175° $\rightarrow$ 5°/min 300°
 Splitless time: 2 min

Carrier gas: He 2.5 ml/min
 Detector: FID
 Analysis time: 25 min

Compounds:

- | | |
|---|-------------------------|
| 1. 5 α -Cholestan | 11. Stigmasterol |
| 2. Squalen | 12. Dihydrolanosterol |
| 3. Coprostanol | 13. Lanosterol |
| 4. Epicoprostanol | 14. β -Sitosterol |
| 5. Coprostanone | |
| 6. Cholesterol | |
| 7. 5 α -Cholestan-3 β -ol | |
| 8. Demosterol | |
| 9. 5 α -Cholest-7-en-3 β -ol | |
| 10. Campesterol | |

**FATTY ACIDS****NB-351**25 m x 0.32 mm, 0.20 μ m**Fish Oil, FAME's**

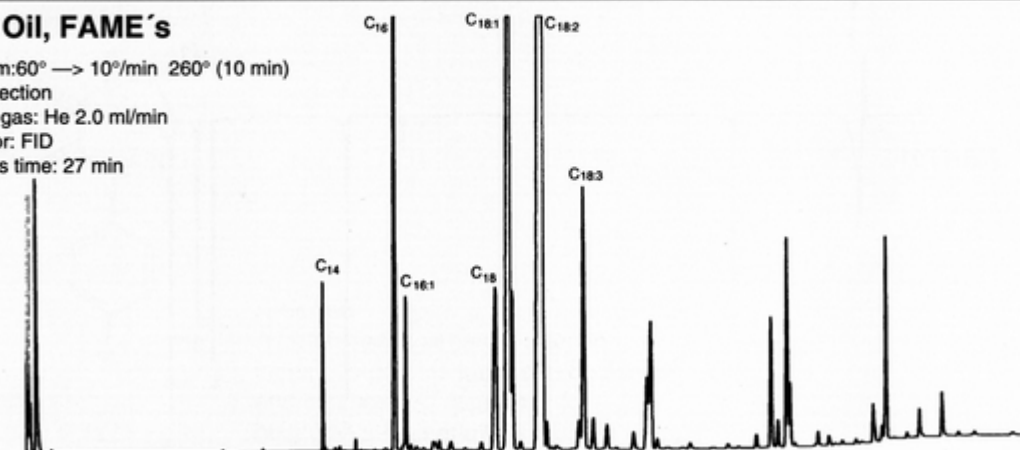
Program: 60° $\rightarrow$ 10°/min 260° (10 min)

Split injection

Carrier gas: He 2.0 ml/min

Detector: FID

Analysis time: 27 min



NB-9C

25 m x 0.32 mm, 0.20 µm

NB-351

25 m x 0.32 mm, 0.20 µm

Fames

Program: 60° → 10°/min 200° → 5°/min 260°

Split injection: 1:50

Carrier gas: He 2.3 ml/min

Detector: FID

Analysis time: 24 min

NB-9C**NB-351****Compounds:**

- | | | |
|------------|-------------|-------------|
| 1. 14:0 | 8. 18:3 | |
| 2. 14:1 | 9. 20:0 | |
| 3. 16:0 | 10. 20:1n-9 | 15. 22:0 |
| 4. 16:1n-7 | 11. 20:2n-6 | 16. 22:1n-9 |
| 5. 18:0 | 12. 20:3n-6 | 17. 22:6n-3 |
| 6. 18:1 | 13. 20:4n-6 | 18. 24:0 |
| 7. 18:2 | 14. 20:3n-3 | 19. 24:1n-9 |

RESINS**NB-351**

25 m x 0.32 mm, 0.20 µm

Free Fatty Acids in Water

Program: 100° → 10°/min 200°

Split injection: 1:50

Carrier gas: He 2.0 ml/min

Detector: FID

Analysis time: 10 min

Compounds:

1. Acetic acid
2. Propionic acid
3. Butyric acid
4. Crotonic acid
5. Caproic acid

NB-9C

25 m x 0.32 mm, 0.20 µm

Resin (methylated)

Program: 150° → 5°/min 260°

Split injection

Carrier gas: Hydrogen 2.0 ml/min

Detector: FID

Analysis time: 17 min

NS-BDS

50 m x 0.32 mm, 0.20 µm

Resin (methylated)

Program: 120° → 10°/min 195° (60 min)

Splitless time: 30 s

Detector: FID

Analysis time: 68 min

NBW-20M

25 m x 0.53 mm, 1.0 μ m

Aromatics (EPA Method 503.1)

Program: 35° (2 min) $\rightarrow$ 5°/min 100° $\rightarrow$ 10°/min 220° (10 min)

Split injection

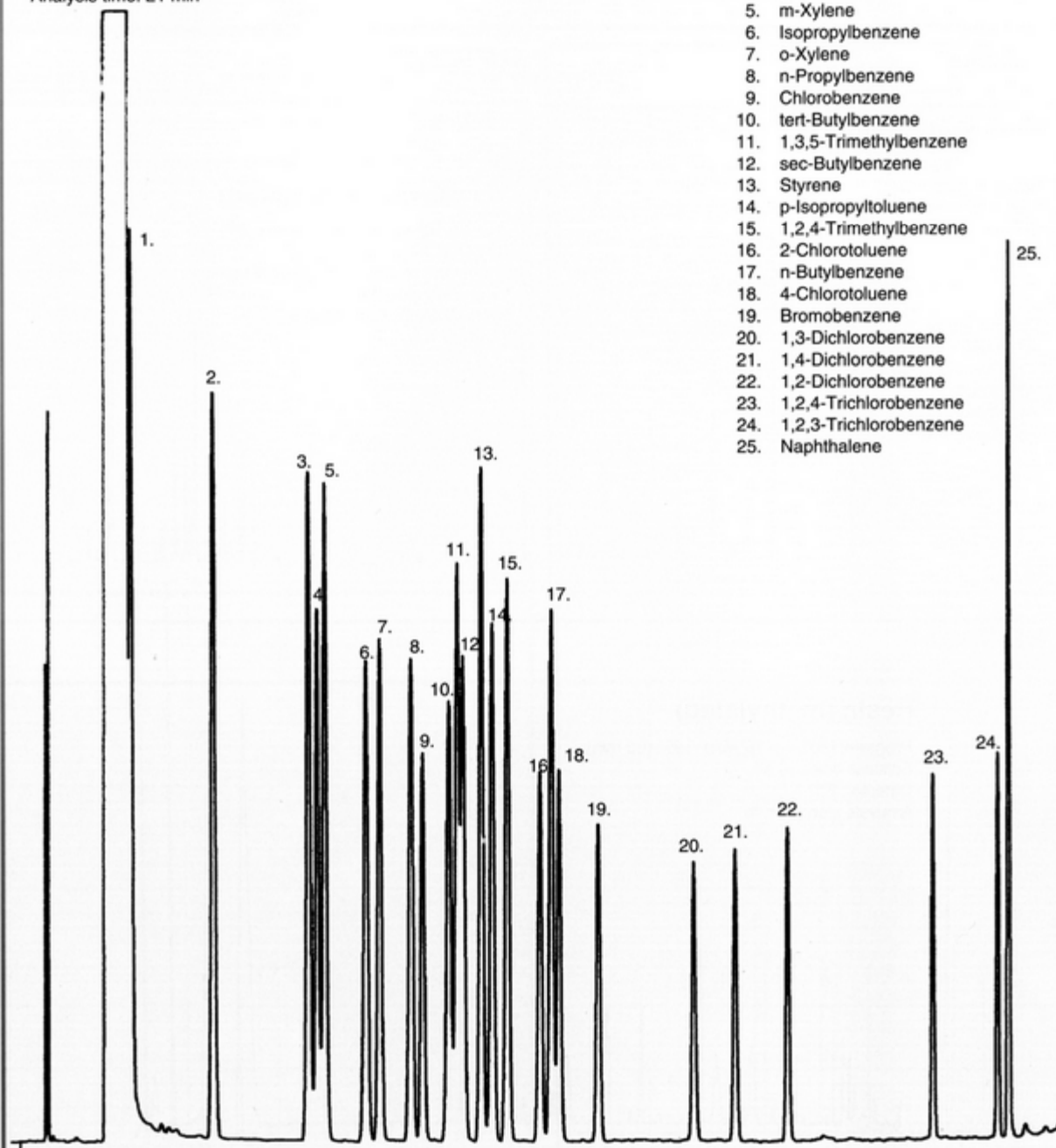
Carrier gas: He 10 ml/min

Detector: FID

Analysis time: 21 min

Compounds:

1. Benzene
2. Toluene
3. Ethyl benzene
4. p-Xylene
5. m-Xylene
6. Isopropylbenzene
7. o-Xylene
8. n-Propylbenzene
9. Chlorobenzene
10. tert-Butylbenzene
11. 1,3,5-Trimethylbenzene
12. sec-Butylbenzene
13. Styrene
14. p-Isopropyltoluene
15. 1,2,4-Trimethylbenzene
16. 2-Chlorotoluene
17. n-Butylbenzene
18. 4-Chlorotoluene
19. Bromobenzene
20. 1,3-Dichlorobenzene
21. 1,4-Dichlorobenzene
22. 1,2-Dichlorobenzene
23. 1,2,4-Trichlorobenzene
24. 1,2,3-Trichlorobenzene
25. Naphthalene



NBW-31115 m x 0.53 mm, 1.5 μ m**Aromatics (EPA Method 602)**Program: 40° (3 min) $\rightarrow$ 8°/min 200°

Split injection

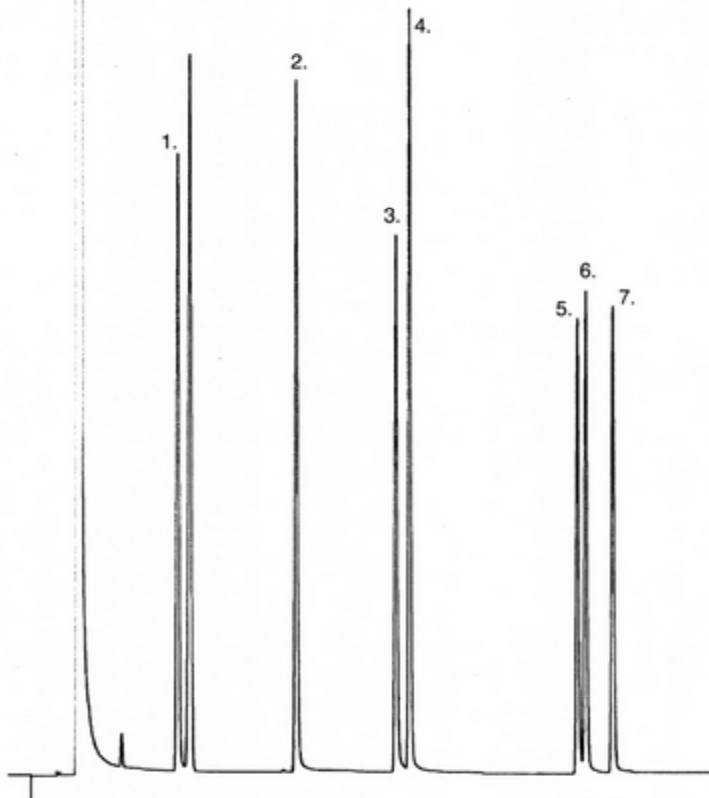
Carrier gas: He 12 ml/min

Detector: FID

Analysis time: 14 min

Compounds:

1. Benzene
2. Toluene
3. Chlorobenzene
4. Ethyl benzene
5. 1,3-Dichlorobenzene
6. 1,4-Dichlorobenzene
7. 1,2-Dichlorobenzene

**NBW-20M**25 m x 0.53 mm, 1.0 μ m**Aromatic Hydrocarbons**Program: 40° (1 min) $\rightarrow$ 5°/min 100°

Split injection: 1:50

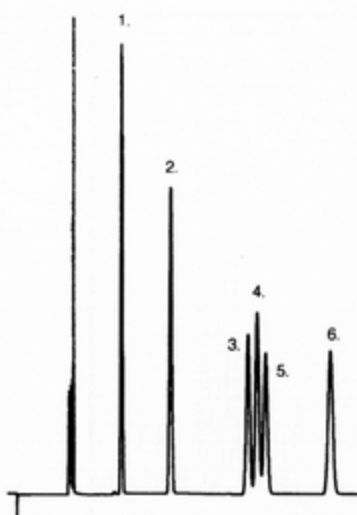
Carrier gas: He 4.0 ml/min

Detector: FID

Analysis time: 8 min

Compounds:

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

**NBW-1701**25 m x 0.53 mm, 1.0 μ m**Aromatics (EPA Method 602)**Program: 35° (4 min) $\rightarrow$ 8°/min 200°

Split injection

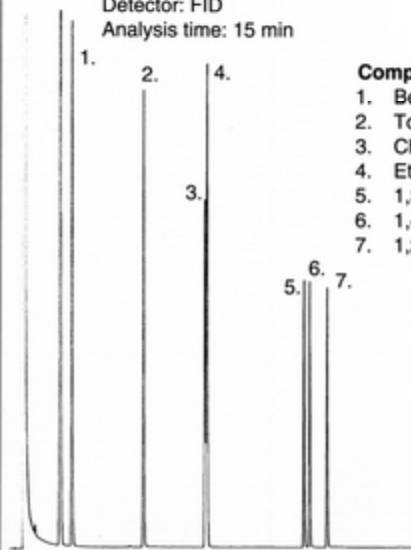
Carrier gas: He 4 ml/min

Detector: FID

Analysis time: 15 min

Compounds:

1. Benzene
2. Toluene
3. Chlorobenzene
4. Ethyl benzene
5. 1,3-Dichlorobenzene
6. 1,4-Dichlorobenzene
7. 1,2-Dichlorobenzene



NBW-1701

25 m x 0.53 mm, 1.0 μ m

Aromatics

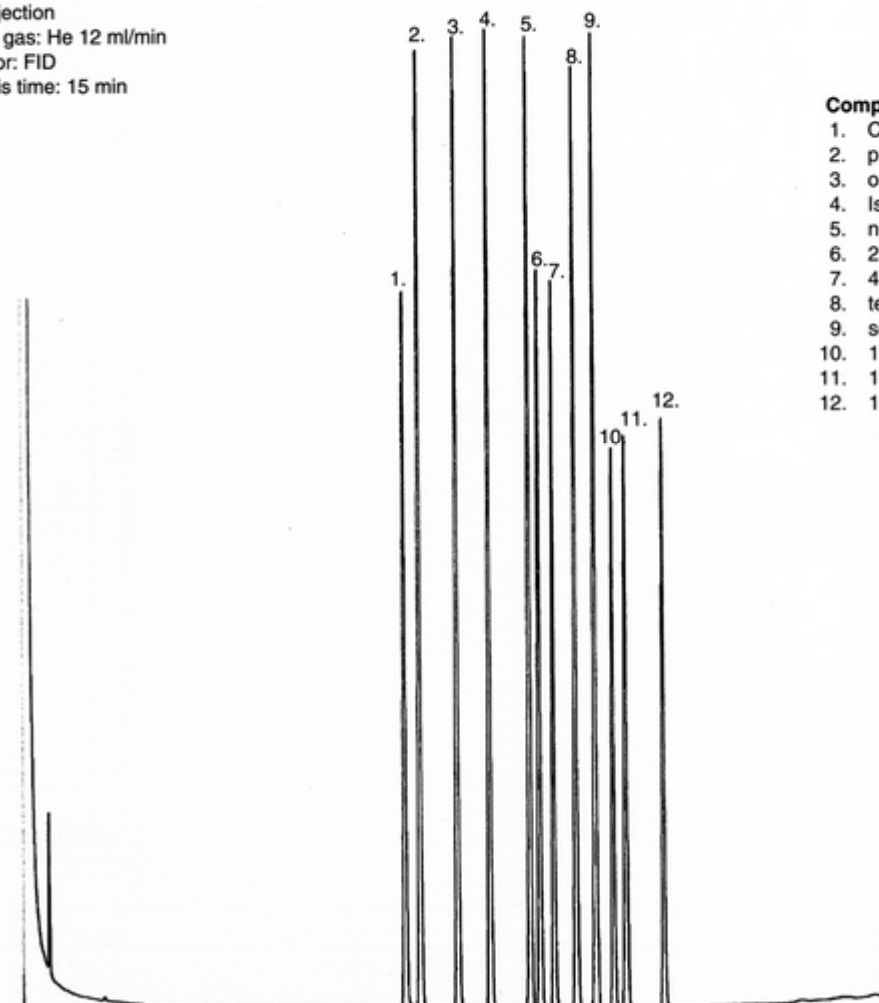
Program: 35° (4 min) $\rightarrow$ 8°/min 200°

Split injection

Carrier gas: He 12 ml/min

Detector: FID

Analysis time: 15 min



Compounds:

1. Chlorobenzene
2. p-Xylene
3. o-Xylene
4. Isopropylbenzene
5. n-Propylbenzene
6. 2-Chlorotoluene
7. 4-Chlorotoluene
8. tert-Butylbenzene
9. sec-Butylbenzene
10. 1,3-Dichlorobenzene
11. 1,4-Dichlorobenzene
12. 1,2-Dichlorobenzene

PCB's

NBW-1701

15 m x 0.53 mm, 1.0 μ m

Arochlor 1254

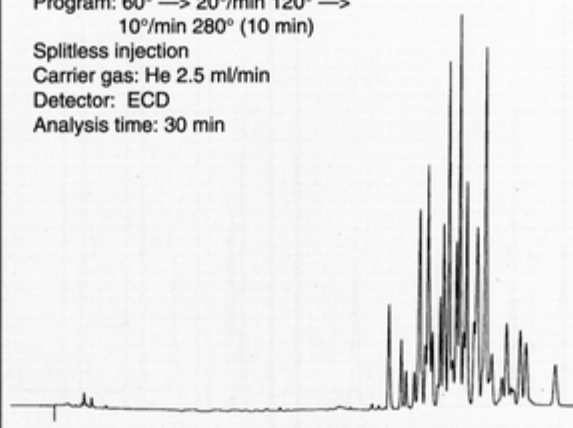
Program: 60° $\rightarrow$ 20°/min 120° $\rightarrow$
10°/min 280° (10 min)

Splitless injection

Carrier gas: He 2.5 ml/min

Detector: ECD

Analysis time: 30 min



NBW-1701

25 m x 0.53 mm, 1.0 µm

Trihalomethanes

Program: 35° (4 min) → 8°/min 200°

Split injection

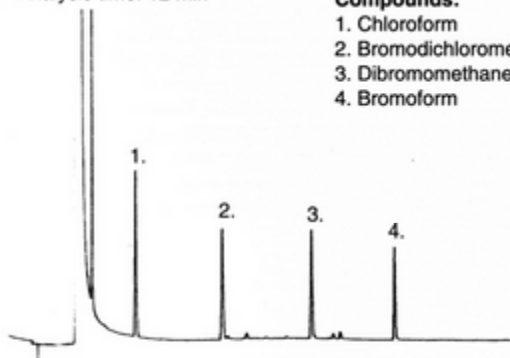
Carrier gas: He 8 ml/min

Detector: FID

Analysis time: 12 min

Compounds:

1. Chloroform
2. Bromodichloromethane
3. Dibromomethane
4. Bromoform

**NBW-311**

15 m x 0.53 mm, 1.5 µm

Trihalomethanes

Program: 40° (2 min) → 10°/min 120°

Split injection

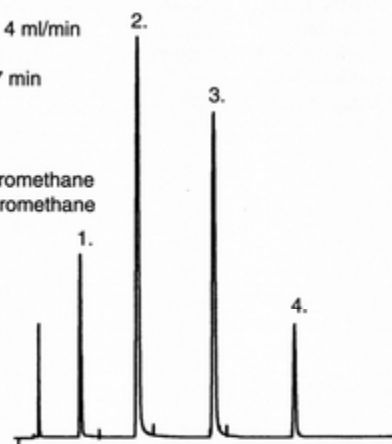
Carrier gas: He 4 ml/min

Detector: ECD

Analysis time: 7 min

Compounds:

1. Chloroform
2. Bromodichloromethane
3. Dibromochloromethane
4. Bromoform

**NBW-1701**

25 m x 0.53 mm, 1.0 µm

Purgeable Halocarbons

Program: 35° (4 min) → 8°/min 200°

Split injection

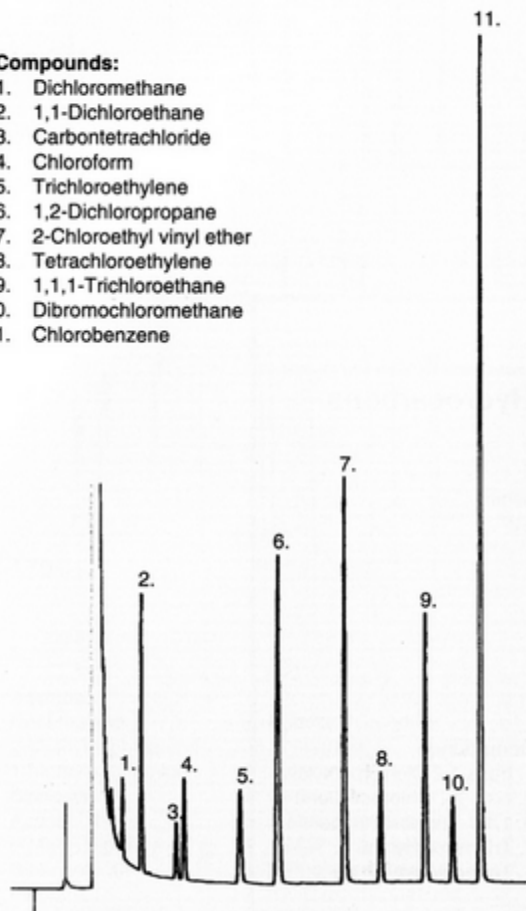
Carrier gas: He 12 ml/min

Detector: FID

Analysis time: 9 min

Compounds:

1. Dichloromethane
2. 1,1-Dichloroethane
3. Carbontetrachloride
4. Chloroform
5. Trichloroethylene
6. 1,2-Dichloropropane
7. 2-Chloroethyl vinyl ether
8. Tetrachloroethylene
9. 1,1,1-Trichloroethane
10. Dibromochloromethane
11. Chlorobenzene

**NBW-311**

25 m x 0.53 mm, 3.0 µm

Halogenated Hydrocarbons

Program: 40° (4 min) → 5°/min 200°

Split injection

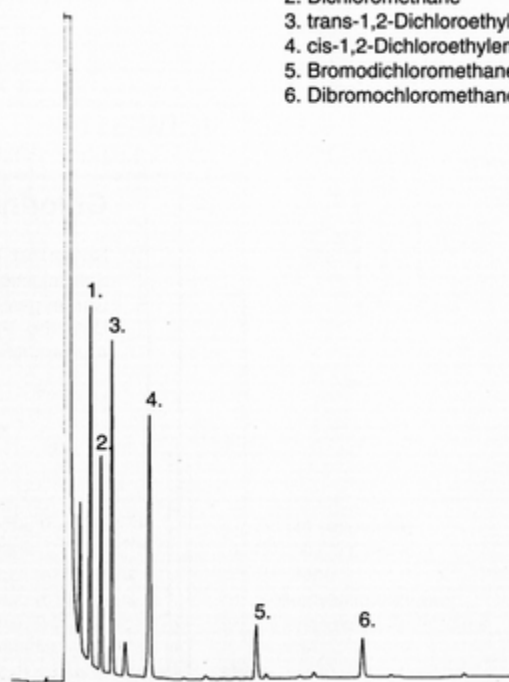
Carrier gas: He 20 ml/min

Detector: FID

Analysis time: 13 min

Compounds:

1. 1,1-Dichloroethylene
2. Dichloromethane
3. trans-1,2-Dichloroethylene
4. cis-1,2-Dichloroethylene
5. Bromodichloromethane
6. Dibromochloromethane



NBW-5415 m x 0.53 mm, 1.0 μ m**Chlorobenzenes**Program: 35° (2 min) $\rightarrow$ 5°/min 100° $\rightarrow$ 10°/min 220°

Split injection

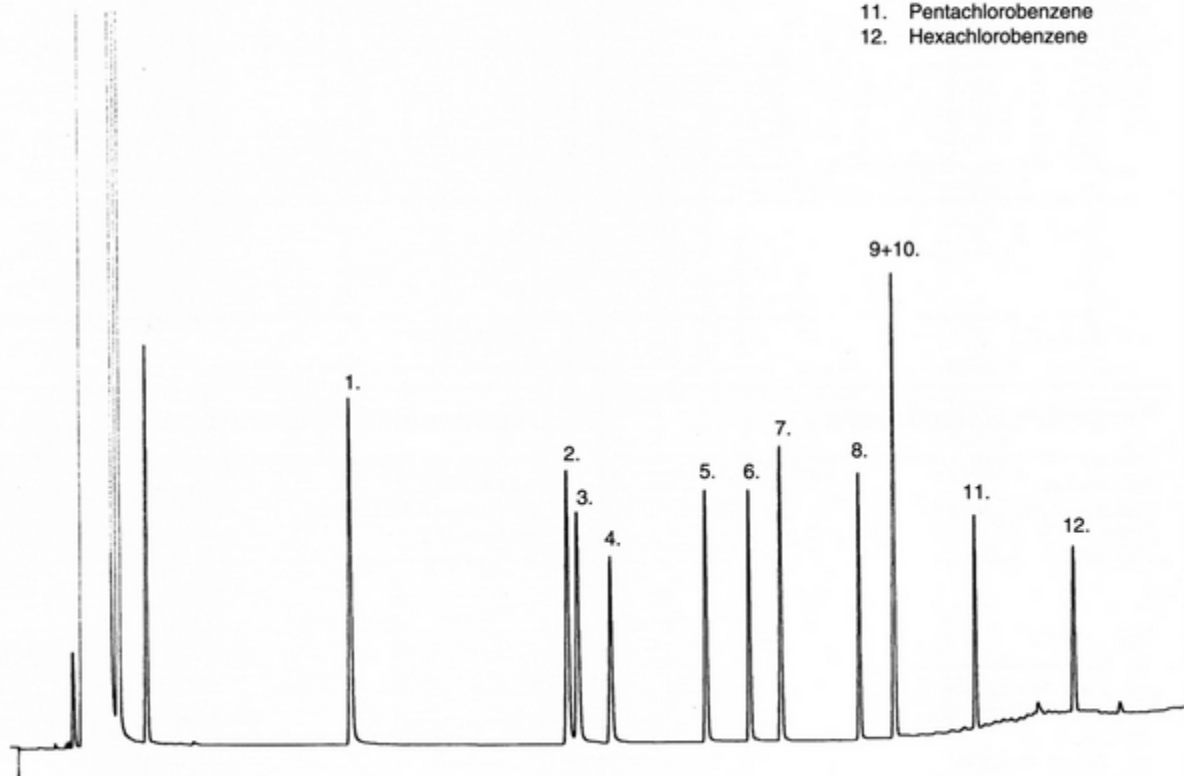
Carrier gas: He 12 ml/min

Detector: FID

Analysis time: 28 min

Compounds:

1. Chlorobenzene
2. 1,3-Dichlorobenzene
3. 1,4-Dichlorobenzene
4. 1,2-Dichlorobenzene
5. 1,3,5-Trichlorobenzene
6. 1,2,4-Trichlorobenzene
7. 1,2,3-Trichlorobenzene
8. 1,2,4,5-Tetrachlorobenzene
9. 1,2,3,5-Tetrachlorobenzene
10. 1,2,3,4-Tetrachlorobenzene
11. Pentachlorobenzene
12. Hexachlorobenzene

**NBW-311**25 m x 0.53 mm, 4.5 μ m**Chlorinated Hydrocarbons**

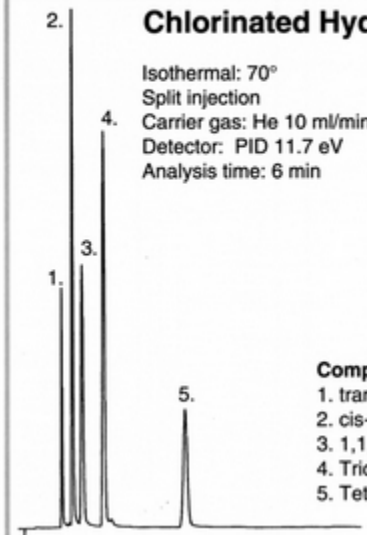
Isothermal: 70°

Split injection

Carrier gas: He 10 ml/min

Detector: PID 11.7 eV

Analysis time: 6 min

**Compounds:**

1. trans-1,2-Dichloroethylene
2. cis-1,2-Dichloroethylene
3. 1,1,1-Trichloroethane
4. Trichloroethylene
5. Tetrachloroethylene

NBW-20M25 m x 0.53 mm, 1.0 μ m**Cognac**Program: 45° (3 min) $\rightarrow$ 8°/min 170°

Split injection

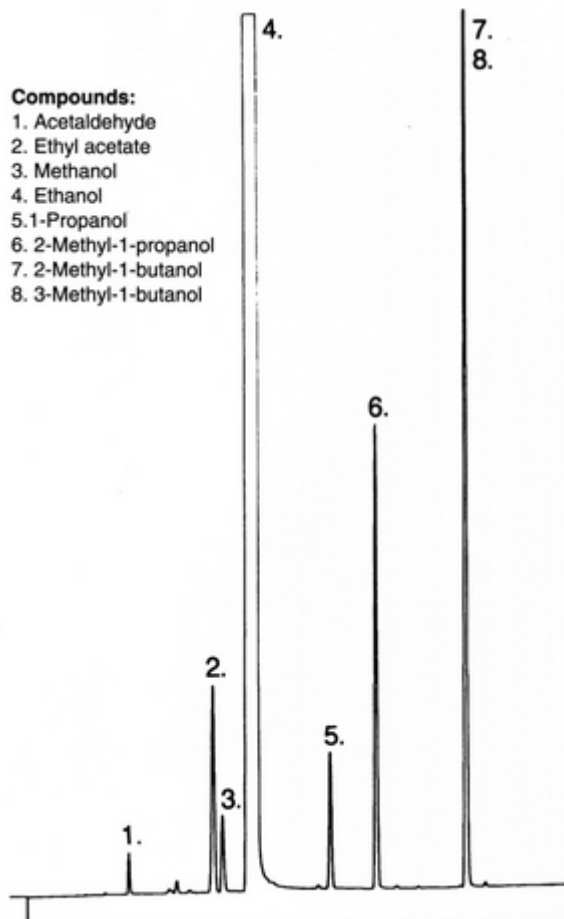
Carrier gas: He 3 ml/min

Detector: FID

Analysis time: 10 min

Compounds:

1. Acetaldehyde
2. Ethyl acetate
3. Methanol
4. Ethanol
5. 1-Propanol
6. 2-Methyl-1-propanol
7. 2-Methyl-1-butanol
8. 3-Methyl-1-butanol

**NBW-20M**25 m x 0.53 mm, 1.0 μ m**Alcohols in Blood**Program: 45° (3 min) $\rightarrow$ 8°/min 80°

Split injection: 1:100

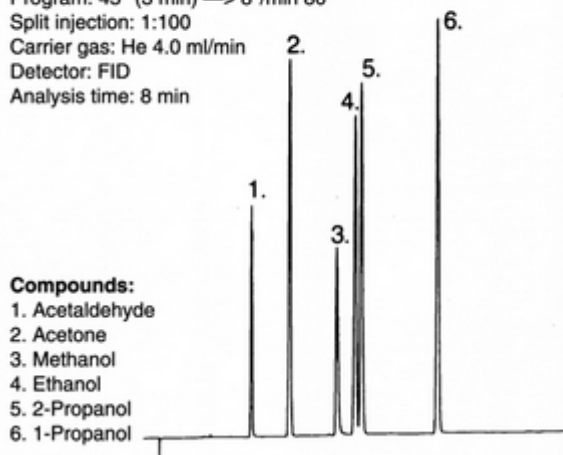
Carrier gas: He 4.0 ml/min

Detector: FID

Analysis time: 8 min

Compounds:

1. Acetaldehyde
2. Acetone
3. Methanol
4. Ethanol
5. 2-Propanol
6. 1-Propanol

**SULPHUR COMPOUNDS****NBW-311**25 m x 0.53 mm, 4.5 μ m**Sulphur Compounds**

Isothermal: 60°

Direct injection

Carrier gas: N₂ 5 ml/min

Detector: PID 11.7 eV

Analysis time: 16 min

Compounds:

1. Hydrogen sulfide
2. Methyl mercaptan
3. Dimethyl sulfide
4. Dimethyl disulfide



NBW-5425 m x 0.53 mm, 1.0 μ m**Acetylated Chlorophenols**

Program: 60° (1 min)
→ 25°/min 150°
→ 5°/min 250° (10 min)

Split injection

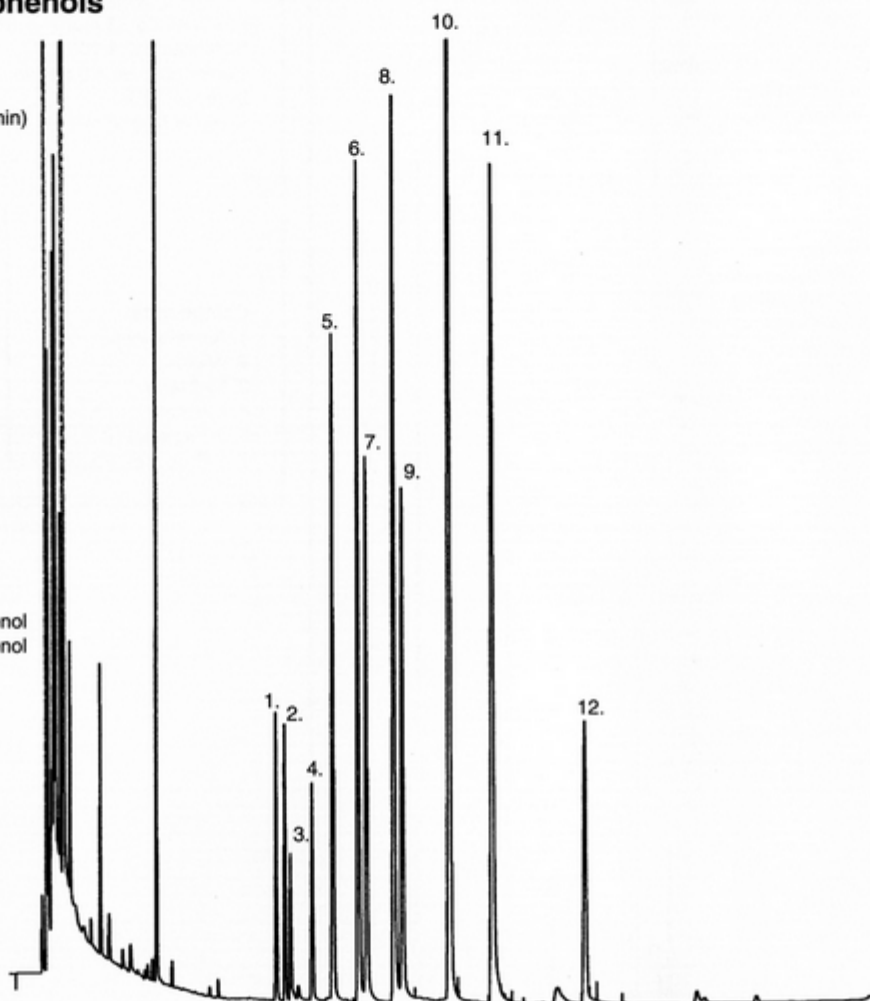
Carrier gas: He 15 ml/min

Detector: ECD

Analysis time: 14 min

Compounds:

1. 2,6 -Dichlorophenol
2. 2,4 -Dichlorophenol
3. 3,5 -Dichlorophenol
4. 3,4 -Dichlorophenol
5. 2,4,6 -Trichlorophenol
6. 2,3,6 -Trichlorophenol
7. 2,4,5 -Trichlorophenol
8. 2,3,4 -Trichlorophenol
9. 3,4,5 -Trichlorophenol
10. 2,3,4,6 -Tetrachlorophenol
11. 2,3,4,5 -Tetrachlorophenol
12. Pentachlorophenol

**PESTICIDES****NBW-1701**15 m x 0.53 mm, 1.0 μ m**Pesticides**

Program: 50° (2 min) → 25°/min 175° → 7°/min 270° (10 min)

Splitless time: 45 s

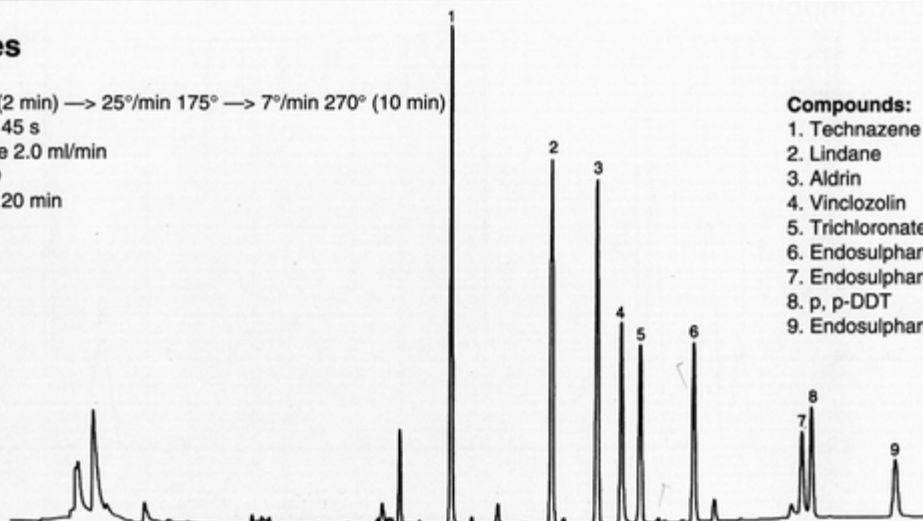
Carrier gas: He 2.0 ml/min

Detector: ECD

Analysis time: 20 min

Compounds:

1. Technazene
2. Lindane
3. Aldrin
4. Vinclozolin
5. Trichloronate
6. Endosulphan α
7. Endosulphan β
8. p, p-DDT
9. Endosulphan sulphate



NBW-5425 m x 0.53 mm, 1.0 μ m**Chlorinated Pesticides (EPA 608)**Program: 120° $\rightarrow$ 5°/min 240° $\rightarrow$ 10°/min 280° (10 min)

Splitless time: 45 s

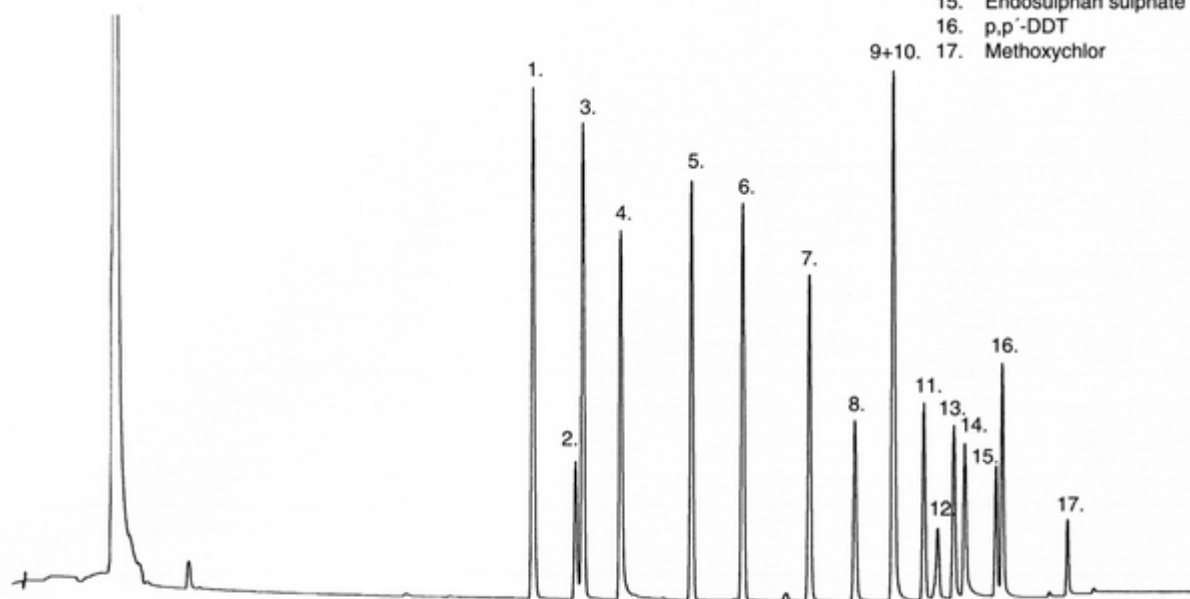
Carrier gas: He 20 ml/min

Detector: ECD

Analysis time: 30 min

Compounds:

1. α -BHC
2. β -BHC
3. Lindane
4. δ -BHC
5. Heptachlor
6. Aldrin
7. Heptachlor epoxide
8. Endosulphan α
9. p,p'-DDE
10. Dieldrin
11. Endrin
12. Endosulphan β
13. p,p'-DDD
14. Endrin aldehyde
15. Endosulphan sulphate
16. p,p'-DDT
17. Methoxychlor

**NBW-54**25 m x 0.53 mm, 1.0 μ m**Chlorinated Pesticides**Program: 120° $\rightarrow$ 10°/min 270°

Splitless time: 45 s

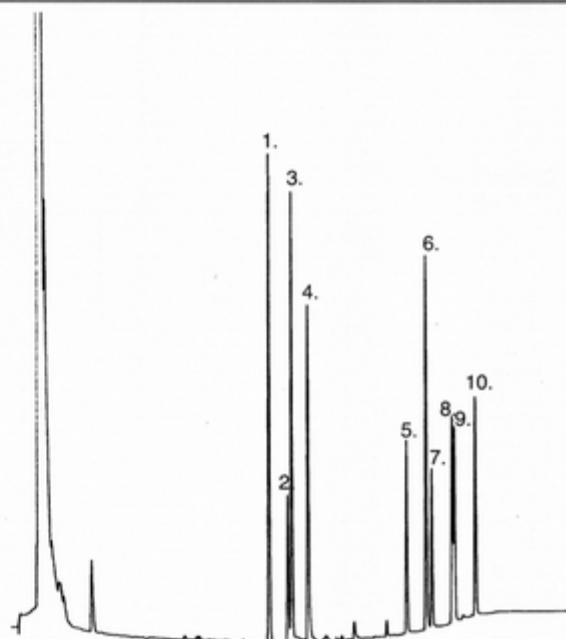
Carrier gas: He 20 ml/min

Detector: ECD

Analysis time: 16 min

Compounds:

1. α -BHC
2. β -BHC
3. Lindane (γ -BHC)
4. δ -BHC
5. o,p'-DDE
6. p,p'-DDE
7. o,p'-DDD
8. p,p'-DDD
9. o,p'-DDT
10. p,p'-DDT



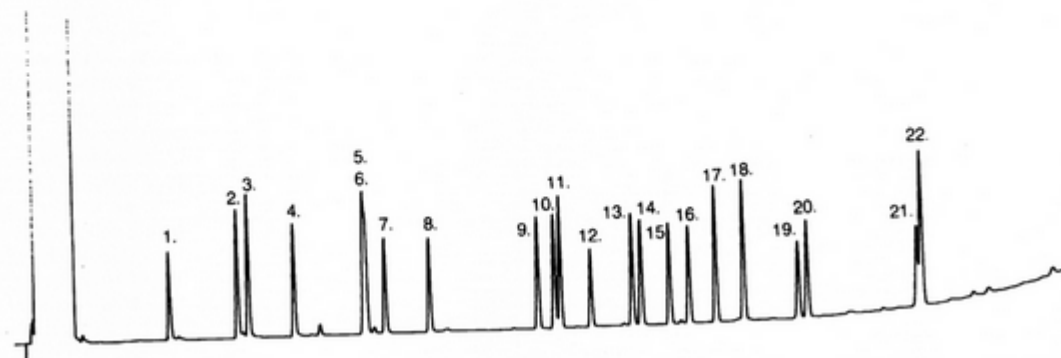
NBW-5415 m x 0.53 mm, 1.0 μ m**Polycyclic Aromatic Hydrocarbons**Program: 80° $\rightarrow$ 6°/min 290°

Splitless time: 60 s

Carrier gas: He 12 ml/min

Detector: FID

Analysis time: 21 min

**Compounds:**

- | | | |
|------------------------|------------------------------|--------------------------|
| 1. Naphthalene | 9. Dibenzothiophene | 17. Fluoranthene |
| 2. 2-Methylnaphthalene | 10. Phenanthrene | 18. Pyrene |
| 3. 1-Methylnaphthalene | 11. Anthracene | 19. Benzo (a) fluorene |
| 4. Biphenyl | 12. Carbazole | 20. Benzo (b) fluorene |
| 5. Acenaphthene | 13. 2-Methylanthracene | 21. Benzo (a) anthracene |
| 6. 6-Methylbiphenyl | 14. 1-Methylphenanthrene | 22. Chrycene |
| 7. Dibenzofuran | 15. 2-Phenylnaphtalene | |
| 8. Fluorene | 16. 3,6-Dimethylphenanthrene | |

FAMES**NBW-351**15 m x 0.53 mm, 1.0 μ m**Fames**Program: 150° $\rightarrow$ 5°/min 240° (10 min)

Split injection

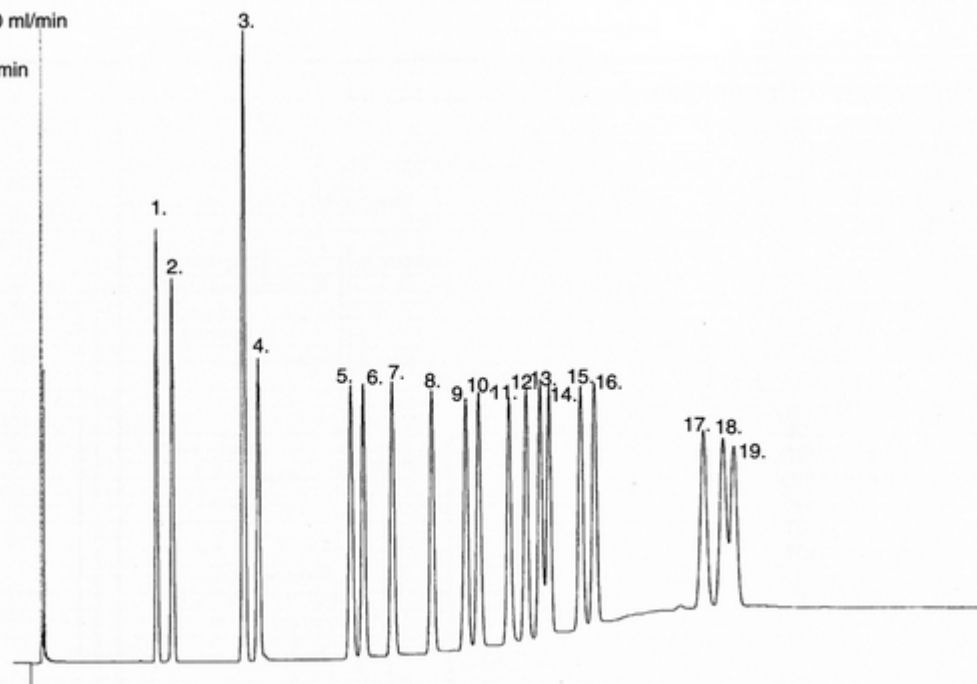
Carrier gas: He 20 ml/min

Detector: FID

Analysis time: 20 min

Compounds:

- | |
|-------------|
| 1. 14:0 |
| 2. 14:1 |
| 3. 16:0 |
| 4. 16:1n-7 |
| 5. 18:0 |
| 6. 18:1 |
| 7. 18:2 |
| 8. 18:3 |
| 9. 20:0 |
| 10. 20:1n-9 |
| 11. 20:2n-6 |
| 12. 20:3n-6 |
| 13. 20:4n-6 |
| 14. 20:3n-3 |
| 15. 22:0 |
| 16. 22:1n-9 |
| 17. 22:6n-3 |
| 18. 24:0 |
| 19. 24:1n-9 |



NBW-54

15 m x 0.53 mm, 1.0 μ m

Plasticizers

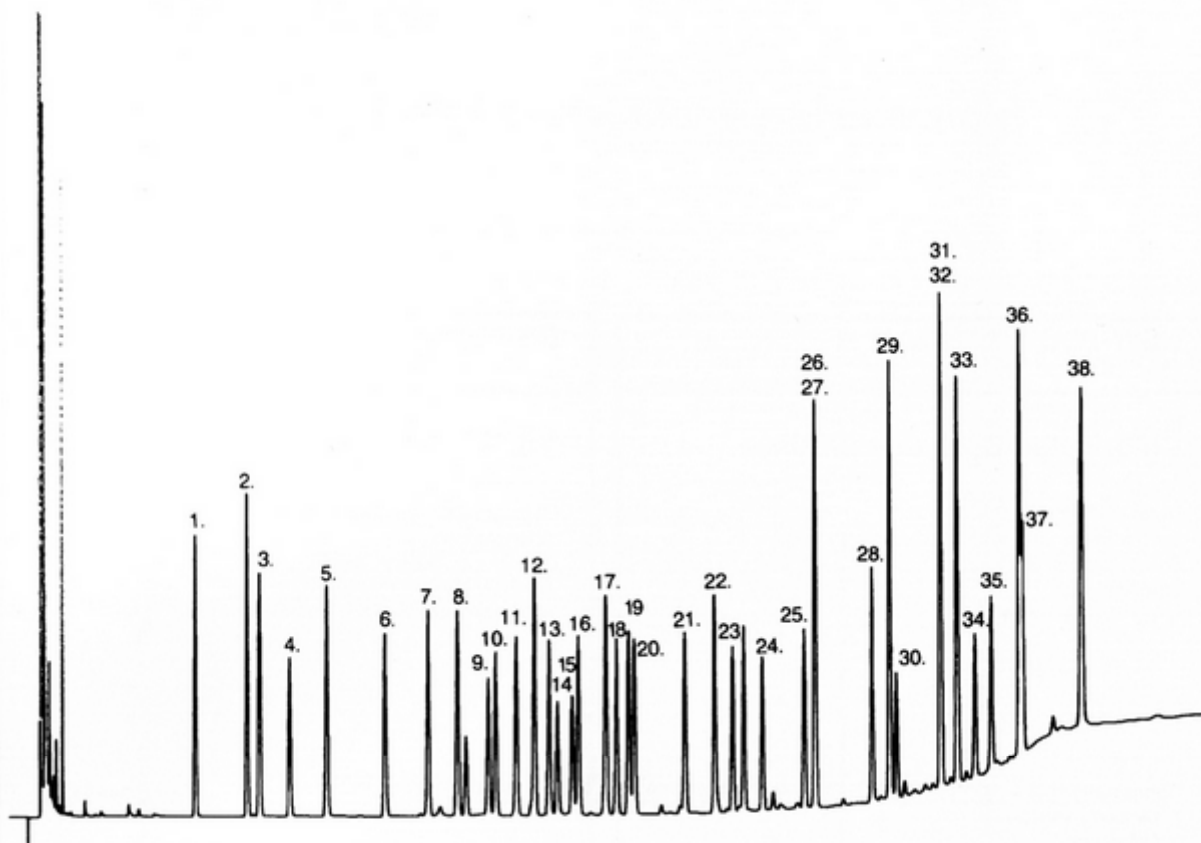
Program: 60° 8°/min $\rightarrow$ 180° 10°/min $\rightarrow$ 290° (15 min)

Split injection

Carrier gas: He 12 ml/min

Detector: FID

Analysis time: 22 min



Compounds:

- | | | |
|-----------------------|-------------------------------|----------------------------|
| 1. Undecane | 14. Triethyl citrate | 27. Butyl benzyl phthalate |
| 2. Naphthalene | 15. Diethyl azelate | 28. Dioctyl adipate |
| 3. Dodecane | 16. Heptadecane | 29. Triphenyl phosphate |
| 4. Dimethyl adipate | 17. Diallyl phthalate | 30. 9-Phenyl anthracene |
| 5. Tridecane | 18. Dibutyl adipate | 31. Dioctyl phthalate |
| 6. Diethyl adipate | 19. Diethyl sebacate | 32. Diphenyl phthalate |
| 7. Dimethyl phthalate | 20. Octadecane | 33. Hexacosane |
| 8. Pentadecane | 21. Nonadecane | 34. Dinonyl phthalate |
| 9. Dimethyl azelate | 22. Dibutyl phthalate | 35. Dioctyl azelate |
| 10. Dibutyl succinate | 23. Dimethyl glycol phthalate | 36. Octacosane |
| 11. Diethyl phthalate | 24. Diamyl phthalate | 37. Dioctyl sebacate |
| 12. Benzophenone | 25. Dibutyl sebacate | 38. Tricontane |
| 13. Dimethyl sebacate | 26. Docosane | |

NSW-PLOT

15 m x 0.53 mm

Chlorinated C₁ Hydrocarbons

Isothermal 220°

Split injection

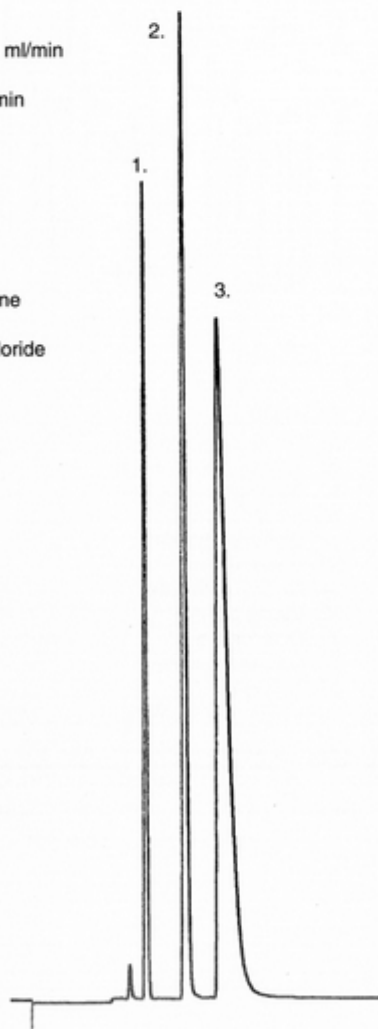
Carrier gas: He 3 ml/min

Detector: FID

Analysis time: 5 min

Compounds:

1. Dichloromethane
2. Chloroform
3. Carbontetrachloride

**NS-PLOT**

25 m x 0.32 mm

Light Hydrocarbons

Program: 50° → 10°/min 150°

Split injection

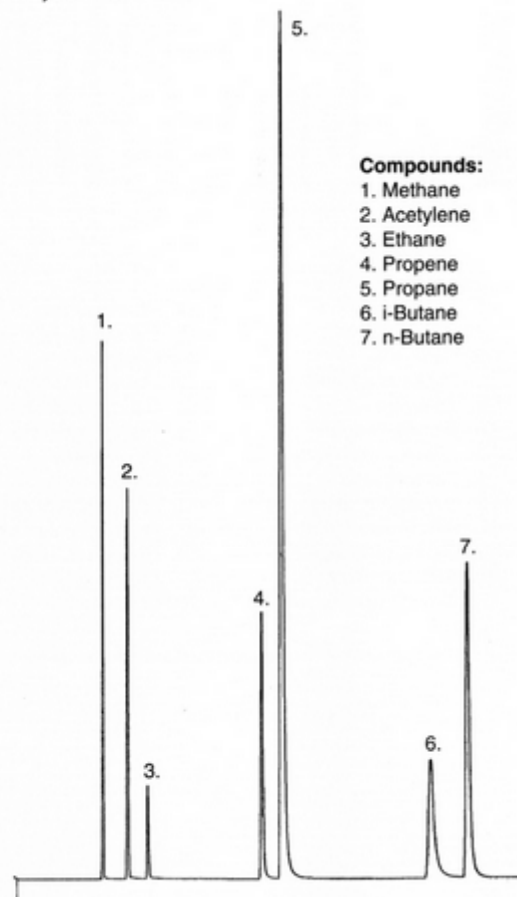
Carrier gas: He 1.5 ml/min

Detector: FID

Analysis time: 12 min

Compounds:

1. Methane
2. Acetylene
3. Ethane
4. Propene
5. Propane
6. i-Butane
7. n-Butane

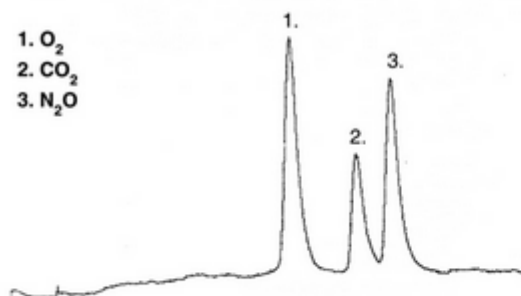


NSW-PLOT

25 m x 0.53 mm

Isothermal: 40°
Direct injection
Carrier gas: He 2.8 ml/min
Detector: FarUV
Analysis time: 8 min

1. O₂
2. CO₂
3. N₂O

**NSW-PLOT**

15 m x 0.53 mm

Ethylene oxide (ETO)

Isothermal 80°
Split injection
Carrier gas: He 10 ml/min
Detector: PID 11.7 eV
Analysis time: 4 min

**NSW-PLOT**

15 m x 0.53 mm

Solvents

Isothermal 140°
Split injection
Carrier gas: He 5 ml/min
Detector: FID
Analysis time: 12 min

Compounds:

1. Methanol
2. Ethanol
3. Acetone
4. Diethyl ether
5. n-Pentane
6. Ethyl acetate

