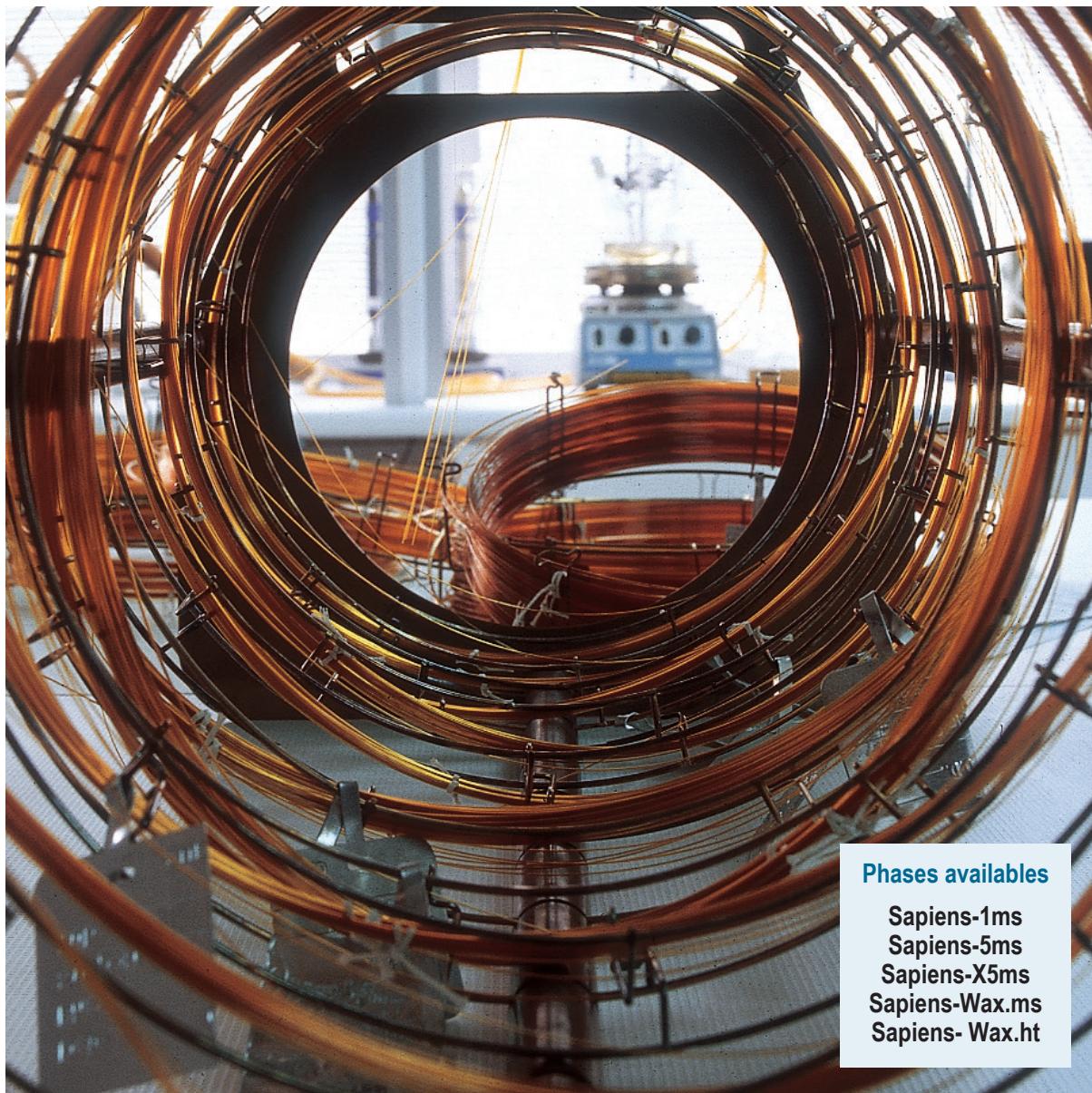


Line of Sapiens Capillary Columns

We are pleased to introduce a superb new generation of capillary columns



Phases available

Sapiens-1ms
Sapiens-5ms
Sapiens-X5ms
Sapiens-Wax.ms
Sapiens- Wax.ht

- Ultra low bleed and high inertness with respect to active, acid and basic compounds
- Developed with integral technology
- Molecular Stabilization Process incorporated (MSP)

Line of Sapiens Capillary Columns

- We are pleased to introduce a superb new generation of capillary columns.
- Columns for today's demanding applications
- Our columns are able to compete with the best columns in the market, with ultra-low bleed and high inertness with respect to active, acid and basic compounds.
- Developed with new integral technology
- Molecular Stabilization Process incorporated (MSP)
- Highest inertness for polar, acid and basic compounds
- Extreme low bleed (improve trace level analysis)
- Warranted reproducibility between batches
- Perfect for use with Retention Time Locking (RTL)software

Sapiens-1ms

100% Dimethyl polysiloxane, bonded and crosslinked phase, manufactured with MSP technology

- General purpose column, non polar
- Ultralow bleed, improved signal to noise ratio for GC-MS
- Solvent rinsable

Sapiens-1ms Equivalent Phase

Agilent: DB1-MS UI, HP-1 MS UI, VF-1MS

Restek: Rxi-1MS

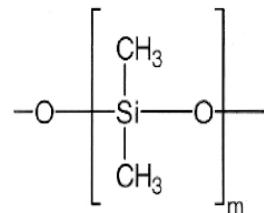
Phenomenex: ZB-1MS

GL Sciences: InertCap 1MS

Sigma-Aldrich: Equity-1

SGE: SOL-GEL-1MS, BPX-1

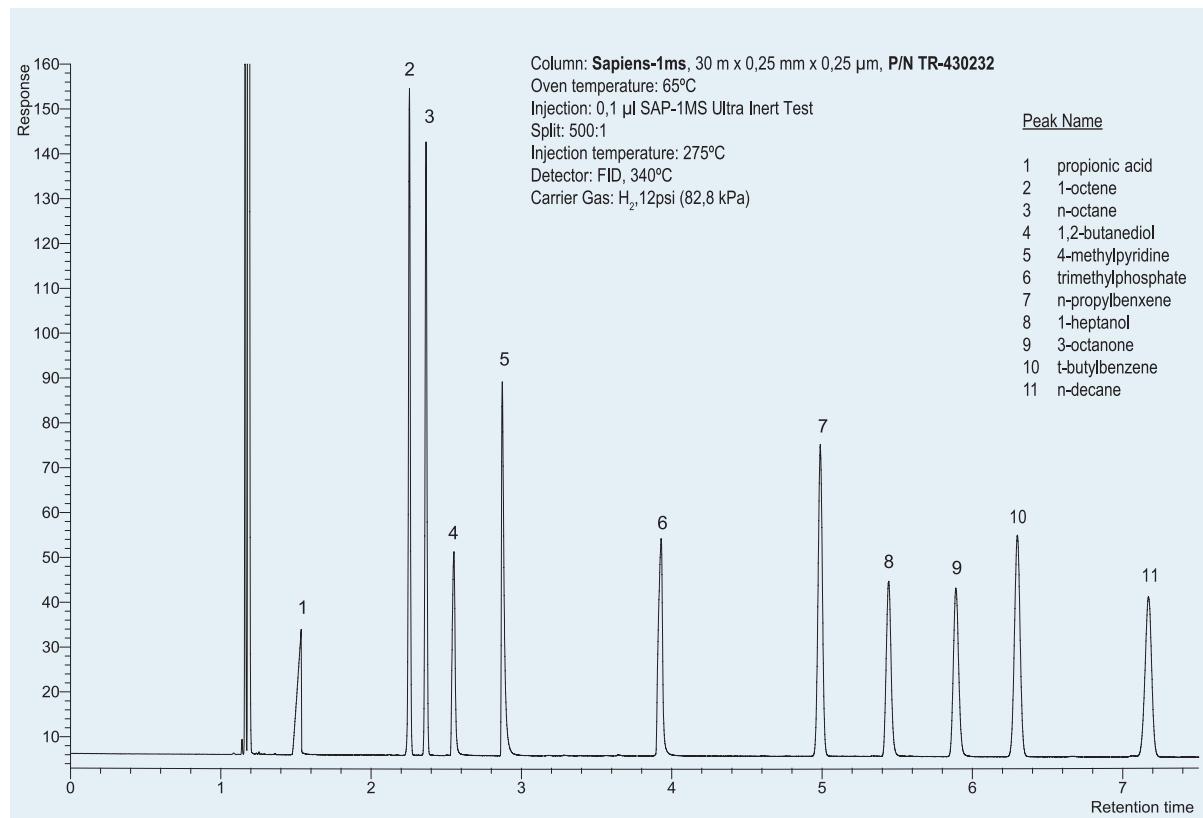
Macherey-Nagel: OPTIMA-1MS Accent



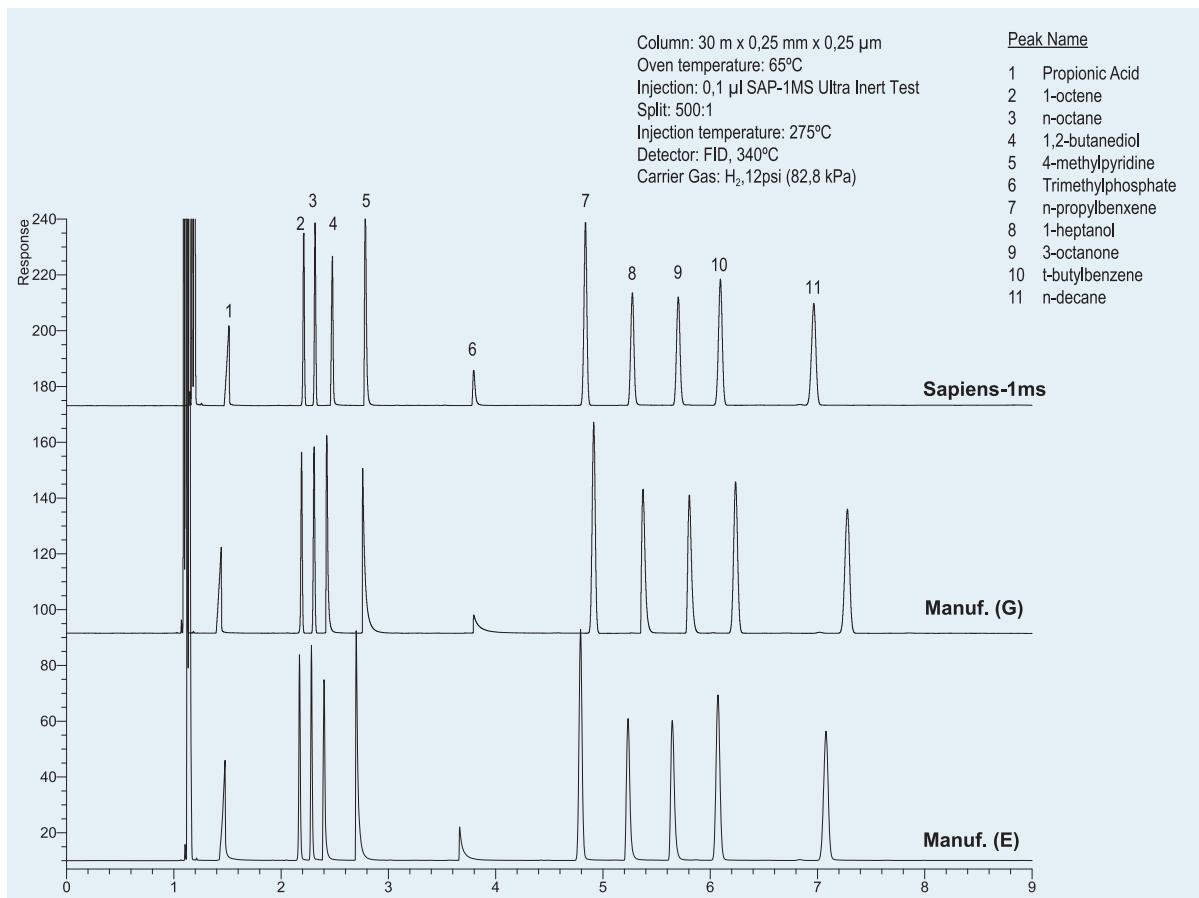
Structure of Poly(dimethyl)siloxane

Sapiens-1ms: Ultra Inert Test (SAP-1MS)

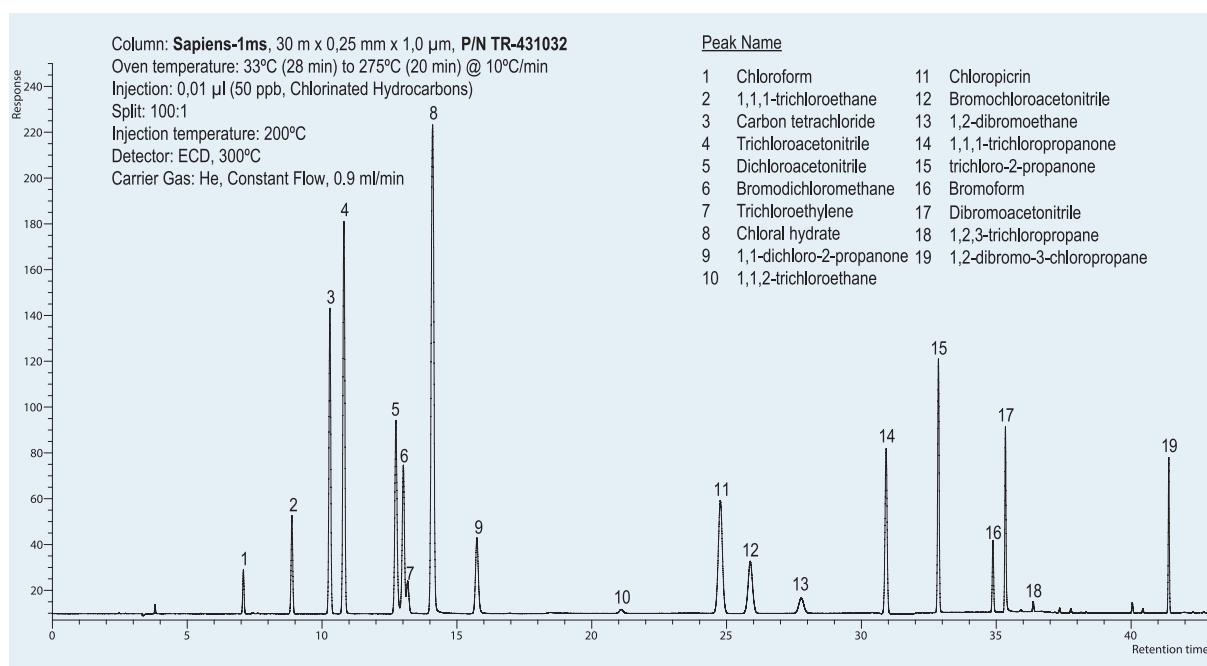
Good peak shape and response for all active compounds



Sapiens-1ms, Ultra Inert Comparative Test (SAP-1MS) vs principal competitors



Application: Sapiens-1ms, 30m x 0,25mm x 1,0µm, P/N TR-431032
 Analysis chlorinated solvents and disinfection by-products (EPA 551.1)



Sapiens-1ms

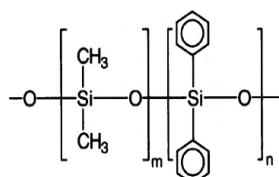
Internal Diam. (mm)	Length (m)	Film thickness (μm)	Temp Limits (°C)	Part. N° (P/N)
0,10	10	0,10	-60 to 325/350	TR-430141
	20	0,10	-60 to 325/350	TR-430181
0,18	20	0,18	-60 to 325/350	TR-430984
	20	0,36	-60 to 325/350	TR-433484
0,20	12	0,33	-60 to 325/350	TR-4333B9
	25	0,33	-60 to 325/350	TR-433329
0,25	15	0,25	-60 to 325/350	TR-430212
	30	0,25	-60 to 325/350	TR-430232
0,32	30	0,50	-60 to 325/350	TR-430532
	30	1,00	-60 to 325/350	TR-431032
0,32	60	0,25	-60 to 325/350	TR-430262
	15	0,25	-60 to 325/350	TR-430213
0,32	25	0,52	-60 to 325/350	TR-435223
	30	0,25	-60 to 325/350	TR-430233
0,32	30	1,00	-60 to 325/350	TR-431033

Sapiens-5ms

(95%) Dimethyl-(5%) diphenylpolysiloxane, bonded and crosslinked phase

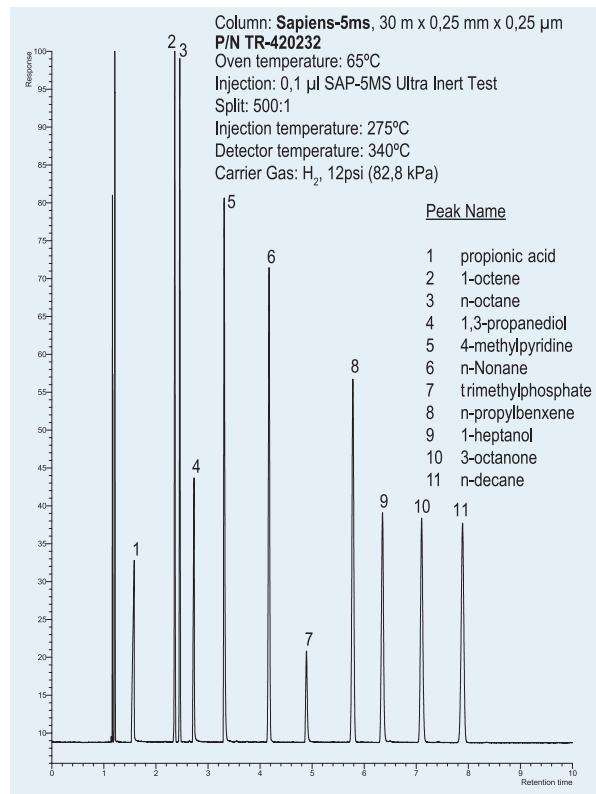
Sapiens-5ms Equivalent Phase

Agilent: HP-5 MS UI
Restek: Rxi-5MS
Phenomenex: ZB-5MSi
Sigma-Aldrich: Equity®-5
SGE: BP-5
Macherey-Nagel: OPTIMA-5MS



Structure of Poly (dimethyl-diphenylsiloxane)

Sapiens-5ms: Ultra Inert Test (SAP-5MS) Excellent performance for all key compounds

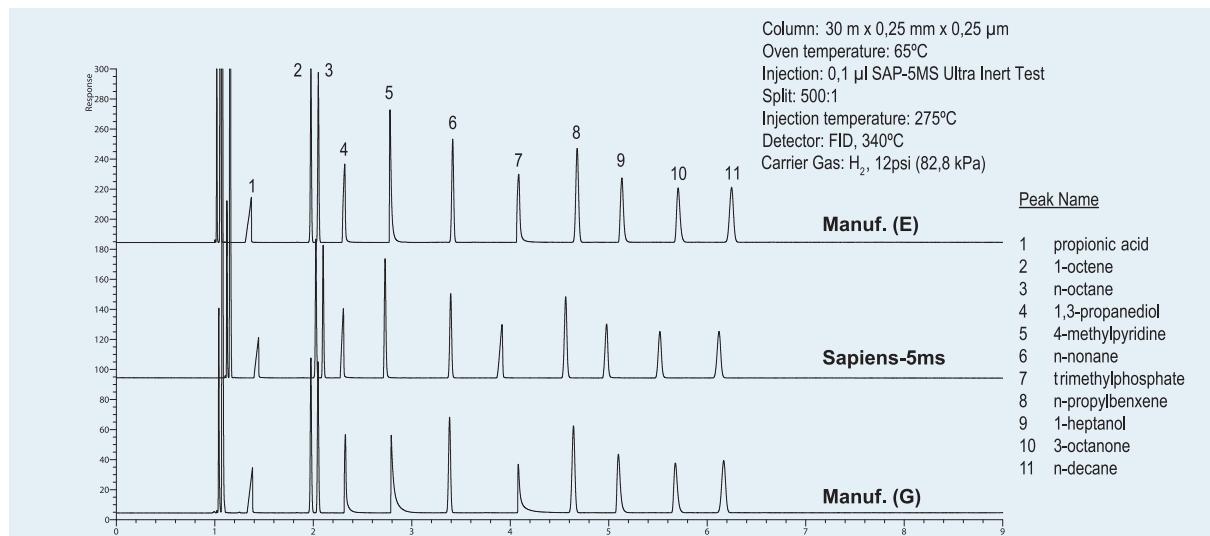


SAP-5MS: Ultra Inert Test (composition)

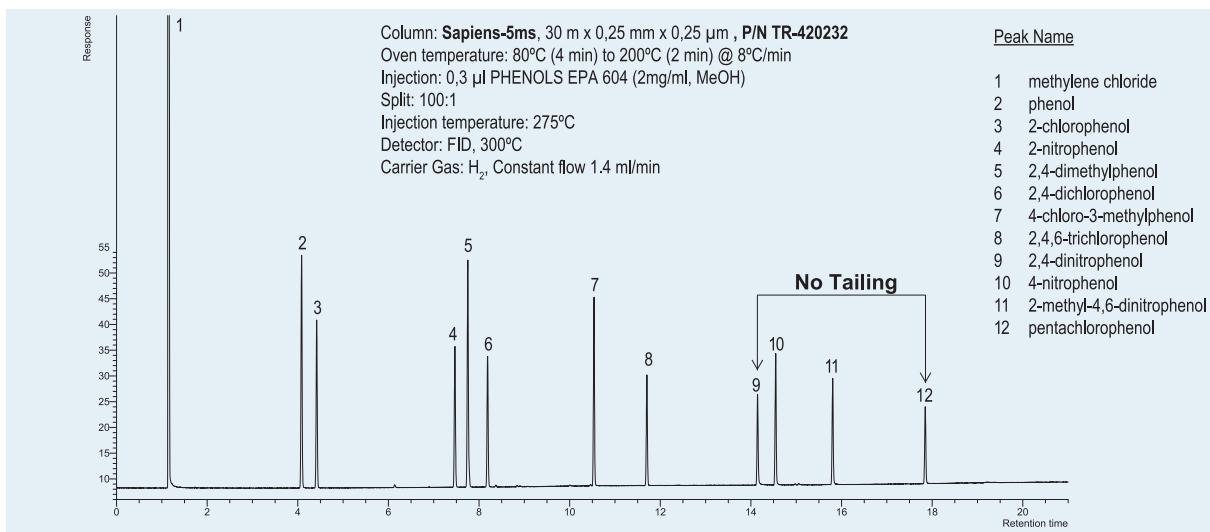
Elution	Compound	Key Control Parameter
1	Propionic acid	Basicity
2	1-Octene	Polarity
3	n-Octane	Hydrocarbon
4	1,3-Propanediol	Silanol
5	4-Methylpyridine	Acidity
6	n-Nonane	Hydrocarbon
7	Trimethylphosphate	Acidity
8	n-Propylbenzene	Hydrocarbon
9	1-Heptanol	Silanol
10	3-Octanone	Polarity
11	n-Decane	Hydrocarbon

Comparation Sapiens-5ms

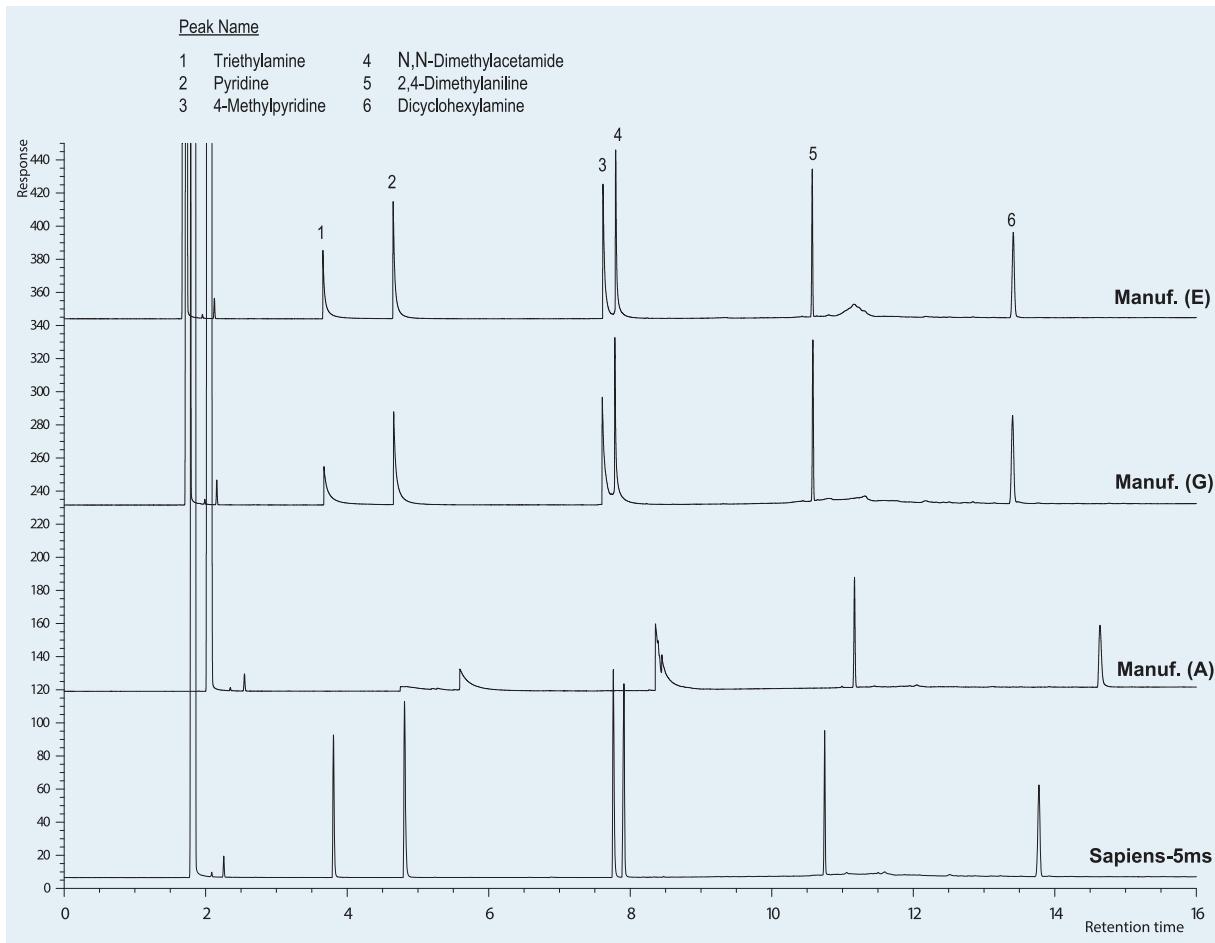
Sapiens-5ms: Inertness comp. test (SAP-5MS) vs principal competitors



Sapiens-5ms: Acidity Test - Perfect Peak shapes

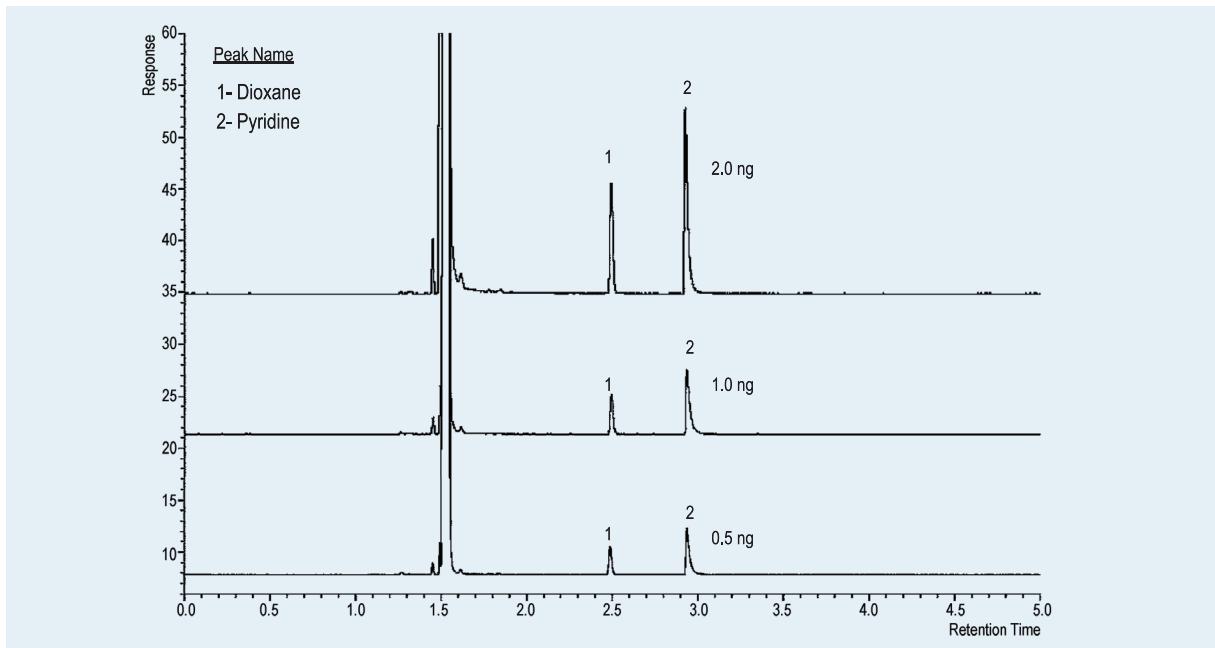


Sapiens-5ms: Basicity comp. test vs principal competitors

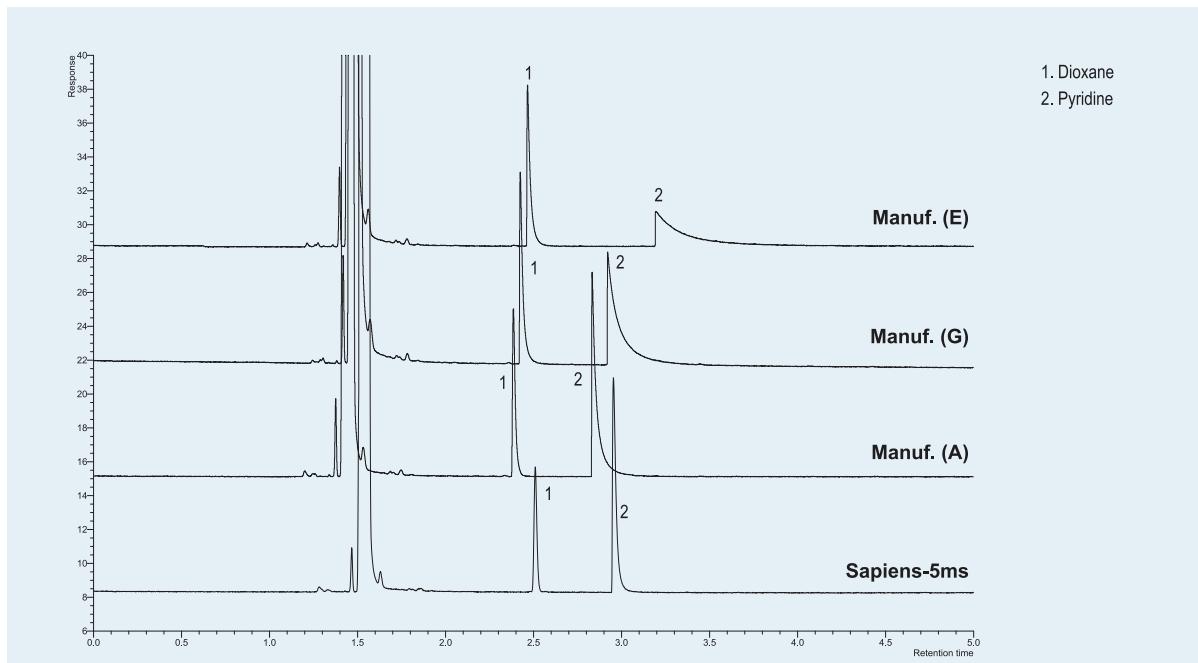


Sapiens-5ms: High inertness, Dioxane, Pyridine

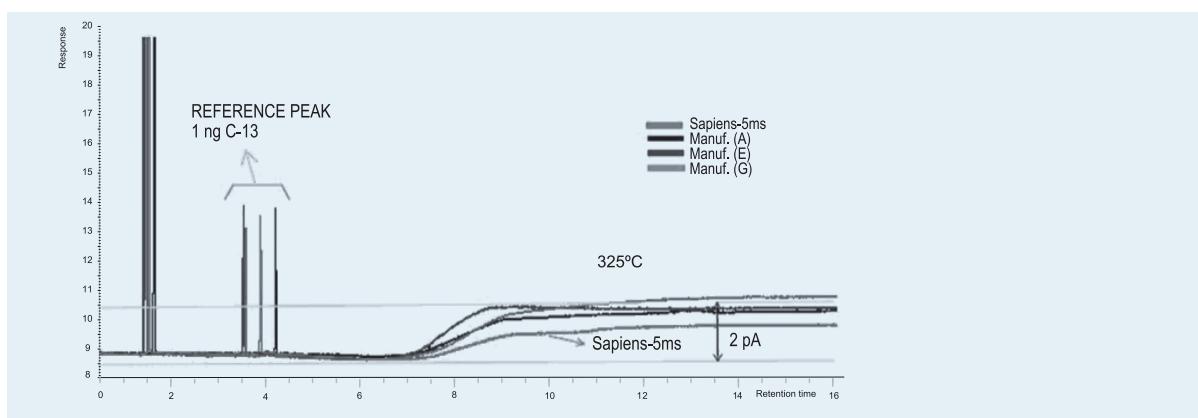
No retention time shifts with pyridine at low concentration (no surface activity)



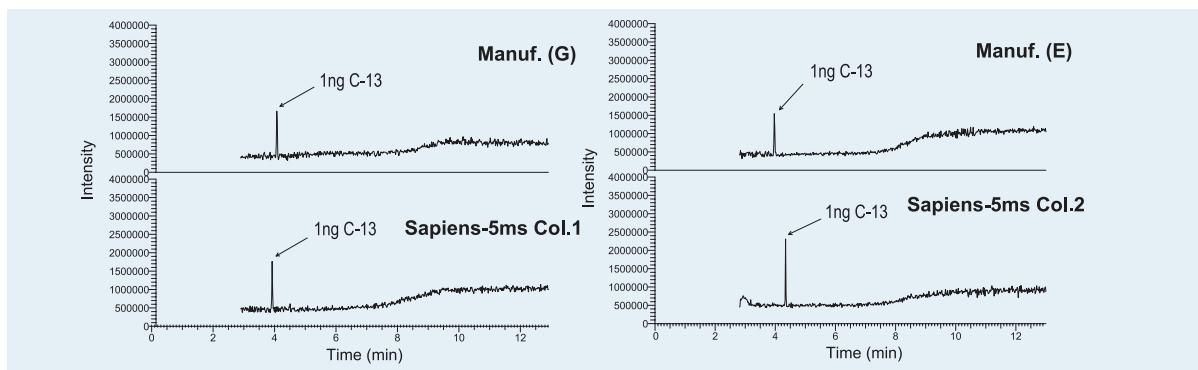
Sapiens-5ms: 1,4-dioxane and pyridine comparison test vs principal competitors



Sapiens-5ms: Bleed (FID) comparison test vs principal competitors
Bleed curves related to 1ng of tridecane in FID detector



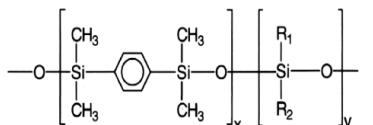
Sapiens-5ms: Bleed (GC-MS) comparison test
Bleed curves related to 1ng of tridecane in MS detector



Sapiens-5ms

Internal Diam(mm)	Length (m)	Film thickness(µm)	Temp Limits (°C)	Part. Nº(P/N)
0,10	10	0,10	-60 to 325/350	TR-420141
	20	0,10	-60 to 325/350	TR-420181
0,18	20	0,18	-60 to 325/350	TR-420984
0,20	12	0,33	-60 to 325/350	TR-4233B9
	25	0,33	-60 to 325/350	TR-423329
0,25	15	0,25	-60 to 325/350	TR-420212
	30	0,25	-60 to 325/350	TR-420232
	30	0,50	-60 to 325/350	TR-420532
	30	1,00	-60 to 325/350	TR-421032
	60	0,25	-60 to 325/350	TR-420262
0,32	30	0,25	-60 to 325/350	TR-420233
	30	1,00	-60 to 325/350	TR-421033

Sapiens-X5ms (Silphenylene phase)



Structure of Polysiloxane containing p-silphenylene

Sapiens-X5ms Equivalent Phase

Agilent: DB-5MS UI, VF-5MS

Restek: Rxi-5Sil MS

Phenomenex: ZB-5MS

SGE: BPX-5, BP-5MS

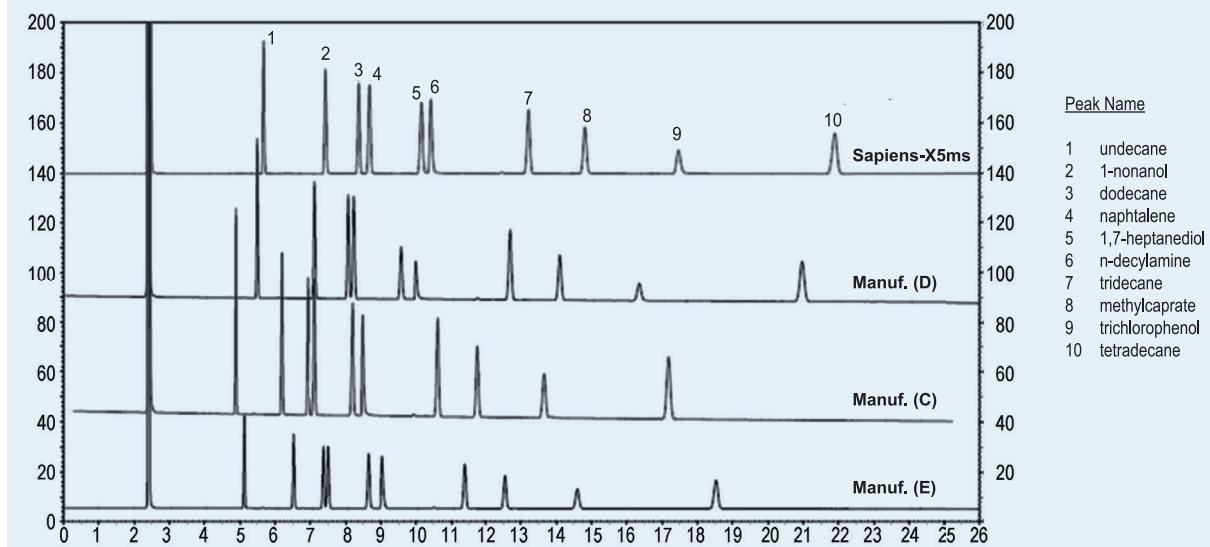
Sigma-Aldrich: SLB-5MS

Macherey-Nagel: OPTIMA-5MS Accent

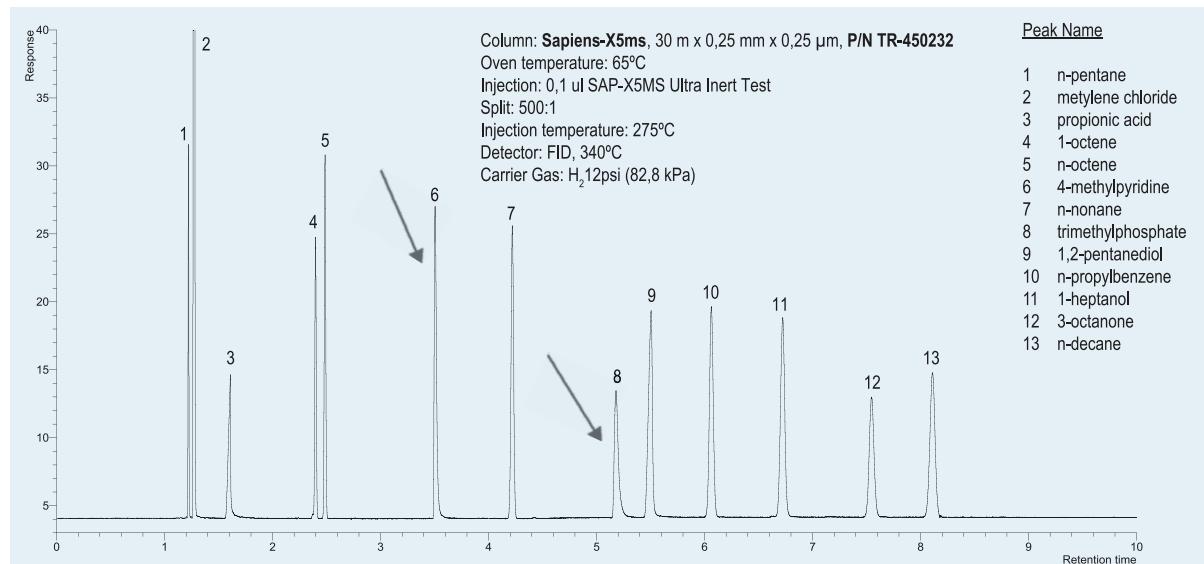
SAP-X5MS: Ultra Inert test (composition)

Elution	Compound	Key Control Parameter
1	Propionic acid	Basicity
2	1-Octene	Polarity
3	n-Octane	Hydrocarbon
4	4-Methylpyridine	Acidity
5	n-Nonane	Hydrocarbon
6	Trimethylphosphate	Acidity
7	1,2-Pantanediol	Silanol
8	n-Propylbenzene	Hydrocarbon
9	1-Heptanol	Silanol
10	3-Octanone	Polarity
11	n-Decane	Hydrocarbon

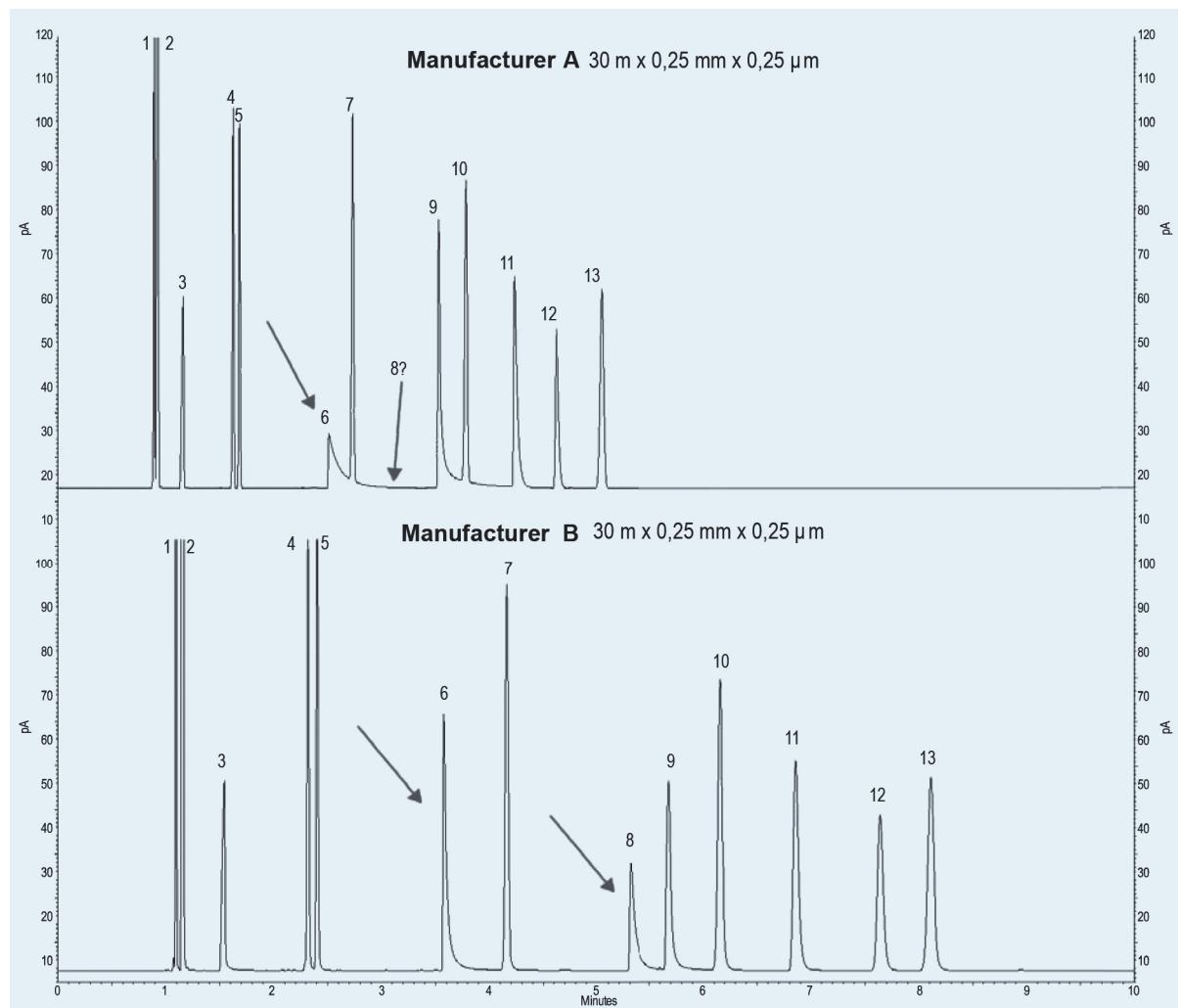
Sapiens-X5ms: Clasical Inertness Test (comparison) - All columns are good

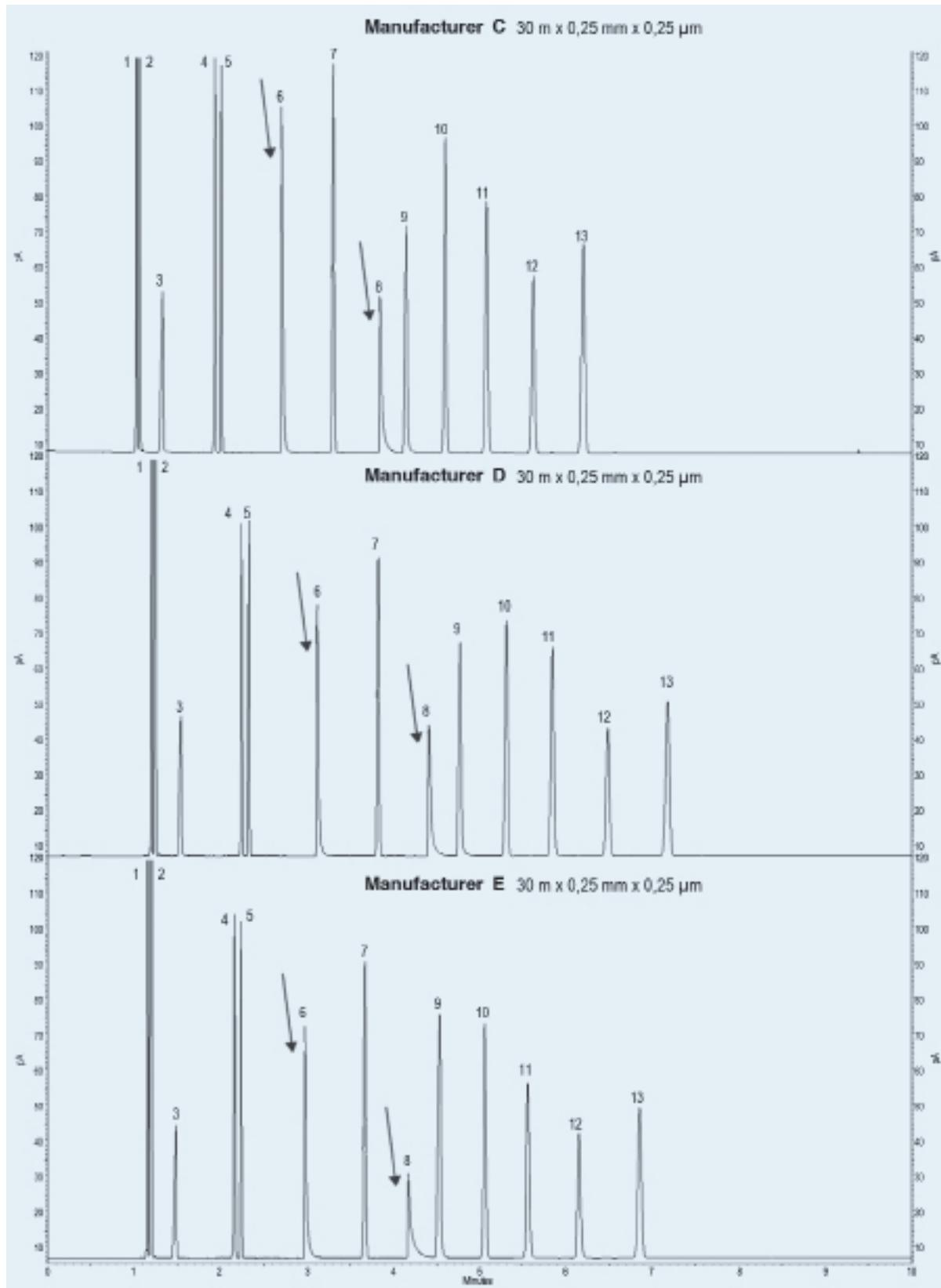


Sapiens-X5ms: Ultra Inert Test (J.Luong et al. J.Sep.Sci. 2007)
Superior quality and peak shape for all active compounds



All columns are very good with a classical test but not all are excellent against a more demanding test



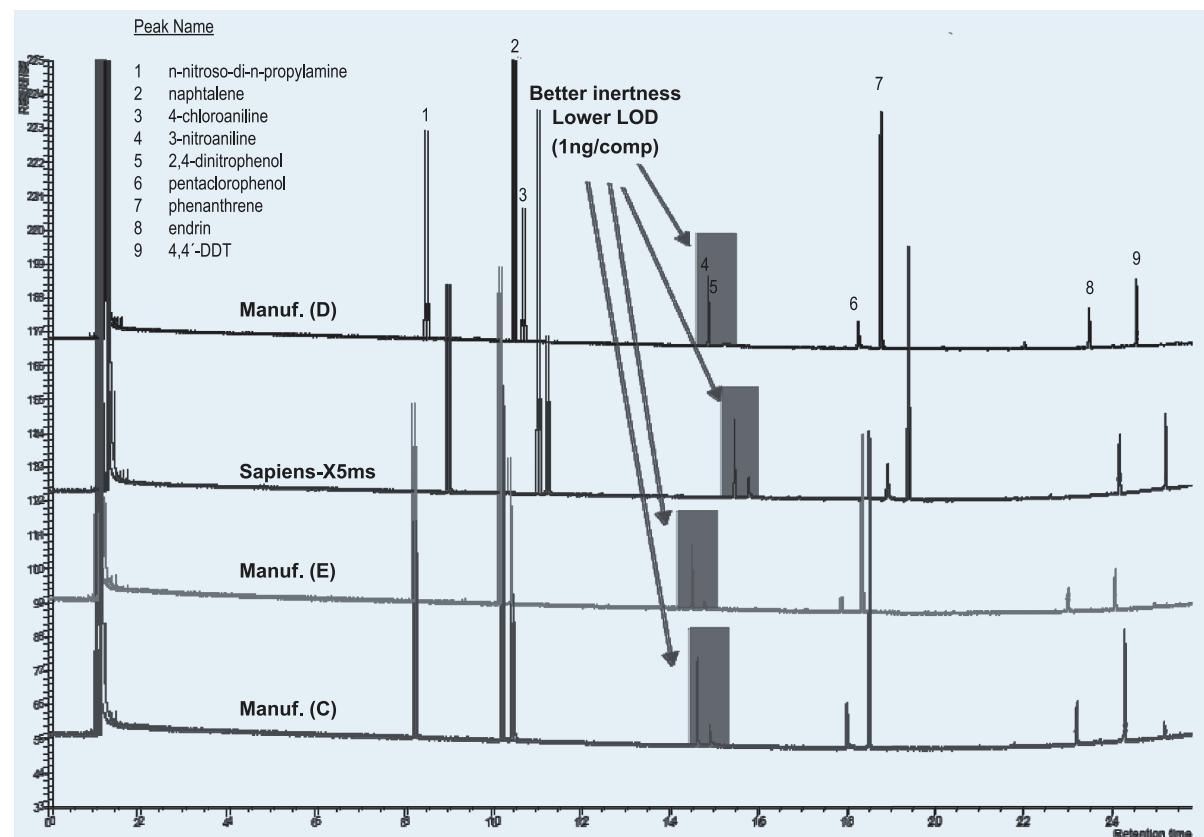


* To perform previous chromatograms shown, it have been used columns from: Agilent, Phenomenex, Supelco, SGE, Restek, (listed in random order).

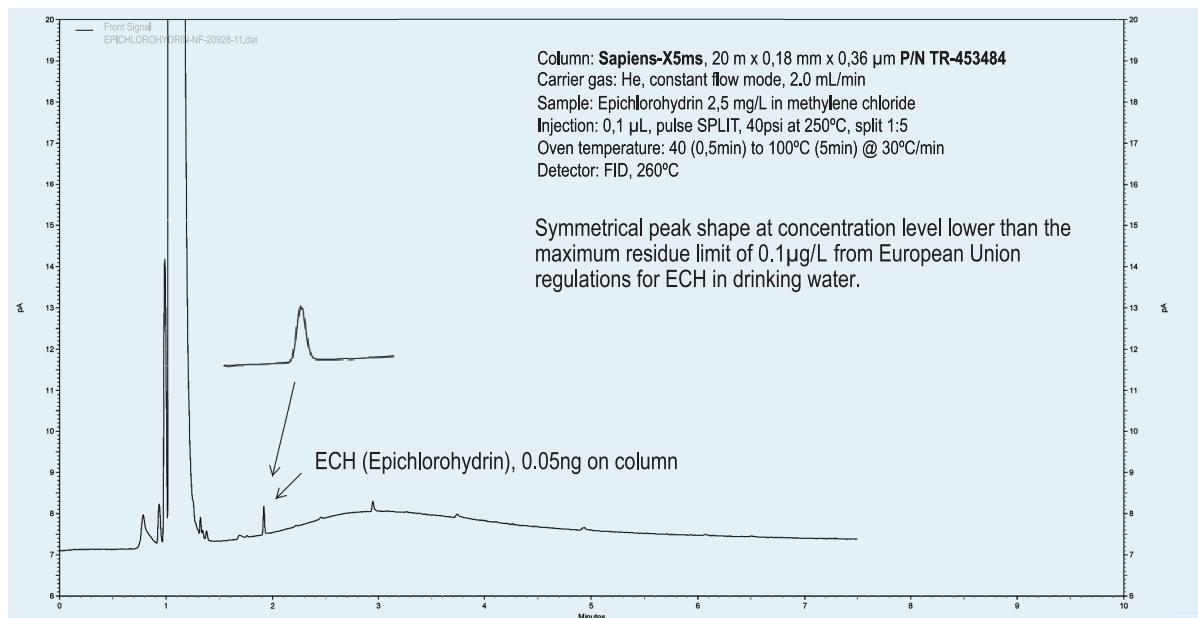
TEST ANILINES-PHENOLS-PESTICIDES:

Sapiens-X5ms vs principal manufacturers

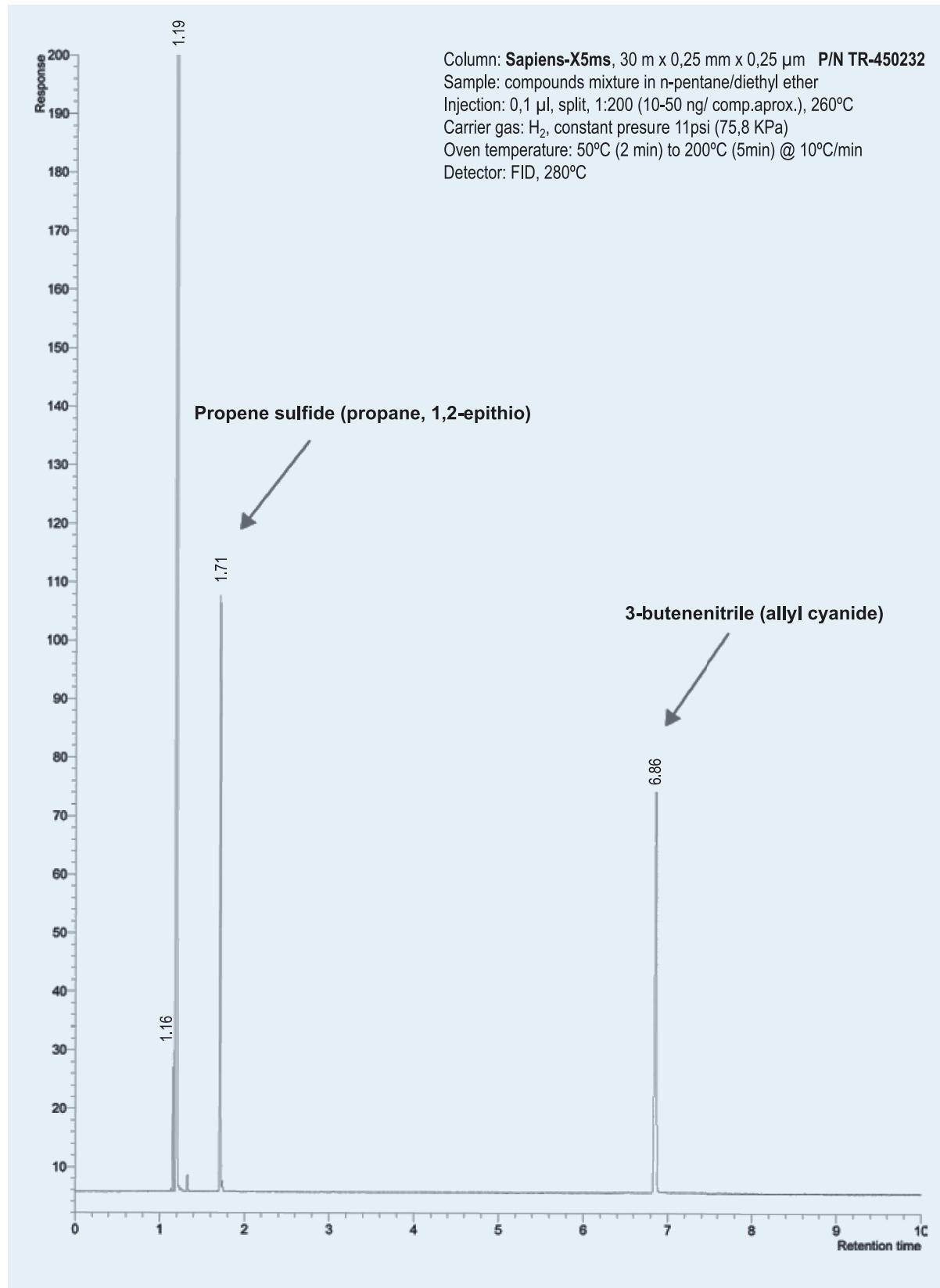
Sapiens-X5ms - Improved performance for active compounds



Aplication : Sapiens-X5ms - Epichlorohydrin GC analysis in drinking whater with Sapiens-X5ms column



- Application : Sapiens-X5ms - Two components from whole garlic



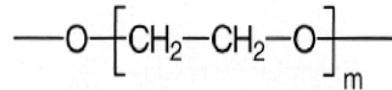
Sapiens-X5ms

Internal Diam.(mm)	Length (m)	Film thickness(μm)	Temp Limits (°C)	Part. N°(P/N)
0,10	10	0,10	-60 to 325/350	TR-450141
	20	0,10	-60 to 325/350	TR-450181
0,18	20	0,18	-60 to 325/350	TR-450984
	20	0,36	-60 to 325/350	TR-453484
0,25	15	0,25	-60 to 325/350	TR-450212
	15	1,00	-60 to 325/350	TR-451012
0,25	25	0,25	-60 to 325/350	TR-450222
	30	0,25	-60 to 325/350	TR-450232
0,25	30	0,50	-60 to 325/350	TR-450532
	30	1,00	-60 to 325/350	TR-451032
0,25	50	0,25	-60 to 325/350	TR-450252
	60	0,25	-60 to 325/350	TR-450262
0,25	60	1,00	-60 to 325/350	TR-451062
	30	0,25	-60 to 325/350	TR-450233
0,32	30	0,25	-60 to 325/350	TR-450233
	30	0,50	-60 to 325/350	TR-450533
0,32	30	1,00	-60 to 325/350	TR-451033
	60	1,00	-60 to 325/350	TR-451063

Sapiens-Wax.ms

100% polyethylene glicol, bonded and cross-linked phase

- Specifically designed for polar compounds
- Lower bleed for trace analysis
- Solvent rinsable
- Equivalent to USP G14, G15, G16, G20 and G39 phases

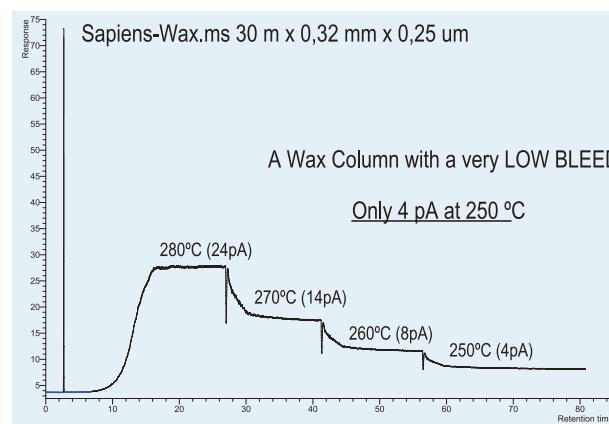


Structure of Polyethylene glycol

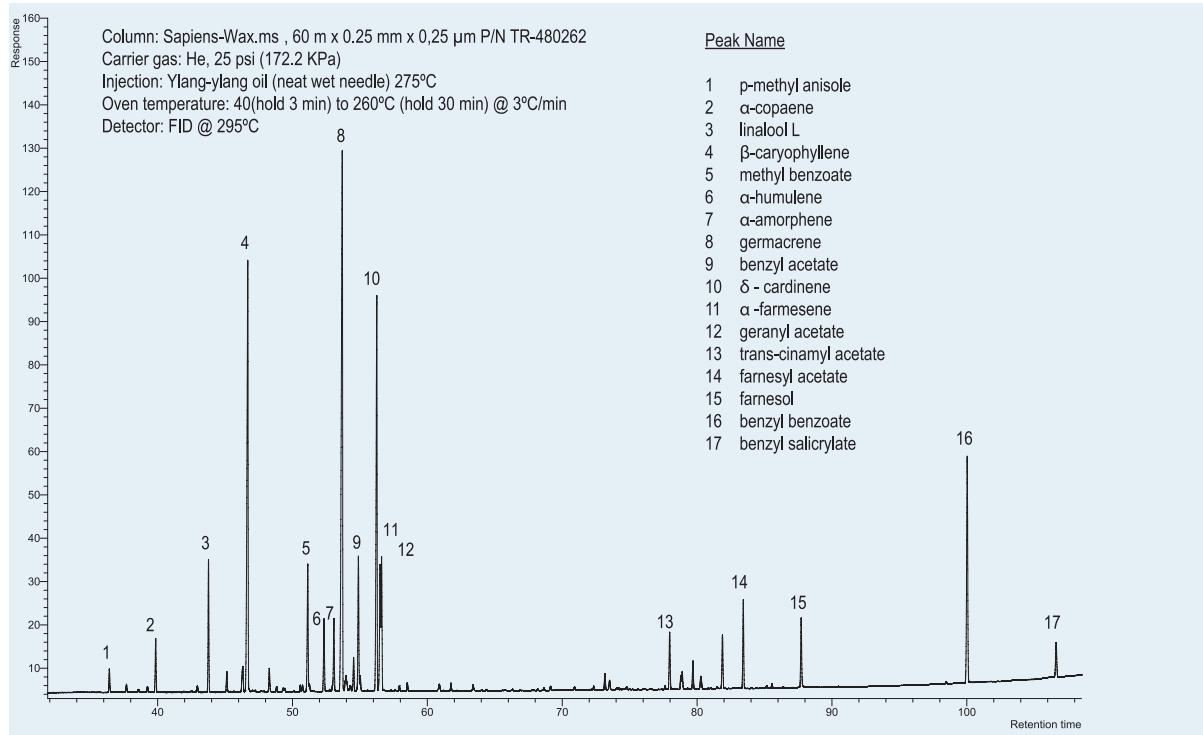
Sapiens-Wax.ms: Bleed vs Temperature

Sapiens-Wax.ms Equivalent Phase

Varian: VF-WAXms
Restek: STABILWAX MS,
Phenomenex: ZB-WAX,
Supelco: Supelcowax 10
SGE: SolGel-WAX
Macherey-Nagel: Optima-WAX



Application : Sapiens-Wax.ms-essential oil: HIGH-CLASS PERFUMES GC-FID Ylang-Ylang Oil



Sapiens-Wax.ms

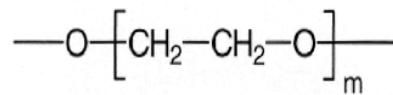
Internal Diam(mm)	Length (m)	Film thickness(µm)	Temp Limits (°C)	Part. N°(P/N)
0,10	10	0,10	35 to 280	TR-480141
	10	0,20	35 to 280	TR-482141
	20	0,10	35 to 280	TR-480181
0,25	15	0,25	35 to 280	TR-480212
	15	0,50	35 to 280	TR-480512
	25	0,20	35 to 280	TR-482122
	30	0,25	35 to 280	TR-480232
	30	0,50	35 to 280	TR-480532
	30	1,00	35 to 280	TR-481032
	60	0,25	35 to 280	TR-480262
0,32	30	0,25	35 to 280	TR-480233
	30	0,50	35 to 280	TR-480533
	30	1,00	35 to 280	TR-481033
	60	0,25	35 to 280	TR-480263
	60	0,50	35 to 280	TR-480563
	60	1,00	35 to 280	TR-481063



Sapiens-Wax.ht

Polyethylen glycol that can withstand up to 300 ° C

- Specifically designed for Fast GC and GC x GC analysis
- MSP High Performance.

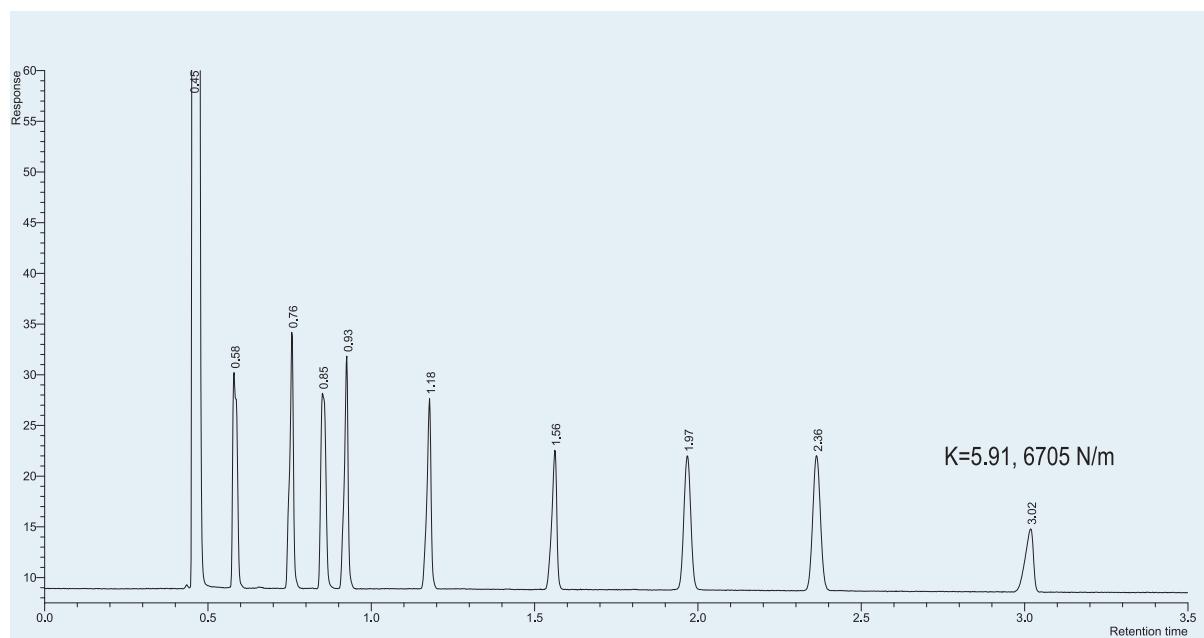


Sapiens-Wax.ht: 10 m x 0,10 mm x 0,10 µm

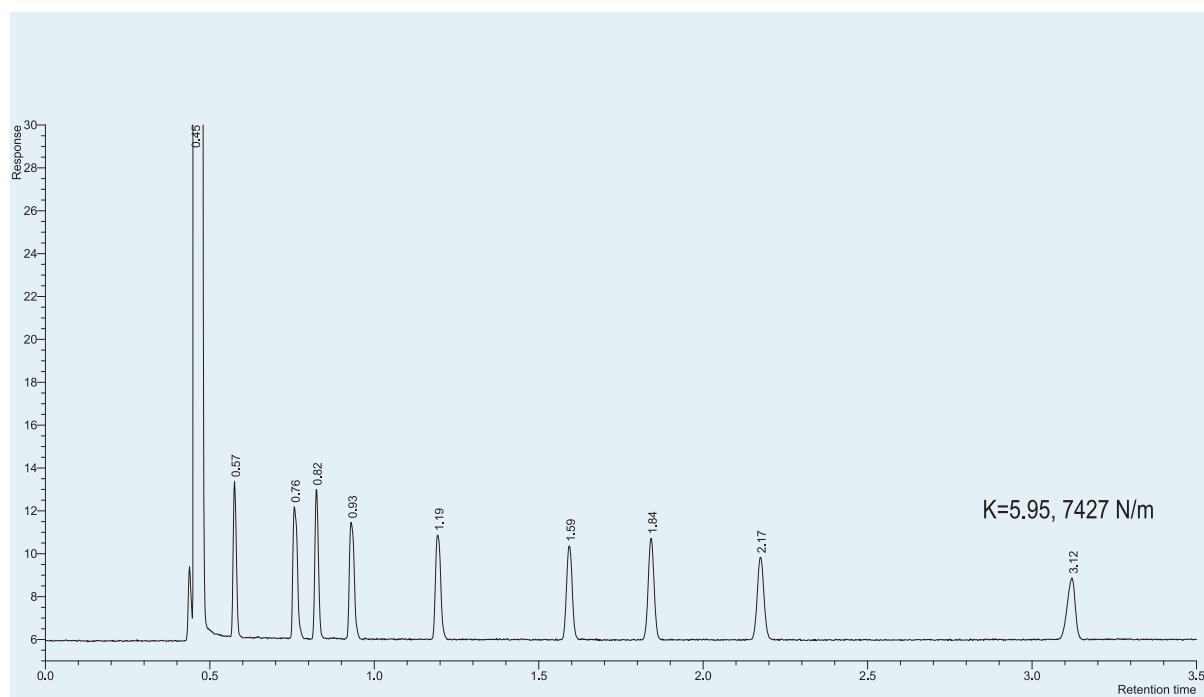
Structure of Polyethylene glycol

After 5hrs continuously at 300°C no degradation of the stationary phase is detected

Initial time

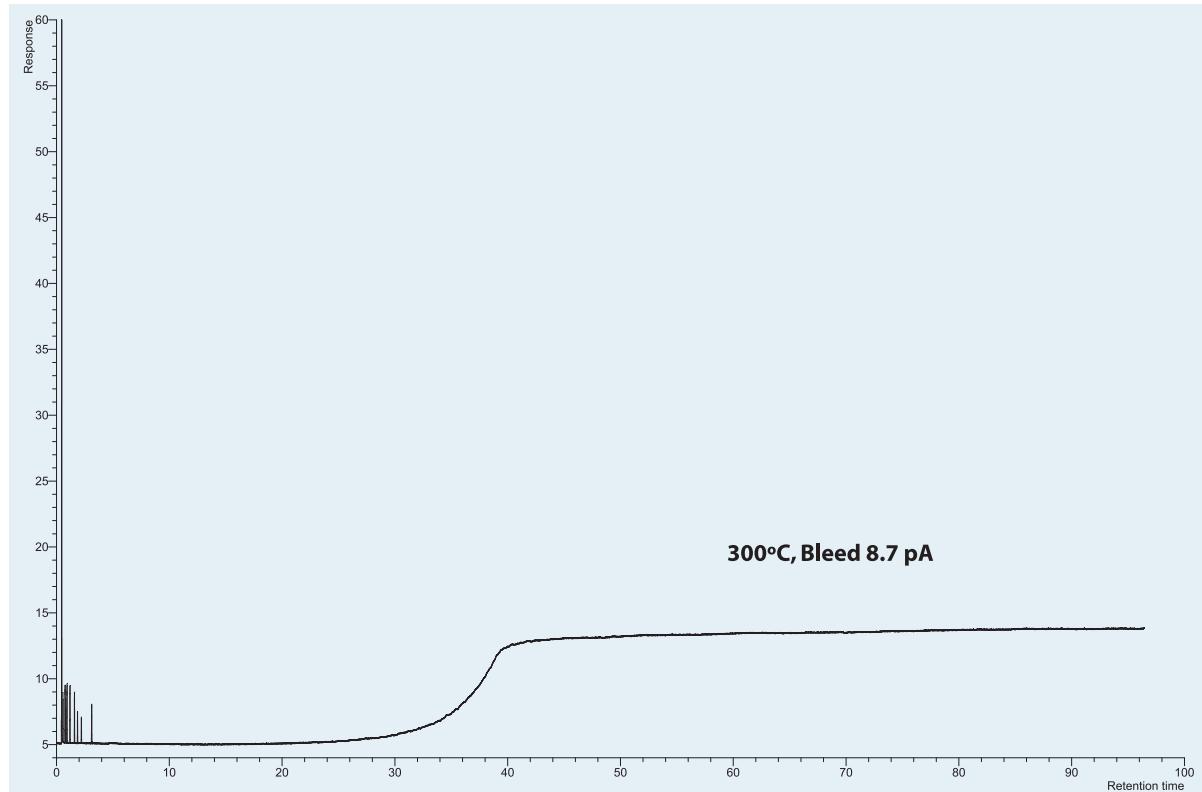


After 5 hours at 300°C



Sapiens-Wax.ht: 10 m x 0,10 mm x 0,10 µm

Bleed at 300°C



Sapiens-Wax.ht

Internal Diam.(mm)	Length (m)	Film thickness(µm)	Temp Limits (°C)	Part. Nº(P/N)
0,10	2	0,10	35 to 300	TR-4901D1
	5	0,10	35 to 300	TR-4901A1
	10	0,10	35 to 300	TR-490141



