



Chromatography Products Catalogue

Professionally Friendly
the *fresh breeze* of chromatography™

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Tk Corporate Information



It is a pleasure to introduce you our Chromatography Products Catalogue, fruit of our clear objective to be closer to you in a professional and also friendly manner.

Just a few words to explain the basis of our relationship objectives

The confidence shown in us by our clients over more than 30 years is explained by our constant policy of surpassing their expectations.

To the quality of our products and services we have always added the value of our understanding of our clients necessities, a personalized technical consultancy and a human relationship which goes beyond the merely commercial.

Our positive attitude to our clients requirements has enabled us to learn from their experiences and to direct this flow of expertise towards an ever greater improvement of our services. It is this attitude to achieve whatever is required that is the backbone of our daily work.

At Teknokroma, each and every one of us who form the team would like to thank you for your confidence in us, expressed over so many years. It is this confidence that strenghtens our convictions, and helps us each day to be closer to you.

In all, we want to share with you our great challenge. In this complex global era, it is our orientation towards each of our clients that will enable us to build a true personal relationship between us, which can only be to the greatest mutual advantage.



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All brands named in this catalogue belong to their corresponding owner.

Teknokroma™ Products



Our technical analysis products catalogue, with more than 4.000 references, is continuously growing with new own research developments and external collaborations with companies and institutions such as “Consejo Superior de Investigaciones Científicas (CSIC)”, “Institut Quimic de Sarriá (IQS)” and with world-renown chromatographer, Cole Woolley, PhD.



- Packed Columns
- Capillary Columns
- HPLC Columns
- Syringe Filters
- Membrane Filters
- Syringes
- Robot Filters
- Static Head Space Sampler
- SPE
- Vials and Septa for Autosampler
- Consumables GC
- Consumables HPLC



TK Social Teknokroma

Our team, formed by chemists, pharmacists, biologists and qualified technical staff, working together in an environment that enable personal initiative, creativity and enthusiasm for all actions in order to achieve the customer satisfaction.

The continued assistance to National and International exhibitions is the formula to enhance excellent communication with our customers.



Expo Center Shangai 2006



Analytica Vietnam 2013



Achema Frankfurt 2006



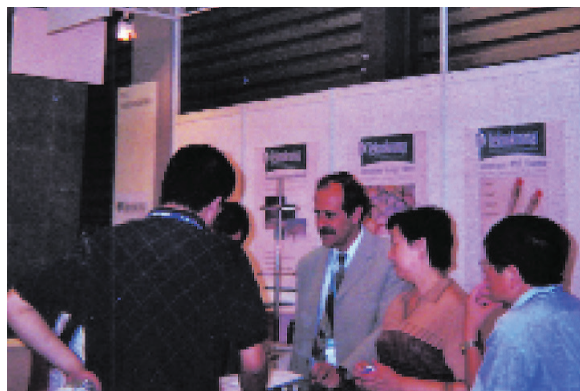
Analytica Munich 2012



Analytica-Anacon India 2006



Arab Lab Dubai 2003



Analytica China 2004



Analytica Múnich 2014.



China 2006



Expoquimia 2012



Arab Lab Dubai 2006



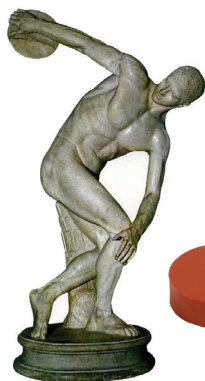
Arab Lab Dubai 2014





Capillary Columns

Sapiens-1ms	See page XI
Sapiens-5ms	See page XIII
Sapiens-X5ms	See page XVII
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Meta.BLOOD 1	See page 70
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TRB-BIODIESEL	See pages 71-72



diskobolus septa by Teknokroma™



Diskobolus™ Septa

See pages 88-92



Ferrules teide by Teknokroma™



TEIDE™ Ferrules

See pages 93-96

New Teknokroma Liners



New Teknokroma Liners

See pages 97-101

OlimPeak® Certified Filters by Teknokroma



Certified Olimpeak™ Syringe Filters

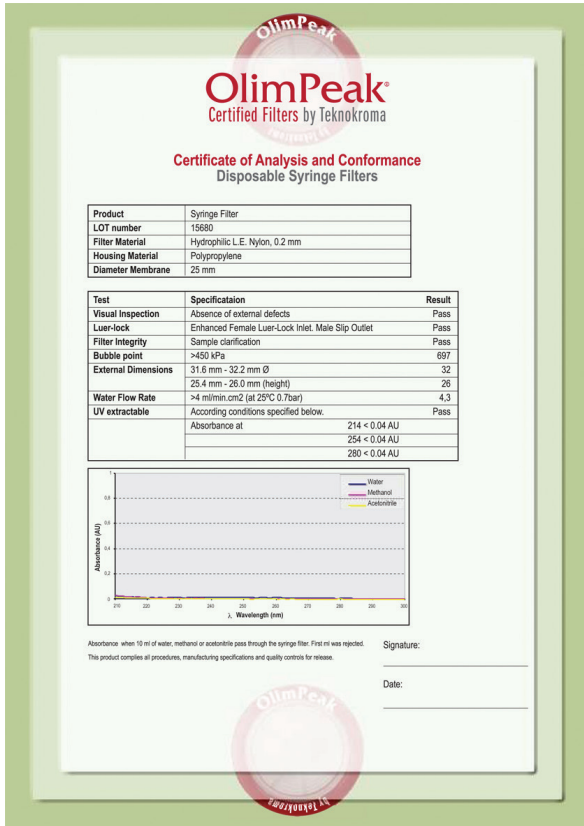
See pages 160-168

Our new **Certified Syringe Filter Olimpeak™** offer the best value. All filters are supplied with a Certificate of Quality batch to batch as guarantee of product performance and quality.

Each lot is quality monitored for:

- 100 % of the syringe filters are visually inspected following quality specifications
- Each batch of filters is tested for external dimensions
- Bubble Point
- Burst Pressure
- Filter Integrity
- Water Flow Rate
- UV Extractables and compliance with all technical procedures.
- Manufacturing specifications and quality controls for release

Test are carried out by an independent laboratory



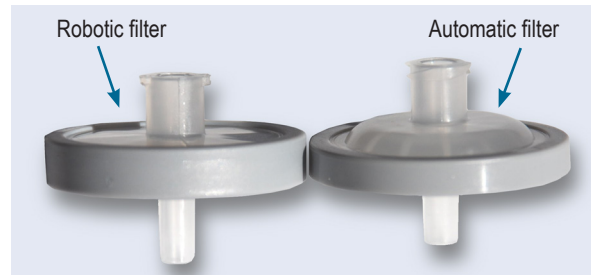
MiniTip Certified Olimpeak™ Syringe Filters



MiniTip Olimpeak™ Syringe Filters See page 167

- Teknokroma has designed a new 13 mm syringe filter with a thin outlet called MiniTip, for direct filling of microvials.
- High quality MiniTip syringe filters are available with these membranes: Nylon, PES, PTFE, PVDF, RC, CN, CA, M.E.C and PP.
- Pore size can be 0.45 or 0.20 µm and the lot number of each filter is printed on the PP housing.

New Certified AUTOMATIC OlimPeak Filter



New Certified AUTOMATIC OlimPeak Filter for Automatic Equipments See page 170

- This filter units are the newest development of Teknokroma filter for automatic equipments.
- The design of this filter is the same than the Robotic Filter except that the upper side is vault shaped.
- The inlet is a female leuer Screw ant the outlet is a male luer Minispike.

Micro-Centrifugal Filters - Nonsterile



New Micro-Centrifugal Filters - Nontersile See page 169

Teknokroma's Syringes filters are of high quality and their level of extractables is very low. The encapsulating process forces the sample to pass only through the membrane .

They chemically resist a wide range of chemical products and solvents.

Teknokroma's filters avoid any leak or any contamination due to the use of high quality materials.

Easy Identification for Method Validation



In addition to the color code, every single unit of Olimpeak™ Certified Syringe Filter is printed with the membrane type, pore size and batch number. This information makes them uniuques for traceability, GLP's and validation purposes.

Certified Olimpeak™ Membrane Filters



Certified Olimpeak™ Membrane Filters See pages 171-172

- Protect your instruments and columns eliminating particulates and gases from mobile phase
- Nylon and PVDF membrane filters are resistant to a wide range of organic and aqueous solvents.
- M.E. Cellulose membranes are used for filtration of aqueous mobile phase
- PTFE membrane filters are ideal for organic solvent

Filtering Equipment



Filtering Equipment See page 172

- 47 mm filtration apparatus is recommended for filtration of mobile phase and removal of particles from HPLC solvents.
- Manufactured with first quality glass, tube of glass DURAN from Schott.
- The porosity of the filtration plate is of number 3, which means a nominal pore size of 16-40 micrometers.

Finisterre

by Teknokroma™



Finisterre™ SPE Columns See pages 173-179

Teknokroma introduces in the market the new line of Finisterre™ Solid Phase Extraction columns for a fast and efficient sample clean-up and concentration prior to analysis through GC, HPLC, and/or other instrumental methods.

SPE method concentrates and purifies analytes from solution by sorption onto a disposable solid phase cartridge, followed by elution of the analyte with an appropriate solvent for instrumental analysis.

The Finisterre™ SPE columns improve sample purity, quantification, and HPLC column life.

HPLC Columns



New Hardware Design column: Ultrafit™ System

New Hardware Design column:
Ultrafit™ System See page 190

The new Ultrafit™ design will make your work in the laboratory more comfortable and efficient. The Ultrafit™ system, as well as helping in the replacement of the frit at the column entrance, enables you to easily include either additional frits or a pre-column, always with the utmost simplicity and economy and in no way whatsoever is the quality of the separation affected.

QuEChERS Finisterre by Teknokroma™



QuEChERS (Quick, Easy, Cheap, Effective, Rugged & Safe) offer a convenient and effective approach for determining pesticide residues in fruit, vegetables and other foods.

The Teknokroma Finisterre QuEChERS Extraction and Dispersive SPE kits permit to work with the specific methods, including:

1. Method **EN 15662** Foods and Plant Origin. Determination of Pesticide Residues using GC-MS and/or LC-MS/MS Following Acetonitrile Extraction/Partitioning and Clean-up by Dispersive SPE- QuEChERS.
2. Method **AOAC 2007.01**. Pesticide Residues in Food by Acetonitrile Extraction and partitioning with Magnesium sulfate.
3. Method **Mini-multiresidue QuEChERS**. Method for the Analysis of Pesticide Residues in Low-Fat Products. www.quechers.com. (2008)

These products make simple to prepare your food samples for analysis with:

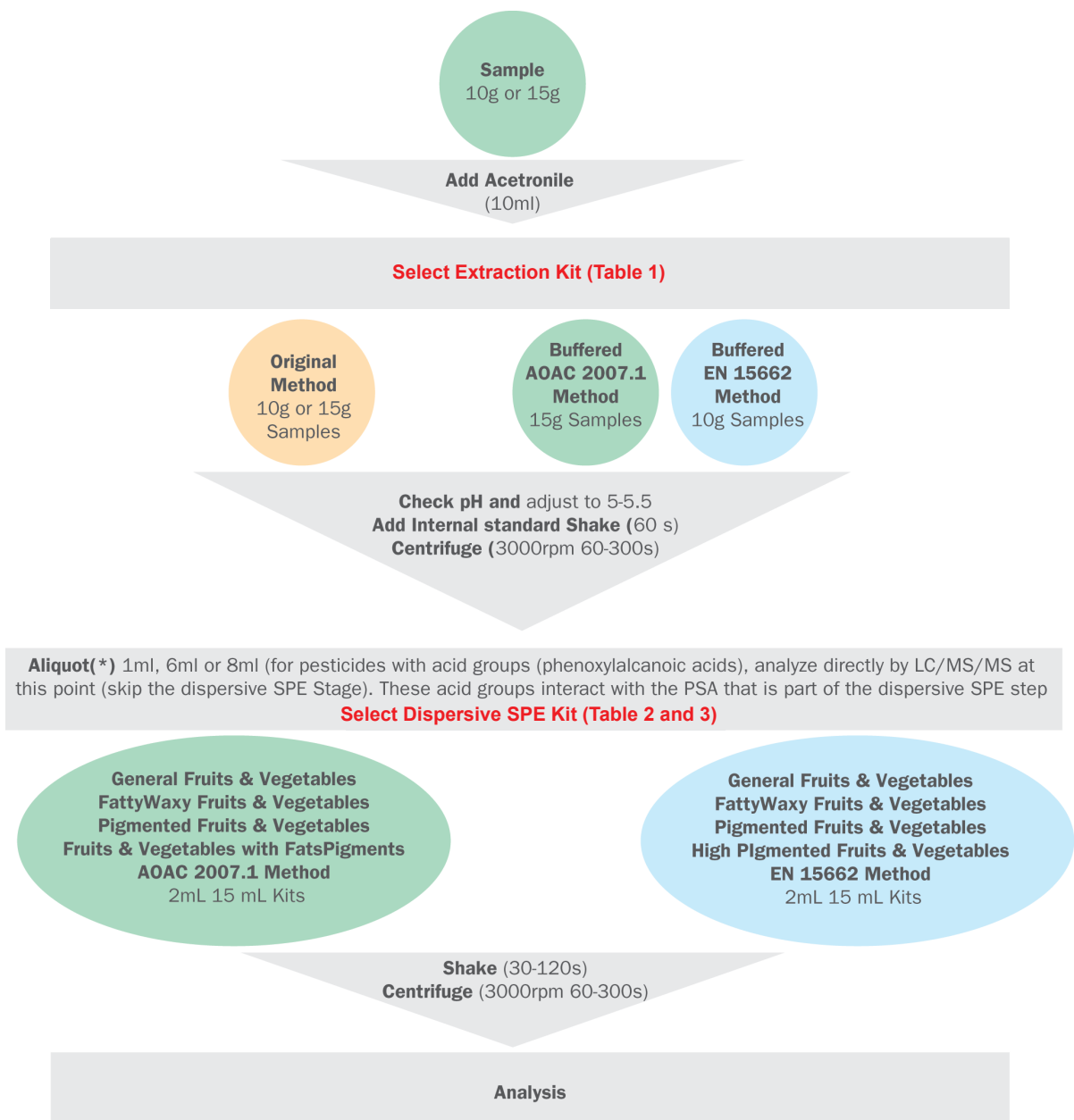
- √ High recoveries
- √ Accurate results
- √ High sample throughput
- √ Minimal solvent use
- √ Less labor
- √ Lower costs
- √ Simple glassware

Tk What's New

We offer QuEChERS extraction and dispersive SPE products in a variety of standard size and formats.

Extraction kits contain preweighed salt, so you can add them after the acetonitrile step, protecting the integrity of your sample.

Dispersive SPE kits are assembled in 2 mL and 15 mL sizes, preweighed are premixed with just the right mixture of salts and sorbents for your aliquot volume.



(recommended values)

PHASE 1: Extraction

Adding solvent and salts to a small (10 or 15 g) fruit or vegetable sample enables to extract the pesticides into the organic layer.

PHASE 1 Extraction KIT - Table 1

50mL Centrifuge Tubes for Sample Extraction

P/N	Description	Qty.	Recommended Application
TR-Q5010	4g MgSO ₄ , 1g NaCl, 1g trisodium citrate dihydrate, 0.5g disodium hydrogencitrate sesquihydrate	50	European EN-15662
TR-Q5040	6g MgSO ₄ , 1.5g NaOAc	50	AOAC 2007.01
TR-Q5020	4g MgSO ₄ , 1g NaCl	50	Mini-Multiresidue (10 g sample)
TR-Q5045	6g MgSO ₄ , 1.5g NaCl	50	Mini-Multiresidue (15 g sample)
TR-Q5030	6g MgSO ₄ , 1.5g NaCl, 1.5g sodium citrate dibasic, 750mg disodium citrate dibasic sesquihydrate	50	
TR-Q5050	6g MgSO ₄ , 1.5g NaOAc, 750mg disodium citrate sesquihydrate	50	
TR-Q5000	Empty 50mL tube	50	



PHASE 2: Dispersive SPE Clean-up

Select the dispersive SPE kit according to the type of food being analyzed and the method that you want to use. One aliquot (*) of the sample extract from Phase 1 is added to 2 mL or 15 mL centrifuge tubes (Table 2 or Table 3) containing a small quantity of SPE sorbent and MgSO₄.

PHASE 2 Dispersive SPE KIT Clean-Up - Table 2

2 mL Micro-centrifuge tubes

P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q2015	150mg MgSO ₄ , 25mg PSA	100	1	European EN-15662 Mini-Multiresidue
TR-Q2025	150mg MgSO ₄ , 25mg PSA, 25mg C18	100	1	European EN-15662 Mini-Multiresidue
TR-Q2035	150mg MgSO ₄ , 25mg PSA, 2.5mg GCB	100	1	European EN-15662 Mini-Multiresidue
TR-Q2045	150mg MgSO ₄ , 25mg PSA, 7.5mg GCB	100	1	European EN-15662 Mini-Multiresidue
TR-Q2055	150mg MgSO ₄ , 50mg PSA	100	1	AOAC 2007.01
TR-Q2065	150mg MgSO ₄ , 50mg PSA, 50mg C18	100	1	AOAC 2007.01
TR-Q2075	150mg MgSO ₄ , 50mg PSA, 50mg GCB	100	1	AOAC 2007.01
TR-Q2085	150mg MgSO ₄ , 50mg PSA, 50mg C18, 50mg GCB	100	1	AOAC 2007.01
TR-Q2090	150mg MgSO ₄ , 25mg C18	100	1	AOAC 2007.01
TR-Q2000	Empty 2mL Centrifuge Tube	100	1	



15 mL Centrifuge tubes - Table 3





P/N	Description	Qty.	Aliquot (mL) (*)	Recommended Application
TR-Q1590	900mg MgSO ₄ , 150mg PSA	50	6	European EN-15662
TR-Q1593	900mg MgSO ₄ , 150mg PSA, 150mg C18	50	6	European EN-15662
TR-Q1591	900mg MgSO ₄ , 150mg PSA, 15mg GCB	50	6	European EN-15662
TR-Q1592	900mg MgSO ₄ , 150mg PSA, 45mg GCB	50	6	European EN-15662
TR-Q1510	1200mg MgSO ₄ , 400mg PSA	50	8	AOAC 2007.01
TR-Q1515	1200mg MgSO ₄ , 400mg PSA, 400mg C18	50	8	AOAC 2007.01
TR-Q1516	1200mg MgSO ₄ , 400mg PSA, 400mg GCB	50	8	AOAC 2007.01
TR-Q1520	1200mg MgSO ₄ , 400mg PSA, 400mg C18, 400mg GCB	50	8	AOAC 2007.01
TR-Q1596	900mg MgSO ₄ , 150mg C18	50	6	AOAC 2007.01
TR-Q1594	900mg MgSO ₄ , 300mg PSA, 150mg GCB	50	6	---
TR-Q1595	900mg MgSO ₄ , 300mg PSA, 150mg C18	50	6	---
TR-Q1600	750mg MgSO ₄ , 250mg PSA, 250mg C18, 250 mg GCB	50	6	---

PSA= Primary and secondary exchange material

GCB= Graphitized carbon blank



Selection Guide for Dispersive Kits. Phase 2




Types	Qt Pack	Methods			
		EN 15662	AOAC 2007.1	Mini Multiresidue	Others
General Fruits and Vegetables:					
Removes polar organic acids, some sugars and lipids					
	100 tubes 2 mL	25 mg PSA 150 mg MgSO ₄ Part N° TR-Q2015	50 mg PSA 150 mg MgSO ₄ Part No. TR-Q2055	25 mg PSA 150 mg MgSO ₄ Part No. TR-Q2015	
	50 tubes 15 mL	150 mg PSA 900 mg MgSO ₄ Part No. TR-Q1590	400 mg PSA 1200 mg MgSO ₄ Part No. TR-Q1510		
Fruits and Vegetables with Fats and Waxes:					
Removes polar organic acids, some sugars, more lipids and sterols					
	100 tubes 2 mL	25 mg PSA 25 mg C18 150 mg MgSO ₄ Part No. TR-Q2025	50 mg PSA 50 mg C18 150 mg MgSO ₄ Part No. TR-Q2065	25 mg PSA 25 mg C18 150 mg MgSO ₄ Part No. TR-Q2025	
	50 tubes 15 mL	150 mg PSA 150 mg C18 900 mg MgSO ₄ Part No. TR-Q1593	400 mg PSA 400 mg C18 1200 mg MgSO ₄ Part No. TR-Q1515		150 mg PSA 150 mg C18 900 mg MgSO ₄ TR-Q1593

Selection Guide for Dispersive Kits. Phase 2

Pigmented Fruits and Vegetables:

Removes polar organic acids, some sugars and lipids, and carotinoides and chlorophyll; not for use with planar pesticides

Methods

Types	Qt Pack	EN 15662	AOAC 2007.1	Mini Multiresidue	Others
	100 tubes 2 mL	25 mg PSA 2.5 mg GCB 150 mg MgSO4	50 mg PSA 50 mg GCB 150 mg MgSO4	25 mg PSA 2,5 mg GCB 150 mg MgSO4	50 mg PSA 50 mg GCB 150 mg MgSO4 TR-Q2075
		Part No. TR-Q2035	Part No. TR-Q2075	Part No. TR-Q2035	
	50 tubes 15 mL	150 mg PSA 400 mg GCB 900 mg MgSO4	400 mg PSA 400 mg C18 1200 mg MgSO4		
		Part No. TR-Q1591	Part No. TR-Q1516		
	50 tubes 15 mL	150 mg PSA 45 mg GCB 900 mg MgSO4			300 mg PSA 150 mg GCB 900 mg MgSO4 TR-Q1594
		Part No. TR-Q1592			

Fruits and Vegetables with Pigments and Fats:

Removes polar organic acids, some sugars and lipids, plus carotinoides and chlorophyll; not for use with planar pesticides

	100 tubes 2 mL		50 mg PSA 50 mg C18 50 mg GCB 150 Mg MgSO4	25 mg PSA 7,5 mg GCB 150 mg MgSO4	
			Part No. TR-Q2085	Part No. TR-Q2045	
	50 tubes 15 mL		400 mg PSA 400 mg C18 400 mg GCB 1200 Mg MgSO4		
			Part No. TR-Q1520		





Mediterranea™ Sea 18, 8 & 4

See pages 200-210

The mediterranea™ sea18 column provides a performance level that, until now, has not been reached in efficiency, inertness, pH-robustness, reproducibility and reliability. mediterranea™ sea18 columns simplify and make your HPLC work more pleasant. You won't worry about the extreme basic or acidic natures of your samples with the mediterranea™ sea18 column.

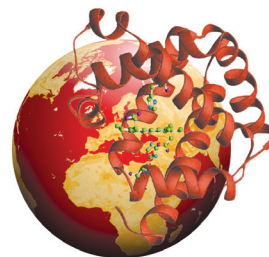
The versatility of the mediterranea™ sea18 column will enable you to deal successfully with the immense variety of separations in the fields of pharmaceuticals, life sciences, environment, foods, etc.

Once every ten years, the world of chromatography experiences a revolutionary technology that surpasses all others and meets the expectations of chromatographic scientists.

Teknokroma has focused all its efforts and all its know-how, accumulated through more than 30 years of chromatographic research and development, in offering the global-best reverse phase HPLC packing mediterranea™ sea18.

While developing the mediterranea™ sea18 column we created two novel proprietary bonding & packing technologies. In order to demonstrate the global-best technology of mediterranea™ sea18, we compared chromatographic results from the world's most popular reverse-phase HPLC columns. We invite you to try our mediterranea™ sea18 when you experience less-than-satisfactory results with your favourite column.

by Teknokroma
Europa®



Europa™ for Peptides & Proteins

See pages 211-217

Teknokroma introduces in the market the new line of **Europa HPLC columns**.

After the versatility of our popular **mediterranea™ Sea 18** column that enables you to deal successfully with the immense variety of separations in the fields of pharmaceuticals, life sciences, environment, foods, etc. Teknokroma has focused all its efforts and all its know-how, accumulated through more than 30 years of chromatographic research and development, in offering the best reverse phase HPLC packing for identification and purification of peptides and protein compounds.

Manufactured using novel proprietary technologies, analytical and preparative Europa columns are simply the best reverse phase columns available today.

As a result of these, we launch into the market the Line of Europa HPLC columns, one of the best columns in the field of analysis of biomolecules.

The Europa HPLC columns for peptides and proteins, provide the best performance and unsurpassed efficiency, reliability and reproducibility.

There is still a consensus that the best material to use as chromatographic packing continues to be silica. The particles of silica material are physically resistant, enable multiple functions, present maximum levels of efficiency and are also compatible with practically all solvents.

Teknokroma has dedicated years of research and development in obtaining the best silica particle on the market. The silica particle on which the Europa columns is based is the result of an optimisation process, starting with extremely pure materials with unusually low metal content, and obtaining a perfectly spherical, rigid and inert particle.



New 2,2 µm Mediterranea by Teknokroma

Reduces analysis costs with no resolution loss
Can work at high flow rates with no efficiency loss
Less backpressure than 1,8 µm columns
Reduces solvent consumption
Ideal for LC-MS applications

Mediterranea UHPLC column

Mediterranea is a transitional column fully compatible with cutting-edge HPLC and UPLC systems, radically improving analysis performance and reducing retention times.

The material used for the development of Mediterranea columns is an ultra-pure, metal-free, state-of-the-art silica gel packing, with a particle size of 2,2 µm and a pore size of 100 Å.

Mediterranea C18 uses the latest technology in functionalization and endcapping of silica particles. Is compatible with a 100% aqueous mobile phase and it stands extreme pH conditions (1,5 to 11).

Mediterranea has been developed to offer the highest quality and reproducibility

Mediterranea UPLC columns C18 2,2 µm

TR-010900	Mediterranea C18	5 x 0,21 cm	2,2 µm
TR-010901	Mediterranea C18	10 x 0,21 cm	2,2 µm

Teknokroma checks rigorously both each packing batch and every single column.

Brisa "LC2"

Latest technology Ultrapure Silica

Optimizes your analysis costs

Immediate delivery

New column Brisa LC2

"Limited Cost x Liquid Chromatography"

The material used for this column development is an ultrapure and metal free silica packing. The pore size is 120 Å and it's available in 3 & 5 µm particle size.

Brisa "LC2" is a fully "endcapped" free silanol silica with a broad usable pH range (2-11).

Brisa "LC2" has been designed to get the highest reproducibility and quality. Teknokroma strictly controls each packing batch and each single column.

Analytical Columns Brisa LC2

C18 (3 & 5 µm)

TR-010481	Brisa LC2 C18	25 x 0,46 cm.	5 µm
TR-010480	Brisa LC2 C18	15 x 0,46 cm.	5 µm
TR-010498	Brisa LC2 C18	15 x 0,46 cm.	3 µm
TR-010499	Brisa LC2 C18	10 x 0,46 cm.	3 µm

LC-MS Columns Brisa LC2

C18-MS (3 µm)

TR-010496	Brisa LC2 C18-MS	5 x 0,21 cm.	3 µm
TR-010497	Brisa LC2 C18-MS	10 x 0,21 cm.	3 µm

Advantix ODS



Advantix ODS

See pages 235-236

New packing made of spherical ultra-pure silica particles, with extremely low metals content, functionalized with groups octadecylsilane of polar embedded type. This polar group included in the base of hydrocarbonades chains confers to the packing a high deactivation in front of basic compounds, being able to chromatograph with perfectly symmetric peaks all kind of bases, including the most difficult ones. Working with acid pH's are able to easily cromatograph acid compounds, basic and quelants.

Also, the polar group included in the functionalization of the packing provides an especial selectivity very useful in the resolution of mixtures separated in conventional C18 packings.

Hyper-Pack ODS



Hyper-Pack ODS

See pages 237-237

Due to its characteristics of pore size, surface area, percentage of covering (%C), and the kind of silica it is build of, it is the suitable alternative to Hypersil ODS packings. Its chromatographic behavior exactly reproduces the one of this popular packing, being able to transfer the chromatographic methods without any kind of adjustment.

Hyper-Pack Basic



Hyper-Pack Basic

See pages 239-240

It reproduces with total fidelity the chromatographic behavior of the columns Hypersil BDS C18.

Available in 3 and 5µm and in all length and diameter configurations.

Deuterium Lamps for a Detector



Deuterium Lamps for a Detector

See pages 279-282

HPLC Safety Caps



HPLC Safety Caps

See pages 283-287

Vapours and gases of dangerous liquids can cause damage to your health and to your environment. Bottles and containers with unsafe contents always have to be sealed reliably to avoid health hazards and environment pollution.

Many directives are already regulated by law - in addition, you should always take care of your health and integrity yourself.

Troubleshooting by SCAT Safety Caps

- **No escape of hazardous vapours**
Integrated air valve and exhaust filters keep your containers sealed safely.
- **No pollution**
Containers always remain shut, even during extraction or filling of liquids.
- **No shift of tubing**
Tubes remain fixed - no air intake into sensitive equipment like chromatography systems
- **Easy container exchange**
Safety Caps are freely turnable without twisting tubes.
- **No air intake**
No interruption of chromatography processes.



HPLC Safety Waste Caps
 HPLC Safety Caps - With Safety Funnel
 Exhaust Filters for Safety Caps
 HPLC Safety Funnels
 Accessories & Consumables

Safety Caps

See pages 288-297

Hamilton SoftGrip™ 2nd. Generation Pipettes



Hamilton SoftGrip™
 2nd. Generation Pipettes

See pages 299-301

- Wide Selection of Ergonomic Pipettes
- Completely Autoclavable
- Guaranteed Accuracy and Precision

Universal AdvanTip™ LT and Precision Pipette Tips



Universal AdvanTip™ LT
 and Precision Pipette Tips

See pages 302-303

GLP Laboratory Electrodes

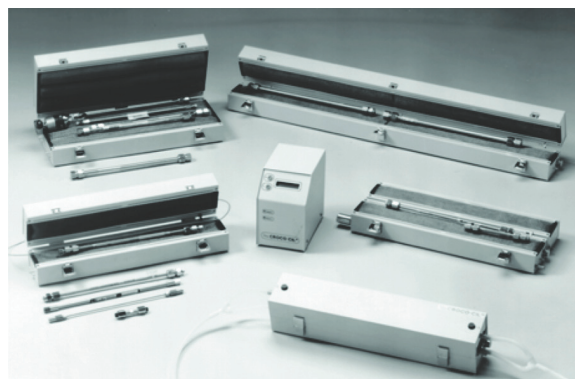


GLP Laboratory Electrodes

See pages 304-307

- All electrodes are printed with an indelible serial number
- Individual test certificates with measured values
- Indelible marking means long-term readability
- Ergonomic electrode head
- Proven electrolyte sealing system
- High-quality seal between electrode head and cable (IP 68)
- Integrated, captive seal at the electrode plug head
- Blue interior buffer gives visual indication of contact with the pH diaphragm

HPLC Column Heaters



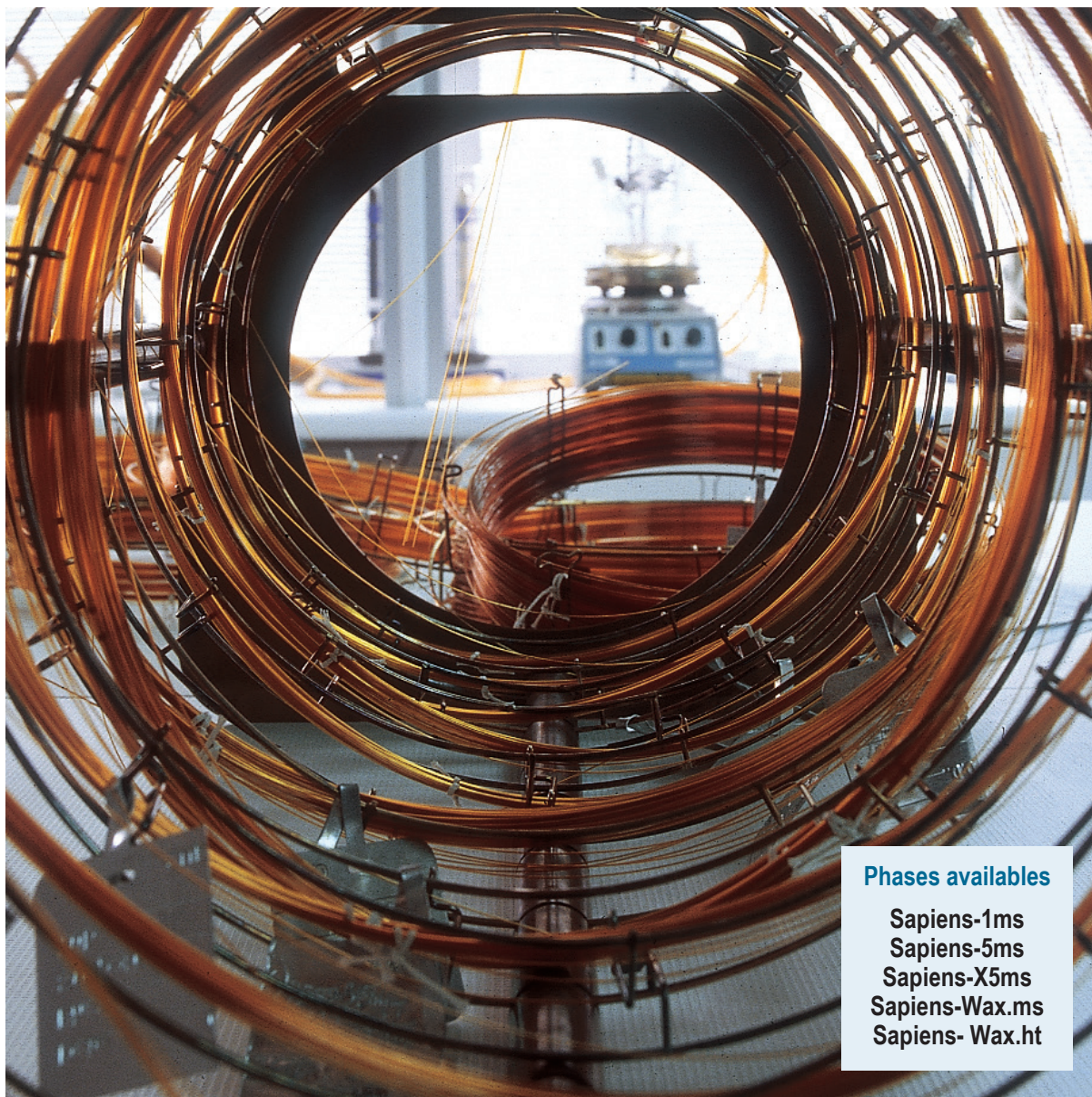
HPLC Column Heaters

See pages 308-309

- **Functional and Compact**
 Can be used with any instrument and any column
 Remote control
 Rheodyne or Vici valves can be installed internally
 Mobile phase preheating (optional)
- **Accurate**
 The opposite metal mesh beds guarantee uniform temperature spread as the metal acts as an ideal heat conductor while, at the same time, allowing air to circulate freely (patented).
 Electronic temperature regulation produces reproducible retention times (CV < 1%)
- **Safe**
 Mobile phase leaks easily detectable (leak detector)

Line of Sapiens Capillary Columns

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



Phases availables

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

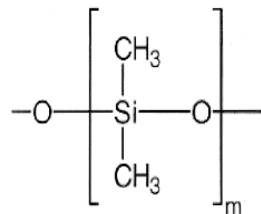
Phenomenex: ZB-1MS

GL Sciences: InertCap 1MS

Sigma-Aldrich: Equity-1

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

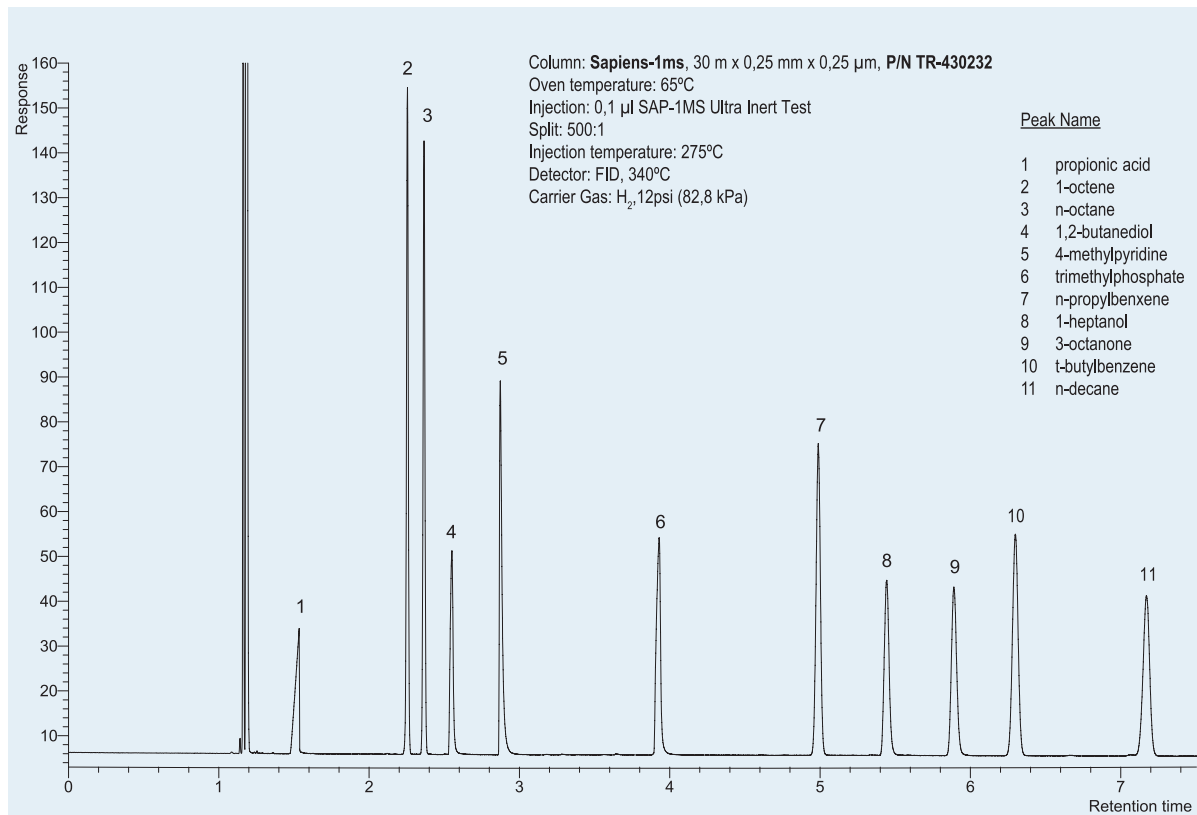
Macherey-Nagel: OPTIMA-1MS Accent



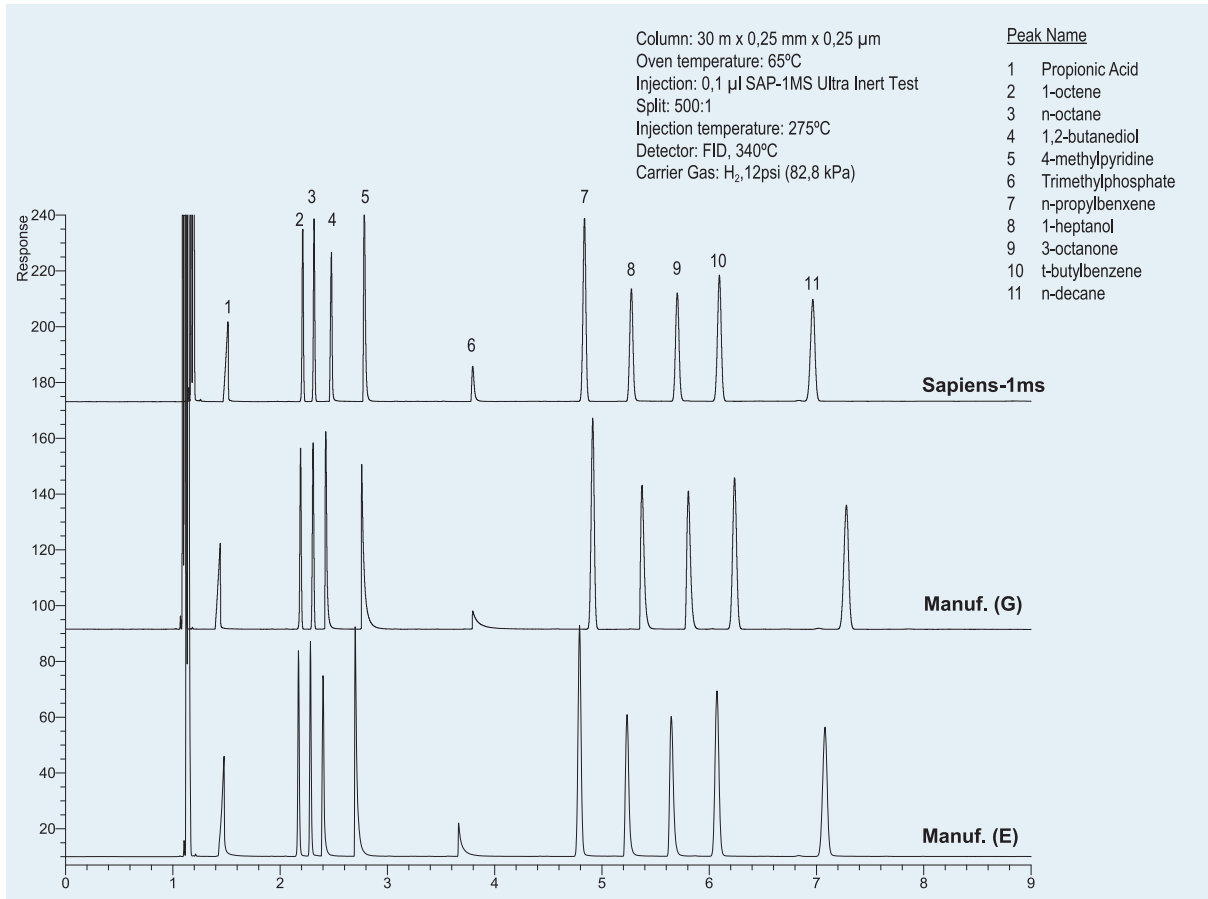
Structure of Poly(dimethyl)siloxane

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

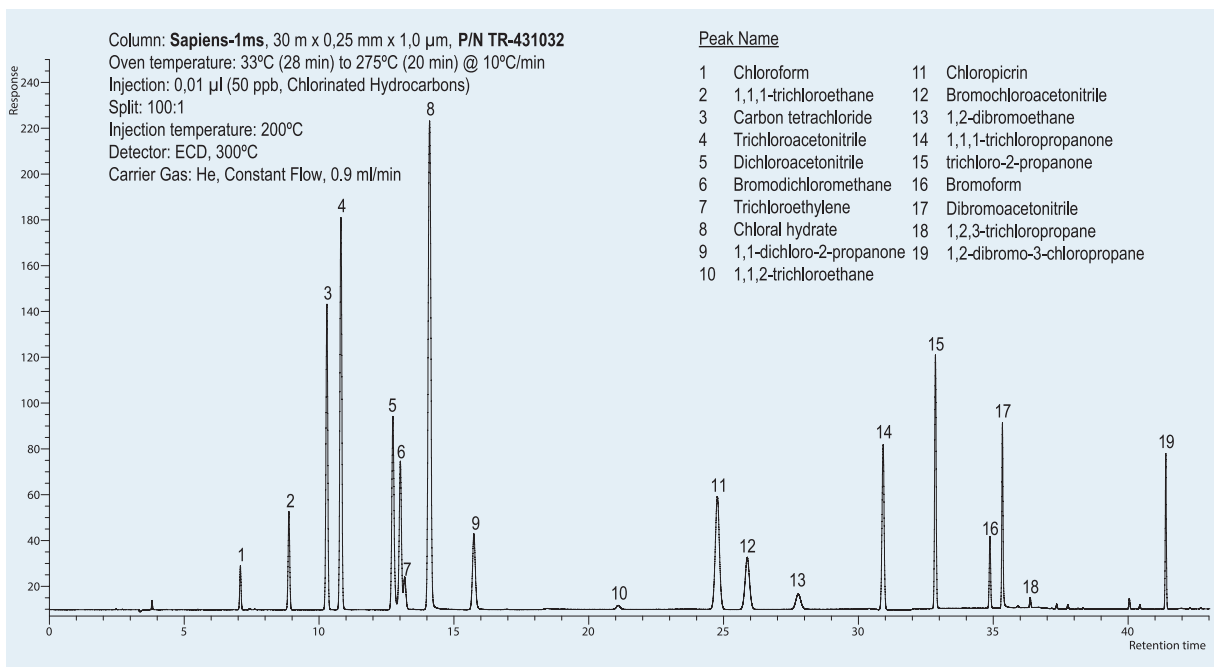
Good peak shape and response for all active compounds



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



Application: Sapiens-1ms, 30m x 0,25mm x 1,0 μ m, 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
	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
	25	0,52	-60 to 325/350	TR-435223
	30	0,25	-60 to 325/350	TR-430233
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

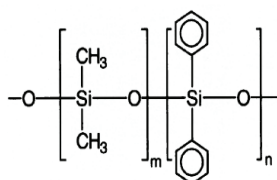
Restek: Rxi-5MS

Phenomenex: ZB-5MSi

Sigma-Aldrich: Equity@-5

SGE: BP-5

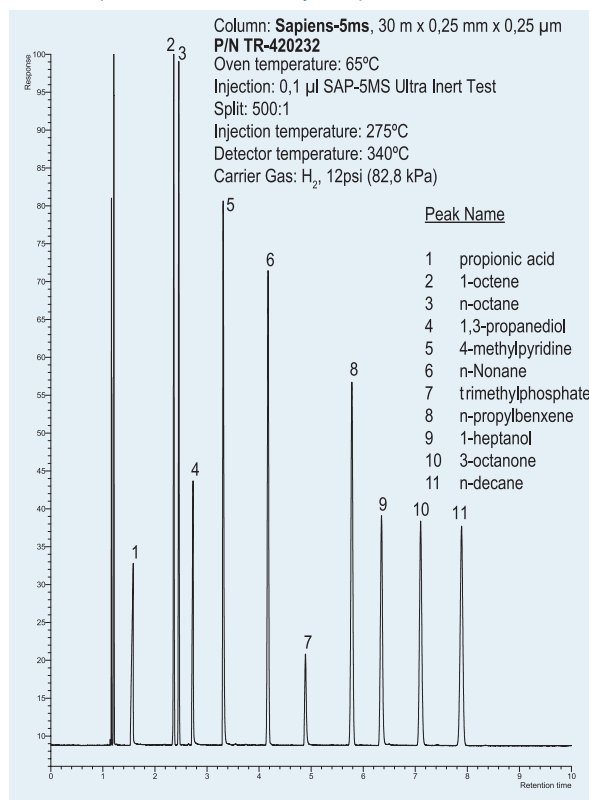
Macherey-Nagel: OPTIMA-5MS



Structure of Poly (dimethyl-diphenylsiloxane)

Sapiens-5ms: Ultra Inert Test (SAP-5MS)

Excellent performance for all key compounds

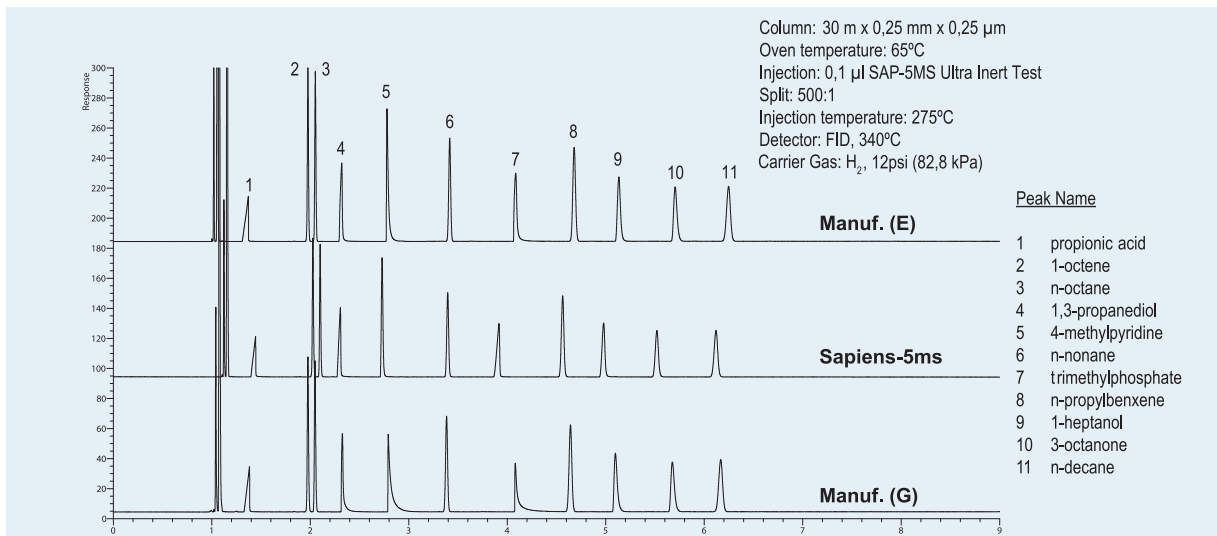


SAP-5MS: Ultra Inert Test (composition)

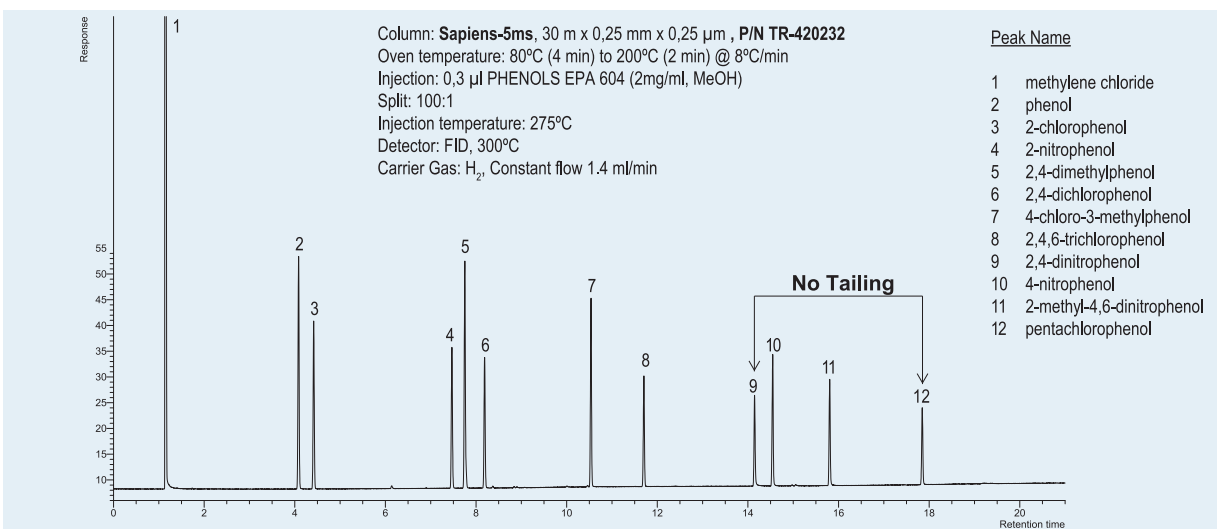
Elution	Compound	Key Control Parameter
1	Propionic acid	Basicity
2	1-Octene	Polarity
3	n-Octane	Hydrocarbon
4	1,3-Propanediol	Silanol
5	4-Methylpyridine	Acidity
6	n-Nonane	Hydrocarbon
7	Trimethylphosphate	Acidity
8	n-Propylbenzene	Hydrocarbon
9	1-Heptanol	Silanol
10	3-Octanone	Polarity
11	n-Decane	Hydrocarbon

Comparison Sapiens-5ms

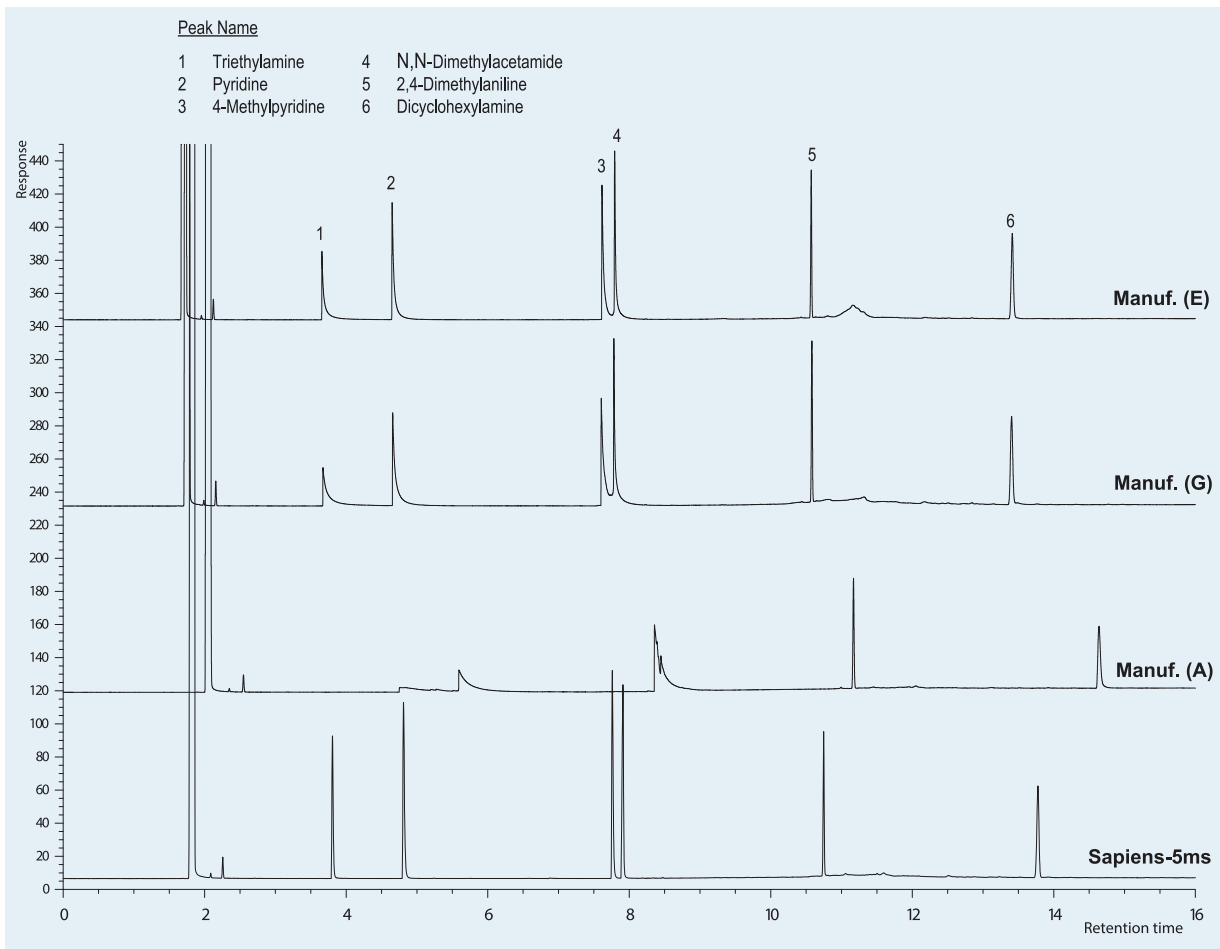
Sapiens-5ms: Inertness comp. test (SAP-5MS) vs principal competitors



Sapiens-5ms: Acidity Test - Perfect Peak shapes

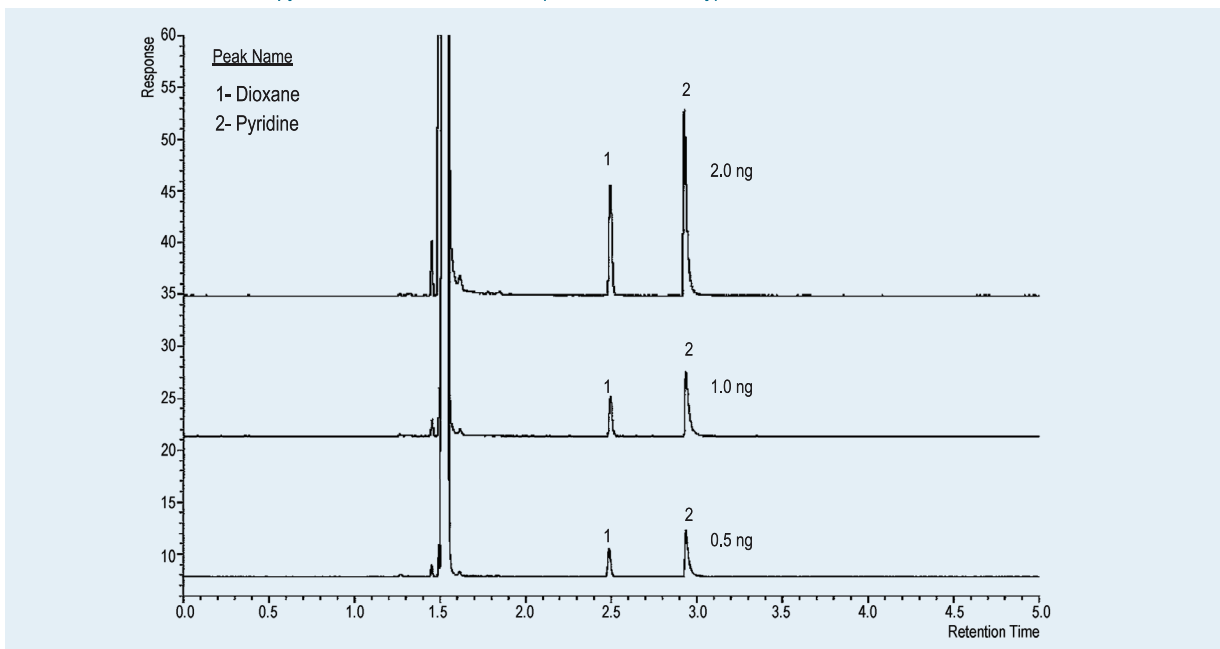


Sapiens-5ms: Basicity comp. test vs principal competitors

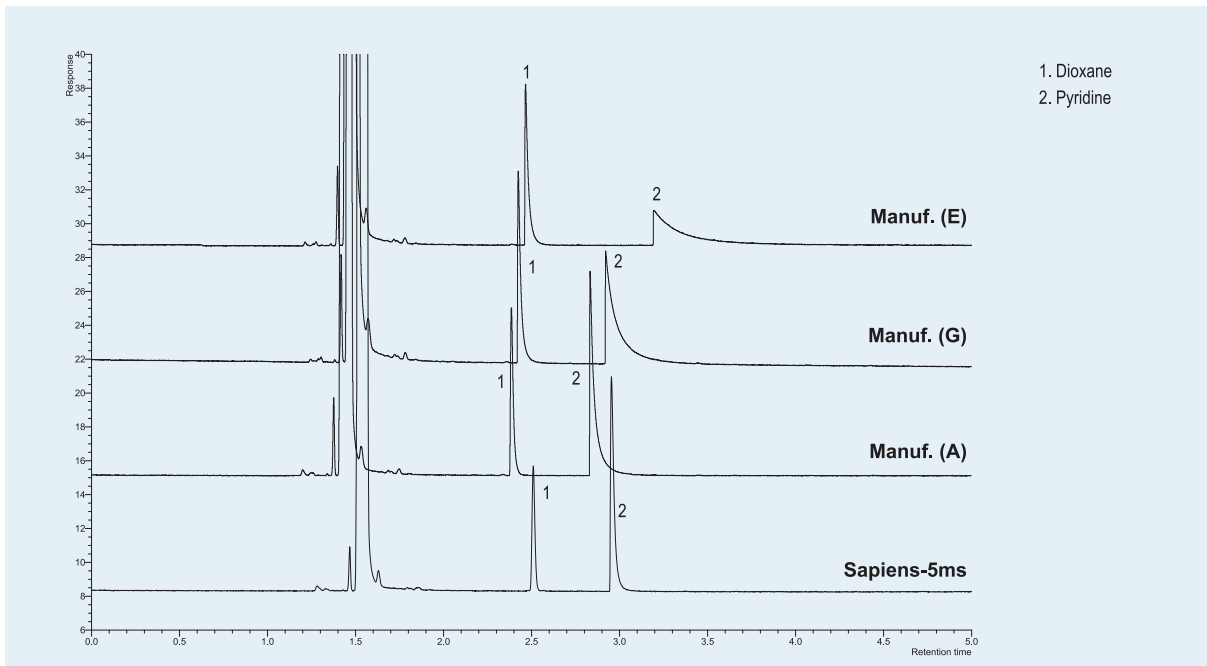


Sapiens-5ms: High inertness, Dioxane, Pyridine

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

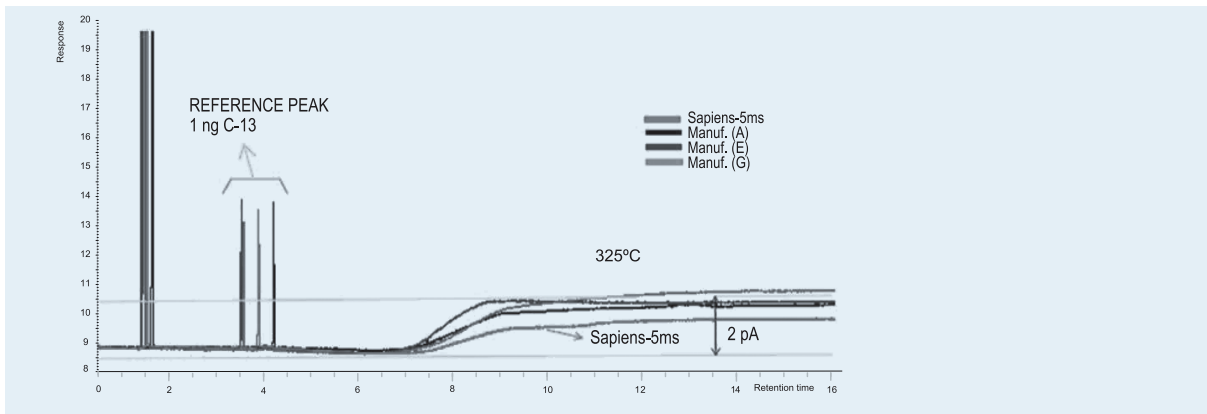


Sapiens-5ms: 1,4-dioxane and pyridine comparison test vs principal competitors



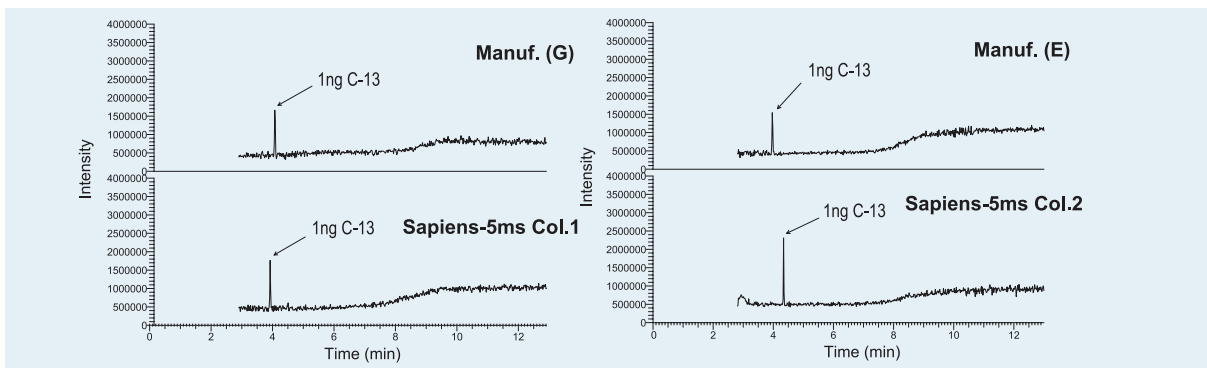
Sapiens-5ms: Bleed (FID) comparison test vs principal competitors

Bleed curves related to 1ng of tridecane in FID detector



Sapiens-5ms: Bleed (GC-MS) comparison test

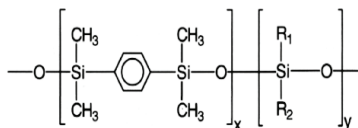
Bleed curves related to 1ng of tridecane in MS detector



Sapiens-5ms

Internal Diam(mm)	Length (m)	Film thickness(μm)	Temp Limits (°C)	Part. N°(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
0,32	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
	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

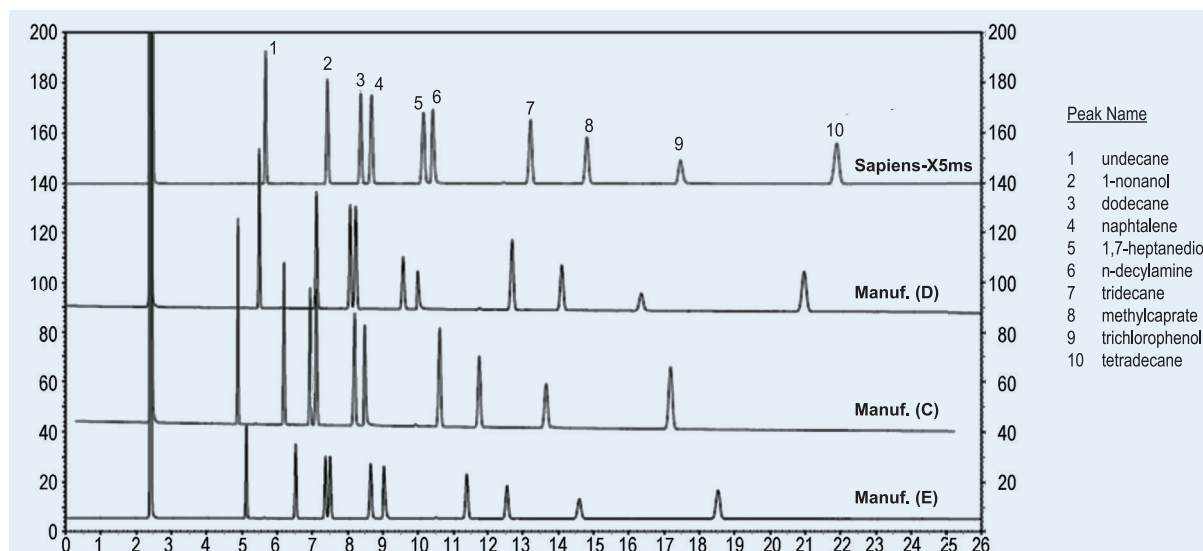
Sigma-Aldrich: SLB-5MS

Macherey-Nagel: OPTIMA-5MS Accent

SAP-X5MS: Ultra Inert test (composition)

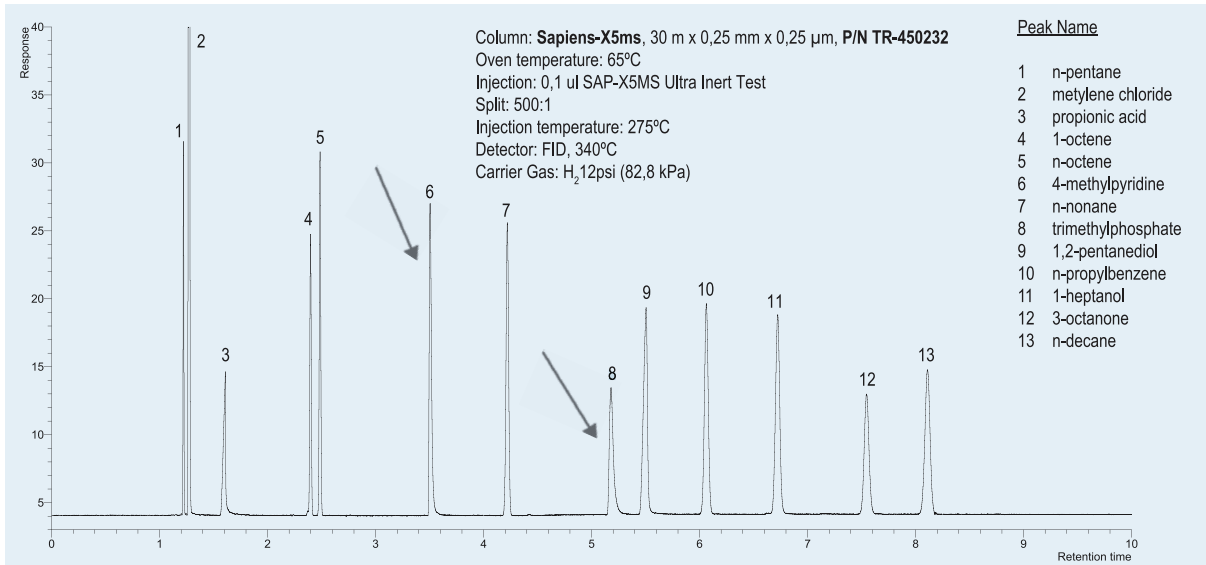
Elution	Compound	Key Control Parameter
1	Propionic acid	Basicity
2	1-Octene	Polarity
3	n-Octane	Hydrocarbon
4	4-Methylpyridine	Acidity
5	n-Nonane	Hydrocarbon
6	Trimethylphosphate	Acidity
7	1,2-Pentandiol	Silanol
8	n-Propylbenzene	Hydrocarbon
9	1-Heptanol	Silanol
10	3-Octanone	Polarity
11	n-Decane	Hydrocarbon

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

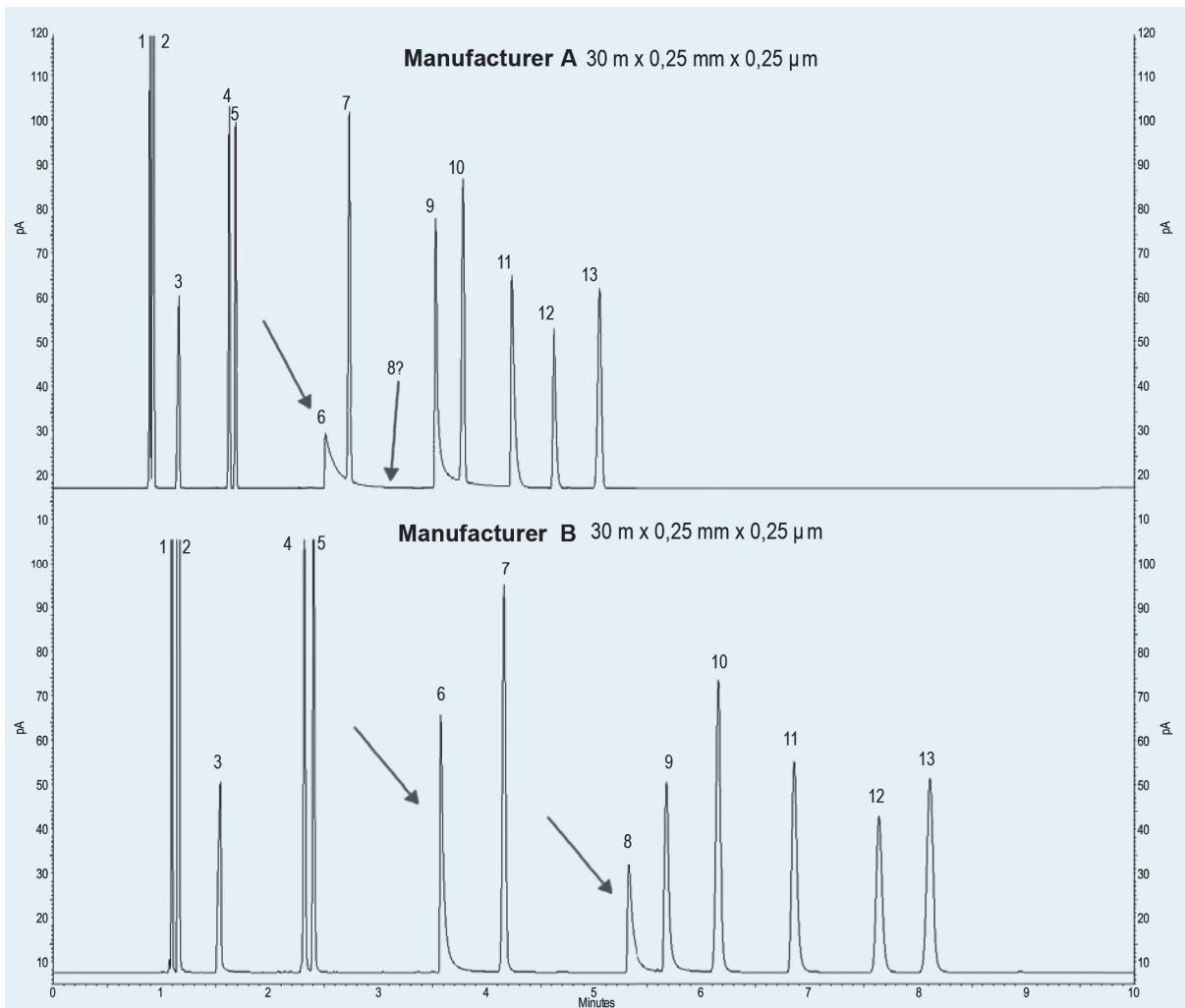


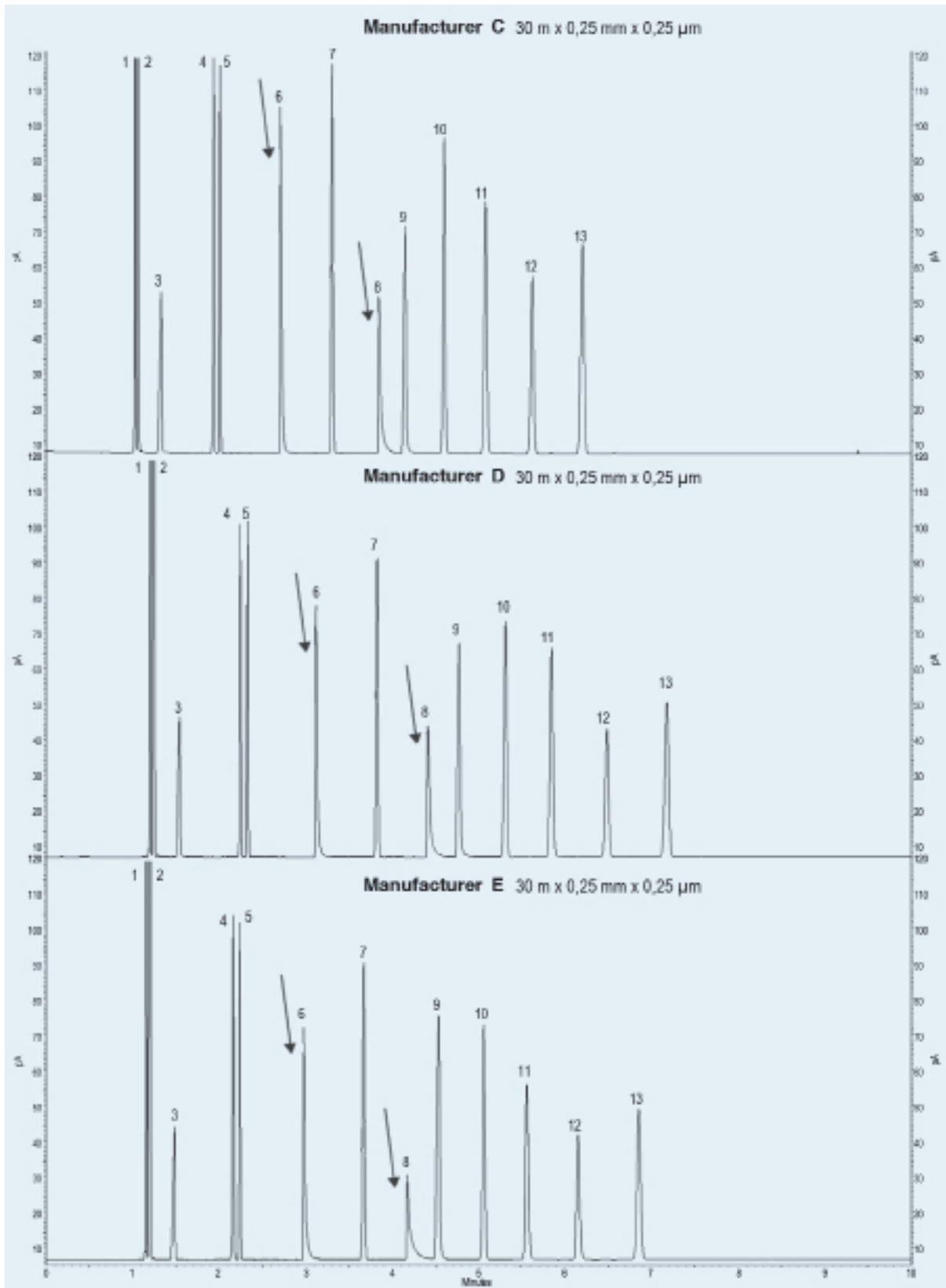
Sapiens-X5ms: Ultra Inert Test (J.Luong et al. J.Sep.Sci. 2007)

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





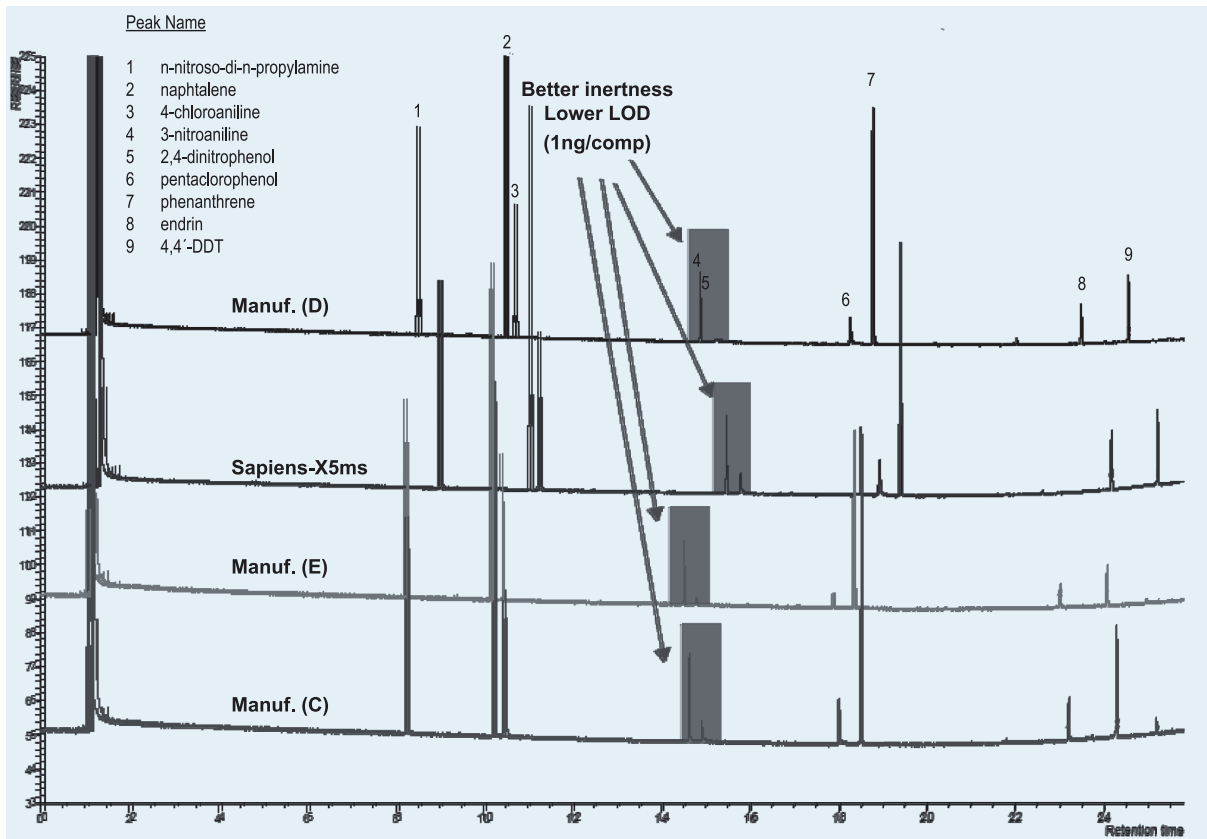
* To perform previous chromatograms shown, it have been used columns from: Agilent, Phenomenex, Supelco, SGE, Restek, (listed in random order).



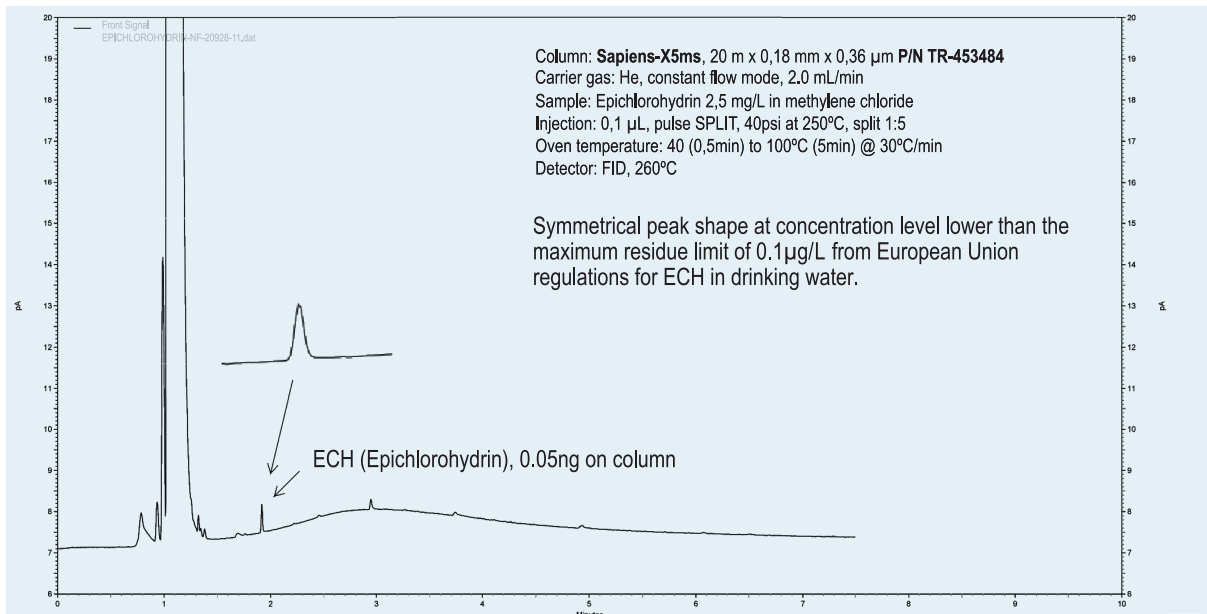
TEST ANILINES-PHENOLS-PESTICIDES:

Sapiens-X5ms vs principal manufacturers

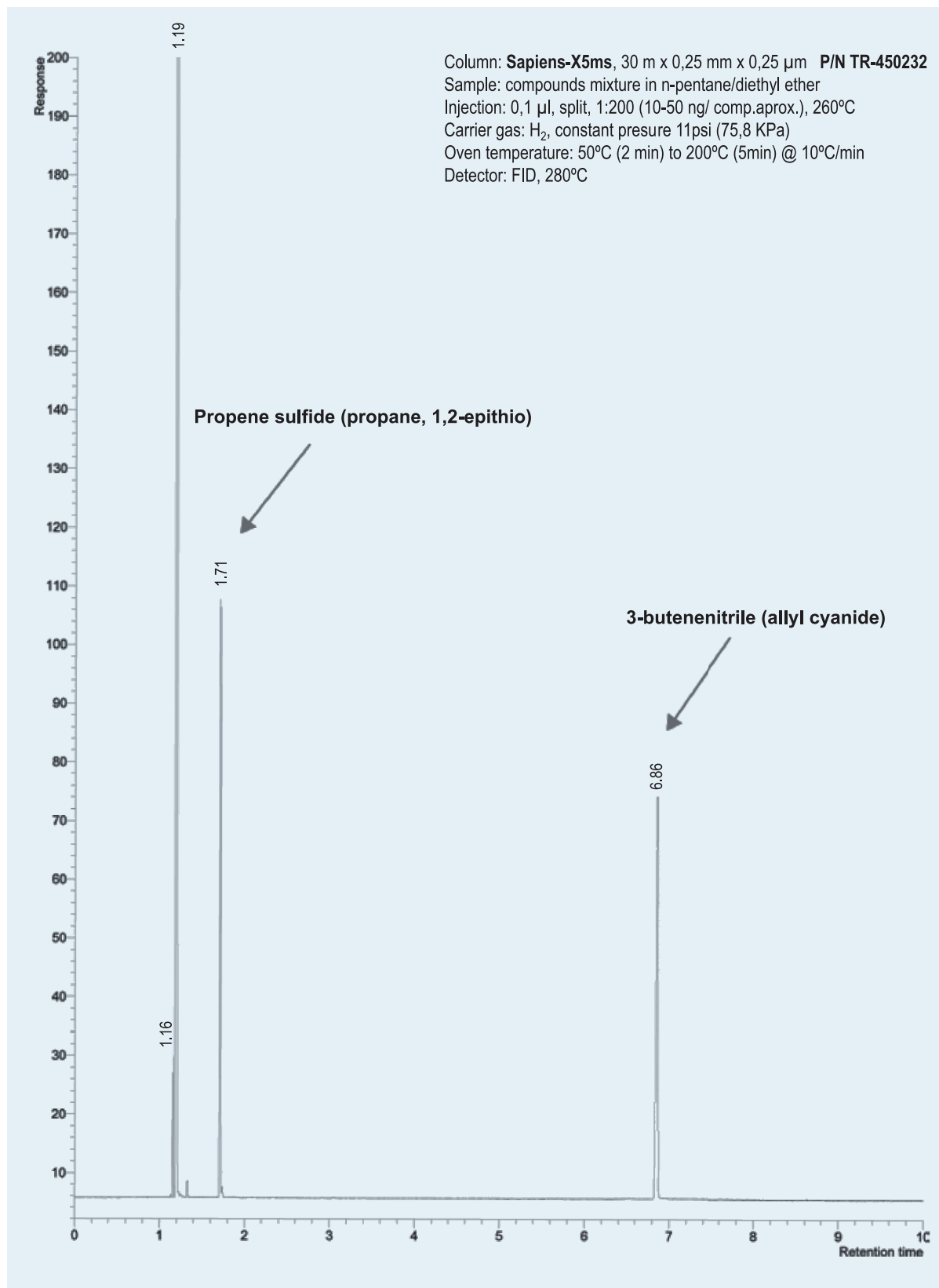
Sapiens-X5ms - Improved performance for active compounds



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



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



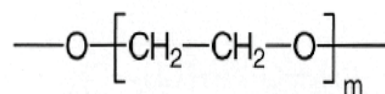
Sapiens-X5ms

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
	25	0,25	-60 to 325/350	TR-450222
	30	0,25	-60 to 325/350	TR-450232
	30	0,50	-60 to 325/350	TR-450532
	30	1,00	-60 to 325/350	TR-451032
	50	0,25	-60 to 325/350	TR-450252
	60	0,25	-60 to 325/350	TR-450262
0,32	30	0,25	-60 to 325/350	TR-450233
	30	0,25	-60 to 325/350	TR-450233
0,32	30	0,50	-60 to 325/350	TR-450533
	30	1,00	-60 to 325/350	TR-451033
	60	1,00	-60 to 325/350	TR-451063

Sapiens-Wax.ms

100% polyethylene glycol, 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

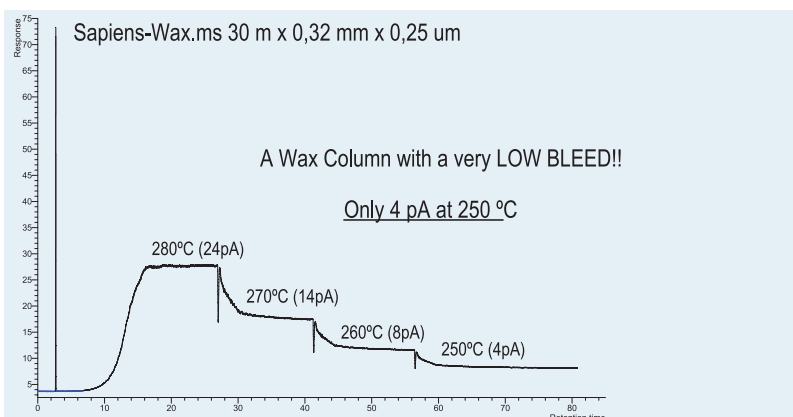


Structure of Polyethylene glycol

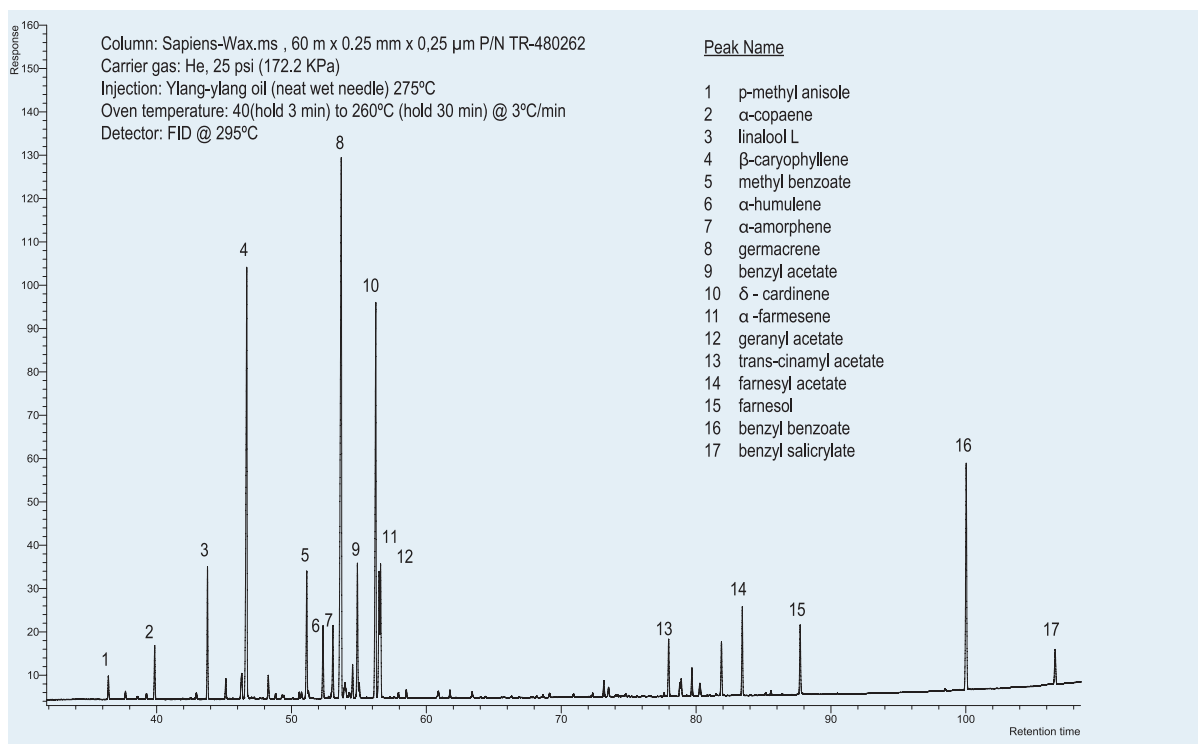
Sapiens-Wax.ms: Bleed vs Temperature

Sapiens-Wax.ms Equivalent Phase

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



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



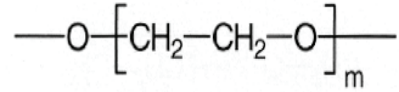
Sapiens-Wax.ms

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
0,32	30	1,00	35 to 280	TR-481032
	60	0,25	35 to 280	TR-480262
	60	0,50	35 to 280	TR-480563
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.

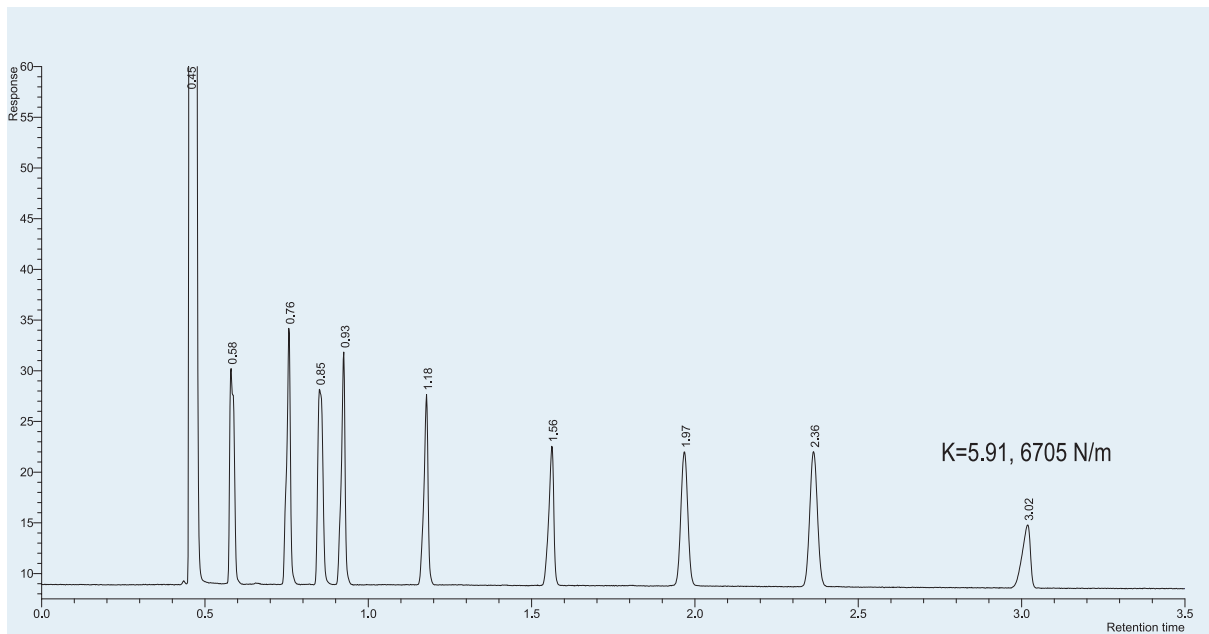


Structure of Polyethylene glycol

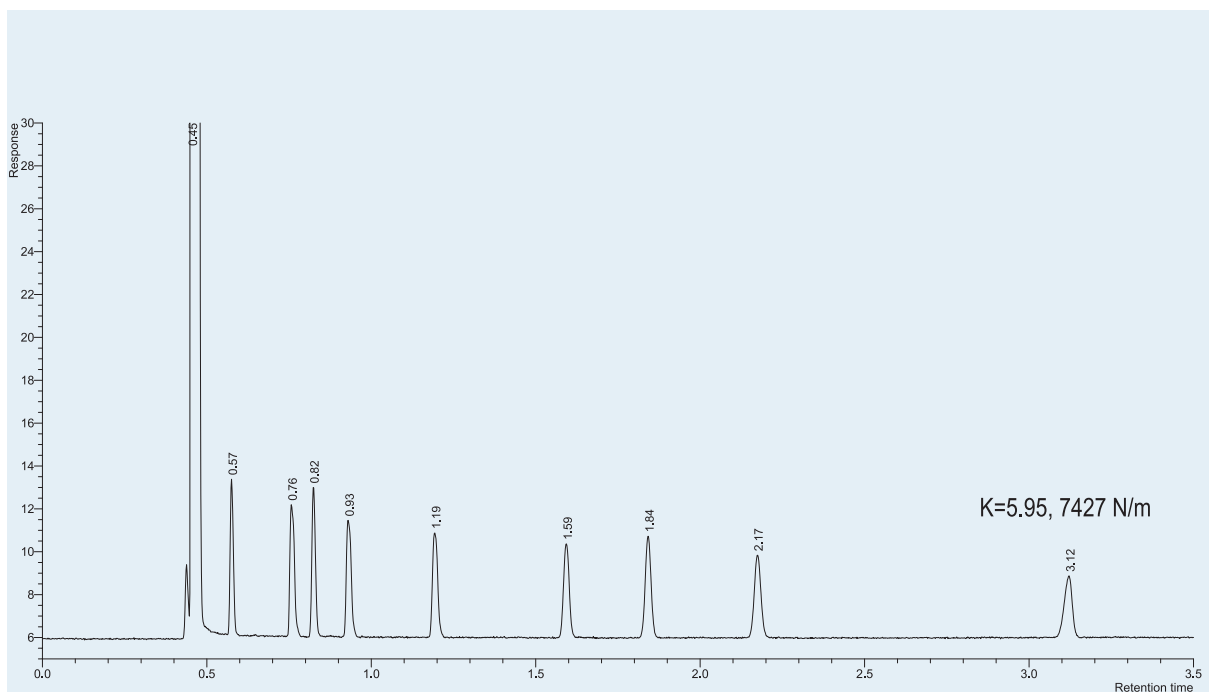
Sapiens-Wax.ht: 10 m x 0,10 mm x 0,10 μm

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

Initial time

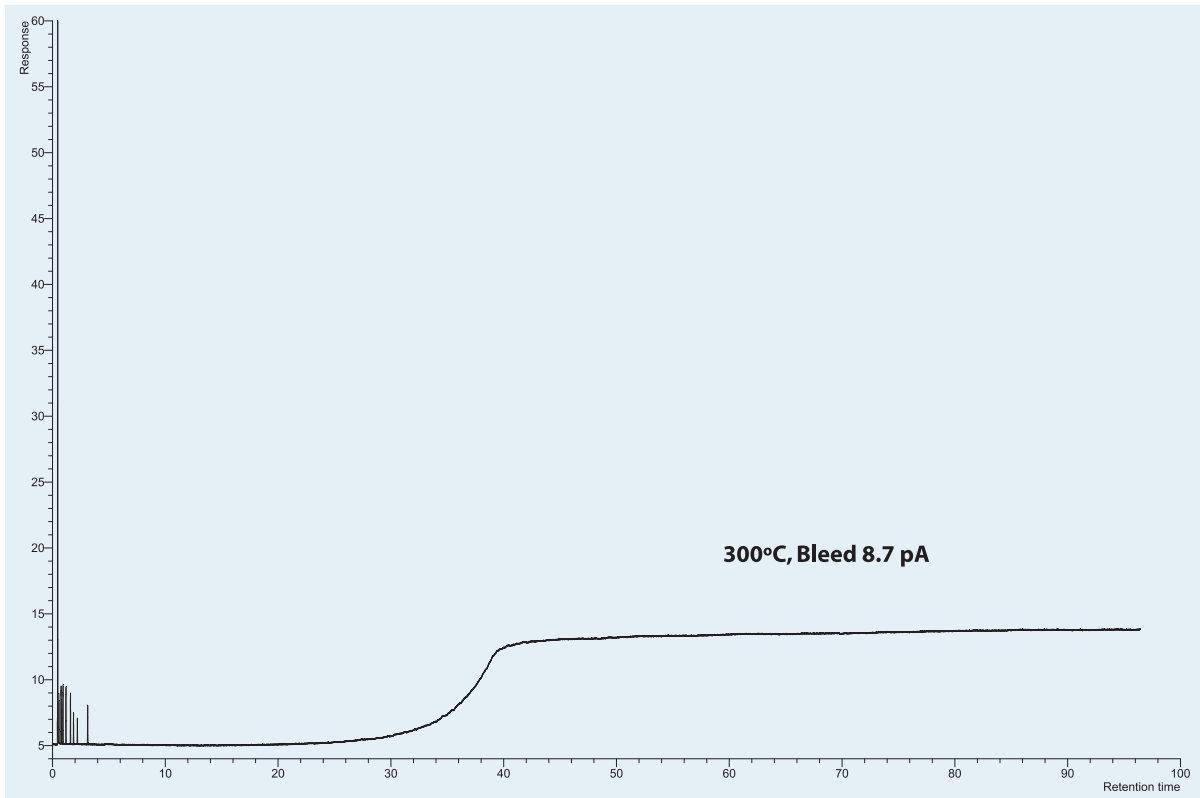


After 5 hours at 300°C



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

Bleed at 300°C



Sapiens-Wax.ht

Internal Diam(mm)	Length (m)	Film thickness(μ m)	Temp Limits (°C)	Part. N°(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

