





Chromatography Products Catalogue

Professionally Friendly the *fresh breeze* of chromatography™

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K Corporate Information









Teknokroma Headquarters

Jaume Costa i Balcells Sales & Marketing Director

Camí de Can Calders, 14 08173 Sant Cugat del Vallés (Barcelona) Spain Tel: +34 936 748 800. Fax: +34 936 752 405

E-mail: export@teknokroma.es www. teknokroma.com

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

Just a few words to explain the basis of our relatinship 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.



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

Teknokroma $^{\text{TM}}$ Products \mathbf{K}

Teknokroma[™] Products















- 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





K 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





Analytica Munich 2012



Analytica-Anacon India 2006



Arab Lab Dubai 2003



Analytica China 2004

Social Teknokroma **K**

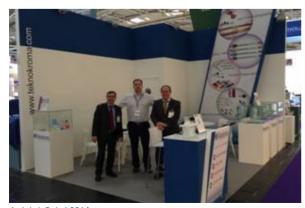


Analytica Múnich 2014.



Expoquimia 2012





Arab Lab Dubai 2014



China 2006



Arab Lab Dubai 2006







Capillary Columns

Sapiens-1ms	See page XI
Sapiens-5ms	See page XIII
Sapiens-X5ms	See page XVII
Sapiens-Wax.ms	See page XXII
Sapiens-Wax.ht	See page XXIV
MetAmine-VOL	See page 37
MTI-5	See pages 39-40
Meta.X5 Triazine	See page 43
Meta.XLB	See pages 43-44
SupraWax-280	See Pages 56-59
Meta.VOC	See page 68
Meta.BLOOD 1	See page 70
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TRB-BIODIESEL	See pages 71-72



Diskobolus™ Septa





See pages 88-92







TEIDE™ Ferrules

See pages 93-96

New Teknokroma Liners



New Teknokroma Liners

See pages 97-101





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



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 uniques for traceability, GLP's and validation purposes.

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.



New Micro-Centrifugal Filters - Nontersile See page 169

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 galss DURAN from Scchott.
- The porosity of the filtration plate is of number 3, which means a nominal pore size of 16-40 micrometers.

Finisterre



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 precolumn, always with the utmost simplicity and economy and in no way whatsoever is the quality of the separation affected.





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

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.



Select Extraction Kit (Table 1)

Original Method 10g or 15g Samples Buffered AOAC 2007.1 Method 15g Samples Buffered EN 15662 Method 10g Samples

Check pH and adjust to 5-5.5 Add Internal standard Shake (60 s) Centrifuge (3000rpm 60-300s)

Aliquot(*) 1ml, 6ml or 8ml (for pesticides with acid groups (phenoxylalcanoic acids), analyze directly by LC/MS/MS at this point (skip the dispersive SPE Stage). These acid groups interact with the PSA that is part of the dispersive SPE step Select Dispersive SPE Kit (Table 2 and 3)

General Fruits & Vegetables
FattyWaxy Fruits & Vegetables
Pigmented Fruits & Vegetables
Fruits & Vegetables with FatsPigments
AOAC 2007.1 Method
2mL 15 mL Kits

General Fruits & Vegetables
FattyWaxy Fruits & Vegetables
Pigmented Fruits & Vegetables
High Plgmented Fruits & Vegetables
EN 15662 Method
2mL 15 mL Kits

Shake (30-120s) **Centrifuge** (3000rpm 60-300s)

Analysis

(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 MgSO4, 1g NaCl, 1g trisodium citrate dihydrate, 0.5g disodium hydrogencitrate sesquihydrate	50	European EN-15662
TR-Q5040	6g MgSO4, 1.5g NaOAc	50	AOAC 2007.01
TR-Q5020	4g MgSO4, 1g NaCl	50	Mini-Multiresidue (10 g sample)
TR-Q5045	6g MgSO4, 1,5g NaCl	50	Mini-Multiresidue (15 g sample)
TR-Q5030	6g MgSO4, 1.5g NaCl, 1.5g sodium citrate dibasic, 750mg disodium citrate dibasic sesquihydrate	50	
TR-Q5050	6g MgSO4, 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 MgS04.

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 MgSO4, 25mg PSA	100	1	European EN-15662 Mini-Multiresidue
TR-Q2025	150mg MgSO4, 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 MgSO4, 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 MgSO4, 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

Methods

Types	Qt Pack	EN 15662	AOAC 2007.1	Mini Multiresidue Others
	uits and Vegetables: lar organic acids, some su	gars and lipids		
	100 tubes 2 mL	25 mg PSA 150 mg MgSO4	50 mg PSA 150 mg MgSO4	25 mg PSA 150 mg MgSO4
	100 tubes 2 IIIL	Part N° TR-Q2015	Part No. TR-Q2055	Part No. TR-Q2015
	50 tubes 15 mL	150 mg PSA 900 mg MgSO4	400 mg PSA 1200 mg MgSO4	
		Part No. TR-Q1590	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 MgSO4	50 mg PSA 50 mg C18 150 mg MgSO4	25 mg PSA 25 mg C18 150 mg MgSO4	
		Part No.TR-Q2025	Part No. TR-Q2065	Part No. TR-Q2025	
	50 tubes 15 mL	150 mg PSA 150 mg C18 900 mg MgSO4	400 mg PSA 400 mg C18 1200 mg MgSO4		150 mg PSA 150 mg C18 900 mg MgSO4
-5- 6		Part No. TR-Q1593	Part No. TR-Q1515		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

Гуреѕ	Qt Pack	EN 15662	AOAC 2007.1	Mini Multiresidue	Others
		25 mg PSA	50 mg PSA	25 mg PSA	50 mg PSA
The state of the s		2.5 mg GCB	50 mg GCB	2,5 mg GCB	50 mg GCB
	100 tubes 2 mL	150 mg MgSO4	150 mg MgSO4	150 mg MgSO4	150 mg MgSO4
		Part No.TR-Q2035	Part No. TR-Q2075	Part No. TR-Q2035	TR-Q2075
1000		150 mg PSA	400 mg PSA		
		400 mg GCB	400 mg C18		
	50 tubes 15 mL	900 mg MgSO4	1200 mg MgSO4		
		Part No. TR-Q1591	Part No. TR-Q1516		
		150 mg PSA			
		45 mg GCB			300 mg PSA
362	50 tubes 15 mL	900 mg MgSO4			150 mg GCB 900 mg MgSO
		Part No. TR-Q1592			TR-Q1594
	etables with Pigmen rganic acids, some su	ts and Fats: gars and lipids, plus carotin		t for use with planar pest	icides
			50 mg PSA	25 mg PSA	
			50 mg C18	7,5 mg GCB	
100 tubes 2 mL			50 mg GCB 150 Mg MgSO4	150 mg MgSO4	
		Part No. TR-Q2085	Part No. TR-Q2045		
			400 mg PSA		
			400 mg C18		
50.1.45.1			400 mg GCB		
	50 tubes 15 mL		1000 N- N-CO1		
			1200 Mg MgSO4		







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.



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 inmense 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 analisys 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 cuttingedge HPLC and UPLC systems, radically improving analisys performance and reducing retention times.

The material used for the developement of Mediterranea columns is an ultra-pure, metal-free, state-of-the-art silica gel packing, with a particle size of 2,2 μ m 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 A and it's available in 3 & 5 um 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, functionarized with groups octadecilsylane of polar embedded type. This polar group included in the base of hidrocarbonades 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, inlcuding 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 $5\mu m$ and in all length and diameter configurations.

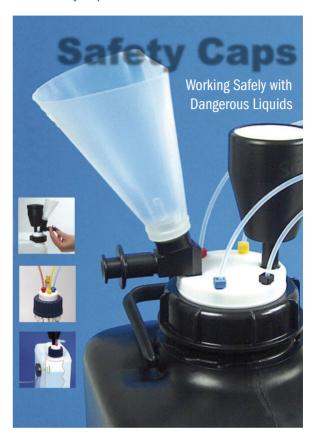
Deuterium Lamps for a Detector



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.

What's New **K**



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

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 preduces reproducible retention times (CV < 1%)

Safe

Mobile phase leaks easily detectable (leak detector)