ERA-Chrom HPLC COLUMNS

Analytical Columns

To get HPLC columns with maximum efficiency and peak symmetry, ERA-Chrom uses tubing and connections designed and fully optimized to provide you superior performance than achievable with columns from the major manufacturers.
The analytical column, use the best bonding reagents, packing support materials ans proprietary procedures. The tubing uniformity and polished interior finish generates higher efficiencies than columns from the major manufacturers. The latest in current research trends are included in ERA-Chrom analytical columns; including smaller particle size, greater particle uniformity, reduced tubing internal diameters and shorter columns for LC-GC and LC-MS applications. ERA-Chrom columns are designed with a new generation of tubing interior surfaces, connections, end-fittings and packing procedures. Our proprietary procedures allows us to manufacture columns as small as 2 mm ID with 3 µm particles and columns as short as 50 mm long with 2 mm ID with no loss in theoretical efficiency.

Microbore Columns

Low dispersion Chromatography

These columns of 2 and 3 mm of internal diameter, packed with the same packing than 3 and 5 µm analytical column, contribute to an important solvent saving and at the time a detectability considerable increase.

Sensibility of detection

Since the detectability depends on the grade of dilution of the sample while it passes through the column, a reduction of the internal diameter of the column redounds directly in a minor dilution and therefore in an increment of the detection sensibility.

Solvent Saving

The same chromatogram obtained with a conventional 4,6 mm ID column working at 2 mL/min can be obtained with a flow of 0,4 mL/min when it is worked with a 2,1 mm ID microbore column. This represents a 80 % saving of the eluyent wasted in HPLC, which means that for a standard job in a chromatograph will represent a saving of 15 liters of solvent.

Column (mm)	Eluyent Waste	Detectability
4.6	480	1
4.0	363	1.322
3.2	232	2.066
2.1	100	4.798
1.0	22.68	21.16

Ultrarapid Columns

High-Speed Chromatography

The use of ultrarapid columns is ideal when short times of analysis are needed (0.5-3.0 min) and high efficiencies of separation. These columns 30-100 mm of length, are packed with spherical packs of 3 µm, and offer efficiencies of 5-15000 N columns (equivalent to 120-150000 N/m), mores than enough for the majority of separations.

Sensibility of detection

Reducing the size of particle the dispersion of the sample in the inside of the column decreases also. In this way, the use of ultrarapid column give a significant improvement of the limit of detection when compared with the one obtained with analytical conventional columns.

High Resolution

Columns of 150-250 mm length packaged with 3 µm packs achieve efficiencies of over 30000 N/ column, which can be very useful when very complex samples require high separation capabilities.

Economy

The reduced time of analysis that is achieved with these columns and therefore the elevated number of samples that can be processed per time unit, compared with conventional columns, allows optimizing to the full the performance of one chromatographic equipment. The extensive selection of available phases allows turning any chromatographic separation into ultrarapid, with all the advantages that this bears.

Instrumentation

The use of this kind of columns does not require any especial chromatographic equipment.

Preparative Columns

Preparative Chromatography

Preparative columns had been developed with the same criteria of quality and versatility that has taken us to lead the market on HPLC analytical columns.

Versatility

ERA-Chrom offers the highest range of phases of the market, covering practically all kind of functional groups. This simplifies enormously the transposition from the analytical scale to the preparative. Beside, a complete range of dimensions of column, from 7.8 mm to 21 mm of diameter, with lengths up to 250 mm and with a high selection of particle size, makes it easy the definition of the ideal configuration of column in relation to its volume capacity and the kind of chromatographic equipment available in the laboratory.

Quality

Each column is individually tested to guarantee that will fulfil the high standard of quality demanded, controlling the parameters of efficiency, peak symmetry and selectivity.

Analytical quality packing

The preparative columns packaged with 5 and 10 µm analytical packing offer exactly the same benefit levels then the correspondent analytical columns. Its high pressure packing ensures a high stability and consequently a long life of use.
The packing of preparative columns quality are the recommended for 20 mm ID or upper columns. These packings are manufactured under the same quality standards, with the difference that they present a particle size normally bigger and a size dispersion not as adjusted as the analytical packings.

eraMEER C18

The eraMEER™ C18 column provides a performance level that, until now, has not been reached in efficiency, inertness, pH robustness, reproducibility and reliability. eraMEER™ C18 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 eraMEER™ C18 column.

New Generation HPLC Column

Purity of Silica

After evaluating many materials as a base for the global-best reverse phase chromatographic packing, the clear consensus is that the special characteristics of silica packings classify them as unsurpassable. No other packing material, apart from ultrapure silica, achieves the perfect balance of physical resistance, functional use, chemical inertness, reproducibility and efficiency. Ultra-pure silica is also compatible with practically all solvents.

An essential condition for obtaining the global-best reverse phase packing is extremely pure silica. The silica particle, on which the new eraMEER™ C18 packing is based, is obtained from ultra-pure materials, using rigorously controlled manufacturing processes to ensure that the slightest possibility of contamination is avoided. The eraMEER™ C18 silica required intensive optimisation of numerous processing factors to achieve a perfectly spherical, rigid and inert particle possessing unusually low metal content. The almost total absence of metals is one of the pillars over which the extraordinary properties of the eraMEER™C18 column reside.

More than 98% of the silica surface area responsible for chromatographic separation of the sample is found inside the particle - within the pores. This explains the extreme importance of obtaining a very homogeneous pore distribution and the least possible number of nanopores. For most reverse-phase silica packings, these nanopores are not properly chemically bonded, endcapped or deactivated. So when nanopores are accessible to analytes, surface-analyte interactions frequently dominate. These surface-analyte interactions slow down the chromatographic process ("load transfer"), often resulting in decreased column efficiency. These treacherous nanopores may also negatively influence the phenomenon of dewetting which occurs with totally aqueous mobile phases.

Multifunctional Endcapping Deactivation

The endcapping process is a critical step in obtaining a perfectly deactivated eraMEER™ C18 column. Our proprietary Multifunctional Endcapping Deactivation technology maximizes surface-bonding, blocking practically all the active centres that may have remained on the surface
of the silica after bonding the C18 chains. Thanks to our new technology, the eraMEER™ C18 column enjoys an unusual low level of silanol activity - helping you to obtain symmetrical peaks from even the most basic and acidic pharmaceuticals and their metabolites. eraMEER™ C18 bonding chemistries will help you to achieve an extraordinary resistance and column lifetime when running at extreme pH levels. Moreover, the eraMEER™ C18 column has been designed to show an excellent retention of polar compounds in a 100 % aqueous environment without the problems of unwanted interactions which inefficiently endcapped conventional packings produce. Packing chemistry based on the new technology, "multifunctional endcapping deactivated", achieves levels of deactivation, resistance to extreme pH values and versatility in its chromatographic applications never reached by conventional or polar-embedded reverse phase packings. This technology has been rigorously developed to achieve the maximum reproducibility, with the objective that its chromatographic separations will be, column to column, exactly the same.

Specifications:

- Efficiency, inertness, PH-robutness, reproducibility and reliabiliy has not been reach until now
- Purity of Silica
- Multifunctional Endcapping Deactivation
- Optimised Porosity SEA(Surface enhanced accessibility)
- 100 % aqueous or reverse phase standard
- Excellent results in the test of characterization of phase NIST SRM870
- Possible to work with eluents from pH 1.5 to pH 12
- Extremely low bleed allows its use in LC/MS applications

- eraTE Columns for Peptides and Proteins

Manufactured using novel proprietary technologies, analytical and preparative eraTE columns are simply the best reverse phase columns available today. As a result of these, we launch into the market the Line of eraTE HPLC columns, one of the best columns in the fi eld of analysis of biomolecules. The eraTE HPLC columns for peptides and proteins, provide the best performance and unsurpassed effi ciency, 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 effi ciency and are also compatible with practically all solvents.
The silica particle on which the eraTE 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.
Furthermore, the propietary "porifi cation process" (Surface Enhanced Accessibility, SEA) for eraTE silica has achieved high surface area without sacrifi cing important properties like physical resistence and high loading capacity- making it ideal for preparative-scale processing.
In addition, the Surface Enhanced Accessibility manufacturing process creates a porous structure that ensures maximum transfer speeds for solutes between the stationary and mobile phases- resulting in higher separation effi ciency.
Our "Ultra-Fast" eraTE columns are made in 30-50 mm length in order to get quick analytical results, whereas the "High Effi ciency" columns are normally in 150-250 mm lengths to obtain best resolution. The eraTE Columns are uniquely designed with optimized pore size distribution; 120 for Peptide and 300 for the Protein Columns.
eraTE columns are available for:
Peptides: eraTE C18 with 2.10, 3.0, 4.0, 4.6, 7.8, 10.0 and 21.2 mm.
Proteins: eraTE C18, C8 and C4 with 2.10, 3.0, 4.0, 4.6, 7.8, 10.0 and 21.2 mm

Purity of silica
The responsibility for chromatographic separation of peptides and proteins is found inside the particle-within the pores. To obtain a very homogeneous pore distribution the least possible number of nanopores is essential.
For most reverse-phase silica packings, these nanopores are not properly chemically bonded, endcapped or deactivated. So when nanopores are accessible to the peptides and proteins, surfacepeptide and protein interactions frequently dominate. These interactions often result in a decrease of column efficiency.

Specifications:
- Ultra high purity, totally spherical silica gel
- High density bonding for extreme performance proprietary fully end-capped silica
- Porous Size: 120 Å, narrow particle size distribution
- Surface Area 300 m^2/g
- % of Carbon 19 %
- High loading capacity of crude peptides
- Stable under basic and extreme acidic conditions
- Packed with 5µm sized silica particles

- eraTS Columns

The new range of eraTS packings has been specially developed to replace one of the most popular packings on the market (WS).
All the physical and chromatographic parameters evaluated show a total equivalence between both materials, and what is more important, this has been certified by the excellent results obtained by the many users who upto now have tried this packing.

Economy
eraTS represents the most economical choice of HPLC packings.

Reproducibility
An advanced manufacturing process and a strict control of each one of its steps ensures a maximum reproducibility and efficiency in every one of the columns.

Guarantee
The confidence we have in our product enables us to offer a complete guarantee on these columns, so that if for any reason whatever a client thinks that a eraTS column does not operate in an identical manner to the equivalent WS packing, we will refund his money.

Characteristics of the material
As shown in the following table,the new packing eraTS is perfectly equivalent to the reference material in all its physicochemical characteristics.

Characteristics **eraTS** **3,5 & 10 µm** **80 Å** **220 m²/g**	**Particle Size** **Pore Size** **Surface area** **Carbon content**	**WS Packing** **3,5 & 10 µm** **80 Å** **220 m²/g**
4 %	C1	4 %
6 %	C6	6 %
6 %	C8	6 %
7 %	ODS-1	7 %
12 %	ODS-2	12 %
3.5 %	CN	3.5 %
2 %	NH2	2 %
3.0 %	Phenyl	3.0 %
-	SAX	-
-	SCX	-

Distribution of particle size
In the development of this new material there has been special care in optimization of the size of the particle, given that this control is essential to get the best efficiency and stability in the packing.
The comparison made with the WS packing shows once more the total equivalence of these two materials.

Applications
In addition to the complete agreement between the comparative data for both packings, the definitive proof comes from their comparison in a wide range of applications.

- eraTX Columns

eraTX™ is a range of totally new packings that employ the most advanced procedures of synthesis and chemical functionalization, resulting in some column packings that completely surpass other silica-based packings on the market.
To manufacture the silica particle, the basis of all eraTX packings, we begin with materials of extreme purity and follow strictly controlled processes. In this way, we get a totally porous, spherically perfect particle, without surface irregularities and with an extremely low content of metals (Al, Fe, Ti and Zn).
The rigorous control of the process variables also allows us to obtain a material with a perfectly reproducible porosity and surface area, and with a practical absence of micropores. In other competitors' packings, these micropores cause chromatographic problems due to incomplete substitution of the support, while with eraTX packings micropores are totally eliminated.
We are therefore able to offer you a complete line of HPLC packings with characteristics of reproducibility, purity, deactivation, fluido-dynamic behaviour and chemical and physical stability that are difficult to beat.

- Exceptional batch-to-batch reproducibility
- Ultra-pure silica
- Extremely low content of metals
- Perfect sphericity
- Meticulously controlled materials
- Maximum pH range (between 2.0 and 11.0)
- 3, 5 and 10 µm particles
- Easily scaled-up, from microbore to preparative HPLC
- Available with 300A pore size for biochromatography
- Exceptional long lifetime
- Wide range of packings
- Fully deactivated after functional bonding

Ordering Information

Custom Standard Quotations – Direct Purchase orders	e-mail: info@erachrom.com
Shipping	Shipments via courier.
Payment	1) Credit Card 2) Pre-Pay - Proforma Invoice 3) TT in advance prior to shipment
Terms and Conditions of Sales	Prices are EXW DUS. Prices are subject to change without notice. The purchase of a ERA-Chrom product assumes the acceptance of ERA-Chrom's "General Sales Terms and Conditions". This information is available in our web site (www.erachrom.com) and upon request.
Minimum Order	Minimum order is 1.000,00 EUR .
Warranty	All ERA-Chrom Chromatography products come with a three months warranty. ERA-Chrom products are available only through authorized distributors. No warranties, claims for damages, or other claims will be honored if products are purchased through unauthorized channels.
Technical Service	Contact your local ERA-Chrom Distributor or e-mail: info@erachrom.com for any technical question
Return Policy	If it is necessary to return material, please contact your local ERA-Chrom Distributor or e-mail: info@erachrom.com for a Return Authorization Form and shipping instructions.

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