THE FOUNDATION OF GREAT CHROMATOGRAPHY

HPLC and UHPLC Column Portfolio

PerkinElmer®
For the Better

CHOOSING THE RIGHT COLUMN MAKES ALL THE DIFFERENCE

Every decision you make in the lab affects your scientific outcomes – and that holds true for column choices. Sample solubility, chemical differences among analytes, and stationary phase chemistry are key factors in deciding which column is right for your application. The column vendor you choose must deliver the reliability, scalability, and reproducibility you need to get the most value from your method-development, quality-control, and preparative-purification processes.

Our innovative, highly efficient HPLC/UHPLC and supercritical fluid chromatography (SFC) column chemistries from ES Industries (now a PerkinElmer company) provide scientists like you with the highest quality columns, including novel chiral and achiral fluorinated phases specifically designed with pharmaceutical and environmental applications in mind. Building on ES Industries' 40 years' experience in column technology, we support you with applications assistance, method development guidance, and column recommendations, too.

PerkinElmer®
For the Better

These Columns Are Epic

Based on a proprietary bonding process, our **Epic™ series** consists of high-density monomerically bonded HPLC and UHPLC columns, compatible with many organic modifiers and buffers and stable over a wide pH range. All Epic products use an ultrapure, metal-free silica and undergo strict quality-control testing. For flexibility, we offer an assortment of column sizes with full scalability, from analytical to preparative dimensions.

An extensive range of column chemistries is available, providing a broad range of selectivities to enhance method development. The Epic line offers:

- Reversed-phase C18 columns and shorter alkyl chain chemistries for general-purpose separations
- Groundbreaking AQ phase (Epic polar) for improved polar-compound retention under RP conditions
- Extensive selectivity options, including phenyl-hexyl, naphthyl, biphenyl, perfluorooctyl, HILIC, and cyano

And as the first to commercialize fluorinated stationary phases, we pioneered the development of Epic PFP LB and Epic perfluorooctyl low-bleed (FO LB) – unique low-bleed stationary phases capable of performing challenging separations.

Epic Columns: Features and Benefits

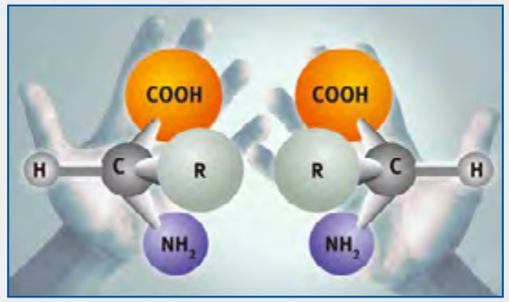
These phases are made from ultrapure silica for improved peak shape, especially for basic compounds, with:

- Extensive range of stationary-phase chemistries with innovative bonding chemistry to enhance method development
- High-density bonding for better pH stability, increased sample loading, and lot-to-lot reproducibility
- Microbore to preparative dimensions available to allow flexibility and full scalability

Learn more about Epic LC Columns

PerkinElmer®
For the Better

Your Science Goes Chiral



Chirality is critical to the pharmaceutical and agricultural industries – subtle differences that make compounds chiral can produce dramatic pharmacological effects in biological systems. That's why the demands for stereoselective separation techniques and analytical assays to evaluate the enantiomeric purity of chiral compounds have increased.

As a leader in chiral separations, we offer a broad range of groundbreaking **ChromegaChiral™ chiral stationary phases (CSPs)** for your analytical and preparative chromatography needs. Existing chiral stationary phases can separate a wide variety of chiral mixtures, but there are still enantiomeric mixtures that are difficult to separate and characterize – and this drives our efforts to develop new CSPs with differing chiral selectivities.

ChromegaChiral: Features and Benefits

Our chiral columns work for both SFC and HPLC applications, providing:

- Excellent selectivity range to enhance method development
- Superior resolution and efficiency
- High pressure limit for increased flexibility
- Fast optimization for increased throughput

Learn more about Chiral LC columns

PerkinElmer®
For the Better

Extraordinary Clone Columns

Legacy methods often rely on older column technologies which can be accompanied by larger variations in batch-to-batch performance, leading to inconsistent results and out-of-specification (OOS) occurrences – and any unplanned downtime to investigate OOS instances can impact productivity. Our line of **clone phases** offer a cost-effective comparable alternative to many of the older leading brands, while ensuring consistency and stability. Our product line is fully scalable from analytical to preparative columns.

Brand	Third Party Equivalent
Aviator™	Avantor ACE®
Chromega Z™	Agilent Zorbax® RX
Chromegabond® HC	Nouryon Kromasil®
Chromegabond® Ultra	Beckman Ultrasphere®
DeactiSil™	GL Sciences Inertsil®
Harmony™	Waters Symmetry®
HarmonySecure™	Waters SymmetryShield™
HyperSelect™ BDS	Thermo Hypersil®
HyperSelect™	Thermo Hypersil®
Micropak™	Waters µBondapak®

Brand	Third Party Equivalent
Neptune™	Waters Atlantis™
Partisep™	Whatman Partisil™
Sonoma™	Phenomenex Luna®
Spherisep™	Waters Spherisorb®
StarRise™	Waters SunFire™
DuraSep™ IR	E. Merck LiChrosorb®
DuraSep™ S	E. Merck LiChrospher®
EnduroSphere™	Macherey-Nagel Nucleosil®

Clone Columns: Features and Benefits

Our clone columns support legacy methods, providing:

- Lower cost of analysis, with comparable performance over legacy brands
- Better lot-to-lot reproduciblity due to more stable production methods

Learn more about Clone LC Columns

PerkinElmer®
For the Better

SFC: A Robust Alternative to Normal-Phase

Many supercritical fluid chromatography (SFC) separations utilize older, normal-phase HPLC stationary phases such as unmodified silica, diol, amino, and cyano. These phases can hamper separations due to the technology's low capacity, poor selectivity, and peak shape. **GreenSep™ stationary phases** are engineered specifically for SFC separations, providing exceptional bonding coverage, density, selectivity, and peak shape. Many of the GreenSep phases designed for basic and acidic compounds don't require mobile phase additives and feature a variety of selectivities for orthogonality.

GreenSep Columns: Features and Benefits

These columns are designed for high-performance SFC applications, resulting in superior separation, selectivity, peak shape, and loading capacity compared to conventional normal-phase HPLC materials adapted for SFC:

- Highly efficient columns with superior reproducibility produced from our rigorous bonding procedures
- Directly scalable from analytical to preparative on the same media to streamline purification and maximize operational efficiency
- Many phases have been specifically engineered using functional group chemistry that don't require mobile phase additives such as triethylamine

Learn more about SFC LC Columns

PerkinElmer®
For the Better

Size-Exclusion Columns for Every Measurement

Size-exclusion chromatography separates molecules based on size. Our **Chromegapore™ molecular-size exclusion** (MSE or SEC) columns are available in a range of pore sizes and chemistries, including silica, TMS bonded to silica, and diol bonded to silica. Silica and TMS Chromegapore columns are recommended for analyzing organic soluble polymers, while Chromegapore diol columns are ideal for water-soluble samples such as proteins, peptides, and many synthetic polymers.

Chromegapore Columns: Features and Benefits

We provide size-exclusion columns to address a wide range of applications, with:

- Five pore sizes (60, 100, 300, 500, and 1,000 Å) to allow separation of molecules of different sizes
- Three phases (diol, silica, and TMS [C1]) to accommodate aqueous and organic soluble samples

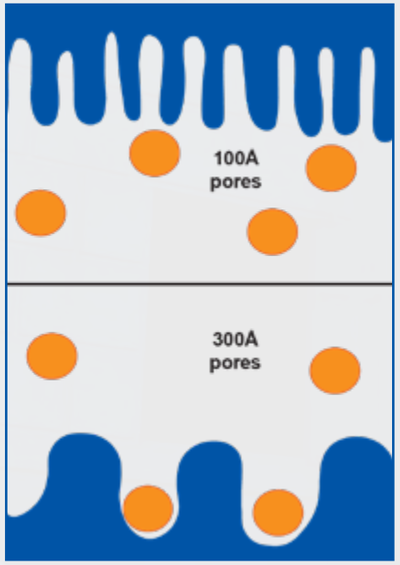
Learn more about Size-Exclusion LC Columns

PerkinElmer®
For the Better

Wide-Pore Columns Open for Anything

Our highly efficient base-deactivated wide-pore **MacroSep® BIO HPLC** columns are based on ultrahigh-purity, metal-free silica containing highly controlled pores of 300 Å diameter – ideal for analysis of proteins, peptides, and other biomolecules.

The perfect solution for analysis of biological compounds, our **MacroSep BIO-Gold** line's packings are based on ultrapure spherical silica, with state-of-the-art high-density bonding and full end capping for separation and purification of compounds with high molecular weight, such as proteins and peptides. MacroSep BIO-Gold offers two pore sizes (400 and 1200 Å) and a breadth of selectivities for enhanced protein separations.



Representation of small pore particles (~100 Å) vs. wide pore particles (~300 Å). Smaller pores do not allow most proteins to enter the pores, which limits interaction.

MacroSep Columns: Features and Benefits

These columns are designed for high-molecular-weight biological compounds, providing:

- Wide-pore surface for protein and peptide analysis
- Ultrapure metal-free silica for improved peak shape, especially for basic compounds
- State-of-the-art base deactivation to ensure superior recoveries of proteins and peptides

Learn more about Wide-Pore LC Columns

PerkinElmer®
For the Better

Say Goodbye to Traditional Limitations

Quasar SPP Columns

Quasar™ superficially porous particle (SPP) phases are just as robust as traditional silica phases, featuring excellent ligand stability and solid packed bed. You'll experience reduced run times, along with less solvent consumption and cost. Whether you're using a UHPLC system or a traditional HPLC instrument, you can seamlessly switch to Quasar SPP columns and enjoy the benefits right away.

Learn more about Quasar SPP Columns

Brownlee SPP Columns

An ideal alternative to traditional columns, **Brownlee SPP columns** deliver greater speed and lasting durability, with sharper peaks and faster separation results due to their breakthrough particle design and size. Brownlee SPP columns use 2.7-µm particles comprised of a thin outer shell of high-quality porous silica fused to a solid inner core. This advanced design allows for a shorter diffusion path, reducing the time solute molecules spend inside the particles while passing through the stationary phase.

Learn more about Brownlee Columns

PerkinElmer®
For the Better

For more information on our HPLC and UHPLC Columns visit us at www.perkinelmer.com/LCColumns

Click here to view our Liquid Chromatography Column Catalog

PerkinElmer, Inc.
940 Winter Street
Waltham, MA 02451 USA
P: (800) 762-4000 or
(+1) 203-925-4602
www.perkinelmer.com

PerkinElmer®

For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs

213895 PKI