

# HPLC COLUMNS

We have a tradition of providing innovative HPLC columns that work with all instrumentation which are tailored to your individual application needs. We offer a wide selection of high performance liquid chromatography (HPLC, UHPLC, and LC-MS) columns for small and large molecule (biomolecule) analysis, including those employing totally porous particles, superficially porous particles and monolithic columns.

## The faster way for trouble-free separations – Chromolith® and Chromolith® HighResolution HPLC columns

Thanks to their patented monolithic silica technology, Chromolith® HPLC columns allow you to race through separations with maximum robustness and selectivity—at minimal back pressure and enable the fast and economic separation of matrix-rich samples. Due to its very high Matrix-tolerance, Sample preparation can be drastically simplified. The bi-modal pore structure of monolithic columns result in a very low column back-pressures and enables rapid separations at very high flow rates. Also the column lifetime is extended with these columns due to its very rugged structure. Chromolith® HighResolution HPLC columns combine these advantages with higher separation efficiency.

### Benefits:

- Enables rapid and cost efficient separations
- Very high Matrix-tolerance
- Extremely low column backpressure
- Extended column lifetime

## Maximum Resolution for Biomolecules - BIOshell™ UHPLC and HPLC Columns

BIOshell™ UHPLC and HPLC columns deliver maximum speed and efficiency for the separation of biomolecules on both UHPLC and HPLC systems. The Fused-Core® superficially porous silica particles (SPP) with pore sizes from 90 Å up to 1000 Å allows superior separation of glycans as well as very large proteins. In particular, a pore size of 1000 Å shows very clear advantages over common 300 Å pores for the separation of very large proteins in biopharmaceutical drug development such as monoclonal antibodies (mAbs) or proteins with molecular weights greater than 100 kDa.

### Benefits:

- Fast and efficient separation of biomolecules
- Advanced Fused-Core Technology
- 4 different particle sizes for HPLC and UHPLC use
- Pore sizes from 90 Å up to 1000 Å allows superior separation of glycans as well as very large proteins

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## Designed to Deliver Speed and Resolution - Ascentis® Express UHPLC and HPLC Columns

The Fused-Core® technology behind our Ascentis® Express columns delivers maximum speed and efficiency on both UHPLC and HPLC systems. Fused-Core® particles provide a much shorter diffusion path compared to totally porous particles, minimizing peak broadening. This results in very high efficiencies, which are typically 40% higher in comparison to fully porous particles of the same size. Ascentis® Express columns are available with 2, 2.7 and 5µm particles and with a very broad range of column chemistries.

### Benefits:

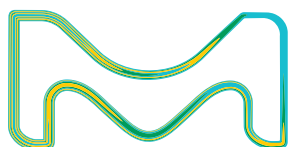
- Maximize speed with sharp peaks and outstanding separation efficiency
- 3 different particle sizes 2.0, 2.7, and 5.0 µm for UHPLC, HPLC and LC/MS use
- Very broad range of column chemistries for best selectivity
- 40% higher separation efficiency in comparison to fully porous particles of the same size



## Purospher® STAR: One for all. Perfectly balanced selectivity

The success of any method depends on the quality of the stationary phase. Precise, long-term reproducibility is a key factor in achieving reliable results.

The base silica of Purospher® STAR columns is 99.999 % pure. Furthermore, meticulous care is given to quality control over all aspects of silica structure and chemistry. These factors ensure that the columns will always perform consistently, resulting in method reproducibility you can trust.



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### Benefits at a Glance

- Accurate results with excellent peak shape for all types of analytes
- Outstanding resolution due to high separation efficiency
- Universal compatibility with best all-round performance acc. to Tanaka
- Proven reliability and reproducibility from run to run and batch to batch
- Maximum flexibility in method development and choice of mobile phase
- Highest sensitivity and suitability for LC-MS applications

## ZIC®-HILIC/ZIC®-cHILIC/ZIC®-pHILIC: Ideal columns for all classes of polar hydrophilic compounds

The high-performance zwitterionic sorbents in these columns ensure reproducible retention for compounds that have proved difficult to separate on reversed-phase HPLC columns.

Straightforward separation of compounds such as acids and bases, anions and cations, carbohydrates, metabolites, metal complexes, amino acids, peptides, protein digests and oligonucleotides can therefore be achieved with a selectivity complementary to reversed-phase columns. Enhanced LC-MS sensitivity is an additional benefit of using these columns.

Columns are available in a wide range of formats from capillary to semi-preparative dimensions, and with several different particle sizes and pore sizes.

### Benefits at a Glance

- Improved separation of hydrophilic polar compounds
- Selectivity complementary to reversed phase
- Optimal design for HPLC and LC-MS
- Easy method development
- Excellent stability

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