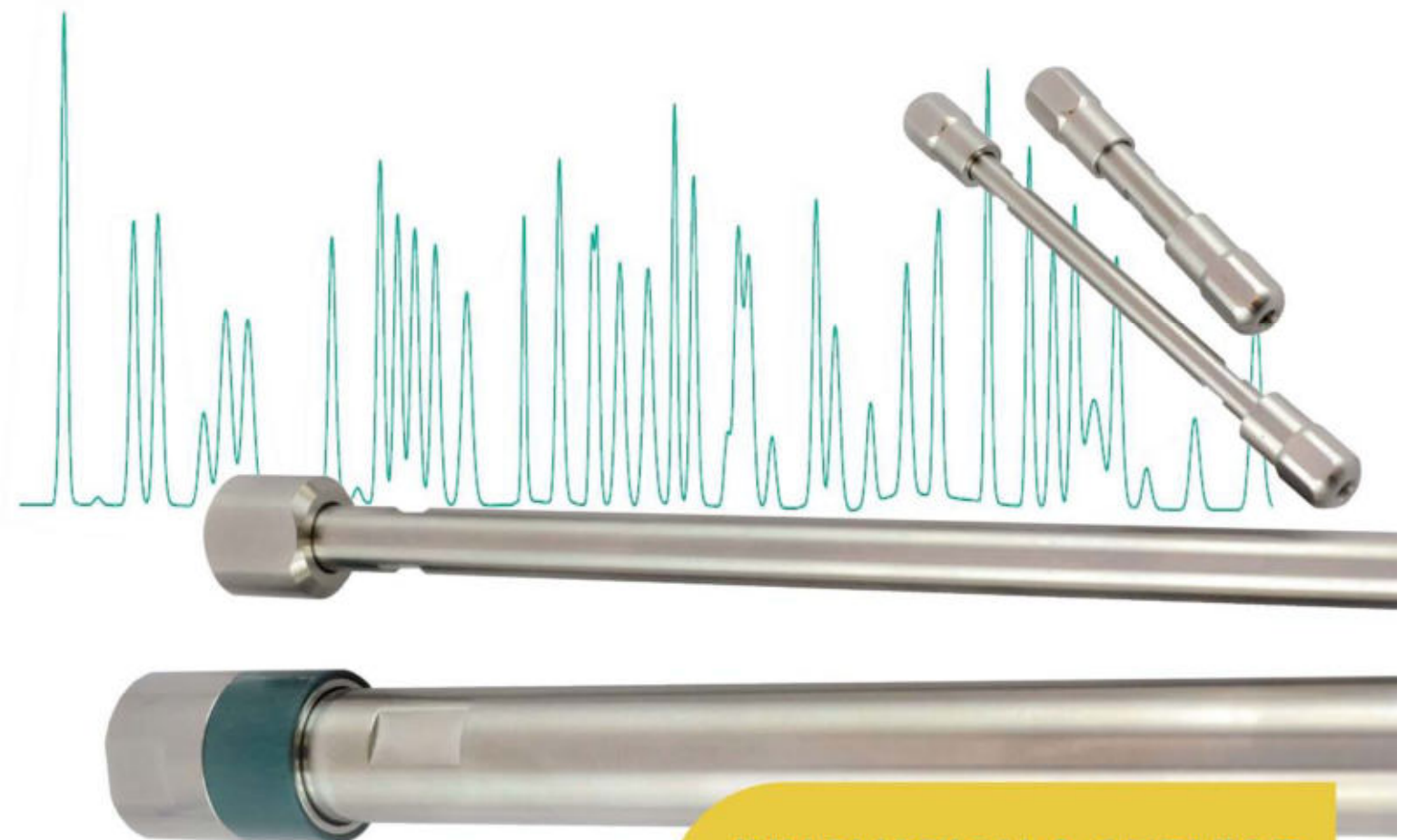
ISERA

XELA
Metab
ISAspher

HPLC and UHPLC Columns



INNOVATION & SERVICE
IN ANALYTICS

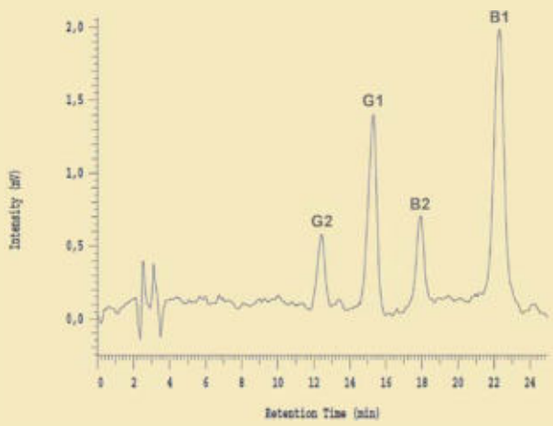
ISAspher

Flexibility and Robustness for Every Field of Application

ISAspher HPLC columns assure the highest level of reliability in a vast variety of applications.

These columns are characterised by a high robustness of the stationary phase combined with a maximum of reproducibility of the analytical results. As this can be ensured not only for each column but also for each lot reliable analytical results are guaranteed.

Separation of Aflatoxins
on ISAspher 100-5 C18



The production of the silica and also the chemical functionalisation are carried out following sophisticated and validated processes.

This assures a constant performance of the separation phases concerning their selectivity and also steady chemical properties.

As a result a direct scale-up to semipreparative and preparative applications is possible, e.g. starting from 5 µm particle size up to 45 µm. A scale-down e.g. to columns with 3 µm particle size for time-optimised analytical methods can be carried out likewise.

ISAspher	Description	Particle size	Pore size	USP Classification
Si	ultra-pure silica, unmodified	3 | 5 | 10 µm	100 Å / 300 Å	L3, Porous silica particles - 1.5 to 10 µm in diameter.
C18	Octadecyl / C18, highly endcappes	3 | 5 | 10 µm	100 Å / 300 Å	L1, Octadecylsilane chemically bonded to porous silica, 1.5 to 10 µm in diameter
C18-AQ	Octadecyl / C18, polar endcapping	3 | 5 | 10 µm	100 Å	L1, Octadecylsilane chemically bonded to porous silica, 1.5 to 10 µm in diameter
C18-BDS	Octadecyl / C18 (polymeric bonding)	3 | 5 | 10 µm	100 Å	L1, Octadecylsilane chemically bonded to porous silica, 1.5 to 10 µm in diameter
C8	Octyl / C8, highly endcapped	3 | 5 | 10 µm	100 Å	L7, Octylsilane chemically bonded to porous silica particles, 1.5 to 10 µm in diameter
C4	Butyl / C4, highly endcapped	3 | 5 | 10 µm	100 Å / 300 Å	L26, Butylsilane chemically bonded to porous silica particles, 1.5 to 10 µm in diameter
C30-CXT	C30 (polymeric bonding)	5 µm	200 Å	L62, C30 silane bonded phase on a fully porous spherical silica, 3 to 15 µm in diameter
Phenyl	Phenyl by alkane spacer, endcapped	3 | 5 | 10 µm	100 Å	L11, Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter
PFP	Pentafluorophenyl by alkane spacer, endcapped	3 | 5 | 10 µm	100 Å	L43, Pentafluorophenyl groups chemically bonded to silica particles by a propyl spacer, 1.5 to 10 µm in diameter
Biphenyl	Biphenyl, endcapped	3 | 5 | 10 µm	100 Å	L11, Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter
Cyano	Nitrile / Cyanopropyl	5 | 10 µm	100 Å	L10, Nitrile groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter
Amino	Aminopropyl	3 | 5 | 10 µm	100 Å	L8, an essentially monomolecular layer of aminopropylsilane chemically bonded to totally porous silica gel support, 1.5 to 10 µm in diameter
Diol	Dihydroxypropyl	5 | 10 µm	100 Å	L20, Dihydroxypropane groups chemically bonded to porous silica, 1.5 to 10 µm in diameter

ISAspher

Flexibility and Robustness for Every Field of Application

Reliability and reproducibility are the most important requirements for successful chromatographic analyses in addition to accuracy and precision.

This is the maxim ISERA pursues when developing and producing ISAspher HPLC-columns.

- **Reliable**
- **Robust**
- **Reproducible**
- **Scalable**

ISAspher phases are based on ultra-pure silica with a residual metal content of approx. 10 ppm and are available in a large variety complying with all requirements of the analytical practice.

Due to the high reproducibility of the performance of each column and lot ISAspher columns are perfectly suited for quality control as well as routine applications.

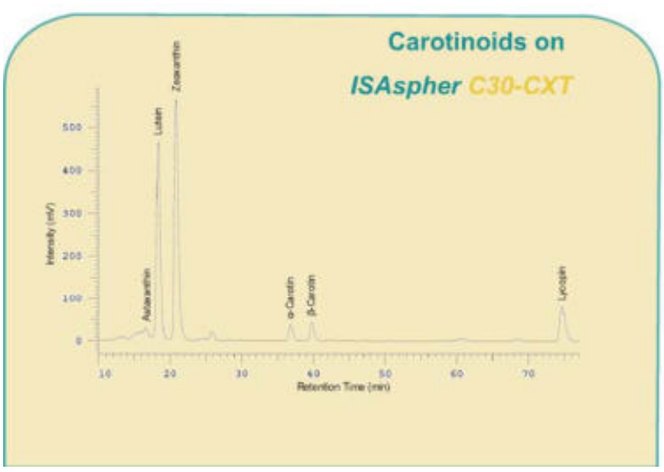
The excellent combination of a narrow particle size distribution and a sophisticated packing technology yields columns with maximum efficiency and long-term stability of the packing.

C30-CXT

ISAspher and ***XELA C30-CXT*** columns were developed especially for the separation of geometrical isomers (cis/trans isomers) of long-chain molecules.

Minimal differences in the shape of such isomers are detected by the C30 structure of the non-polar phase so that these are separated (***Shape Selectivity***).

Due to their unique selectivity ***C30-CXT*** columns can also be used efficiently in further applications like the analysis of **polyaromatic hydrocarbons (PAH), vitamins, phospholipids, unsaturated fatty acids** or similar compounds. In such applications the selectivity of the C30-CXT phase differs considerably from common C18 phases.

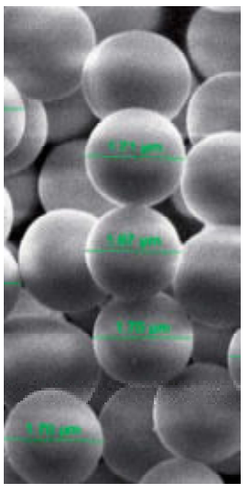


XELA

UHPLC without Limitations

The decisive criterion for a successful chromatographic analysis is the separation of the analytes; reflected in the resolution of the peaks. The best resolution is obtained by a high separation efficiency and an appropriate selectivity.

XELA columns for UHPLC perfectly fulfil these two crucial parameters and are therefore ideal tools for favourable LC ultra-high performance separations.



- 1.7 µm with narrow particle size distribution
- Homogenous pore structure
- Wide selection of phases for an optimal selectivity

The high separation efficiency of XELA UHPLC columns is induced by the 1.7 µm silica particles that are used as the basic material of the different phases. These particles exhibit a narrow size distribution (d90/d10≤ 1.4) and a homogenous pore structure which enables an unhindered access to the full inner surface. In that way UHPLC analyses of complex samples can be realised that feature excellent peak capacity and short analysis times.

Selectivity is the second key parameter for a successful separation. The outstanding wide selection of different XELA phases provides the optimal selectivity for each reversed phase separation.

C18
C18-AQ-PolE
PFP
Biphenyl
C8
C4+
C30-CXT

XELA phases	Description	Particle size	Pore size	Field of application
Si	ultra-pure silica, unmodified	1.7 µm	80 Å / 120 Å	In NP mode for slightly polar compounds In RP mode for highly polar compounds
C18	Octadecyl, C18, endcapped	1.7 µm	80 Å	Versatile phase for different applications
C8	Octyl, C8, endcapped	1.7 µm	80 Å	Less retentive than C18 with comparable selectivity
C4+	Butyl, C4, highly endcapped	1.7 µm	80 Å / 120 Å	For biomolecules like proteins or peptides
C30-CXT	C30 (polymeric bonding)	1.7 µm	120 Å	Unique *Shape Selectivity* e.g. for carotinoids, xantophylls and tetraterpenes
PFP	Pentafluorophenyl, endcapped	1.7 µm	80 Å	Special selectivity towards basic and electron-rich compounds
Biphenyl	Biphenyl, endcapped	1.7 µm	80 Å	Special selectivity towards aromatic and dipolar compounds
C18-AQ-PolE	C18 + embedded amide group	1.7 µm	80 Å	C18 with additional polar selectivity and suitable for 100% aqueous eluents

A Maximum of Separation Efficiency and Perfect Selectivity Comply with Highest Demands

Polymer Phases

Metab

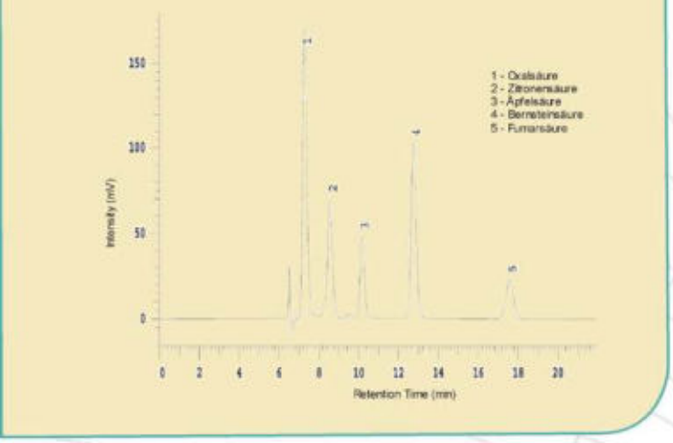
Metab columns have been developed for the analysis of **organic acids, alcohols, monosaccharides, disaccharides** and **highly polar metabolites**. Depending on the type of column the separation is induced by different mechanisms like ion exclusion, ligand exchange, size exclusion and non-polar interactions.

Due to their simple use requiring only a minimum of sample preparation and isocratic, mostly **aqueous eluents** these columns are the appropriate tool for quality control as well as routine analyses.

Typical fields of application for these columns are for example the **food and beverage industry, biotechnology, medical analyses** and also **electroplating**.

A high-quality hardware comprising efficient filter systems and appropriate guard column cartridges ensure a long life time even at acidic conditions and high temperatures.

Organic Acids on *Metab-AAC*



The separation occurs on a robust polystyrene-divinylbenzene (PS-DVB) phase which is stable between pH 0 and pH 14 and at temperatures from 5 to 90°C.

The **Metab-AAC** type (H+-variant) is mainly intended for the separation of small organic acids. But various carbohydrates and alcohols can be analysed as well.

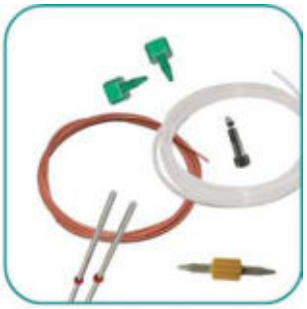
The **Metab-Ca** type is operated with pure water as eluent and often used for a concurrent determination of carbohydrates and sugar alcohols. The **Pb** type column shows a slightly different selectivity which exhibits beneficial effects in the separation of disaccharides in the presence of monosaccharides.

Accessories for Liquid Chromatography

In addition to the columns we also provide the appropriate accessories you require to solve your analytical issues:

- Guard Columns
- UV/VIS Lamps
- Tubing & Fittings





- Syringes & Needles
- Vials & Closures
- SPE & Filters



ISERA's product lines ISAspher, XELA and Metab provide you with the right column for a vast variety of applications. We complete our assortment e.g. in the field of size exclusion chromatography (SEC) by cooperating with renowned manufacturers of specialty columns.

Shodex™
HPLC Columns

Benson polymeric™

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