

Capital Optimal®

The Next Step Forward in Silica Engineering

The new range of Optimal® HPLC columns from Capital HPLC represents the next step forward in porous silica engineering beyond the so-called *new generation* high purity materials.

The current *new generation* materials are based on an alternative synthesis route which yields a high purity product with excellent inertness characteristics. However, Optimal® is manufactured using an entirely new process based on well established, tried and tested silica production techniques coupled with new refining technologies which ultimately leads to a superior material combining the advantages of both the new and traditional approaches to silica manufacturing.



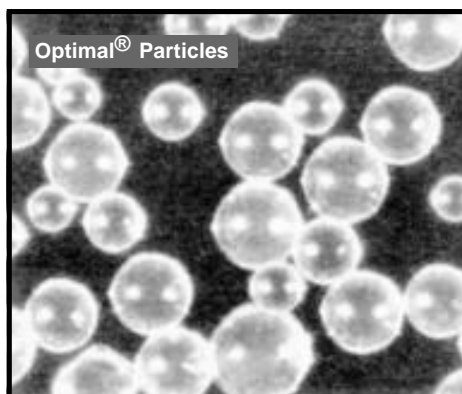
Specifications

The fact that high purity Optimal is manufactured using well established silica engineering techniques means that a wide range of specifications are possible. As a result, we can supply Optimal in pore sizes ranging from 60Å to 1000Å with the most popular being 120Å. Moreover, Optimal is also available in particle sizes ranging from 3µm up to preparative grade sizes.

Shape:	Spherical
Phases Available:	ODS-H, ODS-L, C8 and Silica
Particle Size:	3µm, 5µm and larger
Mean Pore Diameter:	120Å (300, 500 and 1000Å also available)
Carbon Loading:	ODS-H (18%), ODS-L (15%)
Specific Surface Area:	320m ² g ⁻¹ . (120Å material)

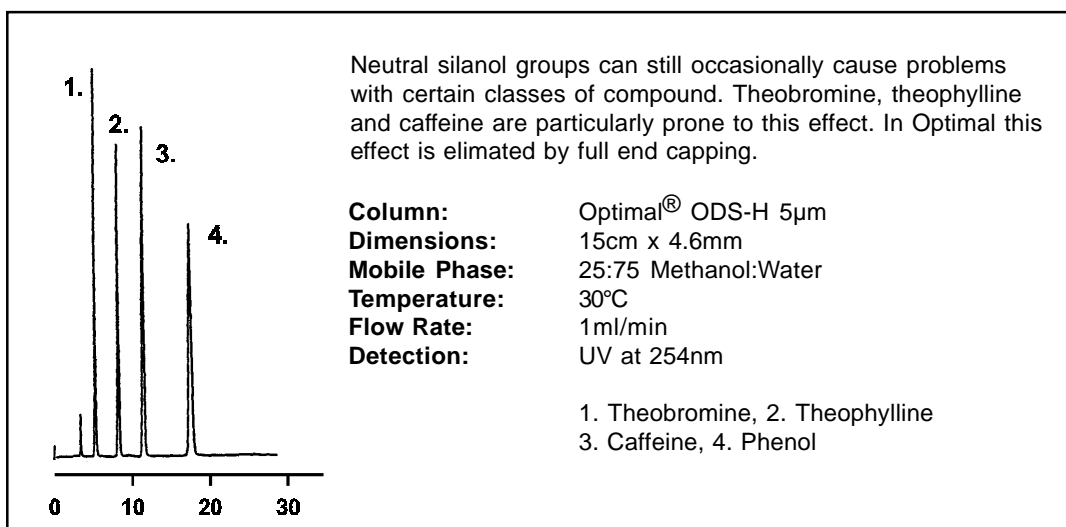
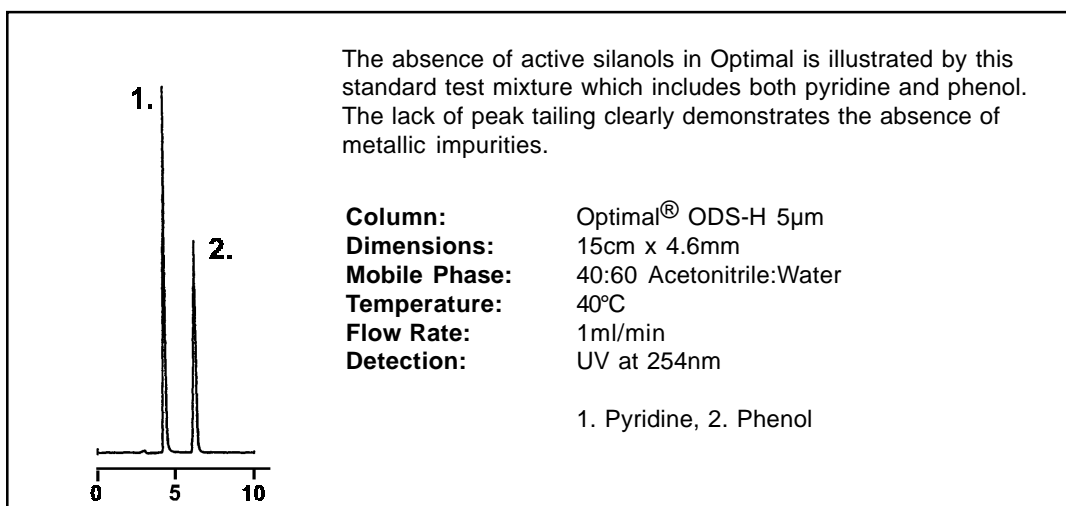
Optimal® ODS-H

Optimal® ODS-H is the most generally applicable of the Optimal® phases and can be used for both specialist applications involving acid and basic compounds or mixtures of both. Optimal® ODS-H is also particularly well suited to general purpose method development.

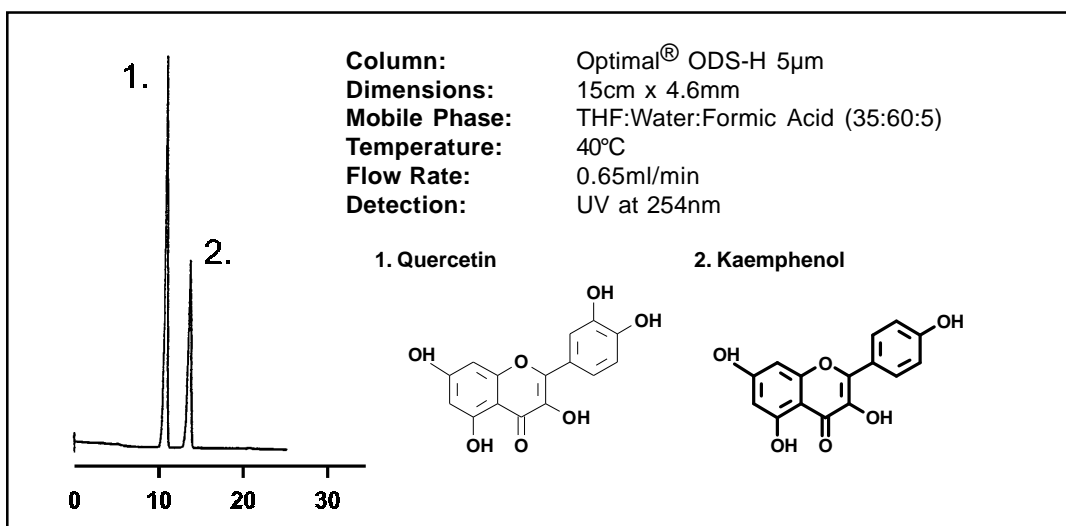


Optimal® Particle Size Distribution

Optimal® ODS-H 120Å



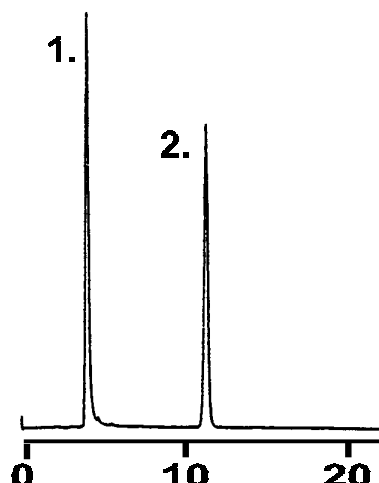
Many compounds such as polyphenols interact irreversibly with the active sites on silica based reversed phase materials. In the case of Optimal ODS-H this problem does not occur, which makes it possible to analyse problematic compounds such as in the example below.



Silanol Sensitive Vitamins

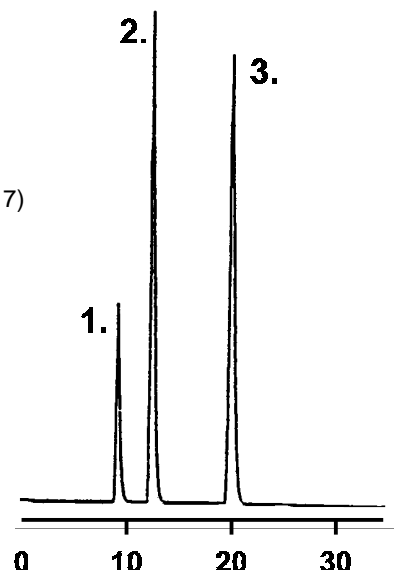
Column: Optimal® ODS-H 5µm
Dimensions: 15cm x 4.6mm
Mobile Phase: 15:85 Acetonitrile:Water
 10mM Sodium Phosphate (pH5)
Temperature: 40°C
Flow Rate: 1ml/min
Detection: UV at 254nm

1. Thiamine Hydrochloride
2. Riboflavine

**Tricyclic Antidepressives**

Column: Optimal® ODS-H 5µm
Dimensions: 15cm x 4.6mm
Mobile Phase: 80:20 Methanol:Water
 20mM Potassium Phosphate (pH 7)
Temperature: 40°C
Flow Rate: 1ml/min
Detection: UV at 254nm

1. Protriptyline
2. Nortriptyline
3. Amitriptyline

**Optimal® ODS-L**

Optimal® ODS-L has a slightly lower carbon loading (15%) than the ODS-H and is useful for the analysis of a wide range of hydrophilic compounds which are normally not retained by other C18 based packing material.

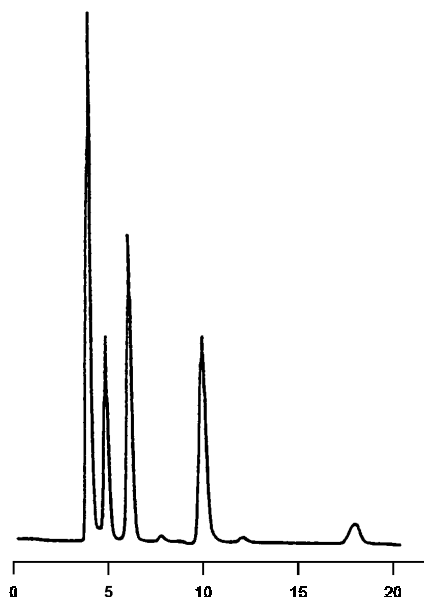
One particular advantage is that even pure water can be used as the eluent without the need for any organic modifier. Highly polar samples only soluble in water may be separated by this packing material, e.g. sugars and other saccharides. Optimal ODS-L is also as useful for analysing hydrophobic samples which are currently chromatographed on competitor C8 materials. Like ODS-H, this packing material is also fully end-capped.

Optimal ODS-L is also based on the same high purity silica as the Optimal ODS-H material which ensures the high degree of inertness and lack of peak tailing.

Fructo-Oligosaccharides

Column: Optimal® ODS-L 5µm
Dimensions: 15cm x 4.6mm
Mobile Phase: 100% Water (HPLC Grade)
Temperature: 40°C
Flow Rate: 1ml/min
Detection: Refractive Index

1. Sucrose
2. Kestose
3. Fructotriose
4. Fructotetraose

**Optimal Ordering Information**

Catalogue numbers refer to 5µm materials 4.6mm column i.d. only. For 2.1mm or 3.2mm diameter columns please add D2 and D3 respectively to the standard 4.6mm i.d. columns. Prices for 2.1mm and 3.2mm i.d. columns are as for 4.6mm i.d.

New Precision Format Columns

5µm prices only (3µm and 10µm particles are also available)

Phase	2cm	5cm	10cm	15cm	20cm	25cm
	(guard)					
Silica	5SA102	5SA105	5SA110	5SA115	5SA120	5SA125
C8	5SF102	5SF105	5SF110	5SF115	5SF120	5SF125
ODS-H	5SG102	5SG105	5SG110	5SG115	5SG120	5SG125
ODS-L	5SH102	5SH105	5SH110	5SH115	5SH120	5SH125
PRICE/£	See price list page 1					

UCC Cartridge Format Columns

5µm prices only (3µm and 10µm particles are also available)

Phase	2cm	5cm	10cm	15cm	20cm	25cm
	(guard)					
Silica	5SA102	5SA305	5SA310	5SA315	5SA320	5SA325
C8	5SF102	5SF305	5SF310	5SF315	5SF320	5SF325
ODS-H	5SG102	5SG305	5SG310	5SG315	5SG320	5SG325
ODS-L	5SH102	5SH305	5SH310	5SH315	5SH320	5SH325
PRICE/£	See price list page 1					

Wide Pore Materials

All Capital HPLC Optimal columns are available in various pore sizes ranging from 60Å up to 1000Å. This makes it possible to analyse larger molecules together with all the advantages of a high purity, highly inert material. For prices and ordering information for wide pore materials, please consult our price list, page 1.