

# PARTISIL & PARTISPHERE COLUMNS

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## **INTRODUCTION:**

Partisil is a high-purity irregular silica gel available in both 5 µm and 10 µm particle sizes with a pore size of 80Å. The choice of column packing includes Silica, C-18 polymeric phases (ODS-3, ODS-2) and C-8. Also available are SAX, SCX, and PAC. These columns provide reproducible results, column to column, lot to lot.

Partisphere is available in pre-packed columns and a choice of 5 µm high performance phases. In addition to its efficient pure silica and monomeric C-18 and C-8, SAX, SCX and PAC are also available. PartiSphere media feature narrow particle size distribution and excellent reproducibility.

## **FEATURES AND BENEFITS:**

### **Unique Void Sealing Cartridge System**

Partisphere columns are available in a unique void sealing (WVS) hardware. If a void eventually forms at the top of the column bed, simply hand tighten the inlet fitting to move the frit assembly downwards and recompress the packed bed, thus removing the void and restoring column efficiency. Large knurled end fittings allow ready hand tightening of the system. All WVS cartridge columns are shipped without end fittings and require end fitting kit p/n 4631-1001 - this item can be interchanged with additional WVS columns.

### **Partisphere Guard Cartridge System**

Additional installation of the unique WVS guard cartridge holder (p/n 4631-1003) allows the use of guard cartridges



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# PARTISIL

- Irregular porous silica
- 5µm and 10µm particle sizes
- Hichrom high efficiency

Partisil was one of the first commercially available irregular silicas, with a large surface area giving it a high loading capacity. Partisil ion exchange materials are widely referenced and remain one of the most popular choices for analysts. Partisil ODS3 shows similar performance to Waters µBondapak.

## PHASES

Partisil Phase	Functional Group	Particle Size (µm)
Silica	-	5, 10
C8	Octyl	5, 10
ODS	Octadecyl	5, 10
ODS2	Octadecyl	5, 10
ODS3	Octadecyl	5, 10
PAC	Amino-cyano	5, 10
SAX	Tetramethyl Ammonium	5, 10
SCX	Sulphonic Acid	5, 10

## NORMAL PHASE (ADSORPTION) MEDIA

### Partisil Silica (5 and 10 µm)

Pure silica stationary phase for adsorption chromatography. Partisil 10 is used particularly for routine separations for higher flow rates and lower back pressures. Partisil 5 is used particularly for higher resolution and fast analysis. These are the supports on which the Partisil bonded phases are based.

## ION EXCHANGE MEDIA

### Partisil SAX (5 and 10 µm)

A strong anion exchanger based on quaternary ammonium groups (-NR<sub>3</sub><sup>+</sup>). Supplied in the H<sub>2</sub>PO<sub>4</sub> form in methanol, Partisil 10 SAX has been widely reported in literature and is best known for the separation of nucleotides. Stable over pH range 1.5-7.5 when used in conjunction with a Solutecon mobile phase conditioning column. Obtains the highest anion exchange efficiencies and resolution. Applicable to separations of nucleic acids, organic acids and inorganic anions.

### Partisil SCX (5 and 10 µm)

Based on aromatic benzene sulfonic acid groups. Supplied in the ammonium form. Excellent for separation of nucleosides, amino acids, polyamines, drugs and other cationic species. Capable of being loaded with specific metallic cations for use in ligand exchange chromatography. Stable over pH range 1.5-7.0 when used in conjunction with a Solutecon mobile phase conditioning-column. Exceptionally stable Si-O-Si-C bond, both thermally and chemically.

## REVERSE PHASE MEDIA

### Partisil ODS (10 µm)

A C-18 phase with a 5% carbon load for both normal adsorption and reversed phase partitioning. Dual-mode operation for added selectivity with 50% residual silanols. Lightly loaded C-18 packing is particularly effective for compounds having greater water solubility when used in the reversed phase mode. Creates a moderately polar surface, different from that of pure silica, in normal phase mode.

### Partisil ODS-2 (10 µm)

The high carbon load (16%) of this polymeric phase makes it the most nonpolar and, therefore, the most retentive of the reversed phases. An alternative to end-capped C-18 where different elution order is desirable for optimum separation. High sample load capacity and 10 µm particle size are very suitable for preparative work.

### Partisil ODS-3 (5 and 10 µm)

A C-18 polymeric phase with a 10.5% carbon load. Medium of choice for improved speed, efficiency and resolution in applications requiring C-18 phases. End-capped for deactivation of silanols to minimize the need for ion suppression or ion pairing agents. Used in a wide range of applications with optimal selectivity, including pharmaceuticals, natural products, food, biological and environmental pollutants.

### Partisil C8 (5 and 10 µm)

An end-capped C-8 monomeric phase with at least 8.5% carbon load. Provides high efficiency and rapid mass transfer while maintaining excellent peak shape and stability over a range of aqueous mobile phase compositions. Recommended for ion pair chromatography.

### Partisil PAC (5 and 10 µm)

A polar amino cyano bonded phase with secondary amine groups for good thermal and chemical stability. Selectivity and rapid equilibrium allow a range of separation mechanisms to be used, including adsorption, reversed phase and weak anion exchange. Extremely fast equilibration across the entire range of solvents from heptane to water. The media of choice for carbohydrate separations.

# PARTISHERE

- **Spherical 5µm porous silica**
- **Unique void-sealing cartridge hardware**
- **Convenient and easy to use - hand tightened fittings**
- **Increased column lifetime**

*Partisphere was one of the first commercially available spherical silicas, and continues to provide reproducible, high efficiency separations. Partisphere columns are available in a wide range of surface chemistries, including a PFP pentafluorophenyl (TAC-1) column.*

## PHASES

Partisphere Phase	Functional Group	Particle Size (µm)
Silica	-	5
C8	Octyl	5
C18	Octadecyl	5
PAC	Amino-cyano	5
SAX	Tetramethyl Ammonium	5
SCX	Sulphonic Acid	5
TAC-1 (PFP)	Pentafluorophenyl	5
WAX (MAX-1)	Proprietary	5

## NORMAL PHASE (ADSORPTION) MEDIA

### Partisphere Spherical Silica (5 µm)

Partisphere silica features homogenous particles with narrow particle size distribution for sharp separations and excellent reproducibility. It is the basis for Partisphere bonded phases.

## ION EXCHANGE MEDIA

### Partisphere SAX and SCX (5 µm)

Strong ion exchange media based on homogenous spherical silica particles with very tight size distribution. They produce very sharp separations.

## REVERSE PHASE MEDIA

### Partisphere C-18 (5 µm)

C-18 stationary phase on homogenous, spherical silica particles for very high separation efficiency.

### Partisphere C-8 (5 µm)

Octyl bonded phase on homogenous spherical particles for maximal resolution.

### Partisphere PAC (5 µm)

Polar Amino Cyano bonded to homogenous spherical particles for maximal resolution.

### Partisphere TAC 1 (5 µm)

For great discoveries such as Taxol, Whatman technology optimally separates the closely eluting taxanes of Pacific yew trees. Whatman worked closely with two leading customers to develop a specific bonded phase that achieves baseline resolution of the paclitaxel molecule from its closest impurity. Each lot of TAC 1 (Taxane Analysis Column) is tested with a paclitaxel chromatographic purity separation to ensure the best possible reproducibility. (Richheimer SL et al. Anal Chem. 1992; 64: 2323-2326)

# SPECIFICATIONS

## Partisil

Particle Size: 5, 10µm  
350 m<sup>2</sup>/g surface area  
85Å pore size

## Partisphere

Particle Size: 5 µm  
160 m<sup>2</sup>/g surface area  
120Å pore size

To order columns directly, please contact MAC-MOD:



Phone: **610-358-9696**  
Fax: **610-368-5993**  
Email: **info@mac-mod.com**  
Web: **www.mac-mod.com**

Please contact MAC-MOD for any columns or dimensions not listed in this product bulletin.

PART NO.	DESCRIPTION
<b>Partisil 5µm Analytical Columns:</b>	
4222-225	Partisil 5µm ODS3 column, 100 x 4.6mm (WCS hardware - RAC-II)
4222-227	Partisil 5µm SAX column, 100 x 4.6mm (WCS hardware - RAC-II)
4222-228	Partisil 5µm SCX column, 100 x 4.6mm (WCS hardware - RAC-II)
4222-232	Partisil 5µm C8 column, 100 x 4.6mm (WCS hardware - RAC-II)
4215-001	Partisil 5µm SIL column, 250 x 4.6mm (WCS hardware)
4235-001	Partisil 5µm PAC column, 250 x 4.6mm (WCS hardware)
4238-001	Partisil 5µm ODS3 column, 250 x 4.6mm (WCS hardware)
4239-001	Partisil 5µm C8 column, 250 x 4.6mm (WCS hardware)
4239-001	Partisil 5µm C8 column, 250 x 4.6mm (WCS hardware)
<b>Partisil 10µm Analytical Columns:</b>	
4216-001	Partisil 10µm SIL column, 250 x 4.6mm (WCS hardware)
4223-001	Partisil 10µm ODS column, 250 x 4.6mm (WCS hardware)
4224-001	Partisil 10µm ODS2 column, 250 x 4.6mm (WCS hardware)
4225-001	Partisil 10µm PAC column, 250 x 4.6mm (WCS hardware)
4226-001	Partisil 10µm SAX column, 250 x 4.6mm (WCS hardware)
4227-001	Partisil 10µm SCX column, 250 x 4.6mm (WCS hardware)
4228-001	Partisil 10µm ODS3 column, 250 x 4.6mm (WCS hardware)
4229-001	Partisil 10µm C8 column, 250 x 4.6mm (WCS hardware)
4141-001	Partisil 10µm SCX column (S-P), 250 x 4.6mm (WCS hardware)
<b>Partisil 10µm Semi-Prep Columns:</b>	
4230-120	Partisil 10µm SIL column, 250 x 9.4mm (Magnum-9 hardware)
4230-124	Partisil 10µm ODS2 column, 250 x 9.4mm (Magnum-9 hardware)
4230-125	Partisil 10µm ODS3 column, 250 x 9.4mm (Magnum-9 hardware)
4230-126	Partisil 10µm PAC column, 250 x 9.4mm (Magnum-9 hardware)
4230-220	Partisil 10µm SIL column, 500 x 9.4mm (Magnum-9 hardware)
4230-224	Partisil 10µm ODS2 column, 500 x 9.4mm (Magnum-9 hardware)
4230-225	Partisil 10µm ODS3 column, 500 x 9.4mm (Magnum-9 hardware)
4232-125	Partisil 10µm ODS column, 250 x 20mm (Magnum-20 hardware)
4232-220	Partisil 10µm SIL column, 500 x 20mm (Magnum-20 hardware)

PART NO.	DESCRIPTION
<b>Partisphere 5µm Analytical Columns:</b>	
<i>(note: WVS cartridge columns require end fitting kit p/n 4631-1001)</i>	
4120-001	Partisphere 5µm WAX (MAX-1) column, 250 x 4.6mm (WCS hardware)
4601-1001	Partisphere 5µm TAC-1 (PFP) cartridge column, 265 x 4.6mm (WVS hardware)
4621-0501	Partisphere 5µm SIL cartridge column, 125 x 4.6mm (WVS hardware)
4621-0502	Partisphere 5µm C18 cartridge column, 125 x 4.6mm (WVS hardware)
4621-0503	Partisphere 5µm C8 cartridge column, 125 x 4.6mm (WVS hardware)
4621-0505	Partisphere 5µm SAX cartridge column, 125 x 4.6mm (WVS hardware)
4621-0507	Partisphere 5µm SCX cartridge column, 125 x 4.6mm (WVS hardware)
4621-0508	Partisphere 5µm PAC cartridge column, 125 x 4.6mm (WVS hardware)
4621-1501	Partisphere 5µm SIL cartridge column, 250 x 4.6mm (WVS hardware)
4621-1502	Partisphere 5µm C18 cartridge column, 250 x 4.6mm (WVS hardware)
4621-1505	Partisphere 5µm SAX cartridge column, 250 x 4.6mm (WVS hardware)
4621-1507	Partisphere 5µm SCX cartridge column, 250 x 4.6mm (WVS hardware)
4621-1508	Partisphere 5µm PAC cartridge column, 250 x 4.6mm (WVS hardware)
<b>Partisil Analytical Cartridge Columns:</b>	
4681-0502	ODS3 cartridge column, 125 x 4.6mm (WVS hardware)
4681-0505	SAX cartridge column, 125 x 4.6mm (WVS hardware)
4681-1501	SIL cartridge column, 250 x 4.6mm (WVS hardware)
4681-1502	ODS3 cartridge column, 250 x 4.6mm (WVS hardware)
4681-1505	SAX cartridge column, 250 x 4.6mm (WVS hardware)
4681-1507	SCX cartridge column, 250 x 4.6mm (WVS hardware)
4681-1509	ODS2 cartridge column, 250 x 4.6mm (WVS hardware)
4682-1502	ODS3 cartridge column, 250 x 4.6mm (WVS hardware)
4682-1505	SAX cartridge column, 250 x 4.6mm (WVS hardware)
4682-1507	SCX cartridge column, 250 x 4.6mm (WVS hardware)
<b>Accessories:</b>	
4250-001	Partisil 10µm SAX column with Solvecon Kit
4251-001	Partisil 10µm SCX column with Solvecon Kit
4631-1001	Wrenchless WVS End Fitting Kit
4631-1003	WVS Guard Cartridge Holder
4631-1004	WCS Guard Cartridge Holder
4641-0001	Silica Guard Cartridge (5 pack)
4641-0002	Reverse Phase Guard Cartridge (5 pack)
4641-0005	Anion Guard Cartridge (5 pack)
4641-0007	Cation Guard Cartridge (5 pack)
4641-0008	PAC Guard Cartridge (5 pack)
HI-050X	PEEK Fingertight Fitting (10 pack)—suitable for connection of all Partisil and Partisphere columns to all 1/16" o.d. tubing types – slip free to 6000psi