



HICHROM

Chromatography Columns and Supplies

LC COLUMNS Partisil and Partisphere

Catalogue 9

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- Acquired by Hichrom from Whatman, a division of GE Healthcare, in 2012
- Choice of spherical or irregular silica
- Wide range of surface chemistries

Partisil® and Partisphere® Acquisition

Hichrom acquired the Partisil and Partisphere HPLC column range from Whatman, a division of GE Healthcare, in 2012. Hichrom worked closely with GE Healthcare during the manufacture of these products for a number of years prior to acquisition and, as such, manufacturing protocols, product specifications and part numbers remain unaffected. All column dimensions previously offered by Whatman/GE Healthcare remain available and are detailed on the following pages.

Hichrom Partisil Columns – Non Standard Whatman/GE Healthcare Dimensions

Hichrom have a deserved reputation for the ability to manufacture and supply high efficiency columns packed into non standard dimensions not originally offered by the silica manufacturer. Partisil columns are no exception, as for many years Hichrom have manufactured Partisil columns into a wider range of column dimensions than available from Whatman/GE Healthcare. These additional dimensions will continue to be supported following the acquisition and are detailed on pages 192-193.

Partisil Phases

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

Partisil was one of the first commercially available irregular silicas. A large surface area gives it a high loading capacity. Partisil ion-exchange materials are widely referenced and remain one of the most popular choices for analysts. Partisil 10 ODS3 is similar to Waters µBondapak.

Partisil Phases

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

Partisil ODS is a low carbon load C18 phase, with intentionally unbonded surface silanols adding to the selectivity.

Partisil ODS2 is a high carbon load C18 bonded silica phase which makes it the most non-polar and, therefore, the most retentive of the Partisil reversed-phase columns. The high sample load capacity is suitable for preparative work.

Partisil ODS3 is an intermediate carbon load C18 phase used for pharmaceutical, natural products, food, biological and environmental pollutants applications. Partisil 10 ODS3 is similar to Waters µBondapak.

Partisil C8 is recommended for ion-pair chromatography.

Partisil PAC is a Polar Amino Cyano bonded phase with secondary amine groups for good thermal and chemical stability. Fast equilibration enables multiple separation mechanisms, including adsorption, reversed-phase and weak anion-exchange, to be used. The phase is particularly suitable for carbohydrate separations.

Partisil SAX is a strong anion-exchange phase based on quaternary ammonium groups. It is stable over the pH range 1.5 to 7.5. At intermediate pH, use of a Solvecon eluent conditioning column (see part number 4250-001) is recommended to further enhance column lifetime. Typical applications include nucleic acids, organic acids and inorganic anions.

Partisil SCX is a strong cation-exchange phase based on benzenesulphonic acid groups and is stable over the pH range 1.5 to 7.0. At intermediate pH, use of a Solvecon eluent conditioning column (see part number 4251-001) is recommended to further enhance column lifetime. Suitable applications include nucleosides, amino acids, polyamines, drugs and other cationic species.

See page 190 for ordering information for Partisil columns in WCS hardware and dimensions previously offered by Whatman/GE Healthcare. See pages 192-193 for Hichrom Partisil columns in a wider range of dimensions.

Partisphere® Phases

- 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 two application specific phases: TAC-1 (Taxane Analysis Column) for the analysis of paclitaxel and other taxanes, and WAX (MAX-1) for corn and soy protein.

Partisphere Phases

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

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, a simple hand tightening of the inlet fitting moves the frit assembly downwards and recompresses 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, catalogue no. 4631-1001. This item can be interchanged with additional WVS columns.

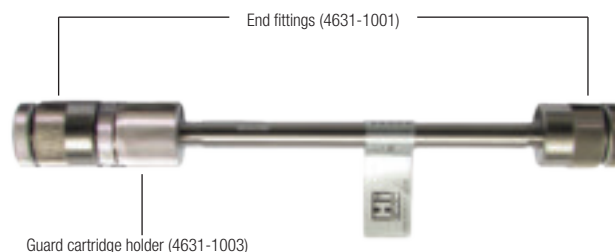


Figure 1. Partisphere WVS hardware cartridge system

Partisphere Guard Cartridge System

Additional installation of the unique WVS guard cartridge holder (catalogue no. 4631-1003) allows the use of guard cartridges (see Figure 1).

Ordering Information - Partisil® and Partisphere®

Partisil 5µm Analytical Columns

Catalogue No.	Description
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)

Partisil 10µm Analytical Columns

Catalogue No.	Description
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)

Ordering Information - Partisil® and Partisphere® (continued)

Partisil 10µm Semi-Prep Columns

Catalogue No.	Description
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 ODS3 column, 250 x 20mm (Magnum-20 hardware)
4232-220	Partisil 10µm SIL column, 500 x 20mm (Magnum-20 hardware)

Partisphere 5µm Analytical Columns (note: WVS cartridge columns require end fitting kit p/n 4631-1001)

Catalogue No.	Description
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)

Partisil Analytical Cartridge Columns (note: WVS cartridge columns require end fitting kit p/n 4631-1001)

Catalogue No.	Description
4681-0502	Partisil 5µm ODS3 cartridge column, 125 x 4.6mm (WVS hardware)
4681-0505	Partisil 5µm SAX cartridge column, 125 x 4.6mm (WVS hardware)
4681-1501	Partisil 5µm SIL cartridge column, 250 x 4.6mm (WVS hardware)
4681-1502	Partisil 5µm ODS3 cartridge column, 250 x 4.6mm (WVS hardware)
4681-1505	Partisil 5µm SAX cartridge column, 250 x 4.6mm (WVS hardware)
4681-1507	Partisil 5µm SCX cartridge column, 250 x 4.6mm (WVS hardware)
4681-1509	Partisil 5µm ODS2 cartridge column, 250 x 4.6mm (WVS hardware)
4682-1502	Partisil 10µm ODS3 cartridge column, 250 x 4.6mm (WVS hardware)
4682-1505	Partisil 10µm SAX cartridge column, 250 x 4.6mm (WVS hardware)
4682-1507	Partisil 10µm SCX cartridge column, 250 x 4.6mm (WVS hardware)

Accessories

Catalogue No.	Description
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 Phase 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.

See also pages 192 and 193 for additional Partisil column dimensions and ordering information.

Hichrom Partisil® Columns – Non Standard Whatman/GE Healthcare Dimensions

Hichrom have a deserved reputation for the ability to manufacture and supply high efficiency columns packed into non standard dimensions not originally offered by the silica manufacturer. Partisil® columns are no exception and for many years Hichrom have manufactured Partisil columns into a wider range of column dimensions than was originally available from Whatman/GE Healthcare. These additional dimensions continue to be supported following the acquisition and are detailed below. Please contact Hichrom for any column dimension not listed.



Ordering Information – Partisil Additional Dimensions

Partisil 2.1mm i.d. Columns

Partisil Phase	Column Dimensions (mm)				Guard Cartridges ¹ (For 2.1mm i.d. Columns)
	50 x 2.1	100 x 2.1	150 x 2.1	250 x 2.1	
Partisil 5 SIL	P5-50AM	P5-100AM	P5-150AM	P5-250AM	P5-10CM5
Partisil 5 C8	P5C8-50AM	P5C8-100AM	P5C8-150AM	P5C8-250AM	P5C8-10CM5
Partisil 5 ODS3	P5ODS3-50AM	P5ODS3-100AM	P5ODS3-150AM	P5ODS3-250AM	P5ODS3-10CM5
Partisil 5 PAC	P5PAC-50AM	P5PAC-100AM	P5PAC-150AM	P5PAC-250AM	P5PAC-10CM5
Partisil 5 SAX	P5SAX-50AM	P5SAX-100AM	P5SAX-150AM	P5SAX-250AM	P5SAX-10CM5
Partisil 5 SCX	P5SCX-50AM	P5SCX-100AM	P5SCX-150AM	P5SCX-250AM	P5SCX-10CM5
Partisil 10 SIL	P10-50AM	P10-100AM	P10-150AM	P10-250AM	P10-10CM5
Partisil 10 C8	P10C8-50AM	P10C8-100AM	P10C8-150AM	P10C8-250AM	P10C8-10CM5
Partisil 10 ODS	P10ODS-50AM	P10ODS-100AM	P10ODS-150AM	P10ODS-250AM	P10ODS-10CM5
Partisil 10 ODS2	P10ODS2-50AM	P10ODS2-100AM	P10ODS2-150AM	P10ODS2-250AM	P10ODS2-10CM5
Partisil 10 ODS3	P10ODS3-50AM	P10ODS3-100AM	P10ODS3-150AM	P10ODS3-250AM	P10ODS3-10CM5
Partisil 10 PAC	P10PAC-50AM	P10PAC-100AM	P10PAC-150AM	P10PAC-250AM	P10PAC-10CM5
Partisil 10 SAX	P10SAX-50AM	P10SAX-100AM	P10SAX-150AM	P10SAX-250AM	P10SAX-10CM5
Partisil 10 SCX	P10SCX-50AM	P10SCX-100AM	P10SCX-150AM	P10SCX-250AM	P10SCX-10CM5

¹ Use with holder HI-161 (£45) and column coupler HI-081 (£26)

² Starter kits (£145) also available – see p.25

Partisil 3.2mm i.d. Columns

Partisil Phase	Column Dimensions (mm)				Guard Cartridges ¹ (For 3.2-4.6mm i.d. Columns)
	50 x 3.2	100 x 3.2	150 x 3.2	250 x 3.2	
Partisil 5 SIL	P5-50AS	P5-100AS	P5-150AS	P5-250AS	P5-10C5
Partisil 5 C8	P5C8-50AS	P5C8-100AS	P5C8-150AS	P5C8-250AS	P5C8-10C5
Partisil 5 ODS3	P5ODS3-50AS	P5ODS3-100AS	P5ODS3-150AS	P5ODS3-250AS	P5ODS3-10C5
Partisil 5 PAC	P5PAC-50AS	P5PAC-100AS	P5PAC-150AS	P5PAC-250AS	P5PAC-10C5
Partisil 5 SAX	P5SAX-50AS	P5SAX-100AS	P5SAX-150AS	P5SAX-250AS	P5SAX-10C5
Partisil 5 SCX	P5SCX-50AS	P5SCX-100AS	P5SCX-150AS	P5SCX-250AS	P5SCX-10C5
Partisil 10 SIL	P10-50AS	P10-100AS	P10-150AS	P10-250AS	P10-10C5
Partisil 10 C8	P10C8-50AS	P10C8-100AS	P10C8-150AS	P10C8-250AS	P10C8-10C5
Partisil 10 ODS	P10ODS-50AS	P10ODS-100AS	P10ODS-150AS	P10ODS-250AS	P10ODS-10C5
Partisil 10 ODS2	P10ODS2-50AS	P10ODS2-100AS	P10ODS2-150AS	P10ODS2-250AS	P10ODS2-10C5
Partisil 10 ODS3	P10ODS3-50AS	P10ODS3-100AS	P10ODS3-150AS	P10ODS3-250AS	P10ODS3-10C5
Partisil 10 PAC	P10PAC-50AS	P10PAC-100AS	P10PAC-150AS	P10PAC-250AS	P10PAC-10C5
Partisil 10 SAX	P10SAX-50AS	P10SAX-100AS	P10SAX-150AS	P10SAX-250AS	P10SAX-10C5
Partisil 10 SCX	P10SCX-50AS	P10SCX-100AS	P10SCX-150AS	P10SCX-250AS	P10SCX-10C5

¹ Use with holder HI-161 (£45) and column coupler HI-081 (£26)

² Starter kits (£145) also available – see p.25

Ordering Information – Partisil Additional Dimensions (continued)

Partisil 4.0mm i.d. Columns

Partisil Phase	Column Dimensions (mm)				Guard Cartridges ¹ (For 3.2-4.6mm i.d. Columns)
	50 x 4.0	100 x 4.0	150 x 4.0	250 x 4.0	
Partisil 5 SIL	P5-50AF	P5-100AF	P5-150AF	P5-250AF	P5-10C5
Partisil 5 C8	P5C8-50AF	P5C8-100AF	P5C8-150AF	P5C8-250AF	P5C8-10C5
Partisil 5 ODS3	P5ODS3-50AF	P5ODS3-100AF	P5ODS3-150AF	P5ODS3-250AF	P5ODS3-10C5
Partisil 5 PAC	P5PAC-50AF	P5PAC-100AF	P5PAC-150AF	P5PAC-250AF	P5PAC-10C5
Partisil 5 SAX	P5SAX-50AF	P5SAX-100AF	P5SAX-150AF	P5SAX-250AF	P5SAX-10C5
Partisil 5 SCX	P5SCX-50AF	P5SCX-100AF	P5SCX-150AF	P5SCX-250AF	P5SCX-10C5
Partisil 10 SIL	P10-50AF	P10-100AF	P10-150AF	P10-250AF	P10-10C5
Partisil 10 C8	P10C8-50AF	P10C8-100AF	P10C8-150AF	P10C8-250AF	P10C8-10C5
Partisil 10 ODS	P10ODS-50AF	P10ODS-100AF	P10ODS-150AF	P10ODS-250AF	P10ODS-10C5
Partisil 10 ODS2	P10ODS2-50AF	P10ODS2-100AF	P10ODS2-150AF	P10ODS2-250AF	P10ODS2-10C5
Partisil 10 ODS3	P10ODS3-50AF	P10ODS3-100AF	P10ODS3-150AF	P10ODS3-250AF	P10ODS3-10C5
Partisil 10 PAC	P10PAC-50AF	P10PAC-100AF	P10PAC-150AF	P10PAC-250AF	P10PAC-10C5
Partisil 10 SAX	P10SAX-50AF	P10SAX-100AF	P10SAX-150AF	P10SAX-250AF	P10SAX-10C5
Partisil 10 SCX	P10SCX-50AF	P10SCX-100AF	P10SCX-150AF	P10SCX-250AF	P10SCX-10C5

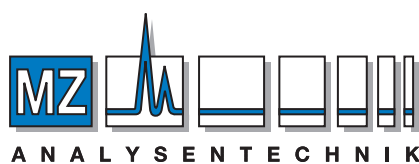
¹ Use with holder HI-161 (£45) and column coupler HI-081 (£26)² Starter kits (£145) also available – see p.25

Partisil 4.6mm i.d. Columns

Partisil Phase	Column Dimensions (mm)				Guard Cartridges ¹ (For 3.2-4.6mm i.d. Columns)
	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	
Partisil 5 SIL	P5-50A	P5-100A	P5-150A	P5-250A	P5-10C5
Partisil 5 C8	P5C8-50A	P5C8-100A	P5C8-150A	P5C8-250A	P5C8-10C5
Partisil 5 ODS3	P5ODS3-50A	P5ODS3-100A	P5ODS3-150A	P5ODS3-250A	P5ODS3-10C5
Partisil 5 PAC	P5PAC-50A	P5PAC-100A	P5PAC-150A	P5PAC-250A	P5PAC-10C5
Partisil 5 SAX	P5SAX-50A	P5SAX-100A	P5SAX-150A	P5SAX-250A	P5SAX-10C5
Partisil 5 SCX	P5SCX-50A	P5SCX-100A	P5SCX-150A	P5SCX-250A	P5SCX-10C5
Partisil 10 SIL	P10-50A	P10-100A	P10-150A	P10-250A	P10-10C5
Partisil 10 C8	P10C8-50A	P10C8-100A	P10C8-150A	P10C8-250A	P10C8-10C5
Partisil 10 ODS	P10ODS-50A	P10ODS-100A	P10ODS-150A	P10ODS-250A	P10ODS-10C5
Partisil 10 ODS2	P10ODS2-50A	P10ODS2-100A	P10ODS2-150A	P10ODS2-250A	P10ODS2-10C5
Partisil 10 ODS3	P10ODS3-50A	P10ODS3-100A	P10ODS3-150A	P10ODS3-250A	P10ODS3-10C5
Partisil 10 PAC	P10PAC-50A	P10PAC-100A	P10PAC-150A	P10PAC-250A	P10PAC-10C5
Partisil 10 SAX	P10SAX-50A	P10SAX-100A	P10SAX-150A	P10SAX-250A	P10SAX-10C5
Partisil 10 SCX	P10SCX-50A	P10SCX-100A	P10SCX-150A	P10SCX-250A	P10SCX-10C5

¹ Use with holder HI-161 (£45) and column coupler HI-081 (£26)² Starter kits (£145) also available – see p.25

Please also see pages 190 and 192 for alternative Partisil columns.
Please contact Hichrom for ordering information on any column dimension not listed.



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