

>5 μm Preparative HPLC Column

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≥5 μm Preparative HPLC Columns

From Productivity Comes Predictability

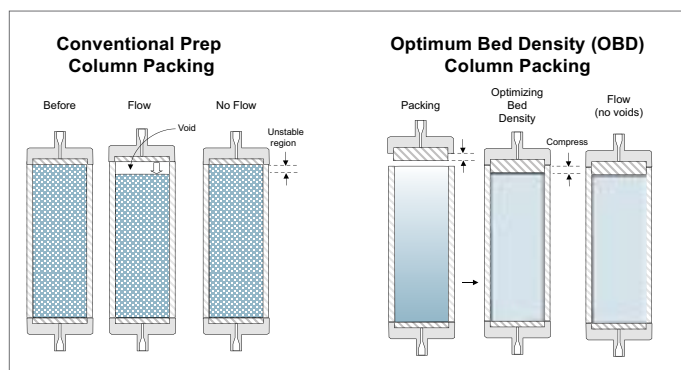
Why struggle with inconsistencies in column-to-column performance, unpredictable column lifetimes, lost samples, repeat purification runs, and poor scalability from small- to large-volume columns?



Increase your productivity through higher recoveries and longer column lifetimes. With Optimum Bed Density (OBD) Preparative Columns, you can:

- Achieve fast, efficient, lab-scale separations, for greater throughput
- Directly scale from UPLC, UHPLC, or HPLC screening to lab-scale purification
- Select robust chromatographic particles designed for purification

The OBD Column Design

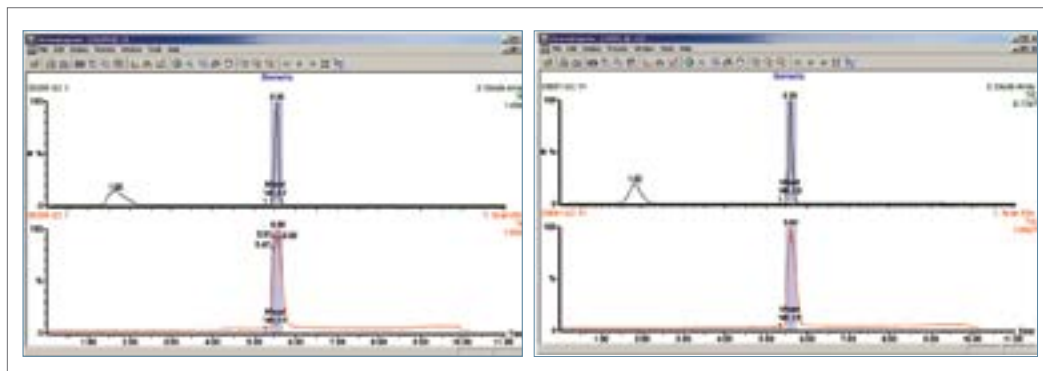


The OBD Preparative Column design and packing process results in predictable, uniform density profiles throughout the column. During the final capping process, our established procedures do not over compress or disrupt in any non-uniform way, eliminating the potential for voids.

COLUMN STABILITY AND RELIABILITY—LONG, PREDICTABLE LIFETIMES

The demand for rapid, high-purity, compound isolation assumes confidence in the integrity and stability of preparative columns. Complex, sparingly-soluble starting materials are often dissolved in strong solvents, such as DMSO. The combination of poor solubility and pressure shocks associated with large injection volumes of pure organic solvent are the primary contributors to early column failure and chromatographic bed collapse. The OBD design exhibits exceptional resistance to mechanical chromatographic bed failure and delivers consistent column-to-column performance, reducing cost by extending lifetimes.

Data From a High-Throughput Drug Discovery Laboratory



Data from a high-throughput drug discovery laboratory shows excellent peak shape after 7000 injections on an XBridge BEH C₁₈ OBD Prep Column, 130 Å, 5 μm, 19 × 50 mm.

HOW TO CHOOSE THE RIGHT OBD PREPARATIVE COLUMN

STEP 1

Once the analytical separation has been optimized, a loading study on the analytical column is performed to determine the capacity of the particular packing material. The large-scale separation should be identical to the small-scale separation, therefore the maximum sample load will be dependent upon the complexity of the analytical separation.

STEP 2

Determine how much mass you need to purify or isolate.

STEP 3

Use these simple equations to determine the required column size for purification.

Note: Preparative HPLC system maximum flow rate and backpressure need to be considered and can limit column size.

Scale-Up Factor

$$\text{Scale-up factor} = \frac{(\text{Diameter preparative})^2 \times \text{Length preparative}}{(\text{Diameter analytical})^2 \times \text{Length analytical}}$$

Example: Scaling up from a 4.6 × 150 mm column to a 19 × 150 mm column:

$$\text{Scale-up factor} = \frac{(19)^2 \times 150}{(4.6)^2 \times 150} = 17.1$$

Applying the scale-up factor, you can predict that an approximate range of 17 to 135 mg of sample could be applied to the larger (19 × 150 mm) column (packed with the same material as the analytical column). This range is based on an analytical column (4.6 mm I.D.) mass load of 1 to 8 mg.

Flow Rate

$$\text{Flow rate (prep)} = \text{Flow rate (analytical)} \times \frac{(\text{Diameter preparative})^2}{(\text{Diameter analytical})^2} \times \frac{\text{Particle size (analytical)}}{\text{Particle size (preparative)}}$$

The calculated flow rate may be used for the larger column to ensure the same linear velocity of the mobile phases as used in the analytical run. However, reasonable rates are based on column diameters. Systems will be limited by increasing backpressure with increasing column length and decreasing particle size.

Gradient Duration (GD)

$$\text{GD (prep)} = \frac{(\text{GD analytical}) \times (\text{Length preparative})}{(\text{Length analytical})} \times \frac{(\text{Diameter preparative})^2}{(\text{Diameter analytical})^2} \times \frac{(\text{Flow rate analytical})}{(\text{Flow rate preparative})}$$

MASS LOADING

Many factors affect the mass capacity of preparative columns. The listed capacities represent an "average" estimate of the total amount of mass per injection to be loaded on to the column.

Approximate Peptide Mass Loading Capacities (mg) for OBD Preparative Columns (Gradient Mode)

Length (mm)	Diameter (mm)				
	4.6	10	19	30	50
50	0.3–0.6 mg	1.5–3.0 mg	4–9 mg	11–22 mg	31–62 mg
100	0.5–1.0 mg	2.5–5.0 mg	9–18 mg	22–45 mg	62–125 mg
150	0.8–1.6 mg	4.0–8.0 mg	13–27 mg	34–68 mg	93–186 mg
250	1.3–2.6 mg	6.0–12.0 mg	22–45 mg	56–112 mg	155–310 mg
Reasonable flow rate (mL/min)	0.9–1.8	4.5–9.0	16–32	40–80	111–222 mg
Reasonable injection volume (µL)	20	100	350	880	2450

Capacity is:

- Higher for strongly retained material
- Higher for simple mixtures
- Lower where higher resolution is required
- Very strongly dependent on loading conditions
 - Limited by loading volume
 - Limited by diluent solvent strength

Approximate Small Molecule Mass Loading Capacities (mg) for OBD Preparative Columns (Gradient Mode)

Length (mm)	Diameter (mm)				
	4.6	10	19	30	50
50	3 mg	15 mg	45 mg	110 mg	310 mg
75	–	–	–	165 mg	–
100	5 mg	25 mg	90 mg	225 mg	620 mg
150	8 mg	40 mg	135 mg	335 mg	930 mg
250	13 mg	60 mg	225 mg	560 mg	1550 mg
Reasonable flow rate (mL/min)	1.4	6.6	24	60	164
Reasonable injection volume (µL)	20	100	350	880	2450

Reasonable flow rates are based on column diameter. Systems will be limited by increasing backpressure with increasing column length and decreasing particle size.

Reasonable injection volumes are based on column diameter at a length of 50 mm with relatively strong solvents. Increased length is compatible with larger injections, but not proportionately so. Weaker solvents significantly increase injection volume.


Mass loading capacities for peptides and purifications depend strongly on the sequence and may be estimated at 5–20% of listed values.

Estimates for peptide mass load are broad because capacity depends on the solubility of the peptide in the mobile phase.

Waters OBD Preparative Columns Calculator

This convenient online scale-up tool provides:

- Mass load scaling
- Gradient scaling with appropriate flow rate scale-up and predicting volume consumption
- Calculations for split flow ratios for those using mass spectrometer driven chromatography
- Focused gradient UPLC, UHPLC, or analytical HPLC to preparative-scale method transfer

 To try this tool, visit waters.com/prepcalculator



[OBD PREPARATIVE COLUMNS]

Increase Your Productivity Through Higher Recoveries and Longer Column Lifetimes

With Optimum Bed Density (OBD™) Preparative Columns you have the ability to:

- Achieve fast, efficient, lab-scale separations for greater throughput
- Directly scale from UPLC,™ UHPLC, or HPLC screening to lab-scale purification
- Select robust chromatographic particles designed for purification

Waters OBD Preparative Columns Calculator

This convenient scale-up tool provides:

- Mass load scaling
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- Calculations for split flow ratios for those using mass spectrometer driven chromatography
- Focused gradient UPLC or UHPLC to preparative method transfer



Learn more on [pages 250-251](#) or to try this tool, visit waters.com/prepcalculator

XBridge OBD Preparative Columns



THE BENCHMARK FOR RUGGEDNESS AND LONGEVITY IN LC METHODS

XBridge HPLC Columns include 10 general and application-specific sorbents that cover a wide range of particle sizes for analytical and preparative HPLC applications. With these versatile columns, you can use mobile phases over a wide pH range to quickly develop robust methods. In doing so, you benefit from high pH and temperature stability for increased mass loading of basic compounds.

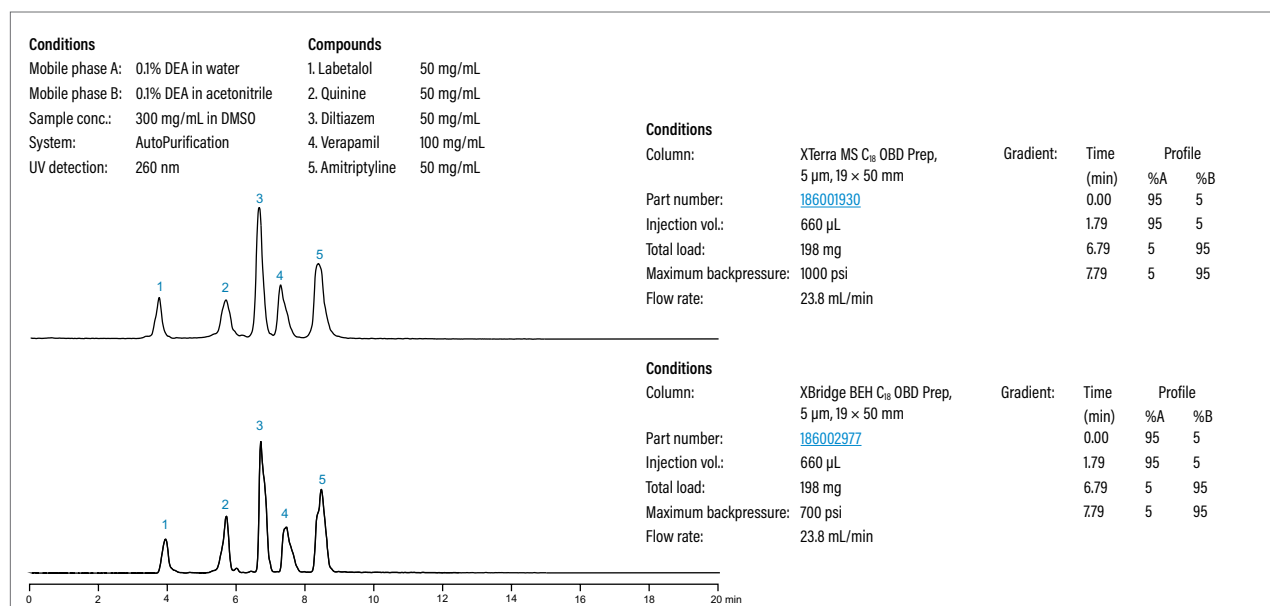
XBridge OBD Preparative Columns offer:

- BEH C₁₈, BEH C₈, BEH Shield RP18, BEH Phenyl, BEH HILIC, and BEH Amide column chemistries
- Improved pH stability and increased column lifetimes
- Proven mechanical stability of OBD Column Technology
- Wide range of selectivity for both reversed-phase LC and HILIC separations
- Scalability from analytical to preparative applications

Columns for biomolecule purifications:

- XBridge Peptide BEH C₁₈, 130 Å and 300 Å Preparative Columns are QC tested for demanding peptide applications
- XBridge Protein BEH C₄, 300 Å Preparative Columns are QC tested for protein applications
- XBridge Oligonucleotide BEH C₁₈, 130 Å, 2.5 µm Preparative Columns are QC tested for excellent resolution of oligonucleotides

Maximum Efficiency/30% Lower Backpressure



XBridge OBD Preparative Columns deliver the same high loading capacity and reliability expected of our XTerra preparative products, with a significantly reduced column backpressure.

i For more information on XBridge HPLC Columns, refer to [page 142](#) for 2.5 µm and [page 181](#) for 3–5 µm column offerings.

XBridge Columns

BEH C ₁₈	ANALYTICAL COLUMNS						
	Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 × 30 mm <i>XP</i>	186006028	176002546	2.1 × 20 mm <i>JS</i>	186003019	2.1 × 20 mm <i>JS</i>	186003107
	2.1 × 50 mm <i>XP</i>	186006029	176002547	2.1 × 30 mm	186003020	2.1 × 30 mm	186003129
	2.1 × 75 mm <i>XP</i>	186006030	176002548	2.1 × 50 mm	186003021	2.1 × 50 mm	186003108
	2.1 × 100 mm <i>XP</i>	186006031	176002549	2.1 × 100 mm	186003022	2.1 × 100 mm	186003109
	2.1 × 150 mm <i>XP</i>	186006709	176002879	2.1 × 150 mm	186003023	2.1 × 150 mm	186003110
	3.0 × 30 mm <i>XP</i>	186006032	176002550	3.0 × 30 mm	186003025	3.0 × 30 mm	186003111
	3.0 × 50 mm <i>XP</i>	186006033	176002551	3.0 × 50 mm	186003026	3.0 × 50 mm	186003131
	3.0 × 75 mm <i>XP</i>	186006034	176002552	3.0 × 100 mm	186003027	3.0 × 100 mm	186003132
	3.0 × 100 mm <i>XP</i>	186006035	176002553	3.0 × 150 mm	186003028	3.0 × 150 mm	186003112
	3.0 × 150 mm <i>XP</i>	186006710	176002880	4.6 × 30 mm	186003030	3.0 × 250 mm	186003133
	4.6 × 30 mm <i>XP</i>	186006036	—	4.6 × 50 mm	186003031	4.6 × 30 mm	186003135
	4.6 × 50 mm <i>XP</i>	186006037	—	4.6 × 75 mm	186003032	4.6 × 50 mm	186003113
	4.6 × 75 mm <i>XP</i>	186006038	—	4.6 × 100 mm	186003033	4.6 × 75 mm	186003114
	4.6 × 100 mm <i>XP</i>	186006039	—	4.6 × 150 mm	186003034	4.6 × 100 mm	186003115
	4.6 × 150 mm <i>XP</i>	186006711	—	4.6 × 250 mm	186003943	4.6 × 150 mm	186003116
						4.6 × 250 mm	186003117

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 10 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
10 × 10 mm	Guard Cartridge	186002972 ¹	10 × 10 mm	Guard Cartridge	186003889 ¹	
10 × 50 mm	OBD Column	186008164	19 × 10 mm	Guard Cartridge	186003892 ²	
10 × 100 mm	OBD Column	186008165	30 × 10 mm	Guard Cartridge	186006893 ³	
10 × 150 mm	OBD Column	186008166	10 × 150 mm	OBD Column	186008210	
10 × 250 mm	OBD Column	186008167	10 × 250 mm	OBD Column	186008211	
19 × 10 mm	Guard Cartridge	186002975 ²	19 × 50 mm	OBD Column	186003893	
19 × 50 mm	OBD Column	186002977	19 × 100 mm	OBD Column	186003901	
19 × 100 mm	OBD Column	186002978	19 × 150 mm	OBD Column	186003894	
19 × 150 mm	OBD Column	186002979	19 × 250 mm	OBD Column	186003895	
19 × 250 mm	OBD Column	186004021	30 × 75 mm	OBD Column	186004711	
30 × 10 mm	Guard Cartridge	186006893 ³	30 × 100 mm	OBD Column	186003930	
30 × 50 mm	OBD Column	186002980	30 × 150 mm	OBD Column	186003896	
30 × 75 mm	OBD Column	186002981	30 × 250 mm	OBD Column	186003897	
30 × 100 mm	OBD Column	186002982	50 × 50 mm	OBD Column	186003898	
30 × 150 mm	OBD Column	186003284	50 × 100 mm	OBD Column	186003902	
30 × 250 mm	OBD Column	186004025	50 × 150 mm	OBD Column	186003899	
50 × 50 mm	OBD Column	186003933	50 × 250 mm	OBD Column	186003900	
50 × 100 mm	OBD Column	186003937				
50 × 150 mm	OBD Column	186003929				
50 × 250 mm	OBD Column	186004107				

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).
² Requires 19 × 10 mm Cartridge Holder, p/n: [186008745](#).
³ Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

XBridge Columns *Continued*

BEH C ₈						
ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006040	176002554	2.1 × 30 mm	186003046	2.1 × 30 mm	186003187
2.1 × 50 mm <i>XP</i>	186006041	176002555	2.1 × 50 mm	186003047	2.1 × 50 mm	186003011
2.1 × 75 mm <i>XP</i>	186006042	176002556	2.1 × 100 mm	186003048	2.1 × 100 mm	186003012
2.1 × 100 mm <i>XP</i>	186006043	176002557	2.1 × 150 mm	186003049	2.1 × 150 mm	186003013
2.1 × 150 mm <i>XP</i>	186006712	176002881	3.0 × 30 mm	186003182	3.0 × 30 mm	186003189
3.0 × 30 mm <i>XP</i>	186006044	176002558	3.0 × 50 mm	186003050	3.0 × 50 mm	186003190
3.0 × 50 mm <i>XP</i>	186006045	176002559	3.0 × 100 mm	186003051	3.0 × 100 mm	186003191
3.0 × 75 mm <i>XP</i>	186006046	176002560	3.0 × 150 mm	186003052	3.0 × 150 mm	186003014
3.0 × 100 mm <i>XP</i>	186006047	176002561	4.6 × 30 mm	186003184	3.0 × 250 mm	186003192
3.0 × 150 mm <i>XP</i>	186006713	176002882	4.6 × 50 mm	186003053	4.6 × 30 mm	186003194
4.6 × 30 mm <i>XP</i>	186006048	—	4.6 × 75 mm	186003185	4.6 × 50 mm	186003015
4.6 × 50 mm <i>XP</i>	186006049	—	4.6 × 100 mm	186003054	4.6 × 75 mm	186003195
4.6 × 75 mm <i>XP</i>	186006050	—	4.6 × 150 mm	186003055	4.6 × 100 mm	186003016
4.6 × 100 mm <i>XP</i>	186006051	—	4.6 × 250 mm	186003963	4.6 × 150 mm	186003017
4.6 × 150 mm <i>XP</i>	186006714	—			4.6 × 250 mm	186003018
PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 10 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
10 × 10 mm	Guard Cartridge	186002991 ¹	10 × 10 mm	Guard Cartridge	186004003 ¹	
10 × 50 mm	OBD Column	186008172	19 × 10 mm	Guard Cartridge	186004006 ²	
10 × 100 mm	OBD Column	186008173	30 × 10 mm	Guard Cartridge	186006894 ³	
10 × 150 mm	OBD Column	186008174	10 × 150 mm	OBD Column	186008215	
10 × 250 mm	OBD Column	186008175	10 × 250 mm	OBD Column	186008216	
19 × 10 mm	Guard Cartridge	186002992 ²	19 × 50 mm	OBD Column	186004007	
19 × 50 mm	OBD Column	186002993	19 × 100 mm	OBD Column	186004008	
19 × 100 mm	OBD Column	186002994	19 × 150 mm	OBD Column	186004009	
19 × 150 mm	OBD Column	186002995	19 × 250 mm	OBD Column	186004010	
19 × 250 mm	OBD Column	186004023	30 × 150 mm	OBD Column	186004011	
30 × 10 mm	Guard Cartridge	186006895 ³	30 × 250 mm	OBD Column	186004012	
30 × 50 mm	OBD Column	186002996	50 × 50 mm	OBD Column	186004013	
30 × 75 mm	OBD Column	186003269	50 × 100 mm	OBD Column	186004014	
30 × 100 mm	OBD Column	186002997	50 × 150 mm	OBD Column	186004015	
30 × 150 mm	OBD Column	186003083	50 × 250 mm	OBD Column	186004016	
50 × 50 mm	OBD Column	186003934				
50 × 100 mm	OBD Column	186003938				

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).
² Requires 19 × 10 mm Cartridge Holder, p/n: [186008745](#).
³ Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

BEH Shield RP18

ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006052	176002562	2.1 × 30 mm	186003035	2.1 × 30 mm	186003157
2.1 × 50 mm <i>XP</i>	186006053	176002563	2.1 × 50 mm	186003036	2.1 × 50 mm	186002999
2.1 × 75 mm <i>XP</i>	186006054	176002564	2.1 × 100 mm	186003037	2.1 × 100 mm	186003002
2.1 × 100 mm <i>XP</i>	186006055	176002565	2.1 × 150 mm	186003038	2.1 × 150 mm	186003003
2.1 × 150 mm <i>XP</i>	186006715	176002883	3.0 × 30 mm	186003153	3.0 × 50 mm	186003160
3.0 × 20 mm <i>IS*</i>	186003140	—	3.0 × 50 mm	186003039	3.0 × 100 mm	186003004
3.0 × 30 mm <i>XP</i>	186006056	176002566	3.0 × 100 mm	186003040	3.0 × 150 mm	186003005
3.0 × 50 mm <i>XP</i>	186006057	176002567	3.0 × 150 mm	186003041	3.0 × 250 mm	186003161
3.0 × 75 mm <i>XP</i>	186006058	176002568	4.6 × 30 mm	186003155	4.6 × 50 mm	186003006
3.0 × 100 mm <i>XP</i>	186006059	176002569	4.6 × 50 mm	186003042	4.6 × 75 mm	186003007
3.0 × 150 mm <i>XP</i>	186006716	176002884	4.6 × 75 mm	186003043	4.6 × 100 mm	186003008
4.6 × 20 mm <i>IS*</i>	186003144	—	4.6 × 100 mm	186003044	4.6 × 150 mm	186003009
4.6 × 30 mm <i>XP</i>	186006060	—	4.6 × 150 mm	186003045	4.6 × 250 mm	186003010
4.6 × 50 mm <i>XP</i>	186006061	—	4.6 × 250 mm	186003964		
4.6 × 75 mm <i>XP</i>	186006062	—				
4.6 × 100 mm <i>XP</i>	186006063	—				
4.6 × 150 mm <i>XP</i>	186006717	—				

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 10 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
10 × 10 mm	Guard Cartridge	186002983 ¹	10 × 10 mm	Guard Cartridge	186003988 ¹	
10 × 50 mm	OBD Column	186008168	19 × 10 mm	Guard Cartridge	186003991 ²	
10 × 100 mm	OBD Column	186008169	30 × 10 mm	Guard Cartridge	186006897 ³	
10 × 150 mm	OBD Column	186008170	10 × 150 mm	OBD Column	186008213	
10 × 250 mm	OBD Column	186008171	10 × 250 mm	OBD Column	186008214	
19 × 10 mm	Guard Cartridge	186002984 ²	19 × 50 mm	OBD Column	186003992	
19 × 50 mm	OBD Column	186002985	19 × 100 mm	OBD Column	186003993	
19 × 100 mm	OBD Column	186002986	19 × 150 mm	OBD Column	186003994	
19 × 150 mm	OBD Column	186002987	19 × 250 mm	OBD Column	186003995	
19 × 250 mm	OBD Column	186004022	30 × 150 mm	OBD Column	186003996	
30 × 10 mm	Guard Cartridge	186006898 ³	30 × 250 mm	OBD Column	186003997	
30 × 50 mm	OBD Column	186002988	50 × 50 mm	OBD Column	186003998	
30 × 75 mm	OBD Column	186003262	50 × 100 mm	OBD Column	186003999	
30 × 100 mm	OBD Column	186002989	50 × 150 mm	OBD Column	186004001	
30 × 150 mm	OBD Column	186002990	50 × 250 mm	OBD Column	186004002	
50 × 50 mm	OBD Column	186003935				
50 × 100 mm	OBD Column	186003939				

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).
²Requires 19 × 10 mm Cartridge Holder, p/n: [186008745](#).
³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

XBridge Columns *Continued*

BEH Phenyl						
ANALYTICAL COLUMNS						
Particle Size: 2.5 μm			Particle Size: 3.5 μm		Particle Size: 5 μm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 \times 30 mm <i>XP</i>	186006064	176002570	2.1 \times 30 mm	186003321	2.1 \times 50 mm	186003338
2.1 \times 50 mm <i>XP</i>	186006065	176002571	2.1 \times 50 mm	186003322	2.1 \times 100 mm	186003339
2.1 \times 75 mm <i>XP</i>	186006066	176002572	2.1 \times 100 mm	186003323	2.1 \times 150 mm	186003340
2.1 \times 100 mm <i>XP</i>	186006067	176002573	2.1 \times 150 mm	186003324	3.0 \times 50 mm	186003343
2.1 \times 150 mm <i>XP</i>	186006718	176002885	3.0 \times 50 mm	186003327	3.0 \times 100 mm	186003344
3.0 \times 30 mm <i>XP</i>	186006068	176002574	3.0 \times 100 mm	186003328	3.0 \times 150 mm	186003345
3.0 \times 50 mm <i>XP</i>	186006069	176002575	3.0 \times 150 mm	186003329	3.0 \times 250 mm	186003346
3.0 \times 75 mm <i>XP</i>	186006070	176002576	4.6 \times 30 mm	186003331	4.6 \times 50 mm	186003349
3.0 \times 100 mm <i>XP</i>	186006071	176002577	4.6 \times 50 mm	186003332	4.6 \times 75 mm	186003350
3.0 \times 150 mm <i>XP</i>	186006719	176002886	4.6 \times 75 mm	186003333	4.6 \times 100 mm	186003351
4.6 \times 30 mm <i>XP</i>	186006072	—	4.6 \times 100 mm	186003334	4.6 \times 150 mm	186003352
4.6 \times 50 mm <i>XP</i>	186006073	—	4.6 \times 150 mm	186003335	4.6 \times 250 mm	186003353
4.6 \times 75 mm <i>XP</i>	186006074	—	4.6 \times 250 mm	186003965		
4.6 \times 100 mm <i>XP</i>	186006075	—				
4.6 \times 150 mm <i>XP</i>	186006720	—				
PREPARATIVE COLUMNS						
Particle Size: 5 μm						
Dimension	Type	P/N (1/pk)				
10 \times 10 mm	Guard Cartridge	186003354 ¹				
10 \times 50 mm	OBD Column	186008176				
10 \times 100 mm	OBD Column	186008177				
10 \times 150 mm	OBD Column	186008178				
10 \times 250 mm	OBD Column	186008179				
19 \times 10 mm	Guard Cartridge	186003355 ²				
19 \times 50 mm	OBD Column	186003356				
19 \times 100 mm	OBD Column	186003357				
19 \times 150 mm	OBD Column	186003358				
19 \times 250 mm	OBD Column	186004024				
30 \times 10 mm	Guard Cartridge	186006891 ³				
30 \times 50 mm	OBD Column	186003277				
30 \times 75 mm	OBD Column	186003278				
30 \times 100 mm	OBD Column	186003279				
30 \times 150 mm	OBD Column	186003276				
50 \times 50 mm	OBD Column	186003936				
50 \times 100 mm	OBD Column	186003940				

¹ Requires 10 \times 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 \times 10 mm Cartridge Holder, p/n: [186008745](#).

³ Requires 30 \times 10 mm Prep Guard Holder, p/n: [186006912](#).

BEH HILIC						
ANALYTICAL COLUMNS						
Particle Size: 2.5 μm			Particle Size: 3.5 μm		Particle Size: 5 μm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 \times 30 mm <i>XP</i>	186006076	176002578	2.1 \times 50 mm	186004432	2.1 \times 50 mm	186004444
2.1 \times 50 mm <i>XP</i>	186006077	176002579	2.1 \times 100 mm	186004433	2.1 \times 100 mm	186004445
2.1 \times 75 mm <i>XP</i>	186006078	176002580	2.1 \times 150 mm	186004434	2.1 \times 150 mm	186004446
2.1 \times 100 mm <i>XP</i>	186006079	176002581	3.0 \times 100 mm	186004436	3.0 \times 100 mm	186004448
2.1 \times 150 mm <i>XP</i>	186006721	176002887	4.6 \times 50 mm	186004439	4.6 \times 50 mm	186004451
3.0 \times 30 mm <i>XP</i>	186006080	176002582	4.6 \times 100 mm	186004440	4.6 \times 100 mm	186004452
3.0 \times 50 mm <i>XP</i>	186006081	176002583	4.6 \times 150 mm	186004441	4.6 \times 150 mm	186004453
3.0 \times 75 mm <i>XP</i>	186006082	176002584			4.6 \times 250 mm	186004454
3.0 \times 100 mm <i>XP</i>	186006083	176002585				
3.0 \times 150 mm <i>XP</i>	186006722	176002888				
4.6 \times 30 mm <i>XP</i>	186006084	—				
4.6 \times 50 mm <i>XP</i>	186006085	—				
4.6 \times 75 mm <i>XP</i>	186006086	—				
4.6 \times 100 mm <i>XP</i>	186006087	—				
4.6 \times 150 mm <i>XP</i>	186006723	—				
PREPARATIVE COLUMNS						
Particle Size: 5 μm						
Dimension	Type	P/N (1/pk)				
10 \times 10 mm	Guard Cartridge	186004720 ¹				
10 \times 50 mm	OBD Column	186008217				
10 \times 100 mm	OBD Column	186008218				
19 \times 10 mm	Guard Cartridge	186004723 ²				
19 \times 50 mm	OBD Column	186004724				
19 \times 100 mm	OBD Column	186004725				
19 \times 150 mm	OBD Column	186004726				
19 \times 250 mm	OBD Column	186004730				
30 \times 10 mm	Guard Cartridge	186006896 ³				
30 \times 50 mm	OBD Column	186004727				
30 \times 100 mm	OBD Column	186004728				
30 \times 150 mm	OBD Column	186004729				
30 \times 250 mm	OBD Column	186004731				
50 \times 50 mm	OBD Column	186004732				
50 \times 100 mm	OBD Column	186004733				
50 \times 150 mm	OBD Column	186004734				
50 \times 250 mm	OBD Column	186004735				

¹ Requires 10 \times 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 \times 10 mm Cartridge Holder, p/n: [186008745](#).

³ Requires 30 \times 10 mm Prep Guard Holder, p/n: [186006912](#).

XBridge Columns *Continued*

BEH Amide						
ANALYTICAL COLUMNS						
Particle Size: 2.5 μ m			Particle Size: 3.5 μ m		Particle Size: 5 μ m	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 \times 30 mm <i>XP</i>	186006088	176002586	2.1 \times 30 mm	186004858	2.1 \times 30 mm	186006587
2.1 \times 50 mm <i>XP</i>	186006089	176002587	2.1 \times 50 mm	186004859	2.1 \times 50 mm	186006588
2.1 \times 75 mm <i>XP</i>	186006090	176002588	2.1 \times 100 mm	186004860	2.1 \times 100 mm	186006589
2.1 \times 100 mm <i>XP</i>	186006091	176002589	2.1 \times 150 mm	186004861	2.1 \times 150 mm	186006590
2.1 \times 150 mm <i>XP</i>	186006724	176002889	3.0 \times 50 mm	186004863	3.0 \times 50 mm	186006591
3.0 \times 30 mm <i>XP</i>	186006092	176002590	3.0 \times 100 mm	186004864	3.0 \times 100 mm	186006592
3.0 \times 50 mm <i>XP</i>	186006093	176002591	4.6 \times 50 mm	186004867	4.6 \times 50 mm	186006593
3.0 \times 75 mm <i>XP</i>	186006094	176002592	4.6 \times 100 mm	186004868	4.6 \times 100 mm	186006594
3.0 \times 100 mm <i>XP</i>	186006095	176002593	4.6 \times 150 mm	186004869	4.6 \times 150 mm	186006595
3.0 \times 150 mm <i>XP</i>	186006725	176002890	4.6 \times 250 mm	186004870	4.6 \times 250 mm	186006596
4.6 \times 30 mm <i>XP</i>	186006096	—				
4.6 \times 50 mm <i>XP</i>	186006097	—				
4.6 \times 75 mm <i>XP</i>	186006098	—				
4.6 \times 100 mm <i>XP</i>	186006099	—				
4.6 \times 150 mm <i>XP</i>	186006726	—				
PREPARATIVE COLUMNS						
Particle Size: 5 μ m						
Dimension	Type	P/N (1/pk)				
10 \times 10 mm	Guard Cartridge	186006597 ¹				
10 \times 50 mm	OBD Column	186008260				
10 \times 100 mm	OBD Column	186008261				
10 \times 150 mm	OBD Column	186008262				
10 \times 250 mm	OBD Column	186008263				
19 \times 10 mm	Guard Cartridge	186006598 ²				
19 \times 50 mm	OBD Column	186006603				
19 \times 100 mm	OBD Column	186006604				
19 \times 150 mm	OBD Column	186006605				
19 \times 250 mm	OBD Column	186006606				
30 \times 10 mm	Guard Cartridge	186006890 ³				
30 \times 50 mm	OBD Column	186006607				
30 \times 75 mm	OBD Column	186006608				
30 \times 100 mm	OBD Column	186006609				
30 \times 150 mm	OBD Column	186006610				
30 \times 250 mm	OBD Column	186006611				

¹Requires 10 \times 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 \times 10 mm Cartridge Holder, p/n: [186008745](#).

³Requires 30 \times 10 mm Prep Guard Holder, p/n: [186006912](#).

XBridge Columns *Continued*

Glycan BEH Amide, 130 Å	ANALYTICAL COLUMNS			
	Particle Size: 2.5 µm		Particle Size: 3.5 µm	
	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 × 50 mm <i>XP</i>	186007263	2.1 × 50 mm	186007502
	2.1 × 100 mm <i>XP</i>	186007264	2.1 × 100 mm	186007503
	2.1 × 150 mm <i>XP</i>	186007265	2.1 × 150 mm	186007504
	3.0 × 30 mm <i>XP</i>	186008038	4.6 × 50 mm	186007273
	3.0 × 75 mm <i>XP</i>	186008039	4.6 × 100 mm	186007274
	3.0 × 150 mm <i>XP</i>	186008040	4.6 × 150 mm	186007275
	4.6 × 50 mm <i>XP</i>	186007268	4.6 × 250 mm	186007276
	4.6 × 100 mm <i>XP</i>	186007269		
	4.6 × 150 mm <i>XP</i>	186007270		

Peptide BEH C ₁₈ , 130 Å	ANALYTICAL COLUMNS				PREPARATIVE COLUMNS					
	Particle Size: 3.5 µm		Particle Size: 5 µm		Particle Size: 5 µm			Particle Size: 10 µm		
	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)	Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
	1.0 × 50 mm	186003560	1.0 × 50 mm	186003571	10 × 10 mm	Guard Cartridge	186004469 ¹	4.6 × 50 mm	OBD Column	186003648
	1.0 × 100 mm	186003561	1.0 × 100 mm	186003572	10 × 50 mm	OBD Column	186008186	4.6 × 100 mm	OBD Column	186003649
	1.0 × 150 mm	186003562	1.0 × 150 mm	186003573	10 × 100 mm	OBD Column	186008187	4.6 × 150 mm	OBD Column	186003650
	2.1 × 50 mm	186003563	2.1 × 50 mm	186003574	10 × 150 mm	OBD Column	186008188	4.6 × 250 mm	OBD Column	186003651
	2.1 × 100 mm	186003564	2.1 × 100 mm	186003575	10 × 250 mm	OBD Column	186008189	10 × 10 mm	Guard Cartridge	186004465 ¹
	2.1 × 150 mm	186003565	2.1 × 150 mm	186003576	19 × 10 mm	Guard Cartridge	186004468 ²	10 × 50 mm	OBD Column	186008194
	2.1 × 250 mm	186003566	2.1 × 250 mm	186003577	19 × 50 mm	OBD Column	186003586	10 × 100 mm	OBD Column	186008195
	4.6 × 50 mm	186003567	4.6 × 50 mm	186003578	19 × 100 mm	OBD Column	186003587	10 × 150 mm	OBD Column	186008196
	4.6 × 100 mm	186003568	4.6 × 100 mm	186003579	19 × 150 mm	OBD Column	186003945	10 × 250 mm	OBD Column	186008197
	4.6 × 150 mm	186003569	4.6 × 150 mm	186003580				19 × 10 mm	Guard Cartridge	186004464 ²
	4.6 × 250 mm	186003570	4.6 × 250 mm	186003581				19 × 50 mm	OBD Column	186003656
								19 × 150 mm	OBD Column	186003657
								19 × 250 mm	OBD Column	186003658
								30 × 50 mm	OBD Column	186003659
								30 × 100 mm	OBD Column	186003660
								30 × 150 mm	OBD Column	186003661
								30 × 250 mm	OBD Column	186003662

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186008745](#).



APPLICATION AREA: Analyze Natural Product Secondary Metabolites from Bacterial Extracts

"For the purpose of our application (natural products metabolites dereliction and isolation) the XBridge OBD prep column showed reproducible results from batch-to-batch runs as well as reliable comparison with the analytical run of the same sample so it is a very reliable and easy to use column."

REVIEWER: Arlene Sy-Cordero

ORGANIZATION: Lodo Therapeutics

XBridge Columns *Continued*

Peptide BEH C₁₈,
300 Å

ANALYTICAL COLUMNS					
Particle Size: 2.5 µm		Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006028	1.0 × 50 mm	186003604	1.0 × 50 mm	186003615
2.1 × 50 mm <i>XP</i>	186006029	1.0 × 100 mm	186003605	1.0 × 100 mm	186003616
2.1 × 75 mm <i>XP</i>	186006030	1.0 × 150 mm	186003606	1.0 × 150 mm	186003617
2.1 × 100 mm <i>XP</i>	186006031	2.1 × 50 mm	186003607	2.1 × 50 mm	186003618
2.1 × 150 mm <i>XP</i>	186006709	2.1 × 100 mm	186003608	2.1 × 100 mm	186003619
3.0 × 30 mm <i>XP</i>	186006032	2.1 × 150 mm	186003609	2.1 × 150 mm	186003620
3.0 × 50 mm <i>XP</i>	186006033	2.1 × 250 mm	186003610	2.1 × 250 mm	186003621
3.0 × 75 mm <i>XP</i>	186006034	4.6 × 50 mm	186003611	4.6 × 50 mm	186003622
3.0 × 100 mm <i>XP</i>	186006035	4.6 × 100 mm	186003612	4.6 × 100 mm	186003623
3.0 × 150 mm <i>XP</i>	186006710	4.6 × 150 mm	186003613	4.6 × 150 mm	186003624
4.6 × 30 mm <i>XP</i>	186006036	4.6 × 250 mm	186003614	4.6 × 250 mm	186003625
4.6 × 50 mm <i>XP</i>	186006037				
4.6 × 75 mm <i>XP</i>	186006038				
4.6 × 100 mm <i>XP</i>	186006039				
4.6 × 150 mm <i>XP</i>	186006711				

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186004471 ¹	4.6 × 50 mm	OBD Column	186003663
10 × 50 mm	OBD Column	186008190	4.6 × 100 mm	OBD Column	186003664
10 × 100 mm	OBD Column	186008191	4.6 × 150 mm	OBD Column	186003665
10 × 150 mm	OBD Column	186008192	4.6 × 250 mm	OBD Column	186003666
10 × 250 mm	OBD Column	186008193	10 × 10 mm	Guard Cartridge	186004467 ¹
19 × 10 mm	Guard Cartridge	186004470 ²	10 × 50 mm	OBD Column	186008198
19 × 50 mm	OBD Column	186003630	10 × 100 mm	OBD Column	186008199
19 × 100 mm	OBD Column	186003631	10 × 150 mm	OBD Column	186008200
19 × 150 mm	OBD Column	186003946	10 × 250 mm	OBD Column	186008201
			19 × 10 mm	Guard Cartridge	186004466 ²
			19 × 50 mm	OBD Column	186003671
			19 × 150 mm	OBD Column	186003672
			19 × 250 mm	OBD Column	186003673
			30 × 10 mm	Guard Cartridge	186006882 ³
			30 × 50 mm	OBD Column	186003674
			30 × 100 mm	OBD Column	186003675
			30 × 150 mm	OBD Column	186003676
			30 × 250 mm	OBD Column	186003677

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 30 × 10 mm Cartridge Holder, p/n: [186006912](#).

Protein BEH C ₄ , 300 Å	ANALYTICAL COLUMNS		PREPARATIVE COLUMNS				
	Particle Size: 3.5 µm		Particle Size: 5 µm			Particle Size: 10 µm	
	Dimension	P/N (1/pk)	Dimension	Type	P/N (1/pk)	Dimension	Type
2.1 × 50 mm	186004498	10 × 10 mm	Guard Cartridge	186007305 ¹	10 × 10 mm	Guard Cartridge	186007325 ¹
2.1 × 100 mm	186004499	10 × 50 mm	OBD Column	186008272	10 × 50 mm	OBD Column	186008276
2.1 × 150 mm	186004500	10 × 100 mm	OBD Column	186008273	10 × 100 mm	OBD Column	186008277
2.1 × 250 mm	186004501	10 × 150 mm	OBD Column	186008274	10 × 150 mm	OBD Column	186008278
4.6 × 50 mm	186004502	10 × 250 mm	OBD Column	186008275	10 × 250 mm	OBD Column	186008279
4.6 × 100 mm	186004503	19 × 10 mm	Guard Cartridge	186007310 ²	19 × 10 mm	Guard Cartridge	186007330 ²
4.6 × 150 mm	186004504	19 × 50 mm	OBD Column	186007311	19 × 50 mm	OBD Column	186007331
4.6 × 250 mm	186004505	19 × 100 mm	OBD Column	186007312	19 × 100 mm	OBD Column	186007332
		19 × 150 mm	OBD Column	186007313	19 × 150 mm	OBD Column	186007333
		19 × 250 mm	OBD Column	186007314	19 × 250 mm	OBD Column	186007334
		30 × 10 mm	Guard Cartridge	186007315 ³	30 × 10 mm	Guard Cartridge	186007335 ³
		30 × 50 mm	OBD Column	186007316	30 × 50 mm	OBD Column	186007336
		30 × 75 mm	OBD Column	186007317	30 × 75 mm	OBD Column	186007337
		30 × 100 mm	OBD Column	186007318	30 × 100 mm	OBD Column	186007338
		30 × 150 mm	OBD Column	186007319	30 × 150 mm	OBD Column	186007339
		30 × 250 mm	OBD Column	186007320	30 × 250 mm	OBD Column	186007340

Oligonucleotide BEH C ₈ , 130 Å	PREPARATIVE COLUMNS		
	Particle Size: 2.5 µm		
	Dimension	Type	P/N (1/pk)
10 × 50 mm	OBD Column	186008212	
19 × 50 mm	OBD Column	186008962	
30 × 50 mm	OBD Column	186008963	
50 × 50 mm	OBD Column	186008964	

Column (mm)	30	50
2.1 × 50	0.04	0.2
4.6 × 50	0.20	1.0
10.0 × 50	1.00	4.5
19.0 × 50	4.00	16.0
30.0 × 50	9.00	40.0
50.0 × 50	25.00	110.0

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).
²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).
³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).



APPLICATION AREA: Small Molecule Purification

"These are excellent columns. They come in a variety of sizes to meet every need, we use mostly the 19 × 100 mm. These columns are great and meet our routine purification needs and give excellent efficiency and resolution for those more challenging ones. We find that the columns are very robust, ours can last years and many injections, in some cases, a good flush is all that is needed to get them back to optimal. Highly recommended."

REVIEWER: Romulo Romero

ORGANIZATION: AstraZeneca

XBridge Columns Method Validation Kits*

	Particle Size: 2.5 μ m		Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
BEH C₁₈	2.1 \times 50 mm <i>XP</i>	186006197	2.1 \times 100 mm	186003766	2.1 \times 150 mm	186003771
	2.1 \times 100 mm <i>XP</i>	186006198	3.0 \times 100 mm	186003767	3.0 \times 100 mm	186003772
	2.1 \times 150 mm <i>XP</i>	186006757	3.0 \times 150 mm	186003768	3.0 \times 150 mm	186003773
	3.0 \times 50 mm <i>XP</i>	186006199	4.6 \times 100 mm	186003769	4.6 \times 100 mm	186003774
	3.0 \times 100 mm <i>XP</i>	186006200	4.6 \times 150 mm	186003770	4.6 \times 150 mm	186003775
	3.0 \times 150 mm <i>XP</i>	186006758			4.6 \times 250 mm	186003776
	4.6 \times 50 mm <i>XP</i>	186006201				
	4.6 \times 100 mm <i>XP</i>	186006202				
	4.6 \times 150 mm <i>XP</i>	186006759				
BEH C₈	2.1 \times 50 mm <i>XP</i>	186006203	2.1 \times 100 mm	186003777	2.1 \times 150 mm	186003782
	2.1 \times 100 mm <i>XP</i>	186006204	3.0 \times 100 mm	186003778	3.0 \times 100 mm	186003783
	2.1 \times 150 mm <i>XP</i>	186006760	3.0 \times 150 mm	186003779	3.0 \times 150 mm	186003784
	3.0 \times 50 mm <i>XP</i>	186006205	4.6 \times 100 mm	186003780	4.6 \times 100 mm	186003785
	3.0 \times 100 mm <i>XP</i>	186006206	4.6 \times 150 mm	186003781	4.6 \times 150 mm	186003786
	3.0 \times 150 mm <i>XP</i>	186006761			4.6 \times 250 mm	186003787
	4.6 \times 50 mm <i>XP</i>	186006207				
	4.6 \times 100 mm <i>XP</i>	186006208				
	4.6 \times 150 mm <i>XP</i>	186006762				
BEH Shield RP18	2.1 \times 50 mm <i>XP</i>	186006209	2.1 \times 100 mm	186003788	2.1 \times 150 mm	186003793
	2.1 \times 100 mm <i>XP</i>	186006210	3.0 \times 100 mm	186003789	3.0 \times 100 mm	186003794
	2.1 \times 150 mm <i>XP</i>	186006763	3.0 \times 150 mm	186003790	3.0 \times 150 mm	186003795
	3.0 \times 50 mm <i>XP</i>	186006211	4.6 \times 100 mm	186003791	4.6 \times 100 mm	186003796
	3.0 \times 100 mm <i>XP</i>	186006212	4.6 \times 150 mm	186003792	4.6 \times 150 mm	186003797
	3.0 \times 150 mm <i>XP</i>	186006774			4.6 \times 250 mm	186003798
	4.6 \times 50 mm <i>XP</i>	186006213				
	4.6 \times 100 mm <i>XP</i>	186006214				
	4.6 \times 150 mm <i>XP</i>	186006775				
BEH Phenyl	2.1 \times 50 mm <i>XP</i>	186006215	2.1 \times 100 mm	186003799	2.1 \times 150 mm	186003804
	2.1 \times 100 mm <i>XP</i>	186006216	3.0 \times 100 mm	186003800	3.0 \times 100 mm	186003805
	2.1 \times 150 mm <i>XP</i>	186006776	3.0 \times 150 mm	186003801	3.0 \times 150 mm	186003806
	3.0 \times 50 mm <i>XP</i>	186006217	4.6 \times 100 mm	186003802	4.6 \times 100 mm	186003807
	3.0 \times 100 mm <i>XP</i>	186006218	4.6 \times 150 mm	186003803	4.6 \times 150 mm	186003808
	3.0 \times 150 mm <i>XP</i>	186006777			4.6 \times 250 mm	186003809
	4.6 \times 50 mm <i>XP</i>	186006219				
	4.6 \times 100 mm <i>XP</i>	186006220				
	4.6 \times 150 mm <i>XP</i>	186006778				
Oligonucleotide BEH C₁₈, 130 Å	4.6 \times 50 mm	186004906				

*Each Method Validation Kit contains 3 columns, each from a different batch.

XBridge Columns Method Validation Kits* *Continued*

Particle Size: 2.5 µm		
	Dimension	P/N (3/pk)
HILIC	2.1 × 50 mm <i>XP</i>	186006221
	2.1 × 100 mm <i>XP</i>	186006222
	2.1 × 150 mm <i>XP</i>	186006779
	3.0 × 50 mm <i>XP</i>	186006223
	3.0 × 100 mm <i>XP</i>	186006224
	3.0 × 150 mm <i>XP</i>	186006780
	4.6 × 50 mm <i>XP</i>	186006225
	4.6 × 100 mm <i>XP</i>	186006226
	4.6 × 150 mm <i>XP</i>	186006781
Amide	2.1 × 50 mm <i>XP</i>	186006227
	2.1 × 100 mm <i>XP</i>	186006228
	2.1 × 150 mm <i>XP</i>	186006782
	3.0 × 50 mm <i>XP</i>	186006229
	3.0 × 100 mm <i>XP</i>	186006230
	3.0 × 150 mm <i>XP</i>	186006783
	4.6 × 50 mm <i>XP</i>	186006231
	4.6 × 100 mm <i>XP</i>	186006232
	4.6 × 150 mm <i>XP</i>	186006784
Glycan BEH Amide, 130 Å	2.1 × 150 mm <i>XP</i>	186007266
	4.6 × 150 mm <i>XP</i>	186007271

*Each Method Validation Kit contains 3 columns, each from a different batch.



APPLICATION AREA: Purification of Small Molecules and Peptides

"XBridge columns are easy to install and basic method development gives high resolution. They are robust, long-lasting and easily cleaned. Even when sample is highly concentrated, and material is overloaded, column resolution remains high."

REVIEWER: Daniel Sheik

ORGANIZATION: Purdue Institute for Drug Discovery

XBridge VanGuard Cartridges

	Particle Size: 2.5 μ m		Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
BEH C ₁₈	2.1 \times 5 mm <i>XP</i>	186007772	2.1 \times 5 mm	186007766	2.1 \times 5 mm	186007769
	3.9 \times 5 mm <i>XP</i>	186007774	3.9 \times 5 mm	186007768	3.9 \times 5 mm	186007771
BEH C ₈	2.1 \times 5 mm <i>XP</i>	186007781	2.1 \times 5 mm	186007775	2.1 \times 5 mm	186007778
	3.9 \times 5 mm <i>XP</i>	186007783	3.9 \times 5 mm	186007777	3.9 \times 5 mm	186007780
BEH Shield RP18	2.1 \times 5 mm <i>XP</i>	186007808	2.1 \times 5 mm	186007802	2.1 \times 5 mm	186007805
	3.9 \times 5 mm <i>XP</i>	186007810	3.9 \times 5 mm	186007804	3.9 \times 5 mm	186007807
BEH Phenyl	2.1 \times 5 mm <i>XP</i>	186007799	2.1 \times 5 mm	186007793	2.1 \times 5 mm	186007796
	3.9 \times 5 mm <i>XP</i>	186007801	3.9 \times 5 mm	186007795	3.9 \times 5 mm	186007798
BEH HILIC	2.1 \times 5 mm <i>XP</i>	186007790	2.1 \times 5 mm	186007784	2.1 \times 5 mm	186007787
	3.9 \times 5 mm <i>XP</i>	186007792	3.9 \times 5 mm	186007786	3.9 \times 5 mm	186007789
BEH Amide	2.1 \times 5 mm <i>XP</i>	186007763	2.1 \times 5 mm	186007757	2.1 \times 5 mm	186007760
	3.9 \times 5 mm <i>XP</i>	186007765	3.9 \times 5 mm	186007759	3.9 \times 5 mm	186007762

Universal VanGuard Cartridge Holder

Description	P/N (1/pk)
Universal VanGuard Cartridge Holder	186007949



APPLICATION AREA: Preparative LC Fraction Collection

"Waters application specialists help us to select the correct dimension of the (XBridge) column based on our application. On the receipt of the column, the application specialist was on site and helped us install and share his experience working with prep column. I am using this column almost every day and made more than 2000 injections with 10 mg/mL sample concentration and still, it works well for my application. I highly recommend this column and I am very happy with Waters products, their after sale support. The one thing that makes stand above all is their 90 days guarantee."

REVIEWER: Jignesh Desai

ORGANIZATION: Alvogen

VERSATILITY AND SELECTIVITY

XSelect HPLC Columns offer the opportunity to scale separations from analytical to preparative, taking advantage of alternative selectivity through different column chemistries and methods specifying different pH scales.

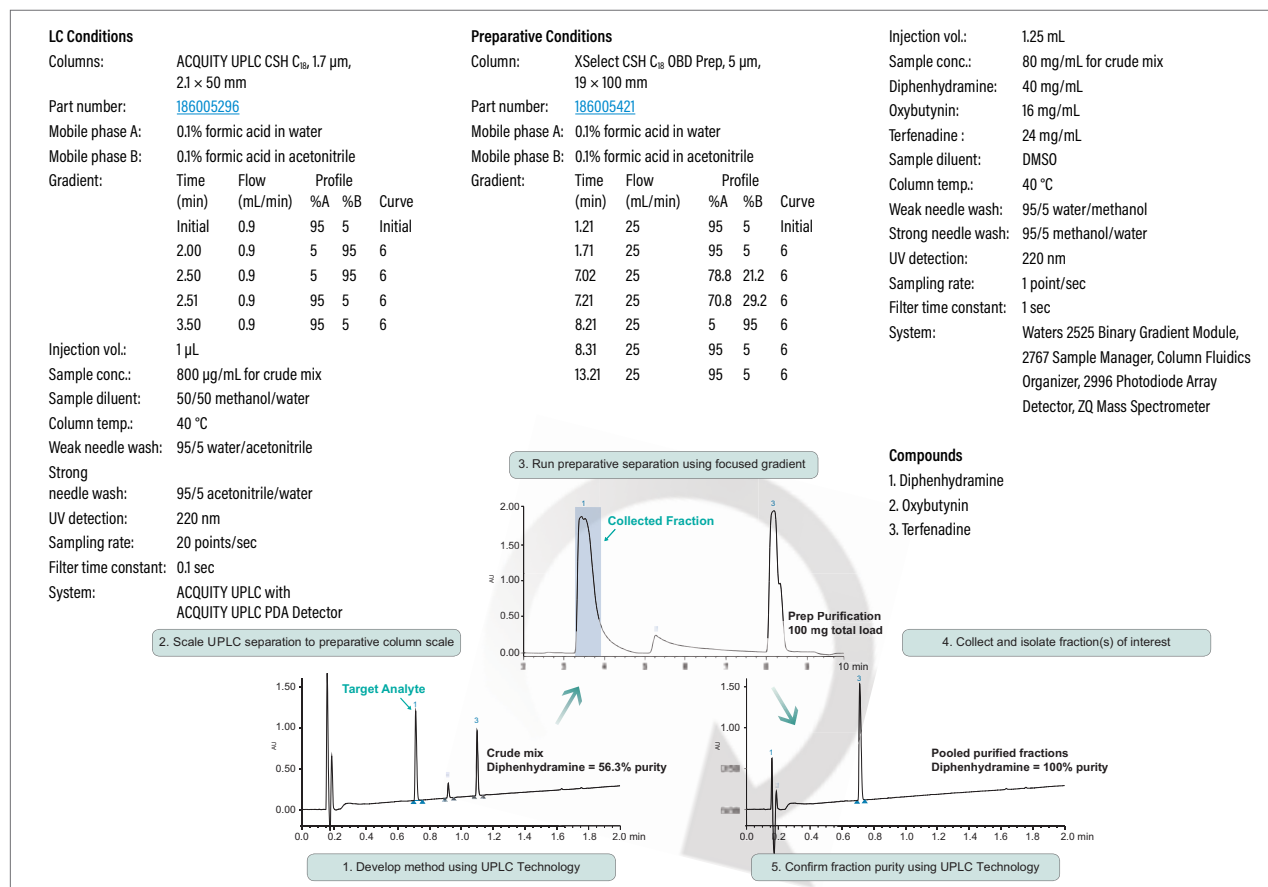
XSelect OBD Preparative Columns are:

- Available as CSH C₁₈, CSH Fluoro-Phenyl, CSH Phenyl-Hexyl, HSS C₁₈, HSS C₁₈ SB, and HSS T3 column chemistries
- Designed for selectivity, improving the separation of closely eluting peaks
- Intended for isolation and purification, improving throughput with high-mass loading
- Ideal for rapid method development, reducing the time and cost required to develop screening methods

Columns for peptide purifications:

- Improve peak shape and mass loading using the QC-tested XSelect Peptide CSH C₁₈ Columns

Columns Designed for Isolation and Purification



Using CSH Technology throughout the entire process, methods can be developed quickly with ACQUITY UPLC CSH Columns and UPLC Technology and then transferred to preparative-scale XSelect OBD Preparative Columns for isolation and purification. The purity of the isolated fraction(s) can then be measured/confirmed using ACQUITY UPLC CSH Columns and UPLC Technology.

Ordering Information

XSelect Columns

CSH C ₁₈	ANALYTICAL COLUMNS						
	Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 × 30 mm <i>XP</i>	186006100	176002594	1.0 × 50 mm	186005249	2.1 × 50 mm	186005274
	2.1 × 50 mm <i>XP</i>	186006101	176002595	1.0 × 150 mm	186005251	2.1 × 100 mm	186005275
	2.1 × 75 mm <i>XP</i>	186006102	176002596	2.1 × 30 mm	186005254	2.1 × 150 mm	186005276
	2.1 × 100 mm <i>XP</i>	186006103	176002597	2.1 × 50 mm	186005255	3.0 × 30 mm	186005279
	2.1 × 150 mm <i>XP</i>	186006727	176002891	2.1 × 75 mm	186005644	3.0 × 50 mm	186005280
	3.0 × 30 mm <i>XP</i>	186006104	176002598	2.1 × 100 mm	186005256	3.0 × 100 mm	186005281
	3.0 × 50 mm <i>XP</i>	186006105	176002599	2.1 × 150 mm	186005257	3.0 × 150 mm	186005282
	3.0 × 75 mm <i>XP</i>	186006106	176002600	3.0 × 30 mm	186005260	3.0 × 250 mm	186005283
	3.0 × 100 mm <i>XP</i>	186006107	176002601	3.0 × 50 mm	186005261	4.6 × 50 mm	186005287
	3.0 × 150 mm <i>XP</i>	186006728	176002892	3.0 × 75 mm	186005647	4.6 × 100 mm	186005289
	4.6 × 30 mm <i>XP</i>	186006108	—	3.0 × 100 mm	186005262	4.6 × 150 mm	186005290
	4.6 × 50 mm <i>XP</i>	186006109	—	3.0 × 150 mm	186005263	4.6 × 250 mm	186005291
	4.6 × 75 mm <i>XP</i>	186006110	—	4.6 × 50 mm	186005267		
	4.6 × 100 mm <i>XP</i>	186006111	—	4.6 × 75 mm	186005268		
	4.6 × 150 mm <i>XP</i>	186006729	—	4.6 × 100 mm	186005269		
				4.6 × 150 mm	186005270		

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186005491 ¹	Guard Cartridge	10 × 10 mm	186007285
10 × 50 mm	OBD Column	186008236	OBD Column	10 × 50 mm	186008268
10 × 100 mm	OBD Column	186008237	OBD Column	10 × 100 mm	186008269
10 × 150 mm	OBD Column	186008238	OBD Column	10 × 150 mm	186008270
10 × 250 mm	OBD Column	186008239	OBD Column	10 × 250 mm	186008271
19 × 10 mm	Guard Cartridge	186005418 ²	Guard Cartridge	19 × 10 mm	186007290
19 × 50 mm	OBD Column	186005420	OBD Column	19 × 50 mm	186007291
19 × 100 mm	OBD Column	186005421	OBD Column	19 × 100 mm	186007292
19 × 150 mm	OBD Column	186005422	OBD Column	19 × 150 mm	186007293
19 × 250 mm	OBD Column	186005492	OBD Column	19 × 250 mm	186007294
30 × 10 mm	Guard Cartridge	186006899 ³	Guard Cartridge	30 × 10 mm	186007295
30 × 50 mm	OBD Column	186005423	OBD Column	30 × 50 mm	186007296
30 × 75 mm	OBD Column	186005424	OBD Column	30 × 75 mm	186007297
30 × 100 mm	OBD Column	186005425	OBD Column	30 × 100 mm	186007298
30 × 150 mm	OBD Column	186005426	OBD Column	30 × 150 mm	186007299
30 × 250 mm	OBD Column	186005493	OBD Column	30 × 250 mm	186007300
50 × 50 mm	OBD Column	186005494	OBD Column	50 × 50 mm	186007301
50 × 100 mm	OBD Column	186005495	OBD Column	50 × 100 mm	186007302
50 × 150 mm	OBD Column	186005496	OBD Column	50 × 150 mm	186007303
50 × 250 mm	OBD Column	186005497	OBD Column	50 × 250 mm	186007304

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

XSelect Columns *Continued*

CSH Fluoro-Phenyl	ANALYTICAL COLUMNS						
	Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 × 30 mm <i>XP</i>	186006112	176002602	2.1 × 50 mm	186005310	2.1 × 50 mm	186005329
	2.1 × 50 mm <i>XP</i>	186006113	176002603	2.1 × 75 mm	186005646	2.1 × 100 mm	186005330
	2.1 × 75 mm <i>XP</i>	186006114	176002604	2.1 × 100 mm	186005311	2.1 × 150 mm	186005331
	2.1 × 100 mm <i>XP</i>	186006115	176002605	2.1 × 150 mm	186005312	3.0 × 50 mm	186005335
	2.1 × 150 mm <i>XP</i>	186006730	176002893	3.0 × 50 mm	186005316	3.0 × 100 mm	186005336
	3.0 × 30 mm <i>XP</i>	186006116	176002606	3.0 × 75 mm	186005649	3.0 × 150 mm	186005337
	3.0 × 50 mm <i>XP</i>	186006117	176002607	3.0 × 100 mm	186005317	3.0 × 250 mm	186005338
	3.0 × 75 mm <i>XP</i>	186006118	176002608	3.0 × 150 mm	186005318	4.6 × 50 mm	186005342
	3.0 × 100 mm <i>XP</i>	186006119	176002609	4.6 × 50 mm	186005322	4.6 × 75 mm	186005343
	3.0 × 150 mm <i>XP</i>	186006731	176002894	4.6 × 75 mm	186005323	4.6 × 100 mm	186005344
	4.6 × 30 mm <i>XP</i>	186006120	—	4.6 × 100 mm	186005324	4.6 × 150 mm	186005345
	4.6 × 50 mm <i>XP</i>	186006121	—	4.6 × 150 mm	186005325	4.6 × 250 mm	186005346
	4.6 × 75 mm <i>XP</i>	186006122	—				
	4.6 × 100 mm <i>XP</i>	186006123	—				
	4.6 × 150 mm <i>XP</i>	186006732	—				
PREPARATIVE COLUMNS							
Particle Size: 5 µm							
Dimension	Type	P/N (1/pk)					
10 × 10 mm	Guard Cartridge	186005498 ¹					
10 × 50 mm	OBD Column	186008240					
10 × 100 mm	OBD Column	186008241					
10 × 150 mm	OBD Column	186008242					
10 × 250 mm	OBD Column	186008243					
19 × 10 mm	Guard Cartridge	186005431 ²					
19 × 50 mm	OBD Column	186005433					
19 × 100 mm	OBD Column	186005434					
19 × 150 mm	OBD Column	186005435					
19 × 250 mm	OBD Column	186005499					
30 × 10 mm	Guard Cartridge	186006900 ³					
30 × 50 mm	OBD Column	186005436					
30 × 75 mm	OBD Column	186005437					
30 × 100 mm	OBD Column	186005438					
30 × 150 mm	OBD Column	186005439					
30 × 250 mm	OBD Column	186005500					
50 × 50 mm	OBD Column	186005501					
50 × 100 mm	OBD Column	186005502					
50 × 150 mm	OBD Column	186005503					
50 × 250 mm	OBD Column	186005504					

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³ Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

XSelect Columns *Continued*

CSH Phenyl-Hexyl	ANALYTICAL COLUMNS						
	Particle Size: 2.5 μm			Particle Size: 3.5 μm		Particle Size: 5 μm	
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 \times 30 mm <i>XP</i>	186006124	176002610	2.1 \times 50 mm	186005365	2.1 \times 50 mm	186005384
	2.1 \times 50 mm <i>XP</i>	186006125	176002611	2.1 \times 75 mm	186005645	2.1 \times 100 mm	186005385
	2.1 \times 75 mm <i>XP</i>	186006126	176002612	2.1 \times 100 mm	186005366	2.1 \times 150 mm	186005386
	2.1 \times 100 mm <i>XP</i>	186006127	176002613	2.1 \times 150 mm	186005367	3.0 \times 50 mm	186005390
	2.1 \times 150 mm <i>XP</i>	186006733	176002895	3.0 \times 50 mm	186005371	3.0 \times 100 mm	186005391
	3.0 \times 30 mm <i>XP</i>	186006128	176002614	3.0 \times 75 mm	186005648	3.0 \times 150 mm	186005392
	3.0 \times 50 mm <i>XP</i>	186006129	176002615	3.0 \times 100 mm	186005372	3.0 \times 250 mm	186005393
	3.0 \times 75 mm <i>XP</i>	186006130	176002616	3.0 \times 150 mm	186005373	4.6 \times 50 mm	186005397
	3.0 \times 100 mm <i>XP</i>	186006131	176002617	4.6 \times 50 mm	186005377	4.6 \times 75 mm	186005398
	3.0 \times 150 mm <i>XP</i>	186006734	176002896	4.6 \times 75 mm	186005378	4.6 \times 100 mm	186005399
	4.6 \times 30 mm <i>XP</i>	186006132	—	4.6 \times 100 mm	186005379	4.6 \times 150 mm	186005400
	4.6 \times 50 mm <i>XP</i>	186006133	—	4.6 \times 150 mm	186005380	4.6 \times 250 mm	186005401
	4.6 \times 75 mm <i>XP</i>	186006134	—				
	4.6 \times 100 mm <i>XP</i>	186006135	—				
	4.6 \times 150 mm <i>XP</i>	186006735	—				

PREPARATIVE COLUMNS		
Particle Size: 5 μm		
Dimension	Type	P/N (1/pk)
10 \times 10 mm	Guard Cartridge	186005505 ¹
10 \times 50 mm	OBD Column	186008244
10 \times 100 mm	OBD Column	186008245
10 \times 150 mm	OBD Column	186008246
10 \times 250 mm	OBD Column	186008247
19 \times 10 mm	Guard Cartridge	186005444 ²
19 \times 50 mm	OBD Column	186005446
19 \times 100 mm	OBD Column	186005447
19 \times 150 mm	OBD Column	186005448
19 \times 250 mm	OBD Column	186005506
30 \times 10 mm	Guard Cartridge	186006901 ³
30 \times 50 mm	OBD Column	186005520
30 \times 75 mm	OBD Column	186005450
30 \times 100 mm	OBD Column	186005451
30 \times 150 mm	OBD Column	186005452
30 \times 250 mm	OBD Column	186005507
50 \times 50 mm	OBD Column	186005508
50 \times 100 mm	OBD Column	186005509
50 \times 150 mm	OBD Column	186005510
50 \times 250 mm	OBD Column	186005511

¹ Requires 10 \times 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 \times 10 mm Cartridge Holder, p/n: [186000709](#).

³ Requires 30 \times 10 mm Prep Guard Holder, p/n: [186006912](#).

XSelect Columns *Continued*

HSS C ₁₈						
ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006136	176002618	2.1 × 30 mm	186006380	2.1 × 50 mm	186006391
2.1 × 50 mm <i>XP</i>	186006137	176002619	2.1 × 50 mm	186006381	2.1 × 100 mm	186006392
2.1 × 75 mm <i>XP</i>	186006138	176002620	2.1 × 75 mm	186006382	2.1 × 150 mm	186006393
2.1 × 100 mm <i>XP</i>	186006139	176002621	2.1 × 100 mm	186006383	3.0 × 50 mm	186006396
2.1 × 150 mm <i>XP</i>	186006736	176002897	2.1 × 150 mm	186006384	3.0 × 100 mm	186006397
3.0 × 30 mm <i>XP</i>	186006140	176002622	3.0 × 30 mm	186004765	3.0 × 150 mm	186006398
3.0 × 50 mm <i>XP</i>	186006141	176002623	3.0 × 50 mm	186004766	3.0 × 250 mm	186006399
3.0 × 75 mm <i>XP</i>	186006142	176002624	3.0 × 75 mm	186005642	4.6 × 50 mm	186004852
3.0 × 100 mm <i>XP</i>	186006143	176002625	3.0 × 100 mm	186004762	4.6 × 75 mm	186006402
3.0 × 150 mm <i>XP</i>	186006737	176002898	3.0 × 150 mm	186004763	4.6 × 100 mm	186006403
4.6 × 30 mm <i>XP</i>	186006144	—	4.6 × 50 mm	186004772	4.6 × 150 mm	186004773
4.6 × 50 mm <i>XP</i>	186006145	—	4.6 × 75 mm	186006387	4.6 × 250 mm	186004775
4.6 × 75 mm <i>XP</i>	186006146	—	4.6 × 100 mm	186004767		
4.6 × 100 mm <i>XP</i>	186006147	—	4.6 × 150 mm	186004768		
4.6 × 150 mm <i>XP</i>	186006738	—	4.6 × 250 mm	186004770		

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 5 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
10 × 10 mm	Guard Cartridge	186004776 ¹	10 × 100 mm	OBD Column	186008223	
10 × 50 mm	OBD Column	186008222	10 × 150 mm	OBD Column	186008224	

HSS C ₁₈ SB						
ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006160	176002634	2.1 × 50 mm	186006422	2.1 × 50 mm	186006432
2.1 × 50 mm <i>XP</i>	186006161	176002635	2.1 × 75 mm	186006423	2.1 × 100 mm	186006433
2.1 × 75 mm <i>XP</i>	186006162	176002636	2.1 × 100 mm	186006424	2.1 × 150 mm	186006434
2.1 × 100 mm <i>XP</i>	186006163	176002637	2.1 × 150 mm	186006425	3.0 × 50 mm	186006437
2.1 × 150 mm <i>XP</i>	186006742	176002901	3.0 × 50 mm	186004747	3.0 × 100 mm	186006438
3.0 × 30 mm <i>XP</i>	186006164	176002638	3.0 × 75 mm	186005643	3.0 × 150 mm	186006439
3.0 × 50 mm <i>XP</i>	186006165	176002639	3.0 × 100 mm	186004743	3.0 × 250 mm	186006440
3.0 × 75 mm <i>XP</i>	186006166	176002640	3.0 × 150 mm	186004744	4.6 × 50 mm	186004757
3.0 × 100 mm <i>XP</i>	186006167	176002641	4.6 × 50 mm	186004753	4.6 × 75 mm	186006443
3.0 × 150 mm <i>XP</i>	186006743	176002902	4.6 × 75 mm	186006428	4.6 × 100 mm	186006444
4.6 × 30 mm <i>XP</i>	186006168	—	4.6 × 100 mm	186004748	4.6 × 150 mm	186004754
4.6 × 50 mm <i>XP</i>	186006169	—	4.6 × 150 mm	186004749	4.6 × 250 mm	186004756
4.6 × 75 mm <i>XP</i>	186006170	—	4.6 × 250 mm	186004751		
4.6 × 100 mm <i>XP</i>	186006171	—				
4.6 × 150 mm <i>XP</i>	186006744	—				

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 5 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
10 × 10 mm	Guard Cartridge	186004758 ¹	10 × 100 mm	OBD Column	186008220	
10 × 50 mm	OBD Column	186008219	10 × 150 mm	OBD Column	186008221	

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).
²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).
³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

XSelect Columns *Continued*

HSS T3

ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006148	176002626	1.0 × 100 mm	186006459	2.1 × 50 mm	186006473
2.1 × 50 mm <i>XP</i>	186006149	176002627	1.0 × 150 mm	186006460	2.1 × 100 mm	186006474
2.1 × 75 mm <i>XP</i>	186006150	176002628	2.1 × 30 mm	186006462	2.1 × 150 mm	186006475
2.1 × 100 mm <i>XP</i>	186006151	176002629	2.1 × 50 mm	186006463	3.0 × 50 mm	186006478
2.1 × 150 mm <i>XP</i>	186006739	176002899	2.1 × 75 mm	186006464	3.0 × 100 mm	186006479
3.0 × 30 mm <i>XP</i>	186006152	176002630	2.1 × 100 mm	186006465	3.0 × 150 mm	186006480
3.0 × 50 mm <i>XP</i>	186006153	176002631	2.1 × 150 mm	186006466	3.0 × 250 mm	186006481
3.0 × 75 mm <i>XP</i>	186006154	176002632	3.0 × 30 mm	186004783	4.6 × 50 mm	186004794
3.0 × 100 mm <i>XP</i>	186006155	176002633	3.0 × 50 mm	186004784	4.6 × 75 mm	186006484
3.0 × 150 mm <i>XP</i>	186006740	176002900	3.0 × 75 mm	186005641	4.6 × 100 mm	186006485
4.6 × 30 mm <i>XP</i>	186006156	—	3.0 × 100 mm	186004780	4.6 × 150 mm	186004791
4.6 × 50 mm <i>XP</i>	186006157	—	3.0 × 150 mm	186004781	4.6 × 250 mm	186004793
4.6 × 75 mm <i>XP</i>	186006158	—	4.6 × 50 mm	186004790		
4.6 × 100 mm <i>XP</i>	186006159	—	4.6 × 75 mm	186006469		
4.6 × 150 mm <i>XP</i>	186006741	—	4.6 × 100 mm	186004785		
			4.6 × 150 mm	186004786		
			4.6 × 250 mm	186004788		

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 5 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186004795 ¹	10 × 150 mm	OBD Column	186008227
10 × 50 mm	OBD Column	186008225	10 × 250 mm	OBD Column	186008280
10 × 100 mm	OBD Column	186008226			

HSS PFP

ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006172	176002642	2.1 × 50 mm	186005847	2.1 × 50 mm	186005869
2.1 × 50 mm <i>XP</i>	186006173	176002643	2.1 × 75 mm	186005848	2.1 × 100 mm	186005871
2.1 × 75 mm <i>XP</i>	186006174	176002644	2.1 × 100 mm	186005849	2.1 × 150 mm	186005872
2.1 × 100 mm <i>XP</i>	186006175	176002645	2.1 × 150 mm	186005850	3.0 × 50 mm	186005875
2.1 × 150 mm <i>XP</i>	186006745	176002903	3.0 × 30 mm	186005852	3.0 × 100 mm	186005877
3.0 × 30 mm <i>XP</i>	186006176	176002646	3.0 × 50 mm	186005853	3.0 × 150 mm	186005878
3.0 × 50 mm <i>XP</i>	186006177	176002647	3.0 × 75 mm	186005854	3.0 × 250 mm	186005879
3.0 × 75 mm <i>XP</i>	186006178	176002648	3.0 × 100 mm	186005855	4.6 × 50 mm	186005882
3.0 × 100 mm <i>XP</i>	186006179	176002649	3.0 × 150 mm	186005856	4.6 × 75 mm	186005883
3.0 × 150 mm <i>XP</i>	186006746	176002904	4.6 × 50 mm	186005859	4.6 × 100 mm	186005884
4.6 × 30 mm <i>XP</i>	186006180	—	4.6 × 75 mm	186005860	4.6 × 150 mm	186005885
4.6 × 50 mm <i>XP</i>	186006181	—	4.6 × 100 mm	186005861	4.6 × 250 mm	186005886
4.6 × 75 mm <i>XP</i>	186006182	—	4.6 × 150 mm	186005862		
4.6 × 100 mm <i>XP</i>	186006183	—	4.6 × 250 mm	186005863		
4.6 × 150 mm <i>XP</i>	186006747	—				

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

XSelect Columns *Continued*

HSS CN ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm <i>XP</i>	186006184	176002650	2.1 × 50 mm	186005907	2.1 × 50 mm	186005929
2.1 × 50 mm <i>XP</i>	186006185	176002651	2.1 × 75 mm	186005908	2.1 × 100 mm	186005931
2.1 × 75 mm <i>XP</i>	186006186	176002652	2.1 × 100 mm	186005909	2.1 × 150 mm	186005932
2.1 × 100 mm <i>XP</i>	186006187	176002653	2.1 × 150 mm	186005910	3.0 × 50 mm	186005935
2.1 × 150 mm <i>XP</i>	186006748	176002905	3.0 × 50 mm	186005913	3.0 × 100 mm	186005937
3.0 × 30 mm <i>XP</i>	186006188	176002654	3.0 × 75 mm	186005914	3.0 × 150 mm	186005938
3.0 × 50 mm <i>XP</i>	186006189	176002655	3.0 × 100 mm	186005915	3.0 × 250 mm	186005939
3.0 × 75 mm <i>XP</i>	186006190	176002656	3.0 × 150 mm	186005916	4.6 × 50 mm	186005942
3.0 × 100 mm <i>XP</i>	186006191	176002657	4.6 × 50 mm	186005919	4.6 × 75 mm	186005943
3.0 × 150 mm <i>XP</i>	186006749	176002906	4.6 × 75 mm	186005920	4.6 × 100 mm	186005944
4.6 × 30 mm <i>XP</i>	186006192	—	4.6 × 100 mm	186005921	4.6 × 150 mm	186005945
4.6 × 50 mm <i>XP</i>	186006193	—	4.6 × 150 mm	186005922	4.6 × 250 mm	186005946
4.6 × 75 mm <i>XP</i>	186006194	—	4.6 × 250 mm	186005923		
4.6 × 100 mm <i>XP</i>	186006195	—				
4.6 × 150 mm <i>XP</i>	186006750	—				

Peptide CSH C ₁₈ , 130 Å ANALYTICAL COLUMNS						
Particle Size: 2.5 µm			Particle Size: 3.5 µm			
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)		
2.1 × 50 mm <i>XP</i>	186006941		2.1 × 50 mm	186006950		
2.1 × 100 mm <i>XP</i>	186006942		2.1 × 100 mm	186006951		
2.1 × 150 mm <i>XP</i>	186006943		2.1 × 150 mm	186006952		
4.6 × 50 mm <i>XP</i>	186006946		4.6 × 50 mm	186006955		
4.6 × 100 mm <i>XP</i>	186006947		4.6 × 100 mm	186006956		
4.6 × 150 mm <i>XP</i>	186007038		4.6 × 150 mm	186006957		

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 5 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
4.6 × 50 mm	Column	186007076 ⁴	19 × 250 mm	OBD Column	186007031	
4.6 × 100 mm	Column	186007077 ⁴	30 × 50 mm	OBD Column	186007026	
4.6 × 150 mm	Column	186007078 ⁴	30 × 100 mm	OBD Column	186007025	
10 × 10 mm	Guard	186007015 ¹	30 × 150 mm	OBD Column	186007023	
10 × 50 mm	OBD Column	186008264	30 × 250 mm	OBD Column	186007024	
10 × 100 mm	OBD Column	186008265	50 × 50 mm	OBD Column	186007030	
10 × 150 mm	OBD Column	186008266	50 × 100 mm	OBD Column	186007027	
10 × 250 mm	OBD Column	186008267	50 × 150 mm	OBD Column	186007028	
19 × 10 mm	Guard	186007019 ³	50 × 250 mm	OBD Column	186007029	
19 × 50 mm	OBD Column	186007022				
19 × 100 mm	OBD Column	186007020				
19 × 150 mm	OBD Column	186007021				

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

³Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

⁴For use in developing lab-scale preparative chromatography.

XSelect Columns Method Validation Kits*

	Particle Size: 2.5 µm		Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
CSH C₁₈	2.1 × 50 mm <i>XP</i>	186006233	2.1 × 100 mm	186005538	2.1 × 150 mm	186005543
	2.1 × 100 mm <i>XP</i>	186006234	3.0 × 100 mm	186005539	3.0 × 100 mm	186005544
	2.1 × 150 mm <i>XP</i>	186006785	3.0 × 150 mm	186005540	3.0 × 150 mm	186005545
	3.0 × 50 mm <i>XP</i>	186006235	4.6 × 100 mm	186005541	4.6 × 100 mm	186005546
	3.0 × 100 mm <i>XP</i>	186006236	4.6 × 150 mm	186005542	4.6 × 150 mm	186005547
	3.0 × 150 mm <i>XP</i>	186006786			4.6 × 250 mm	186005548
	4.6 × 50 mm <i>XP</i>	186006237				
	4.6 × 100 mm <i>XP</i>	186006238				
	4.6 × 150 mm <i>XP</i>	186006787				
CSH Fluoro-Phenyl	2.1 × 50 mm <i>XP</i>	186006239	2.1 × 100 mm	186005549	2.1 × 150 mm	186005554
	2.1 × 100 mm <i>XP</i>	186006240	3.0 × 100 mm	186005550	3.0 × 100 mm	186005555
	2.1 × 150 mm <i>XP</i>	186006788	3.0 × 150 mm	186005551	3.0 × 150 mm	186005556
	3.0 × 50 mm <i>XP</i>	186006241	4.6 × 100 mm	186005552	4.6 × 100 mm	186005557
	3.0 × 100 mm <i>XP</i>	186006242	4.6 × 150 mm	186005553	4.6 × 150 mm	186005558
	3.0 × 150 mm <i>XP</i>	186006789			4.6 × 250 mm	186005559
	4.6 × 50 mm <i>XP</i>	186006243				
	4.6 × 100 mm <i>XP</i>	186006244				
	4.6 × 150 mm <i>XP</i>	186006790				
CSH Phenyl-Hexyl	2.1 × 50 mm <i>XP</i>	186006245	2.1 × 100 mm	186005560	2.1 × 150 mm	186005565
	2.1 × 100 mm <i>XP</i>	186006246	3.0 × 100 mm	186005561	3.0 × 100 mm	186005566
	2.1 × 150 mm <i>XP</i>	186006791	3.0 × 150 mm	186005562	3.0 × 150 mm	186005567
	3.0 × 50 mm <i>XP</i>	186006247	4.6 × 100 mm	186005563	4.6 × 100 mm	186005568
	3.0 × 100 mm <i>XP</i>	186006248	4.6 × 150 mm	186005564	4.6 × 150 mm	186005569
	3.0 × 150 mm <i>XP</i>	186006792			4.6 × 250 mm	186005570
	4.6 × 50 mm <i>XP</i>	186006249				
	4.6 × 100 mm <i>XP</i>	186006250				
	4.6 × 150 mm <i>XP</i>	186006793				

*Each Method Validation Kit contains 3 columns, each from a different batch.



APPLICATION AREA: Peptide Purification from Biological Samples

"The Waters XSelect line of columns are easily some of the best columns I have used for separations of peptides. The columns give reproducible results, can be effectively used under a wide range of conditions, and effectively separate almost everything I've attempted. The service by Waters and by the sales team was also top notch - they worked with me efficiently and were helpful in finding me the best column for my application. Thanks, Waters!"

REVIEWER: James Checco

ORGANIZATION: University of Illinois at Urbana-Champaign

XSelect Columns Method Validation Kits* *Continued*

	Particle Size: 2.5 μ m		Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
HSS C₁₈	2.1 \times 50 mm <i>XP</i>	186006251	2.1 \times 100 mm	186006406	2.1 \times 150 mm	186006411
	2.1 \times 100 mm <i>XP</i>	186006252	3.0 \times 100 mm	186006407	3.0 \times 100 mm	186006412
	2.1 \times 150 mm <i>XP</i>	186006794	3.0 \times 150 mm	186006408	3.0 \times 150 mm	186006413
	3.0 \times 50 mm <i>XP</i>	186006253	4.6 \times 100 mm	186006409	4.6 \times 100 mm	186006414
	3.0 \times 100 mm <i>XP</i>	186006254	4.6 \times 150 mm	186006410	4.6 \times 150 mm	186006415
	3.0 \times 150 mm <i>XP</i>	186006795			4.6 \times 250 mm	186006416
	4.6 \times 50 mm <i>XP</i>	186006255				
	4.6 \times 100 mm <i>XP</i>	186006256				
	4.6 \times 150 mm <i>XP</i>	186006796				
HSS C₁₈ SB	2.1 \times 50 mm <i>XP</i>	186006263	2.1 \times 100 mm	186006447	2.1 \times 150 mm	186006452
	2.1 \times 100 mm <i>XP</i>	186006264	3.0 \times 100 mm	186006448	3.0 \times 100 mm	186006453
	2.1 \times 150 mm <i>XP</i>	186006800	3.0 \times 150 mm	186006449	3.0 \times 150 mm	186006454
	3.0 \times 50 mm <i>XP</i>	186006265	4.6 \times 100 mm	186006450	4.6 \times 100 mm	186006455
	3.0 \times 100 mm <i>XP</i>	186006266	4.6 \times 150 mm	186006451	4.6 \times 150 mm	186006456
	3.0 \times 150 mm <i>XP</i>	186006801			4.6 \times 250 mm	186006457
	4.6 \times 50 mm <i>XP</i>	186006267				
	4.6 \times 100 mm <i>XP</i>	186006268				
	4.6 \times 150 mm <i>XP</i>	186006802				
HSS T3	2.1 \times 50 mm <i>XP</i>	186006257	2.1 \times 100 mm	186006488	2.1 \times 150 mm	186006493
	2.1 \times 100 mm <i>XP</i>	186006258	3.0 \times 100 mm	186006489	3.0 \times 100 mm	186006494
	2.1 \times 150 mm <i>XP</i>	186006797	3.0 \times 150 mm	186006490	3.0 \times 150 mm	186006495
	3.0 \times 50 mm <i>XP</i>	186006259	4.6 \times 100 mm	186006491	4.6 \times 100 mm	186006496
	3.0 \times 100 mm <i>XP</i>	186006260	4.6 \times 150 mm	186006492	4.6 \times 150 mm	186006497
	3.0 \times 150 mm <i>XP</i>	186006798			4.6 \times 250 mm	186006498
	4.6 \times 50 mm <i>XP</i>	186006261				
	4.6 \times 100 mm <i>XP</i>	186006262				
	4.6 \times 150 mm <i>XP</i>	186006799				
HSS PFP	2.1 \times 50 mm <i>XP</i>	186006815	2.1 \times 100 mm	186005890	2.1 \times 150 mm	186005895
	2.1 \times 100 mm <i>XP</i>	186006816	3.0 \times 100 mm	186005891	3.0 \times 100 mm	186005896
	2.1 \times 150 mm <i>XP</i>	186006803	3.0 \times 150 mm	186005892	3.0 \times 150 mm	186005897
	3.0 \times 50 mm <i>XP</i>	186006817	4.6 \times 100 mm	186005893	4.6 \times 100 mm	186005898
	3.0 \times 100 mm <i>XP</i>	186006818	4.6 \times 150 mm	186005894	4.6 \times 150 mm	186005899
	3.0 \times 150 mm <i>XP</i>	186006804			4.6 \times 250 mm	186005900
	4.6 \times 50 mm <i>XP</i>	186006273				
	4.6 \times 100 mm <i>XP</i>	186006274				
	4.6 \times 150 mm <i>XP</i>	186006805				
Peptide CSH C₁₈	2.1 \times 100 mm <i>XP</i>	186006945	2.1 \times 100 mm	186006953		
	4.6 \times 100 mm <i>XP</i>	186006966	4.6 \times 100 mm	186006959		

*Each Method Validation Kit contains 3 columns, each from a different batch.

XSelect Columns Method Validation Kits* *Continued*

	Particle Size: 2.5 µm		Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
HSS CN	2.1 × 50 mm <i>XP</i>	186006275	2.1 × 100 mm	186005950	2.1 × 150 mm	186005955
	2.1 × 100 mm <i>XP</i>	186006276	3.0 × 100 mm	186005951	3.0 × 100 mm	186005956
	2.1 × 150 mm <i>XP</i>	186006806	3.0 × 150 mm	186005952	3.0 × 150 mm	186005957
	3.0 × 50 mm <i>XP</i>	186006277	4.6 × 100 mm	186005953	4.6 × 100 mm	186005958
	3.0 × 100 mm <i>XP</i>	186006278	4.6 × 150 mm	186005954	4.6 × 150 mm	186005959
	3.0 × 150 mm <i>XP</i>	186006807			4.6 × 250 mm	186005960
	4.6 × 50 mm <i>XP</i>	186006279				
	4.6 × 100 mm <i>XP</i>	186006280				
	4.6 × 150 mm <i>XP</i>	186006808				

*Each Method Validation Kit contains 3 columns, each from a different batch.

XSelect VanGuard Cartridges

	Particle Size: 2.5 µm		Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
CSH C₁₈	2.1 × 5 mm <i>XP</i>	186007817	2.1 × 5 mm	186007811	2.1 × 5 mm	186007814
	3.9 × 5 mm <i>XP</i>	186007819	3.9 × 5 mm	186007813	3.9 × 5 mm	186007816
CSH Fluoro-Phenyl	2.1 × 5 mm <i>XP</i>	186007827	2.1 × 5 mm	186007820	2.1 × 5 mm	186007824
	3.9 × 5 mm <i>XP</i>	186007829	3.9 × 5 mm	186007822	3.9 × 5 mm	186007826
CSH Phenyl-Hexyl	2.1 × 5 mm <i>XP</i>	186007839	2.1 × 5 mm	186007830	2.1 × 5 mm	186007836
	3.9 × 5 mm <i>XP</i>	186007841	3.9 × 5 mm	186007832	3.9 × 5 mm	186007838
HSS C₁₈	2.1 × 5 mm <i>XP</i>	186007857	2.1 × 5 mm	186007851	2.1 × 5 mm	186007854
	3.9 × 5 mm <i>XP</i>	186007859	3.9 × 5 mm	186007853	3.9 × 5 mm	186007856
HSS C₁₈ SB	2.1 × 5 mm <i>XP</i>	186007848	2.1 × 5 mm	186007842	2.1 × 5 mm	186007845
	3.9 × 5 mm <i>XP</i>	186007850	3.9 × 5 mm	186007844	3.9 × 5 mm	186007847
HSS T3	2.1 × 5 mm <i>XP</i>	186007884	2.1 × 5 mm	186007878	2.1 × 5 mm	186007881
	3.9 × 5 mm <i>XP</i>	186007886	3.9 × 5 mm	186007880	3.9 × 5 mm	186007883
HSS PFP	2.1 × 5 mm <i>XP</i>	186007875	2.1 × 5 mm	186007869	2.1 × 5 mm	186007872
	3.9 × 5 mm <i>XP</i>	186007877	3.9 × 5 mm	186007871	3.9 × 5 mm	186007874
HSS CN	2.1 × 5 mm <i>XP</i>	186007866	2.1 × 5 mm	186007860	2.1 × 5 mm	186007863
	3.9 × 5 mm <i>XP</i>	186007868	3.9 × 5 mm	186007862	3.9 × 5 mm	186007865

Universal VanGuard Cartridge Holder

Description	P/N (1/pk)
Universal VanGuard Cartridge Holder	186007949

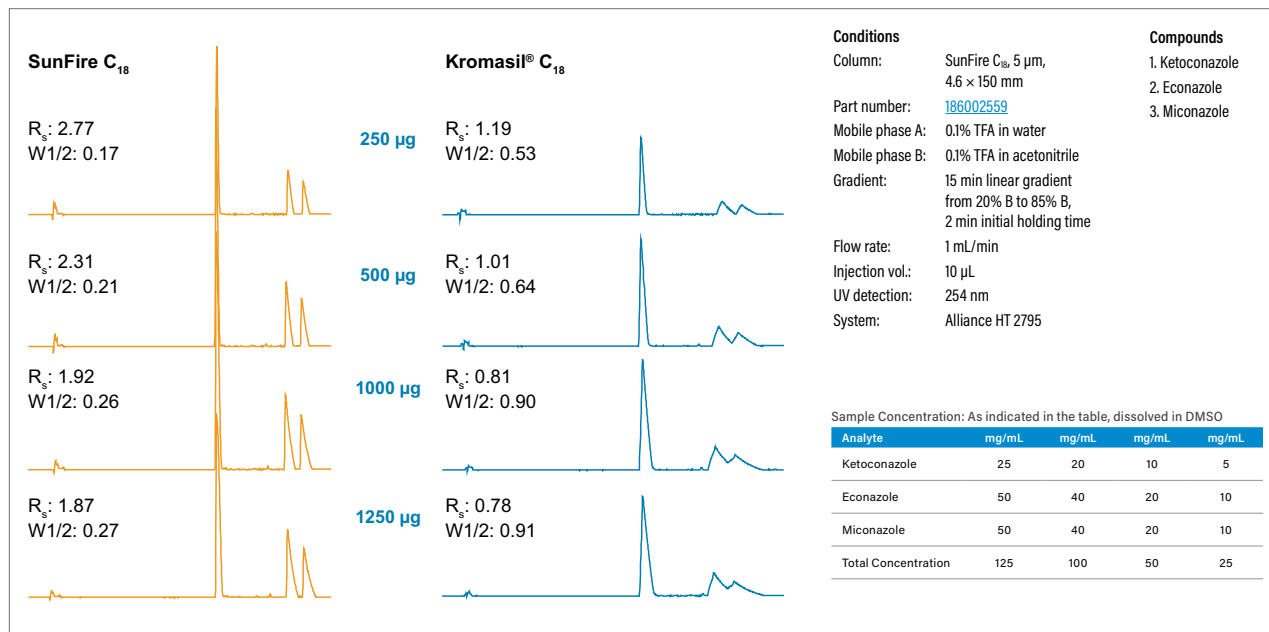
HIGH-MASS LOADING

SunFire C₁₈, C₈, and Silica Columns provide significant mass-loading capacity. The OBD design ensures the column's excellent performance, scalability, and serviceable life.

SunFire OBD Preparative Columns offer:

- Easy scale-up from analytical to preparative chromatography
- High-mass loading
- Low-pH stability
- Excellent column life and stability
- Superior peak shapes

High Mass Loading of SunFire Sorbents Enables the Use of Smaller Preparative Column Dimensions



For more information on SunFire Columns, refer to [page 169](#) for 2.5 µm and [page 211](#) for 3–5 µm column offerings.

Ordering Information

SunFire Columns

ANALYTICAL COLUMNS					
Particle Size: 2.5 µm*		Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm	186003399	2.1 × 50 mm	186002533	2.1 × 50 mm	186002539
2.1 × 50 mm	186003401	2.1 × 100 mm	186002534	2.1 × 100 mm	186002540
2.1 × 75 mm	186005634	2.1 × 150 mm	186002535	2.1 × 150 mm	186002541
3.0 × 30 mm	186003407	3.0 × 50 mm	186002542	3.0 × 50 mm	186002545
3.0 × 50 mm	186003409	3.0 × 100 mm	186002543	3.0 × 100 mm	186002546
3.0 × 75 mm	186005636	3.0 × 150 mm	186002544	3.0 × 150 mm	186002547
4.6 × 50 mm	186003417	4.6 × 20 mm /S	186002549	3.0 × 250 mm	186002548
		4.6 × 50 mm	186002551	4.6 × 30 mm	186002556
		4.6 × 75 mm	186002552	4.6 × 50 mm	186002557
		4.6 × 100 mm	186002553	4.6 × 100 mm	186002558
		4.6 × 150 mm	186002554	4.6 × 150 mm	186002559
				4.6 × 250 mm	186002560

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186002565 ¹	10 × 10 mm	Guard Cartridge	186002663 ¹
10 × 50 mm	OBD Column	186008152	10 × 50 mm	OBD Column	186008208
10 × 100 mm	OBD Column	186008153	10 × 150 mm	OBD Column	186008156
10 × 150 mm	OBD Column	186008154	10 × 250 mm	OBD Column	186008157
10 × 250 mm	OBD Column	186008155	19 × 10 mm	Guard Cartridge	186002666 ²
19 × 10 mm	Guard Cartridge	186002569 ²	19 × 50 mm	OBD Column	186002667
19 × 50 mm	OBD Column	186002566	19 × 150 mm	OBD Column	186002668
19 × 100 mm	OBD Column	186002567	19 × 250 mm	OBD Column	186002669
19 × 150 mm	OBD Column	186002568	30 × 10 mm	Guard Cartridge	186006884 ³
19 × 250 mm	OBD Column	186004027	30 × 50 mm	OBD Column	186003854
30 × 10 mm	Guard Cartridge	186006885 ³	30 × 100 mm	OBD Column	186003971
30 × 50 mm	OBD Column	186002570	30 × 150 mm	OBD Column	186002670
30 × 75 mm	OBD Column	186002571	30 × 250 mm	OBD Column	186002671
30 × 100 mm	OBD Column	186002572	50 × 50 mm	OBD Column	186002871
30 × 150 mm	OBD Column	186002797	50 × 100 mm	OBD Column	186003972
30 × 250 mm	OBD Column	186003969	50 × 150 mm	OBD Column	186002672
50 × 50 mm	OBD Column	186002867	50 × 250 mm	OBD Column	186002673
50 × 100 mm	OBD Column	186002869			
50 × 150 mm	OBD Column	186003941			
50 × 250 mm	OBD Column	186003970			

*Recommended maximum pressure of 6000 psi (400 bar).

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

C₈

ANALYTICAL COLUMNS					
Particle Size: 2.5 µm*		Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
3.0 × 50 mm	186003410	2.1 × 50 mm	186002710	2.1 × 50 mm	186002715
		2.1 × 100 mm	186002711	2.1 × 100 mm	186002716
		2.1 × 150 mm	186002712	2.1 × 150 mm	186002717
		3.0 × 50 mm	186002719	3.0 × 50 mm	186002723
		3.0 × 100 mm	186002720	3.0 × 100 mm	186002724
		3.0 × 150 mm	186002721	3.0 × 150 mm	186002725
		4.6 × 50 mm	186002729	4.6 × 30 mm	186002734
		4.6 × 75 mm	186002730	4.6 × 50 mm	186002735
		4.6 × 100 mm	186002731	4.6 × 100 mm	186002736
		4.6 × 150 mm	186002732	4.6 × 150 mm	186002737
				4.6 × 250 mm	186002738

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186002750 ¹	10 × 10 mm	Guard Cartridge	186002758 ¹
10 × 50 mm	OBD Column	186008158	10 × 50 mm	OBD Column	186008209
10 × 100 mm	OBD Column	186008159	10 × 150 mm	OBD Column	186008162
10 × 150 mm	OBD Column	186008160	10 × 250 mm	OBD Column	186008163
10 × 250 mm	OBD Column	186008161	19 × 10 mm	Guard Cartridge	186002761 ²
19 × 10 mm	Guard Cartridge	186002754 ²	19 × 150 mm	OBD Column	186002763
19 × 50 mm	OBD Column	186002751	19 × 250 mm	OBD Column	186002764
19 × 100 mm	OBD Column	186002752	30 × 10 mm	Guard Cartridge	186006886 ³
19 × 150 mm	OBD Column	186002753	30 × 50 mm	OBD Column	186003853
19 × 250 mm	OBD Column	186004028	30 × 150 mm	OBD Column	186002765
30 × 10 mm	Guard Cartridge	186006887 ³	30 × 250 mm	OBD Column	186002766
30 × 50 mm	OBD Column	186002755	50 × 50 mm	OBD Column	186002872
30 × 75 mm	OBD Column	186002756	50 × 150 mm	OBD Column	186002767
30 × 100 mm	OBD Column	186002757	50 × 250 mm	OBD Column	186002768
30 × 150 mm	OBD Column	186002795			
50 × 50 mm	OBD Column	186002868			
50 × 100 mm	OBD Column	186002870			

*Recommended maximum pressure of 6000 psi (400 bar).

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

SunFire Columns *Continued*

ANALYTICAL COLUMNS						
Particle Size: 3.5 µm			Particle Size: 5 µm			
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)		
4.6 × 150 mm	186003453		4.6 × 150 mm	186003467		
4.6 × 250 mm	186003454		4.6 × 250 mm	186003468		
PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 10 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
10 × 10 mm	Guard Cartridge	186003429 ¹	10 × 10 mm	Guard Cartridge	186003441 ¹	
10 × 50 mm	OBD Column	186008180	10 × 150 mm	OBD Column	186008184	
10 × 100 mm	OBD Column	186008181	10 × 250 mm	OBD Column	186008185	
10 × 150 mm	OBD Column	186008182	19 × 10 mm	Guard Cartridge	186003444 ²	
10 × 250 mm	OBD Column	186008183	19 × 50 mm	OBD Column	186003445	
19 × 10 mm	Guard Cartridge	186003434 ²	19 × 150 mm	OBD Column	186003446	
19 × 50 mm	OBD Column	186003431	19 × 250 mm	OBD Column	186003447	
19 × 100 mm	OBD Column	186003432	30 × 10 mm	Guard Cartridge	186006888 ³	
19 × 150 mm	OBD Column	186003433	30 × 50 mm	OBD Column	186003855	
19 × 250 mm	OBD Column	186004029	30 × 150 mm	OBD Column	186003448	
30 × 10 mm	Guard Cartridge	186006889 ³	30 × 250 mm	OBD Column	186003449	
30 × 50 mm	OBD Column	186003435	50 × 50 mm	OBD Column	186003450	
30 × 75 mm	OBD Column	186003436	50 × 150 mm	OBD Column	186003451	
30 × 100 mm	OBD Column	186003437	50 × 250 mm	OBD Column	186003452	
30 × 150 mm	OBD Column	186003438				
50 × 50 mm	OBD Column	186003439				
50 × 100 mm	OBD Column	186003440				

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³ Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

SunFire Preparative Scouting Columns

C ₁₈	PREPARATIVE COLUMNS			
	Particle Size: 10 µm			
Dimension	P/N (1/pk)			
4.6 × 150 mm	186003390			
4.6 × 250 mm	186003391			
Silica	Particle Size: 5 µm		Particle Size: 10 µm	
	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
4.6 × 150 mm	186003453	4.6 × 150 mm	186003467	
4.6 × 250 mm	186003454	4.6 × 250 mm	186003468	

SunFire Columns Method Validation Kits*

	Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
C₁₈	4.6 \times 100 mm	186002675	4.6 \times 150 mm	186002679
	4.6 \times 150 mm	186002676	4.6 \times 250 mm	186002680
C₈	4.6 \times 100 mm	186002740	4.6 \times 150 mm	186002744
	4.6 \times 150 mm	186002741	4.6 \times 250 mm	186002745

*Each Method Validation Kit contains 3 columns, each from a different batch.

SunFire VanGuard Cartridges

	Particle Size: 2.5 μ m		Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
C₁₈	2.1 \times 5 mm	186007691	2.1 \times 5 mm	186007694	2.1 \times 5 mm	186007697
	3.9 \times 5 mm	186007693	3.9 \times 5 mm	186007696	3.9 \times 5 mm	186007699
C₈	2.1 \times 5 mm	186007700	2.1 \times 5 mm	186007703	2.1 \times 5 mm	186007706
	3.9 \times 5 mm	186007702	3.9 \times 5 mm	186007705	3.9 \times 5 mm	186007708

Universal VanGuard Cartridge Holder

Description	P/N (1/pk)
Universal VanGuard Cartridge Holder	186007949



APPLICATION AREA: Small Molecule Prep-Scale Purification with Fraction Collector

"The SunFire OBD C₁₈ prep-LC column made transitioning from my analytical method to a focused-gradient prep scale method fast and easy. Product gave reproducible results which was critical for impurity isolation and identification."

REVIEWER: Doug Vaughan

ORGANIZATION: BioVectra Inc.

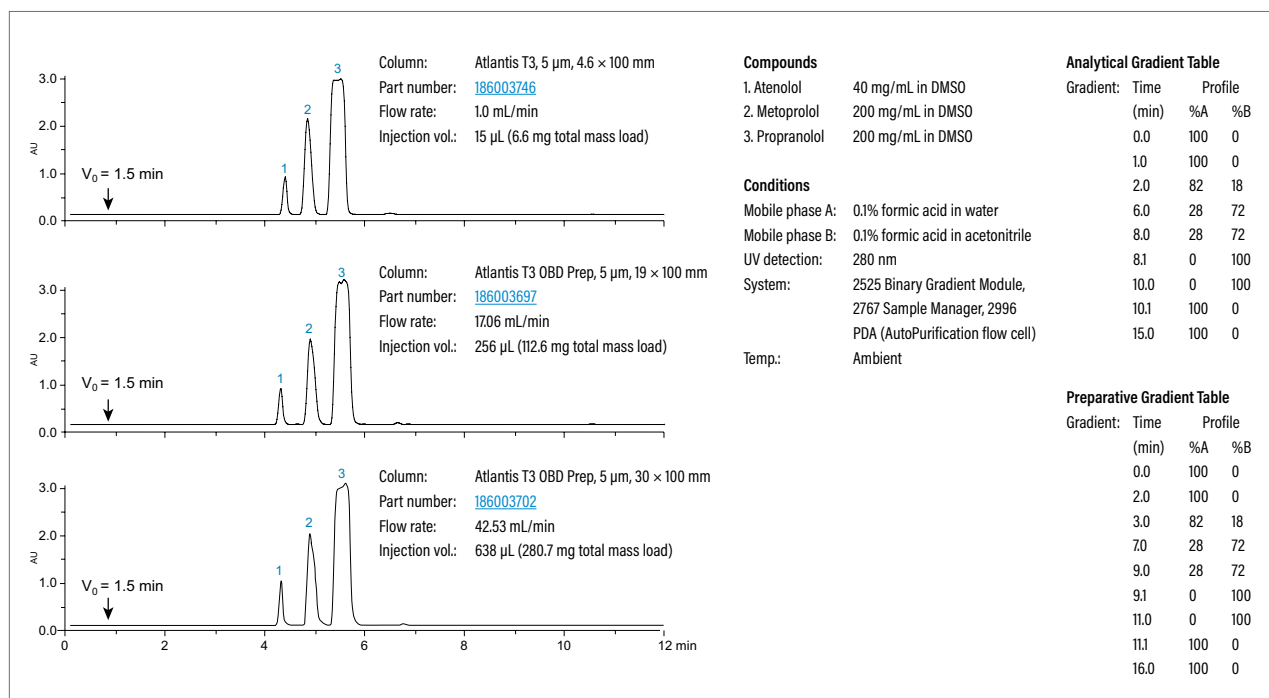
RETENTION OF POLAR COMPOUNDS

Atlantis HPLC Columns provide balanced retention for broad analyte mixtures and exceptional performance, versatility, and retention for polar compounds.

Atlantis OBD Preparative Columns offer:

- T3, HILIC, and dC₁₈ column chemistries
- Compatibility with 100% aqueous mobile phases
- Long column life when used with mobile phases of low pH
- Polar-compound retention without ion-pairing reagents

Beta Blockers



Atlantis Columns

T3 ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
1.0 × 50 mm	186003713		2.1 × 30 mm	186003733	
1.0 × 150 mm	186003714		2.1 × 50 mm	186003734	
2.1 × 20 mm /S	186003715		2.1 × 100 mm	186003735	
2.1 × 30 mm	186003716		2.1 × 150 mm	186003736	
2.1 × 50 mm	186003717		3.0 × 50 mm	186003738	
2.1 × 75 mm	186005652		3.0 × 100 mm	186003739	
2.1 × 100 mm	186003718		3.0 × 150 mm	186003740	
2.1 × 150 mm	186003719		3.0 × 250 mm	186003741	
3.0 × 50 mm	186003721		4.6 × 50 mm	186003744	
3.0 × 75 mm	186005653		4.6 × 75 mm	186003745	
3.0 × 100 mm	186003722		4.6 × 100 mm	186003746	
3.0 × 150 mm	186003723		4.6 × 150 mm	186003747	
4.6 × 50 mm	186003726		4.6 × 250 mm	186003748	
4.6 × 75 mm	186003727				
4.6 × 100 mm	186003728				
4.6 × 150 mm	186003729				

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186003695 ¹	10 × 10 mm	Guard Cartridge	186003706 ¹
10 × 50 mm	OBD Column	186008202	10 × 150 mm	OBD Column	186008206
10 × 100 mm	OBD Column	186008203	10 × 250 mm	OBD Column	186008207
10 × 150 mm	OBD Column	186008204	19 × 10 mm	Guard Cartridge	186003710 ²
10 × 250 mm	OBD Column	186008205	19 × 50 mm	OBD Column	186003707
19 × 10 mm	Guard Cartridge	186003699 ²	19 × 150 mm	OBD Column	186003708
19 × 50 mm	OBD Column	186003696	19 × 250 mm	OBD Column	186003709
19 × 100 mm	OBD Column	186003697	30 × 10 mm	Guard Cartridge	186006878 ³
19 × 150 mm	OBD Column	186003698	30 × 75 mm	OBD Column	186004712
19 × 250 mm	OBD Column	186004026	30 × 150 mm	OBD Column	186003711
30 × 10 mm	Guard Cartridge	186006879 ³	30 × 250 mm	OBD Column	186003712
30 × 50 mm	OBD Column	186003700	50 × 50 mm	OBD Column	186004083
30 × 75 mm	OBD Column	186003701	50 × 100 mm	OBD Column	186004084
30 × 100 mm	OBD Column	186003702	50 × 150 mm	OBD Column	186004085
30 × 150 mm	OBD Column	186003703	50 × 250 mm	OBD Column	186004086
50 × 50 mm	OBD Column	186004080			
50 × 100 mm	OBD Column	186004081			
50 × 150 mm	OBD Column	186004082			

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³ Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

Atlantis Columns *Continued*

dC ₁₈ ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.1 × 30 mm	186001287		2.1 × 50 mm	186001293	
2.1 × 50 mm	186001291		2.1 × 100 mm	186001297	
2.1 × 100 mm	186001295		2.1 × 150 mm	186001301	
2.1 × 150 mm	186001299		3.0 × 100 mm	186001305	
3.0 × 50 mm	186001389		3.0 × 150 mm	186001309	
3.0 × 100 mm	186001303		3.0 × 250 mm	186001311	
3.0 × 150 mm	186001307		3.9 × 150 mm	186001319	
3.9 × 100 mm	186001393		4.6 × 50 mm	186001331	
3.9 × 150 mm	186001317		4.6 × 75 mm	186001335	
4.6 × 50 mm	186001329		4.6 × 100 mm	186001340	
4.6 × 75 mm	186001333		4.6 × 150 mm	186001344	
4.6 × 100 mm	186001337		4.6 × 250 mm	186001346	
4.6 × 150 mm	186001342				

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 10 mm	Guard Cartridge	186002300 ¹	10 × 10 mm	Guard Cartridge	186002452 ¹
10 × 50 mm	OBD Column	186008146	10 × 150 mm	OBD Column	186008149
10 × 100 mm	OBD Column	186008148	10 × 250 mm	OBD Column	186008151
19 × 10 mm	Guard Cartridge	186001361 ²	19 × 10 mm	Guard Cartridge	186001363 ²
19 × 50 mm	OBD Column	186001365	19 × 150 mm	OBD Column	186001369
19 × 100 mm	OBD Column	186001367	19 × 250 mm	OBD Column	186001371
19 × 150 mm	OBD Column	186002800	30 × 10 mm	Guard Cartridge	186006875 ³
19 × 250 mm	OBD Column	186004030	30 × 250 mm	OBD Column	186002418
30 × 10 mm	Guard Cartridge	186006876 ³			
30 × 50 mm	OBD Column	186001373			
30 × 75 mm	OBD Column	186002455			
30 × 150 mm	OBD Column	186002801			

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³ Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

Atlantis Columns *Continued*

HILIC Silica					
ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.1 × 15 mm Direct Connect	186002007		2.1 × 50 mm	186002012	
2.1 × 30 mm	186002009		2.1 × 100 mm	186002014	
2.1 × 50 mm	186002011		2.1 × 150 mm	186002016	
2.1 × 100 mm	186002013		3.0 × 50 mm	186002018	
2.1 × 150 mm	186002015		4.6 × 50 mm	186002028	
3.0 × 50 mm	186002017		4.6 × 100 mm	186002030	
3.0 × 100 mm	186002019		4.6 × 150 mm	186002032	
4.6 × 50 mm	186002027		4.6 × 250 mm	186002033	
4.6 × 100 mm	186002029				
4.6 × 150 mm	186002031				

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
19 × 10 mm	Guard Cartridge	186003956 ²	10 × 10 mm	Guard Cartridge	186002452 ¹
19 × 50 mm	OBD Column	186003957	10 × 150 mm	OBD Column	186008149
19 × 100 mm	OBD Column	186003958	10 × 250 mm	OBD Column	186008151
19 × 150 mm	OBD Column	186003959	19 × 10 mm	Guard Cartridge	186001363 ²
30 × 10 mm	Guard Cartridge	186006877 ³	19 × 150 mm	OBD Column	186001369
30 × 50 mm	OBD Column	186003960	19 × 250 mm	OBD Column	186001371
30 × 100 mm	OBD Column	186003961	30 × 10 mm	Guard Cartridge	186006875 ³
30 × 150 mm	OBD Column	186003962	30 × 250 mm	OBD Column	186002418

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

Atlantis Columns Method Validation Kits*

	Particle Size: 3 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
T3	4.6 × 150 mm	186003751	4.6 × 150 mm	186003754
			4.6 × 250 mm	186003755

HILIC Silica	Particle Size: 3 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
	4.6 × 150 mm	186002315	4.6 × 150 mm	186002314
			4.6 × 250 mm	186002316

*Each Method Validation Kit contains 3 columns, each from a different batch.

Atlantis VanGuard Cartridges

	Particle Size: 3 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
T3	2.1 × 5 mm	186007674	2.1 × 5 mm	186007678
	3.9 × 5 mm	186007676	3.9 × 5 mm	186007680

dC ₁₈	Particle Size: 3 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
	2.1 × 5 mm	186007658	2.1 × 5 mm	186007662
	3.9 × 5 mm	186007660	3.9 × 5 mm	186007664

HILIC Silica	Particle Size: 3 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
	2.1 × 5 mm	186007666	2.1 × 5 mm	186007670
	3.9 × 5 mm	186007668	3.9 × 5 mm	186007672

Universal VanGuard Cartridge Holder

Description	P/N (1/pk)
Universal VanGuard Cartridge Holder	186007949

XTerra OBD Preparative Columns



XTerra HPLC Columns offer a rugged material of high mechanical strength and high efficiency. They provide excellent peak shape for bases and easy scale-up from analytical to preparative chromatography.

XTerra OBD Preparative Columns offer:

- MS C₁₈, MS C₈, Shield RP18, and Shield RP8 column chemistries
- High mechanical strength
- Excellent chemical stability for both low- and high-pH purifications
- Excellent peak shape for bases

BioAdvisor

Discover the best chemistry solutions for your application with this tool.



BioAdvisor enables you to select an appropriate UPLC/UHPLC or HPLC column and/or chemistry consumable for a desired application, all organized by molecule type.

For more information, visit [waters.com/BioAdvisor](https://www.waters.com/BioAdvisor)

Ordering Information

XTerra Columns

MS C ₁₈		ANALYTICAL COLUMNS					
		Particle Size: 2.5 µm*		Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
2.1 × 30 mm	186000592	2.1 × 30 mm	186000398	2.1 × 20 mm JS	186001979		
4.6 × 20 mm JS	186001889	2.1 × 50 mm	186000400	2.1 × 50 mm	186000446		
4.6 × 30 mm	186000600	2.1 × 100 mm	186000404	2.1 × 100 mm	186000450		
4.6 × 50 mm	186000602	2.1 × 150 mm	186000408	2.1 × 150 mm	186000454		
4.6 × 75 mm	186000981	3.0 × 50 mm	186000414	2.1 × 250 mm	186000458		
		3.0 × 100 mm	186000418	3.0 × 50 mm	186000462		
		3.0 × 150 mm	186000422	3.0 × 100 mm	186000466		
		3.9 × 100 mm	186000426	3.0 × 150 mm	186000470		
		4.6 × 30 mm	186000430	3.0 × 250 mm	186000474		
		4.6 × 50 mm	186000432	3.9 × 150 mm	186000478		
		4.6 × 100 mm	186000436	4.6 × 50 mm	186000482		
		4.6 × 150 mm	186000440	4.6 × 100 mm	186000486		
		4.6 × 250 mm	186001470	4.6 × 150 mm	186000490		
				4.6 × 250 mm	186000494		

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 10 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
7.8 × 10 mm	Guard Cartridge	186001168 ⁵	7.8 × 10 mm	Guard Cartridge	186001172 ⁵	
7.8 × 50 mm	Column	186001152	7.8 × 150 mm	Column	186001160	
7.8 × 100 mm	Column	186001156	7.8 × 300 mm	Column	186001164	
7.8 × 150 mm	Column	186001475	10 × 10 mm	Guard Cartridge	186001002 ¹	
10 × 10 mm	Guard Cartridge	186001001 ¹	10 × 150 mm	OBD Column	186008129	
10 × 50 mm	OBD Column	186008103	10 × 250 mm	OBD Column	186008133	
10 × 100 mm	OBD Column	186008107	10 × 300 mm	OBD Column	186008137	
10 × 150 mm	OBD Column	186008141	19 × 10 mm	Guard Cartridge	186001034 ²	
19 × 10 mm	Guard Cartridge	186001104 ²	19 × 50 mm	OBD Column	186002254	
19 × 50 mm	OBD Column	186001930	19 × 150 mm	OBD Column	186002255	
19 × 100 mm	OBD Column	186001934	19 × 250 mm	OBD Column	186002259	
19 × 150 mm	OBD Column	186002379	19 × 300 mm	OBD Column	186002263	
30 × 10 mm	Guard Cartridge	186006903 ³	30 × 10 mm	Guard Cartridge	186006902 ³	
30 × 50 mm	OBD Column	186001938	30 × 150 mm	OBD Column	186002267	
30 × 100 mm	OBD Column	186001942	30 × 250 mm	OBD Column	186002271	
50 × 50 mm	OBD Column	186002218	30 × 300 mm	OBD Column	186002275	
50 × 100 mm	OBD Column	186002222	50 × 50 mm	OBD Column	186002279	
			50 × 150 mm	OBD Column	186002843	
			50 × 250 mm	OBD Column	186002847	

*Recommended maximum pressure of 6000 psi (400 bar).

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

⁵Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

 For more information on XTerra Columns, refer to [page 174](#) for 2.5 µm and [page 221](#) for 3–5 µm column offerings.

XTerra Columns *Continued*

MS C ₈						
ANALYTICAL COLUMNS						
Particle Size: 2.5 µm*			Particle Size: 3.5 µm		Particle Size: 5 µm	
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
4.6 × 50 mm	186000603		2.1 × 50 mm	186000401	2.1 × 50 mm	186000447
			2.1 × 100 mm	186000405	2.1 × 100 mm	186000451
			2.1 × 150 mm	186000409	2.1 × 150 mm	186000455
			3.9 × 100 mm	186000427	2.1 × 250 mm	186000459
			4.6 × 50 mm	186000433	3.9 × 150 mm	186000479
			4.6 × 100 mm	186000437	4.6 × 50 mm	186000483
			4.6 × 150 mm	186000441	4.6 × 100 mm	186000487
			4.6 × 250 mm	186001471	4.6 × 150 mm	186000491
					4.6 × 250 mm	186000495

PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 10 µm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
7.8 × 10 mm	Guard Cartridge	186001169 ⁵	7.8 × 10 mm	Guard Cartridge	186001173 ⁵	
7.8 × 50 mm	Column	186001153	7.8 × 150 mm	Column	186001161	
7.8 × 100 mm	Column	186001157	7.8 × 300 mm	Column	186001165	
7.8 × 150 mm	Column	186001476	10 × 150 mm	OBD Column	186008130	
10 × 50 mm	OBD Column	186008104	10 × 250 mm	OBD Column	186008134	
10 × 150 mm	OBD Column	186008142	10 × 300 mm	OBD Column	186008138	
19 × 10 mm	Guard Cartridge	186001105 ²	19 × 10 mm	Guard Cartridge	186001035 ²	
19 × 50 mm	OBD Column	186001931	19 × 150 mm	OBD Column	186002256	
19 × 100 mm	OBD Column	186001935	19 × 250 mm	OBD Column	186002260	
19 × 150 mm	OBD Column	186002380	19 × 300 mm	OBD Column	186002264	
30 × 10 mm	Guard Cartridge	186006904 ³	30 × 150 mm	OBD Column	186002268	
30 × 75 mm	OBD Column	186002388	30 × 250 mm	OBD Column	186002272	
30 × 100 mm	OBD Column	186001943	30 × 300 mm	OBD Column	186002276	
50 × 50 mm	OBD Column	186002219	50 × 50 mm	OBD Column	186002280	
50 × 100 mm	OBD Column	186002223	50 × 150 mm	OBD Column	186002844	

*Recommended maximum pressure of 6000 psi (400 bar).
¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).
²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).
³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).
⁵Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

Shield RP18					
ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.1 × 20 mm /S	186001925		2.1 × 50 mm	186000448	
2.1 × 50 mm	186000402		2.1 × 100 mm	186000452	
2.1 × 100 mm	186000406		2.1 × 150 mm	186000456	
2.1 × 150 mm	186000410		2.1 × 250 mm	186000460	
3.0 × 50 mm	186000416		3.0 × 50 mm	186000464	
3.0 × 100 mm	186000420		3.0 × 100 mm	186000468	
3.0 × 150 mm	186000424		3.0 × 150 mm	186000472	
3.9 × 100 mm	186000428		3.0 × 250 mm	186000476	
4.6 × 50 mm	186000434		3.9 × 150 mm	186000480	
4.6 × 100 mm	186000438		4.6 × 50 mm	186000484	
4.6 × 150 mm	186000442		4.6 × 100 mm	186000488	
4.6 × 250 mm	186001472		4.6 × 150 mm	186000492	
			4.6 × 250 mm	186000496	

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
7.8 × 10 mm	Guard Cartridge	186001170 ⁵	7.8 × 10 mm	Guard Cartridge	186001174 ⁵
7.8 × 50 mm	Column	186001154	7.8 × 150 mm	Column	186001162
7.8 × 100 mm	Column	186001158	7.8 × 300 mm	Column	186001166
7.8 × 150 mm	Column	186001477	10 × 10 mm	Guard Cartridge	186001007 ¹
10 × 10 mm	Guard Cartridge	186001006 ¹	10 × 150 mm	OBD Column	186008131
10 × 50 mm	OBD Column	186008105	10 × 250 mm	OBD Column	186008135
10 × 100 mm	OBD Column	186008128	10 × 300 mm	OBD Column	186008139
10 × 150 mm	OBD Column	186008143	19 × 10 mm	Guard Cartridge	186001036 ²
19 × 10 mm	Guard Cartridge	186001106 ²	19 × 150 mm	OBD Column	186002257
19 × 50 mm	OBD Column	186001932	19 × 250 mm	OBD Column	186002261
19 × 100 mm	OBD Column	186001936	19 × 300 mm	OBD Column	186002265
19 × 150 mm	OBD Column	186002381	30 × 10 mm	Guard Cartridge	186006905 ³
30 × 10 mm	Guard Cartridge	186006906 ³	30 × 150 mm	OBD Column	186002269
30 × 50 mm	OBD Column	186001940	30 × 250 mm	OBD Column	186002273
30 × 75 mm	OBD Column	186002389	30 × 300 mm	OBD Column	186002277
30 × 100 mm	OBD Column	186001944	50 × 50 mm	OBD Column	186002281
50 × 50 mm	OBD Column	186002220	50 × 250 mm	OBD Column	186002849
50 × 100 mm	OBD Column	186002224			

¹Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 30 × 10 mm Prep Guard Holder, p/n: [186006912](#).

⁵Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

XTerra Columns *Continued*

Shield RP8					
ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
3.0 × 50 mm	186000417		2.1 × 150 mm	186000457	
3.0 × 100 mm	186000421		3.0 × 100 mm	186000469	
3.0 × 150 mm	186000425		3.0 × 150 mm	186000473	
3.9 × 100 mm	186000429		3.9 × 150 mm	186000481	
4.6 × 50 mm	186000435		4.6 × 50 mm	186000485	
4.6 × 100 mm	186000439		4.6 × 100 mm	186000489	
4.6 × 150 mm	186000443		4.6 × 150 mm	186000493	
4.6 × 250 mm	186001473		4.6 × 250 mm	186000497	
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
7.8 × 10 mm	Guard Cartridge	186001171 ⁵	7.8 × 10 mm	Guard Cartridge	186001175 ⁵
7.8 × 50 mm	Column	186001155	7.8 × 150 mm	Column	186001163
7.8 × 100 mm	Column	186001159	7.8 × 300 mm	Column	186001167
7.8 × 150 mm	Column	186001478	10 × 10 mm	Guard Cartridge	186001009 ¹
10 × 10 mm	Guard Cartridge	186001008 ¹	10 × 150 mm	OBD Column	186008132
10 × 50 mm	OBD Column	186008106	10 × 250 mm	OBD Column	186008136
10 × 150 mm	OBD Column	186008144	10 × 300 mm	OBD Column	186008140
19 × 10 mm	Guard Cartridge	186001107 ²	19 × 10 mm	Guard Cartridge	186001037 ²
19 × 100 mm	OBD Column	186001937	19 × 150 mm	OBD Column	186002258
19 × 150 mm	OBD Column	186002382	19 × 250 mm	OBD Column	186002262
30 × 50 mm	OBD Column	186001941	19 × 300 mm	OBD Column	186002266
30 × 75 mm	OBD Column	186002390	30 × 150 mm	OBD Column	186002270
30 × 100 mm	OBD Column	186001945	30 × 250 mm	OBD Column	186002274
50 × 50 mm	OBD Column	186002221	30 × 300 mm	OBD Column	186002278
50 × 100 mm	OBD Column	186002225	50 × 50 mm	OBD Column	186002282
			50 × 150 mm	OBD Column	186002846
			50 × 250 mm	OBD Column	186002850

¹ Requires 10 × 10 mm Cartridge Holder, p/n: [289000779](#).

² Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

⁵ Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

XTerra Columns *Continued*

Phenyl	ANALYTICAL COLUMNS			
	Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 \times 50 mm	186001179	3.9 \times 150 mm	186001184
	2.1 \times 100 mm	186001180	4.6 \times 50 mm	186001144
	2.1 \times 150 mm	186001181	4.6 \times 100 mm	186001145
	3.0 \times 100 mm	186001142	4.6 \times 150 mm	186001146
	3.0 \times 150 mm	186001143	4.6 \times 250 mm	186001147
	3.9 \times 150 mm	186001178		
	4.6 \times 50 mm	186001138		
	4.6 \times 100 mm	186001139		
	4.6 \times 150 mm	186001140		
	4.6 \times 250 mm	186001474		

XTerra Columns Method Validation Kits*

	Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
MS C₁₈	4.6 \times 150 mm	186000826	4.6 \times 150 mm	186000829
			4.6 \times 250 mm	186000830
Shield RP18	4.6 \times 150 mm	186000861	4.6 \times 150 mm	186000862
			4.6 \times 250 mm	186000863

*Each Method Validation Kit contains 3 columns, each from a different batch.

XTerra VanGuard Cartridges

	Particle Size: 2.5 μ m		Particle Size: 3.5 μ m		Particle Size: 5 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
MS C₁₈	2.1 \times 5 mm	186007887	2.1 \times 5 mm	186007892	2.1 \times 5 mm	186007896
	3.9 \times 5 mm	186007889	3.9 \times 5 mm	186007894	3.9 \times 5 mm	186007899
MS C₈	2.1 \times 5 mm	186007901	2.1 \times 5 mm	186007905	2.1 \times 5 mm	186007909
	3.9 \times 5 mm	186007903	3.9 \times 5 mm	186007735	3.9 \times 5 mm	186007739
Shield RP18			2.1 \times 5 mm	186007929	2.1 \times 5 mm	186007933
			3.9 \times 5 mm	186007931	3.9 \times 5 mm	186007935
Shield RP8			2.1 \times 5 mm	186007941	3.9 \times 5 mm	186007947
			3.9 \times 5 mm	186007943		
Phenyl			2.1 \times 5 mm	186007917	2.1 \times 5 mm	186007921
			3.9 \times 5 mm	186007919	3.9 \times 5 mm	186007923

Universal VanGuard Cartridge Holder

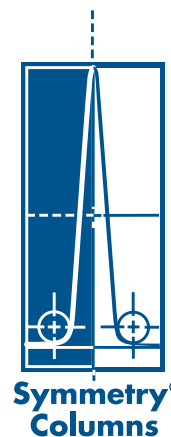
Description	P/N (1/pk)
Universal VanGuard Cartridge Holder	186007949

Symmetry Preparative Columns

Symmetry Columns provide a high standard of reproducibility and total confidence in the long-term compliance of your HPLC methods. The SymmetryPrep family includes SymmetryPrep (C₁₈ and C₈), SymmetryShield (RP18 and RP8), and Symmetry300 (C₁₈) Columns.

Symmetry Preparative Columns offer:

- High capacity
- High efficiency
- The ability to scale-up methods from Symmetry analytical columns with particles of 3.5 and 5 μm



Ordering Information

Symmetry, SymmetryShield, and Symmetry300 Columns

Symmetry C ₁₈	ANALYTICAL COLUMNS					
	Particle Size: 3.5 μm			Particle Size: 5 μm		
	Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
	2.1 × 30 mm	WAT058973		2.1 × 50 mm	186000206	
	2.1 × 50 mm	WAT200650		2.1 × 100 mm	186002608	
	2.1 × 100 mm	WAT058965		2.1 × 150 mm	WAT056975	
	2.1 × 150 mm	WAT106005		3.0 × 150 mm	WAT054200	
	3.0 × 50 mm	186002612		3.0 × 250 mm	186000690	
	3.0 × 100 mm	186000696		3.9 × 20 mm /S	186002086	
	3.0 × 150 mm	186000695		3.9 × 150 mm	WAT046980	
	3.9 × 20 mm /S	186002082		4.6 × 20 mm /S	186002094	
	4.6 × 30 mm	186000271		4.6 × 50 mm	186000207	
	4.6 × 50 mm	WAT200625		4.6 × 100 mm	186002616	
	4.6 × 75 mm	WAT066224		4.6 × 150 mm	WAT045905	
	4.6 × 100 mm	WAT066220		4.6 × 250 mm	WAT054275	
	4.6 × 150 mm	WAT200632				
	4.6 × 250 mm	186005794				
PREPARATIVE COLUMNS						
Particle Size: 5 μm			Particle Size: 7 μm			
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)	
7.8 × 10 mm	Guard Cartridge	186000711 ⁵	7.8 × 10 mm	Guard Cartridge	186000713 ⁵	
7.8 × 50 mm	Column	186000208	7.8 × 150 mm	Column	WAT066288	
7.8 × 100 mm	Column	186000209	7.8 × 300 mm	Column	WAT066235	
19 × 10 mm	Guard Cartridge	186000715 ²	19 × 10 mm	Guard Cartridge	186000717 ²	
19 × 50 mm	Column	186000210	19 × 150 mm	Column	WAT066240	
19 × 100 mm	Column	186000211	19 × 300 mm	Column	WAT066245	
30 × 100 mm	Column	186000236				

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

⁵Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

Symmetry, SymmetryShield, and Symmetry300 Columns *Continued*

Symmetry C ₈					
ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.1 × 50 mm	WAT200624		2.1 × 100 mm	186002609	
2.1 × 100 mm	WAT058961		2.1 × 150 mm	WAT056955	
2.1 × 150 mm	WAT106011		3.0 × 150 mm	WAT054230	
3.0 × 100 mm	186000698		3.0 × 250 mm	186000691	
3.0 × 150 mm	186000697		3.9 × 20 mm /S	186002087	
4.6 × 30 mm	186000270		3.9 × 150 mm	WAT046970	
4.6 × 50 mm	WAT200620		4.6 × 50 mm	186000213	
4.6 × 75 mm	WAT066200		4.6 × 100 mm	186002617	
4.6 × 100 mm	WAT066204		4.6 × 150 mm	WAT045995	
4.6 × 150 mm	WAT200630		4.6 × 250 mm	WAT054270	

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 7 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
7.8 × 10 mm	Guard Cartridge	186000712⁵	7.8 × 10 mm	Guard Cartridge	186000714⁵
7.8 × 50 mm	Column	186000214	7.8 × 150 mm	Column	WAT066285
7.8 × 100 mm	Column	186000215	7.8 × 300 mm	Column	WAT066225
19 × 100 mm	Column	186000229	19 × 10 mm	Guard Cartridge	186000718²
30 × 50 mm	Column	186000237	19 × 150 mm	Column	WAT066228
30 × 100 mm	Column	186000238	19 × 300 mm	Column	WAT066230
30 × 100 mm	Column	186000236			

Symmetry Shield RP18					
ANALYTICAL COLUMNS					
Particle Size: 3.5 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.1 × 50 mm	186000172		2.1 × 50 mm	186000217	
2.1 × 100 mm	186000173		2.1 × 100 mm	186000998	
2.1 × 150 mm	186000174		2.1 × 150 mm	186000111	
3.0 × 100 mm	186000700		3.0 × 150 mm	186000692	
3.0 × 150 mm	186000699		3.0 × 250 mm	186000693	
3.9 × 20 mm /S	186002084		3.9 × 150 mm	186000108	
4.6 × 50 mm	186000177		4.6 × 50 mm	186000218	
4.6 × 75 mm	186000178		4.6 × 100 mm	186002618	
4.6 × 100 mm	186000179		4.6 × 150 mm	186000109	
4.6 × 150 mm	186000180		4.6 × 250 mm	186000112	

PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 7 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
19 × 10 mm	Guard Cartridge	186001835²	19 × 150 mm	Column	186001839
19 × 50 mm	Column	186001836	19 × 300 mm	Column	186001840
19 × 100 mm	Column	186001837			
19 × 150 mm	Column	186001838			

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).⁵Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

Symmetry, SymmetryShield, and Symmetry300 Columns *Continued*

Symmetry Shield RP8	ANALYTICAL COLUMNS					
	Particle Size: 3.5 µm			Particle Size: 5 µm		
	Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
	2.1 × 50 mm	WAT094257		2.1 × 150 mm	WAT094245	
	2.1 × 100 mm	WAT058969		3.0 × 150 mm	WAT094243	
	2.1 × 150 mm	WAT106008		3.9 × 20 mm JS	186002089	
	4.6 × 50 mm	WAT094260		3.9 × 150 mm	WAT200655	
	4.6 × 75 mm	WAT094263		4.6 × 50 mm	186000224	
	4.6 × 100 mm	WAT094266		4.6 × 100 mm	186002619	
	4.6 × 150 mm	WAT094269		4.6 × 150 mm	WAT200662	
				4.6 × 250 mm	WAT200670	
PREPARATIVE COLUMNS						
Particle Size: 5 µm			Particle Size: 7 µm			
Dimension	Type	P/N (1/pk)		Dimension	Type	P/N (1/pk)
19 × 10 mm	Guard Cartridge	186001841 ²		19 × 150 mm	Column	186001845
19 × 50 mm	Column	186001842		19 × 300 mm	Column	186001846
19 × 100 mm	Column	186001843				
19 × 150 mm	Column	186001844				

Symmetry300 C ₁₈	ANALYTICAL COLUMNS					
	Particle Size: 3.5 µm			Particle Size: 5 µm		
	Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
	2.1 × 50 mm	186000187		2.1 × 150 mm	WAT106172	
	2.1 × 100 mm	186000188		4.6 × 50 mm	WAT106209	
	2.1 × 150 mm	186000200		4.6 × 150 mm	WAT106157	
	4.6 × 50 mm	186000201		4.6 × 250 mm	WAT106151	
	4.6 × 75 mm	186000189				
	4.6 × 100 mm	186000190				
	4.6 × 150 mm	186000197				
PREPARATIVE COLUMNS						
Particle Size: 5 µm						
Dimension	Type	P/N (1/pk)				
19 × 10 mm	Guard Cartridge	186001847 ²				
19 × 50 mm	Column	186001848				
19 × 100 mm	Column	186001849				
19 × 150 mm	Column	186001850				

²Requires 19 × 10 mm Cartridge Holder, p/n: [186000709](#).

³Requires 7.8 × 10 mm Cartridge Holder, p/n: [186000708](#).

Symmetry, SymmetryShield, and Symmetry300 Columns *Continued*

Symmetry300 C ₄	ANALYTICAL COLUMNS			
	Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)
	2.1 × 50 mm	186000277	2.1 × 150 mm	186000285
	2.1 × 100 mm	186000278	3.9 × 150 mm	186000286
	2.1 × 150 mm	186000279	4.6 × 50 mm	186000287
	4.6 × 50 mm	186000280	4.6 × 150 mm	186000288
	4.6 × 75 mm	186000281	4.6 × 250 mm	186000289
	4.6 × 100 mm	186000282		
	4.6 × 150 mm	186000283		

Symmetry, SymmetryShield, and Symmetry300 Method Validation Kits*

	Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
Symmetry C ₈	4.6 × 150 mm	WAT094240	3.9 × 150 mm	WAT047210
			4.6 × 150 mm	WAT054448
			4.6 × 250 mm	WAT054450
Symmetry C ₆	4.6 × 150 mm	WAT094237	3.9 × 150 mm	WAT046955
			4.6 × 150 mm	WAT054435
			4.6 × 250 mm	WAT054438
SymmetryShield RP18	4.6 × 150 mm	186000181	4.6 × 150 mm	186000103
			4.6 × 250 mm	186000102
SymmetryShield RP8	4.6 × 150 mm	WAT094278	4.6 × 250 mm	WAT210591
Symmetry300 C ₁₈	4.6 × 150 mm	186000195	3.9 × 150 mm	WAT106187
			4.6 × 150 mm	WAT106190
			4.6 × 250 mm	WAT106184
Symmetry300 C ₄	4.6 × 150 mm	186000291	3.9 × 150 mm	186000293
			4.6 × 150 mm	186000294
			4.6 × 250 mm	186000295

*Each Method Validation Kit contains 3 columns, each from a different batch.

Symmetry VanGuard Cartridges

	Particle Size: 3.5 µm		Particle Size: 5 µm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
Symmetry C ₁₈	2.1 × 5 mm	186007725	2.1 × 5 mm	186007729
	3.9 × 5 mm	186007727	3.9 × 5 mm	186007731
Symmetry C ₆	2.1 × 5 mm	186007733	2.1 × 5 mm	186007737
	3.9 × 5 mm	186007735	3.9 × 5 mm	186007739
SymmetryShield RP18	2.1 × 5 mm	186007749	2.1 × 5 mm	186007753
	3.9 × 5 mm	186007751	3.9 × 5 mm	186007755
SymmetryShield RP8	2.1 × 5 mm	186007741	2.1 × 5 mm	186007745
	3.9 × 5 mm	186007743	3.9 × 5 mm	186007747
Symmetry300 C ₁₈	2.1 × 5 mm	186007709	2.1 × 5 mm	186007713
	3.9 × 5 mm	186007711	3.9 × 5 mm	186007715
Symmetry300 C ₄	2.1 × 5 mm	186007717	2.1 × 5 mm	186007721
	3.9 × 5 mm	186007719	3.9 × 5 mm	186007723

Universal VanGuard Cartridge Holder

Description	P/N (1/pk)
Universal VanGuard Cartridge Holder	186007949

Spherisorb Preparative Columns

Spherisorb Columns are frequently referenced in scientific literature. To date, more than 2000 published abstracts acknowledge the use of Spherisorb Columns. These articles provide a tremendous range of validated methods and applications of significant use in method development.

Ordering Information

Spherisorb Columns

ODS1					
ANALYTICAL COLUMNS					
Particle Size: 3 μ m			Particle Size: 5 μ m		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.0 \times 100 mm	PSS833422		4.0 \times 125 mm	PSS845541	
4.6 \times 50 mm	PSS833411		4.0 \times 250 mm	PSS845542	
4.6 \times 100 mm	PSS833412		4.6 \times 100 mm	PSS830612	
4.6 \times 150 mm	PSS833413		4.6 \times 150 mm	PSS830613	
			4.6 \times 250 mm	PSS830615	
PREPARATIVE COLUMNS					
Particle Size: 5 μ m			Particle Size: 10 μ m		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 \times 250 mm	OBD Column	186008284	10 \times 250 mm	OBD Column	186008285
19 \times 250 mm	OBD Column	186008846	19 \times 250 mm	OBD Column	186008857

ODS2					
ANALYTICAL COLUMNS					
Particle Size: 3 μ m			Particle Size: 5 μ m		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
4.6 \times 50 mm	PSS832111		4.0 \times 125 mm	PSS845543	
4.6 \times 100 mm	PSS832112		4.0 \times 250 mm	PSS845277	
4.6 \times 150 mm	PSS832113		4.6 \times 50 mm	PSS831911	
			4.6 \times 100 mm	PSS831912	
			4.6 \times 150 mm	PSS831913	
			4.6 \times 250 mm	PSS831915	
PREPARATIVE COLUMNS					
Particle Size: 5 μ m			Particle Size: 10 μ m		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 \times 250 mm	OBD Column	186008292	10 \times 250 mm	OBD Column	186008294
19 \times 250 mm	OBD Column	186008847	19 \times 250 mm	OBD Column	186008858

Spherisorb Columns *Continued*

C₆					
ANALYTICAL COLUMNS					
Particle Size: 3 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
4.6 × 50 mm	PSS832211		4.0 × 125 mm	PSS845280	
4.6 × 100 mm	PSS832212		4.0 × 250 mm	PSS845281	
4.6 × 150 mm	PSS832213		4.6 × 100 mm	PSS831812	
			4.6 × 150 mm	PSS831813	
			4.6 × 250 mm	PSS831815	
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 250 mm	OBD Column	186008291	10 × 250 mm	OBD Column	186008297
19 × 250 mm	OBD Column	186008848	19 × 250 mm	OBD Column	186008859

C₆					
ANALYTICAL COLUMNS					
Particle Size: 3 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
4.6 × 150 mm	PSS833113		4.0 × 125 mm	PSS845284	
			4.6 × 100 mm	PSS831012	
			4.6 × 250 mm	PSS831015	
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 250 mm	OBD Column	186008288	19 × 250 mm	OBD Column	186008860
19 × 250 mm	OBD Column	186008849			

C₁					
ANALYTICAL COLUMNS					
Particle Size: 5 µm					
			Dimension	P/N (1/pk)	
			4.6 × 100 mm	PSS832612	
			4.6 × 150 mm	PSS832613	
			4.6 × 250 mm	PSS832615	
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 250 mm	OBD Column	186008295	19 × 250 mm	OBD Column	186008861
19 × 250 mm	OBD Column	186008850			

Spherisorb Columns *Continued*

NH ₂					
ANALYTICAL COLUMNS					
Particle Size: 3 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
2.0 × 100 mm	PSS832322		4.0 × 250 mm	PSS845301	
4.6 × 50 mm	PSS832311		4.6 × 150 mm	PSS831113	
4.6 × 100 mm	PSS832312		4.6 × 250 mm	PSS831115	
4.6 × 150 mm	PSS832313				
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 250 mm	OBD Column	186008289	10 × 250 mm	OBD Column	186008299
19 × 250 mm	OBD Column	186008853	19 × 250 mm	OBD Column	186008864

Phenyl					
ANALYTICAL COLUMNS					
Particle Size: 3 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
4.6 × 150 mm	PSS833713		4.0 × 250 mm	PSS845293	
			4.6 × 250 mm	PSS830815	
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 250 mm	OBD Column	186008286	10 × 250 mm	OBD Column	186008300
19 × 250 mm	OBD Column	186008854	19 × 250 mm	OBD Column	186008865

CN Normal Phase					
ANALYTICAL COLUMNS					
Particle Size: 3 µm			Particle Size: 5 µm		
Dimension	P/N (1/pk)		Dimension	P/N (1/pk)	
4.6 × 150 mm	PSS832413		4.0 × 250 mm	PSS845297	
			4.6 × 100 mm	PSS830912	
			4.6 × 150 mm	PSS830913	
			4.6 × 250 mm	PSS830915	
PREPARATIVE COLUMNS					
Particle Size: 5 µm			Particle Size: 10 µm		
Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
10 × 250 mm	OBD Column	186008287	10 × 250 mm	OBD Column	186008298
19 × 250 mm	OBD Column	186008852	19 × 250 mm	OBD Column	186008863

Spherisorb Columns *Continued*

CN Reversed Phase	ANALYTICAL COLUMNS	
	Particle Size: 5 µm	
	Dimension	P/N (1/pk)
	4.6 × 150 mm	PSS830908
	4.6 × 250 mm	PSS830909

Silica	ANALYTICAL COLUMNS					
	Particle Size: 3 µm		Particle Size: 5 µm			
	Dimension	P/N (1/pk)	Dimension	P/N (1/pk)		
	4.6 × 150 mm	PSS832013	2.0 × 250 mm	PSS830125		
			4.0 × 250 mm	PSS845540		
			4.6 × 250 mm	PSS830115		
	PREPARATIVE COLUMNS					
	Particle Size: 5 µm			Particle Size: 10 µm		
	Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
	10 × 250 mm	OBD Column	186008281	10 × 250 mm	OBD Column	186008282
	19 × 250 mm	OBD Column	186008851	19 × 250 mm	OBD Column	186008862

SAX	ANALYTICAL COLUMNS		PREPARATIVE COLUMNS					
	Particle Size: 5 µm		Particle Size: 5 µm		Particle Size: 10 µm			
	Dimension	P/N (1/pk)	Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
	4.0 × 250 mm	PSS845305	10 × 250 mm	OBD Column	186008296	10 × 250 mm	OBD Column	186008301
	4.6 × 50 mm	PSS832711	19 × 250 mm	OBD Column	186008855	19 × 250 mm	OBD Column	186008866
	4.6 × 150 mm	PSS832713						
	4.6 × 250 mm	PSS832715						

SCX	ANALYTICAL COLUMNS		PREPARATIVE COLUMNS					
	Particle Size: 5 µm		Particle Size: 5 µm		Particle Size: 10 µm			
	Dimension	P/N (1/pk)	Dimension	Type	P/N (1/pk)	Dimension	Type	P/N (1/pk)
	4.0 × 250 mm	PSS845309	10 × 250 mm	OBD Column	186008302	10 × 250 mm	OBD Column	186008303
	4.6 × 50 mm	PSS837511	19 × 250 mm	OBD Column	186008856	19 × 250 mm	OBD Column	186008867
	4.6 × 100 mm	PSS837512						
	4.6 × 150 mm	PSS837513						
	4.6 × 250 mm	PSS837515						

OD/CN	ANALYTICAL COLUMNS	
	Particle Size: 5 µm	
	Dimension	P/N (1/pk)
	4.6 × 150 mm	PSS837813
	4.6 × 250 mm	PSS837815

Nova-Pak Preparative Columns

Nova-Pak HR, 6 μm , ultra-high-efficiency packing materials are available as shorter columns to facilitate separations - making it faster, lowering solvent consumption, and producing fractions of greater concentration. The preparative Nova-Pak HR material provides the same selectivity and retention characteristics as the analytical Nova-Pak 4 μm material. The Nova-Pak HR packing materials for preparative use are ideal for separating a wide range of compounds such as organic synthesis intermediates or natural products.

Ordering Information

Nova-Pak Columns

Nova-Pak C ₁₈	ANALYTICAL COLUMNS	
	Particle Size: 4 μm	
	Dimension	P/N (1/pk)
	2.1 \times 150 mm	WAT023655
	3.9 \times 75 mm	WAT011670
	3.9 \times 150 mm	WAT086344
	3.9 \times 300 mm	WAT011695
	4.6 \times 150 mm	WAT044375
	PREPARATIVE COLUMNS	
	Particle Size: 6 μm	
	Dimension	P/N (1/pk)
	3.9 \times 300 mm	WAT038500
	7.8 \times 300 mm	WAT025820
	19 \times 300 mm	WAT025822
Nova-Pak C ₈	3.9 \times 75 mm	WAT035877
	3.9 \times 150 mm	WAT035876

Nova-Pak Phenyl	ANALYTICAL COLUMNS	
	Particle Size: 4 μm	
	Dimension	P/N (1/pk)
	2.1 \times 150 mm	WAT052740
	3.9 \times 75 mm	WAT011675
	3.9 \times 150 mm	WAT010656
Nova-Pak CN-HP	3.9 \times 75 mm	WAT010270
	3.9 \times 150 mm	WAT044245
	3.9 \times 300 mm	WAT056920
Nova-Pak Silica	2.1 \times 150 mm	WAT052745
	3.9 \times 150 mm	WAT010025
	PREPARATIVE COLUMNS	
	Particle Size: 6 μm	
	Dimension	P/N (1/pk)
	3.9 \times 300 mm	WAT038501
	7.8 \times 300 mm	WAT025821
	19 \times 300 mm	WAT025823

 For more information on Nova-Pak Columns, refer to [page 232](#).

μ Bondapak/Bondapak and μ Porasil/Porasil Columns

The popular μ Bondapak C₁₈ chemistry and μ Porasil silica packing materials are offered in 10 μm particle size. Bondapak and Porasil are available in two particle sizes, 15–20 μm and 37–55 μm , providing easy transfer of chromatography methods and the means to optimize resolution, throughput, and cost. Existing 10 μm μ Bondapak or μ Porasil chromatography can serve as a starting point for scale-up separations.

The preparative Bondapak HC₁₈ HA (high carbon load, high activity silica) is a highly carbon-loaded packing that differs in selectivity from that of the standard Bondapak packing materials. The higher carbon load on the silica surface typically results in a higher loading capability. Bondapak HC₁₈ HA is available in the 37–55 μm particle size.

The Porasil Silica family of packing materials provides a cost-effective means for scaling up to preparative processes. μ Porasil 10 μm , Porasil 15–20 μm , and Porasil 37–55 μm can be scaled up to Prep Silica 55–105 μm columns.

Ordering Information

μBondapak/Bondapak

C ₁₈ , 125 Å	
ANALYTICAL COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086684
3.9 × 300 mm	WAT027324
4.6 × 150 mm	WAT044370
4.6 × 300 mm	186000925
PREPARATIVE COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086684
3.9 × 300 mm	WAT027324
4.6 × 150 mm	WAT044370
4.6 × 300 mm	186000925
7.8 × 300 mm	WAT084176
19 × 150 mm	WAT088500
19 × 300 mm	WAT025828
Particle Size: 15–20 μm	
3.9 × 150 mm	WAT025875
7.8 × 300 mm	WAT025832
19 × 300 mm	WAT025834

CN, 125 Å	
ANALYTICAL COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086688
3.9 × 300 mm	WAT084042
PREPARATIVE COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086688
3.9 × 300 mm	WAT084042
7.8 × 300 mm	WAT084177


NH ₂ , 125 Å	
ANALYTICAL COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 300 mm	WAT084040
PREPARATIVE COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 300 mm	WAT084040
7.8 × 300 mm	WAT084178

Phenyl, 125 Å	
ANALYTICAL COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086680
3.9 × 300 mm	WAT027198
PREPARATIVE COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086680
3.9 × 300 mm	WAT027198
7.8 × 300 mm	WAT084179

μPorasil/Porasil

μPorasil, 125 Å	
ANALYTICAL COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 300 mm	WAT027477
PREPARATIVE COLUMNS	
Particle Size: 10 μm	
Dimension	P/N (1/pk)
3.9 × 150 mm	WAT086692
3.9 × 300 mm	WAT027477
7.8 × 300 mm	WAT084175
19 × 150 mm	WAT091648
19 × 300 mm	WAT025829

Porasil, 125 Å	
PREPARATIVE COLUMNS	
Particle Size: 15–20 μm	
Dimension	P/N (1/pk)
3.9 × 300 mm	WAT025874
19 × 300 mm	WAT025835

 For μBondapak/Bondapak and μPorasil/Porasil Preparative Columns, please refer to [pages 235–237](#).

Delta-Pak Preparative Columns

Delta-Pak packing materials are ideal for separating peptides, proteins, and natural products. Isolating and purifying a peptide is usually a multi-step procedure in which fractions from a first run are re-chromatographed on the same preparative column to obtain pure product. Delta-Pak packing materials are based on a highly stable, bonded, end-capped 5 and 15 μm packing. The 5 μm packing is available in analytical-scale dimensions for preliminary preparative chromatographic studies, peptide mapping, and fraction-purity assays. The chemistry characteristics of the packing materials are independent of the particle size.

Ordering Information

Delta-Pak Columns

Delta-Pak C ₁₈ , 300 Å	ANALYTICAL COLUMNS	
	Particle Size: 5 μm	
	Dimension	P/N (1/pk)
	3.9 × 150 mm	WAT011793
	PREPARATIVE COLUMNS	
	Particle Size: 15 μm	
	Dimension	P/N (1/pk)
	3.9 × 300 mm	WAT011802
	7.8 × 300 mm	WAT011803
	19 × 300 mm	WAT011804
	30 × 300 mm	WAT011805

Delta-Pak C ₄ , 300 Å	ANALYTICAL COLUMNS	
	Particle Size: 5 μm	
	Dimension	P/N (1/pk)
	3.9 × 150 mm	WAT011794
	PREPARATIVE COLUMNS	
	Particle Size: 15 μm	
	Dimension	P/N (1/pk)
	3.9 × 300 mm	WAT011812
	7.8 × 300 mm	WAT011813
	19 × 300 mm	WAT011814
	30 × 300 mm	WAT011815

Delta-Pak C ₁₈ , 100 Å	PREPARATIVE COLUMNS	
	Particle Size: 15 μm	
	Dimension	P/N (1/pk)
	3.9 × 300 mm	WAT011797
	7.8 × 300 mm	WAT011798
	19 × 300 mm	WAT011799
	30 × 300 mm	WAT011800
	50 × 300 mm	WAT011801

Delta-Pak C ₄ , 100 Å	PREPARATIVE COLUMNS	
	Particle Size: 15 μm	
	Dimension	P/N (1/pk)
	3.9 × 300 mm	WAT011807
	7.8 × 300 mm	WAT011808
	19 × 300 mm	WAT011809
	30 × 300 mm	WAT011810

Preparative Guard Cartridge Holders

Ordering Information

Purification and Isolation Cartridge Holders

Description	P/N
7.8 × 10 mm Cartridge Holder	186000708
10 × 10 mm Cartridge Holder	289000779
19 × 10 mm Cartridge Holder	186000709
30 × 10 mm Prep Guard Holder	186006912
Replacement O-ring 7.8 mm, 2/pk	700001019
Replacement O-ring 10 mm, 2/pk	700001436
Replacement O-ring 19 mm, 2/pk	700001020
Replacement O-ring 30 mm, 2/pk	186007012

19 × 10 mm and 30 × 10 mm Prep Guard Holder and Cartridge



Preparative Standards

HOW DO YOU KNOW YOUR CHROMATOGRAPHIC SYSTEM IS IN PROPER WORKING ORDER?

Quality Control Reference Materials (QC Reference Materials) contain mixtures of standards specifically chosen to provide an easy and reliable way to monitor the performance of any chromatographic system. Using a QC Reference Material, you can be assured that your column and system are ready to analyze your samples. Regular use of QC Reference Materials also provides an opportunity to benchmark your chromatographic systems and trend performance over time, making it easier to proactively identify problems and resolve them faster.

Literature References


Title	Literature Code
Quality Control Reference Material and Benchmarking Instrument Performance white paper	720004535EN
Troubleshooting Common System Problems Using Waters Neutrals Quality Control Reference Material application note	720004635EN

Chromatographic analyses are inherently complex. Variables such as mobile-phase composition, column type, and detection method influence their outcome. Waters has formulated specific QC Reference Material mixtures that account for these variables while testing the performance of chromatographic columns and systems.

Ordering Information

Quality Control Reference Materials

Product Name	Intended Use	Chromatographic Mode	Systems	Contents	P/N
Preparative Chromatography Mix Standard	Provides chromatographic performance information inclusive of mobile-phase pH using one void marker, one acidic, one basic, and one neutral probes.	Reversed-phase	All Purification Systems	5 mg/mL each: Diclofenac sodium salt, diphenhydramine hydrochloride, flavone in a 1 mL solution of DMSO. Store at room temperature.	186006703
AutoPurification System Standard	Tests the performance of fraction collectors, both UV and MS directed, using three dyes.	Reversed-phase	All Purification Systems with Fraction Collectors	3 ampoules of test mix containing: 2500 µg/mL thionin, 3000 µg/mL thioflavin, 2500 µg/mL crystal violet in a 10 mL solution of 25/75 water/methanol. Store at room temperature.	716000765

 For details about standards specific to calibration, qualification, and the tuning of instruments (as well as a more comprehensive listing of standards and reagents), consult the Analytical Standards and Reagents e-Catalog at asr.waters.com.

Preparative Bulk Material

Waters offers various kinds of bulk packing materials for lab-to-process-scale purifications. All are manufactured in accordance with our ISO 9001-certified manufacturing processes, ensuring long-term reproducible material.

Bulk materials are available packaged in quantities of 100 g to 25 kg. For larger quantity purchases, inquire about pricing and availability.

Ordering Information

Reversed-Phase Bulk Packings

	Particle Size: 10 μm	
	Qty.	P/N
XBridge BEH C₁₈, 130 Å	1 kg	186008658

SunFire C₁₈, 100 Å	1 kg	186007650
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	Particle Size: 15–20 μm	
Bondapak C₁₈, 125 Å	100 g	WAT020739
	1 kg	WAT020740
	5 kg	WAT020741
	Particle Size: 37–55 μm	
	100 g	WAT030632
	1 kg	WAT030633
	5 kg	WAT030634

	Particle Size: 37–55 μm	
Bondapak HC₁₈ HA, 125 Å	100 g	WAT035672
	1 kg	WAT035674
	5 kg	WAT035676

	Particle Size: 55–105 μm	
Prep C₁₈, 125 Å	100 g	WAT020594
	1 kg	WAT010001
	5 kg	WAT020595
	25 kg	WAT020596

Normal-Phase Bulk Packings

	Particle Size: 10 μm	
	Qty.	P/N
μPorasil Silica, 125 Å	5 kg	186005791

	Particle Size: 15–20 μm	
Porasil Silica, 125 Å	100 g	WAT020731
	1 kg	WAT020732
	5 kg	WAT020733
	25 kg	WAT020734

	Particle Size: 37–55 μm	
	100 g	WAT020721
	1 kg	WAT020722
	5 kg	WAT020723
	25 kg	WAT020724

	Particle Size: 55–105 μm	
Prep Silica, 125 Å	100 g	WAT020587
	1 kg	WAT010004
	5 kg	WAT020588
	25 kg	WAT020589

Gas Chromatography Packings

Versatile PoraPak gas chromatography column packing materials simplify the analysis of many complex compounds, from atmospheric gases to organics. Consisting of polymer beads, these unique packings are chemically and physically stable. Consistent particle size, porosity, and surface area ensure analytical reproducibility. The columns also provide unequalled separation capability with high resolution and low, constant retention volumes.

VERSATILITY FOR SPECIALTY APPLICATIONS

To optimize separation of even the most complex matrices, PoraPak packing materials offer several physical and chemical variations.

Special characteristics of Waters' unique GC packings include:

- Fast analysis, with compounds eluting in distinctive bands with no tailing
- The ability to sustain elevated temperatures, permitting temperature programming without adverse effects to retention, reproducibility, and column life
- The ability to accommodate large sample loads required for preparative and trace analysis while maintaining characteristically high column efficiency

Ordering Information

GC PoraPak Porous Polymer Packing

Type	Polarity	Surface Area (m ² /g)	Density (g/cm ³)	Single Temp. Program	Particle Size Mesh	Qty.	P/N
P	Nonpolar	100-200	0.26	250 °C	50-80	20 g	WAT027053
					80-100	20 g	WAT027054
					100-120	20 g	WAT027055
PS	Nonpolar	100-200	0.26	250 °C	50-80	20 g	WAT027083
					80-100	20 g	WAT027084
					100-120	20 g	WAT027085
Q	Slightly nonpolar to moderate	500-600	0.34	250 °C	50-80	26 g	WAT027059
					80-100	26 g	WAT027060
					100-120	26 g	WAT027061
QS	Slightly nonpolar to moderate	500-600	0.34	250 °C	50-80	26 g	WAT027089
					80-100	26 g	WAT027090
					100-120	26 g	WAT027091
R	Moderate polar monomer: vinyl pyrrolidone	450-600	0.32	250 °C	50-80	24 g	WAT027065
					80-100	24 g	WAT027066
					100-120	24 g	WAT027067
S	Moderate polar monomer: vinyl pyridine	300-450	0.35	250 °C	50-80	26 g	WAT027071
					80-100	26 g	WAT027072
					100-120	26 g	WAT027073
N	Polar monomer: vinyl pyrrolidone	250-350	0.41	190 °C	50-80	29 g	WAT027047
					80-100	29 g	WAT027048
					100-120	29 g	WAT027049
T	Highly polar monomer: ethyleneglycol dimethacrylate	225-350	0.39	190 °C	50-80	31 g	WAT027077
					80-100	31 g	WAT027078
					100-120	31 g	WAT027079

Radial Compression Module Products

We carry a complete inventory of accessories and spare parts for Waters' patented radial compression modules for use with the 5 mm and 8 mm I.D. Radial-Pak Column segments, the 25 mm and 40 mm I.D. PrepLC Column segments, and the 47 mm I.D. PrepPak Cartridges.

Ordering Information



8 x 100 Cartridge Holder (p/n: [WAT082887](#)) for 8 x 100 mm and 5 x 100 mm Radial-Pak Column Segments.

8 x 100 Cartridge Holder, Parts, and Accessories

Description	P/N
8 x 100 Cartridge Holder	WAT082887
8 x 100 Extension Kit (Includes one Extension Tube, Union, O-Rings)	WAT038846
Column Segment Union	WAT038849
O-Ring for Extension Tube	WAT038851
Connector Tubing Assembly (Non Metallic)	WAT088919
Connector Assembly (Stainless Steel)	WAT082892
Washer for Connectors, 10/pk	WAT005147
Pressure Relief Plug	WAT088027
Check Valve	WAT082888
O-Ring (Large) for Connector, 10/pk	WAT005130
O-Ring (Small) for Connector (Normal Phase), 4/pk	WAT015797
O-Ring (Small) for Connector (Reversed Phase), 10/pk	WAT005129
O-Ring for Filling Port, 10/pk	WAT005129
O-Ring for Pressure Piston	WAT088494
Gripper Ring Replacement Kit (Includes 10 Gripper Rings, 20 Washers, 10 Ferrules, and Tool)	WAT021908

*All column segments and cartridges require the appropriate holder/module.



(p/n: [WAT015814](#))

PrepLC 25 mm Module, Parts, and Accessories

Description	P/N
PrepLC 25 mm Module	WAT015814
PrepLC 25 mm Extension Kit (Includes one Extension Tube, Union, O-Rings)	WAT022180
Extension Tube	WAT019311
O-Ring for Extension Tube	WAT015831
O-Ring (Large) for Connector	WAT015833
O-Ring (Small) for Connector (Normal Phase)	WAT015848
O-Ring (Small) for Connector (Reversed Phase)	WAT015834
O-Ring for Filling Port, 10/pk	WAT005129
O-Ring for Pressure Piston	WAT015854
Union Coupling Assembly	WAT015860
Union, 1/8" to 1/16" Tubing, 5/pk	WAT005137

*All column segments and cartridges require the appropriate holder/module.

PrepLC Assemblies

Description	P/N
PrepLC 40 mm Assembly (Includes PrepLC Universal Base and PrepLC 40 mm Chamber)	WAT022441
PrepLC Universal Base	WAT027577
PrepLC 40 mm Chamber (Includes O-Rings, Spacer, and Union)	WAT027578
PrepLC 40 mm Extension Kit (Includes Extension Tube, Union, and O-Rings)	WAT022365
PrepLC 25 mm Chamber (Includes O-Rings, Spacer, and Union)	WAT033994
PrepLC 25 mm Extension Kit (Includes one Extension Tube, Union, and O-Rings)	WAT022180
PrepLC Scale-Up Kit with Capability for 40 mm or 25 x 300 mm Length	
Includes: One - PrepLC Universal Base Two - PrepLC Chambers (One each of 40 mm and 25 mm) Two - PrepLC 25 mm Extension Kits Two - PrepLC 40 mm Extension Kits	WAT022440

PrepLC Assembly 40 x 100 mm



(p/n: [WAT022440](#))

PrepLC Spare Parts

Description	P/N
PrepLC Universal Base Spare Parts	
O-Ring Removal Tool	WAT082853
O-Ring for Pressure Piston	WAT022281
O-Ring for Filling Port	WAT005129
Filling Port Plug	WAT027509
Ferrules and Compression Fittings (Stainless Steel), 5/pk	WAT025604
PrepLC 40 mm Chamber Spare Parts	
Column Segment Union	WAT033996
Cartridge Spacer	WAT033997
O-Ring, Base Plate (Small)	WAT022453
O-Ring, Base Plate (Large)	WAT022454
O-Ring, Chamber Top	WAT022280
O-Ring (Normal Phase) Cartridge, Top and Bottom, Spacers, and Unions	WAT027519
O-Ring (Reversed Phase) Cartridge, Top and Bottom, Spacers, and Unions	WAT027518
O-Ring (Reversed Phase) Chamber, Bottom	WAT022283
O-Ring (Reversed Phase) Inner Connector, Top and Bottom	WAT015835
O-Ring, Extension Tube	WAT022454
PrepLC 25 mm Chamber Spare Parts	
Column Segment Union	WAT015860
Segment Spacer	WAT015859
O-Ring, Base Plate (Small)	WAT022276
O-Ring, Base Plate (Large)	WAT015831
O-Ring, Chamber Top	WAT015833
O-Ring (Normal Phase) Cartridge Top and Bottom, Spacers, and Unions	WAT015848
O-Ring (Reversed Phase) Cartridge, Top and Bottom, Spacers, and Union	WAT015834
O-Ring (Reversed Phase) Chamber Bottom	WAT022282
O-Ring (Reversed Phase) Inner Connector, Top and Bottom	WAT015835
Tubing Fluid Path Kit* (PEEK) (Includes Inner Connectors, Tubing, Ferrules, and Compression Screws)	WAT022400

*For applications where a metal-free flow path is needed.

PrepPak Cartridges*

Particle Size: 15-20 µm		
	Dimension	P/N
Bondapak C ₁₈ , 125 Å	47 × 300 mm	WAT091784
Bondapak C ₁₈ , 300 Å	47 × 300 mm	WAT038571
Particle Size: 37-55 µm		
Bondapak HC ₁₈ HA, 125 Å	47 × 300 mm	WAT038570
Particle Size: 55-105 µm		
Bondapak NH ₂ , 125 Å	47 × 300 mm	WAT091631
Particle Size: 15 µm		
Delta-Pak C ₁₈ , 100 Å	47 × 300 mm	WAT015401
Delta-Pak C ₁₈ , 300 Å	47 × 300 mm	WAT010988
Particle Size: 15 µm		
Delta-Pak C ₄ , 100 Å	47 × 300 mm	WAT011633
Delta-Pak C ₄ , 300 Å	47 × 300 mm	WAT011669
Particle Size: 55-105 µm		
Prep C ₁₈ , 125 Å	47 × 300 mm	WAT025876
Particle Size: 37-55 µm		
Porasil Silica, 125 Å (1/pk)	47 × 300 mm	WAT025853
Particle Size: 37-55 µm		
Porasil Silica, 125 Å (10/pk)	47 × 300 mm	WAT025877
PrepPak 1000 Module for 47 × 300 mm PrepPak Cartridges		WAT089592

*All column segments and cartridges require the appropriate holder/module, see [page 305](#).

Resolve Radial Compression Column Segments and PrepPak Cartridges*

Particle Size: 5 µm		
	Dimension	P/N
C ₁₈ , 90 Å	8 × 100 mm	WAT0846241
Particle Size: 10 µm		
	5 × 100 mm	WAT084620
	8 × 100 mm	WAT084720
Particle Size: 10 µm		
C ₈ , 90 Å	5 × 100 mm	WAT085672
	8 × 100 mm	WAT085670

*Requires 8 × 100 Cartridge Holder, p/n: [WAT082887](#).

Delta-Pak Radial Compression Column Segments and PrepPak Cartridges*



Particle Size: 15 µm			
	Dimension	Type	P/N
Delta-Pak C ₁₈ , 100 Å	8 × 100 mm	Column	WAT025846
	25 × 10 mm	Guard, 2/pk	WAT038520
	25 × 100 mm	Column	WAT038506
	40 × 10 mm	Guard, 2/pk	WAT037842
	40 × 100 mm	Column	WAT037688
Delta-Pak C ₁₈ , 300 Å	8 × 100 mm	Column	WAT025845
	25 × 10 mm	Guard, 2/pk	WAT038522
	25 × 100 mm	Column	WAT038507
	40 × 10 mm	Guard, 2/pk	WAT037845
	40 × 100 mm	Column	WAT037692
Delta-Pak C ₄ , 100 Å	8 × 100 mm	Column	WAT025848
	25 × 10 mm	Guard, 2/pk	WAT038524
	25 × 100 mm	Column	WAT038508
	40 × 100 mm	Column	WAT037696
Delta-Pak C ₄ , 300 Å	25 × 100 mm	Column	WAT038509
	25 × 10 mm	Guard, 2/pk	WAT038526
	40 × 10 mm	Guard, 2/pk	WAT037851
	40 × 100 mm	Column	WAT037700

*All column segments and cartridges require the appropriate holder/module, see [page 305](#).

Particle Size: 5 µm		
	Dimension	P/N
Silica, 90 Å	8 × 100 mm	WAT084634
Particle Size: 10 µm		
	5 × 100 mm	WAT084630
	8 × 100 mm	WAT084730
Particle Size: 10 µm		
CN, 90 Å	5 × 100 mm	WAT084626
	8 × 100 mm	WAT084636

Nova-Pak and Prep Nova-Pak Radial Compression Column Segments and PrepPak Cartridges

Nova-Pak Radial-Pak Column Segments*		Particle Size: 4 µm
	Dimension	P/N
C ₁₈ , 60 Å	5 × 100 mm	WAT080100
	8 × 100 mm	WAT086342
C ₈ , 60 Å	5 × 100 mm	WAT035890
	8 × 100 mm	WAT035884
Phenyl, 60 Å	5 × 100 mm	WAT010657
	8 × 100 mm	WAT010658
CN HP, 60 Å	5 × 100 mm	WAT010224
	8 × 100 mm	WAT010223
Silica, 60 Å	5 × 100 mm	WAT010986
	8 × 100 mm	WAT010987

*Requires 8 × 100 mm Cartridge Holder, p/n: [WAT082887](#).

Prep Nova-Pak HR Radial-Pak Column Segments		Particle Size: 6 µm
C ₁₈ , 60 Å	8 × 100 mm	WAT025843
Silica, 60 Å	8 × 100 mm	WAT025844

Prep Nova-Pak HR PrepLC 25 mm Column Segments		Particle Size: 6 µm
C ₁₈ , 60 Å	25 × 100 mm	WAT038510
Silica, 60 Å	25 × 100 mm	WAT038511

Prep Nova-Pak HR 25 × 10 Guard-Pak Inserts, 2/pk		Particle Size: 6 µm
C ₁₈ , 60 Å	25 × 10 mm	WAT038528
Silica, 60 Å	25 × 10 mm	WAT038530

Prep Nova-Pak HR PrepLC 40 mm Column Segments		Particle Size: 6 µm
C ₁₈ , 60 Å	40 × 100 mm	WAT037704

Prep Nova-Pak HR 40 × 10 Guard-Pak Inserts, 2/pk		Particle Size: 6 µm
C ₁₈ , 60 Å	40 × 10 mm	WAT037854
Silica, 60 Å	40 × 10 mm	WAT037857