

MaxPeak Premier Columns featuring MaxPeak High Performance Surfaces

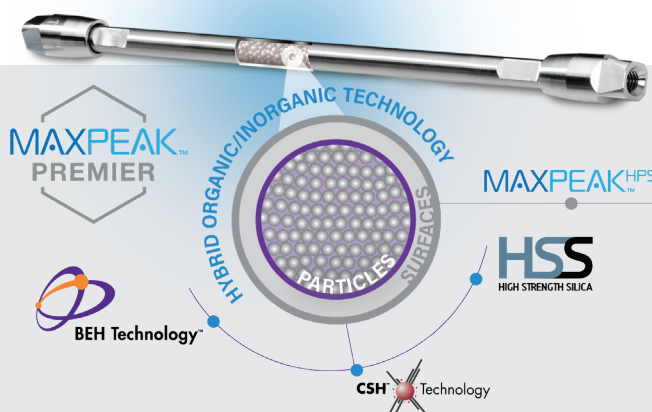
Good chromatography is as much about preventing the detrimental interactions you don't want, as it is creating the ones you do.

Waters™ MaxPeak™ Premier Columns enable scientists to have more control over their chromatographic separations with the inclusion of MaxPeak High Performance Surfaces (HPS). MaxPeak HPS are innovative technologies designed to increase analyte recovery, sensitivity, and reproducibility by minimizing analyte/surface interactions that can lead to sample losses. In MaxPeak Premier Columns, this technology mitigates the loss of metal sensitive analytes, such as lipids, organic acids, acidic peptides, oligonucleotides, or other compounds containing phosphate or carboxylate functionalities.

MaxPeak Premier Columns provide:

- Reduced column conditioning and passivation times
- Improved sensitivity and peak shapes
- Simpler mobile phases, without complex additives
- Time savings in method development
- Reduced risk and greater confidence in data and decision making

Available with particle technologies and quality manufacturing you can trust for small molecule, peptide, oligonucleotide, protein, and glycan separations in reversed-phase, HILIC, and SEC separation modes.



BEH Technology

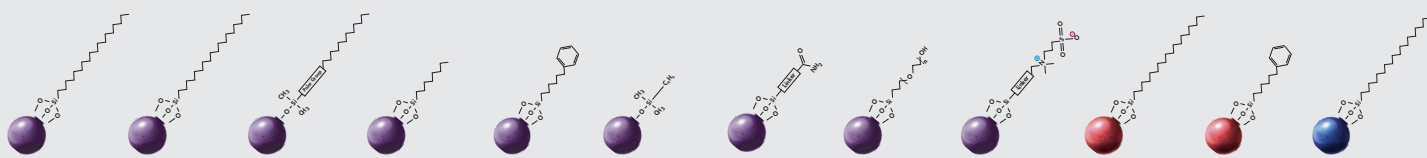
- Good universal column choice for a wide variety of compounds
- Exceptional peak shape for basic analytes at elevated pH
- Stable across a wide pH range
- Stable at high temperatures

HSS Technology

- Increased retentivity over hybrid materials
- Widest selectivity space with C₁₈, T₃, C₈, SB, Cyano, and PFP chemistries
- High strength silica (HSS) for mechanical stability

CSH Technology

- Excellent peak shape for basic compounds under acidic, low ionic strength conditions
- Excellent MS performance with formic acid as a mobile phase modifier
- Fast pH switching and column equilibration



	C ₁₈	C ₁₈ AX	Shield RP18	C ₈	Phenyl	C ₄	Amide	Z-HILIC	BEH-PEO	CSH C ₁₈	CSH Phenyl-Hexyl	HSS T ₃
Ligand density	3.1 μmol/m ²	1.6 μmol/m ²	3.3 μmol/m ²	3.2 μmol/m ²	3.0 μmol/m ²	2.4 μmol/m ²	7.5 μmol/m ²	3.0 μmol/m ²	1.5 μmol/m ²	2.3 μmol/m ²	2.3 μmol/m ²	1.6 μmol/m ²
Pore diameter	130 Å, 300 Å	95 Å	130 Å	130 Å	130 Å	300 Å	130 Å	95 Å	250 Å	130 Å	130 Å	100 Å
Carbon load	18%	17%	17%	13%	15%	8%	12%	17%	12%	15%	14%	11%
Endcap style	proprietary	proprietary	TMS	proprietary	proprietary	none	none	none	none	proprietary	proprietary	proprietary
pH range	1–12	2–10	2–11	1–12	1–12	2–10	2–11	2–10	2.5–8	1–11	1–11	2–8
Low pH temp. limit	80 °C	60 °C	50 °C	60 °C	80 °C	80 °C	90 °C	60 °C	60 °C	80 °C	80 °C	45 °C
High pH temp. limit	60 °C	60 °C	45 °C	60 °C	60 °C	50 °C	90 °C	60 °C	60 °C	45 °C	45 °C	45 °C
Surface area	185 m ² /g	270 m ² /g	185 m ² /g	185 m ² /g	185 m ² /g	90 m ² /g	185 m ² /g	270 m ² /g	174 m ² /g	185 m ² /g	185 m ² /g	230 m ² /g
USP classification	L1	L78	L1	L7	L11	L26	L68	L122	L33	L1	L11	L1

MAXPEAK PREMIER COLUMNS FOR BIOSEPARATIONS

PEPTIDE ANALYSIS

ACQUITY Premier BEH C₁₈ and XBridge™ Premier BEH C₁₈ Particle Technology

- Outstanding peak capacity and superior peak shape in TFA, DFA, and FA
- Two pore sizes (130 Å and 300 Å) to provide different separation selectivities for small and large peptides

ACQUITY Premier CSH C₁₈ and XSelect™ CSH C₁₈ Premier Particle Technology

- Accepts greater peptide mass loads for improved low-level detection of impurities
- Excellent performance with TFA for optical applications, FA for MS, and DFA for dual detection

ACQUITY Premier HSS T3 and XSelect HSS T3 Premier Particle Technology

- Ideal choice for the separation of small, polar peptides with greater retentivity than hybrid (BEH, CSH) particle technology columns

PROTEIN AGGREGATE, MONOMER, AND FRAGMENT ANALYSIS

ACQUITY Premier Protein SEC and XBridge Premier Protein SEC 250 Å, 1.7 µm and 2.5 µm Particle Technology

- Efficiently separate protein size variants from simple to complex biotherapeutics (e.g., mAb, ADCs, bi-specifics, fusion proteins) that range from approximately 10,000 to 650,000 Daltons in a single SEC analysis for reliable component quantitation
- Minimize method development by using a single SEC buffer formulation without the need for co-solvents/additives for a variety of samples without sacrificing resolution
- Reduce the cost per analysis using MaxPeak Premier SEC 250 Å Guards that will not degrade the quality of challenging applications

The measurement of therapeutic biological molecules requires standards and reagents designed specifically to ensure that your LC and LC-MS systems are fit-for-purpose. To meet this requirement, Waters developed a portfolio of Life Science consumables. Using high-quality standards, reagents, and sample preparation products specifically designed for critical life science applications will help drive successful results and add an additional layer of assurance to your analyses.

- Choose from a range of specially designed products, specifically the NIST-line of standards
- Achieve consistent, repeatable results with QC-tested standards and application kits
- Add confidence and assurance to your analyses with IonHance™ mobile phase additives

waters.com/biostds

OLIGONUCLEOTIDE ANALYSIS

ACQUITY Premier BEH C₁₈ and XBridge Premier BEH C₁₈ Particle Technology

- Outstanding peak capacity and superior peak shape and lifetime in HFIP, HAA, and TEA
- Two pore sizes (130 Å and 300 Å) to provide different separation selectivities

GLYCAN ANALYSIS

ACQUITY Premier BEH Amide and XBridge Premier BEH Amide Particle Technology

- Best suited for the analysis of released, N-labeled glycans using pre-column labeling with 2-AB, 2-AA, or Waters innovative and enabling *RapiFluor-MS™* reagent
- Two pore sizes (130 Å and 300 Å) to provide different selectivities from released glycans to large glycans, glycopeptides, and glycoproteins

ACQUITY Premier BEH C₁₈ AX and XBridge Premier BEH C₁₈ AX Particle Technology

- Charge-based separation of neutral-to-highly acidic released N-glycans
- Improved resolution and recovery for sialylated and phosphorylated glycans

INTACT AND SUBUNIT PROTEIN ANALYSIS

ACQUITY Premier Protein BEH C₄ and XBridge Premier Protein BEH C₄, 300 Å, 1.7 µm and 2.5 µm Particle Technology

- Separates proteins of various sizes, hydrophobicities, and isoelectric points
- Tolerates extreme pH and temperature, and provides minimal secondary interactions
- Improves sensitivity for phosphorylated proteins and low-level intact and subunit mAb analyses



Ordering Information

ACQUITY™ Premier Columns

	2.1 x 50 mm		2.1 x 100 mm		2.1 x 150 mm	
	Column	VanGuard FIT Column	Column	VanGuard FIT Column	Column	VanGuard FIT Column
BEH C ₁₈ , 130 Å, 1.7 µm	186009452	186009455	186009453	186009457	186009454	186009458
BEH Shield RP18, 130 Å, 1.7 µm	186009497	186009500	186009498	186009501	186009499	186009502
BEH C ₈ , 130 Å, 1.7 µm	186010356	186010359	186010357	186010360	186010358	186010361
BEH Phenyl, 130 Å, 1.7 µm	186010336	186010338	186010337	186010339	186010294	186010340
BEH Amide, 130 Å, 1.7 µm	186009504	186009507	186009505	186009508	186009506	186009509
CSH C ₁₈ , 130 Å, 1.7 µm	186009460	186009463	186009461	186009464	186009462	186009465
CSH Phenyl Hexyl, 130 Å, 1.7 µm	186009474	186009477	186009475	186009478	186009476	186009479
HSS T3, 100 Å, 1.8 µm	186009467	186009470	186009468	186009471	186009469	186009472

VanGuard FIT Cartridges	BEH C ₁₈ ^{VR} , 130 Å, 1.7 µm	BEH Shield RP18, 130 Å, 1.7 µm	BEH C ₈ ^{VR} , 130 Å, 1.7 µm	BEH Phenyl, 130 Å, 1.7 µm	BEH Amide, 130 Å, 1.7 µm	CSH C ₁₈ ^{VR} , 130 Å, 1.7 µm	CSH Phenyl Hexyl, 130 Å, 1.7 µm	HSS T3, 100 Å, 1.8 µm
2.1 x 5 mm	186009459	186009503	186010362	186010341	186009510	186009466	186009480	186009473

MaxPeak Premier 1.7 µm Columns for Bioseparations

	2.1 x 50 mm	2.1 x 100 mm	2.1 x 150 mm
Glycan BEH C ₁₈ AX, 95 Å, 1.7 µm	186009758 (Column)	186009759 (Column)	186009760 (Column)
	186009970 (VanGuard FIT Column)	186009971 (VanGuard FIT Column)	186009972 (VanGuard FIT Column)
Glycan BEH Amide, 130 Å, 1.7 µm	186009522 (Column)	186009523 (Column)	186009524 (Column)
	186009974 (VanGuard FIT Column)	186009975 (VanGuard FIT Column)	186009976 (VanGuard FIT Column)
Glycoprotein BEH Amide, 300 Å, 1.7 µm	186009547	186009548	186009549
Oligonucleotide BEH C ₁₈ , 130 Å, 1.7 µm	186009484	186009485	186009486
Peptide BEH C ₁₈ , 130 Å, 1.7 µm	186009481	186009482	186009483
Peptide BEH C ₁₈ , 300 Å, 1.7 µm	186009493*	186009494*	186009495*
Peptide CSH C ₁₈ , 130 Å, 1.7 µm	186009487	186009488	186009489
Peptide HSS T3, 100 Å, 1.8 µm	186009490	186009491	186009492
Protein BEH C ₄ , 300 Å, 1.7 µm	176005107** (Column and Standard)	176005108** (Column and Standard)	176005109** (Column and Standard)

*Peptide BEH 300 Å columns may also be used for oligonucleotide analyses requiring wider pore sizes.

**MassPREP Protein Mix Standard p/n: 186004900.

	4.6 x 150 mm	4.6 x 300 mm
Protein SEC 250 Å, 1.7 µm	176005071*** (Column and Standard)	176005072*** (Column and Standard)
	176004794*** (Column, Standard, and Guard)	176004795*** (Column, Standard, and Guard)

***mAb Size Variant Standard p/n: 186009429; MaxPeak Premier Protein SEC 250 Å, 2.5 µm, 4.6 x 30 mm Guard p/n: 186009969.

VanGuard FIT Cartridges	Glycan BEH C ₁₈ AX, 95 Å, 1.7 µm	Glycan BEH Amide, 130 Å, 1.7 µm
2.1 x 5 mm	186009973	186009977

MaxPeak Premier 2.5 µm Columns

	2.1 x 50 mm		2.1 x 100 mm		2.1 x 150 mm	
	Column	VanGuard FIT Column	Column	VanGuard FIT Column	Column	VanGuard FIT Column
XBridge Premier BEH C ₁₈ , 130 Å, 2.5 µm	186009827	186009843	186009828	186009844	186009829	186009845
XBridge Premier BEH Amide, 130 Å, 2.5 µm	186009928	186009931	186009929	186009932	186009930	186009933
XBridge Premier BEH Shield RP18, 130 Å, 2.5 µm	186009914	186009917	186009915	186009918	186009916	186009919
XBridge Premier BEH C ₈ , 130 Å, 2.5 µm	186010363	186010366	186010364	186010367	186010365	186010368
XBridge Premier BEH Phenyl, 130 Å, 2.5 µm	186010342	186010345	186010343	186010346	186010344	186010347
XSelect Premier CSH C ₁₈ , 130 Å, 2.5 µm	186009865	186009868	186009866	186009869	186009867	186009870
XSelect Premier CSH Phenyl Hexyl, 130 Å, 2.5 µm	186009879	186009882	186009880	186009883	186009881	186009884
XSelect Premier HSS T3, 100 Å, 2.5 µm	186009830	186009854	186009831	186009855	186009832	186009856

	4.6 x 50 mm		4.6 x 100 mm		4.6 x 150 mm	
	Column	VanGuard FIT Column	Column	VanGuard FIT Column	Column	VanGuard FIT Column
XBridge Premier BEH C ₁₈ , 130 Å, 2.5 µm	186009847	186009850	186009848	186009851	186009849	186009852
XBridge Premier BEH Amide, 130 Å, 2.5 µm	186009935	186009938	186009936	186009939	186009937	186009940
XBridge Premier BEH Shield RP18, 130 Å, 2.5 µm	186009921	186009924	186009922	186009925	186009923	186009926
XBridge Premier BEH C ₈ , 130 Å, 2.5 µm	186010370	186010373	186010371	186010374	186010372	186010375
XBridge Premier BEH Phenyl, 130 Å, 2.5 µm	186010349	186010352	186010350	186010353	186010351	186010354
XSelect Premier CSH C ₁₈ , 130 Å, 2.5 µm	186009872	186009875	186009873	186009876	186009874	186009877
XSelect Premier CSH Phenyl Hexyl, 130 Å, 2.5 µm	186009886	186009889	186009887	186009890	186009888	186009891
XSelect Premier HSS T3, 100 Å, 2.5 µm	186009858	186009861	186009859	186009862	186009860	186009863

VanGuard FIT Cartridges	XBridge BEH C ₁₈ , 130 Å, 2.5 µm	XBridge BEH Amide, 130 Å, 2.5 µm	XBridge BEH Shield RP18, 130 Å, 2.5 µm	XBridge BEH C ₈ , 130 Å, 2.5 µm	XBridge BEH Phenyl, 130 Å, 2.5 µm	XSelect CSH C ₁₈ , 130 Å, 2.5 µm	XSelect CSH Phenyl Hexyl, 130 Å, 2.5 µm	XSelect HSS T3, 100 Å, 2.5 µm
2.1 x 5 mm	186009842	186009927	186009913	186010369	186010348	186009864	186009878	186009853
3.9 x 5 mm	186009846	186009934	186009920	186010376	186010355	186009871	186009885	186009857



To protect your investment, select columns are available with VanGuard™ FIT integrated guard column technology. With a FIT column design created specifically to integrate a guard column, separation efficiency is maintained, along with column lifetime.



MaxPeak Premier 2.5 µm Columns for Bioseparations

	2.1 x 50 mm	2.1 x 100 mm	2.1 x 150 mm
XBridge Premier Glycan BEH C ₁₈ AX, 95 Å, 2.5 µm	186009947	186009948	186009949
XBridge Premier Glycan BEH Amide, 130 Å, 2.5 µm	186009941	186009942	186009943
XBridge Premier Oligonucleotide BEH C ₁₈ , 130 Å, 2.5 µm	186009836	186009837	186009838
XBridge Premier Peptide BEH C ₁₈ , 130 Å, 2.5 µm	186009733	186009734	186009835
XBridge Premier Peptide BEH C ₁₈ , 300 Å, 2.5 µm	186009892*	186009893*	186009894*
XBridge Premier Protein BEH C ₄ , 300 Å, 2.5 µm	176005110** (Column and Standard)	176005111** (Column and Standard)	176005112** (Column and Standard)
XSelect Premier Peptide HSS T3, 100 Å, 2.5 µm	186009839	186009840	186009841

	4.6 x 50 mm	4.6 x 100 mm	4.6 x 150 mm
XBridge Premier Glycan BEH C ₁₈ AX, 95 Å, 2.5 µm	186009950	186009951	186009952
XBridge Premier Glycan BEH Amide, 130 Å, 2.5 µm	186009944	186009945	186009946
XBridge Premier Oligonucleotide BEH C ₁₈ , 130 Å, 2.5 µm	186009901	186009902	186009903
XBridge Premier Peptide BEH C ₁₈ , 130 Å, 2.5 µm	186009898	186009899	186009900
XBridge Premier Peptide BEH C ₁₈ , 300 Å, 2.5 µm	186009895*	186009896*	186009897*
XBridge Premier Protein BEH C ₄ , 300 Å, 2.5 µm	176005113** (Column and Standard)	176005114** (Column and Standard)	176005115** (Column and Standard)
XSelect Premier Peptide HSS T3, 100 Å, 2.5 µm	186009910	186009911	186009912

*XBridge Premier Peptide BEH 300 Å Columns may also be used for oligonucleotide analyses requiring wider pore sizes.

**MassPREP Protein Mix Standard p/n: 186004900.

	4.6 x 150 mm	4.6 x 300 mm	7.8 x 150 mm	7.8 x 300 mm
XBridge Premier Protein SEC 250 Å, 2.5 µm	176005067*** (Column and Standard)	176005068*** (Column and Standard)	176005069*** (Column and Standard)	176005070*** (Column and Standard)
	176004790*** (Column, Standard, and Guard)	176004791*** (Column, Standard, and Guard)	176004792*** (Column, Standard, and Guard)	176004793*** (Column, Standard, and Guard)

***mAb Size Variant Standard p/n: 186009429; MaxPeak Premier Protein SEC 250 Å, 2.5 µm, 4.6 x 300 mm Guard p/n: 186009969.

Atlantis™ Premier BEH C₁₈ AX, 95 Å Columns

	1.7 µm		2.5 µm		5 µm	
	Column	VanGuard FIT Column	Column	VanGuard FIT Column	Column	VanGuard FIT Column
2.1 x 30 mm	186009365	186009357	186009389	186009374	-	-
2.1 x 50 mm	186009366	186009358	186009390	186009375	186009407	186009404
2.1 x 75 mm	186009367	186009359	186009391	186009376	-	-
2.1 x 100 mm	186009368	186009360	186009392	186009378	186009408	186009405
2.1 x 150 mm	186009369	186009361	186009393	186009379	186009409	186009406
4.6 x 50 mm	-	-	186009426	186009383	186009427	186009410
4.6 x 100 mm	-	-	186009397	186009384	186009416	186009411
4.6 x 150 mm	-	-	186009398	186009385	186009417	186009412
4.6 x 250 mm	-	-	-	-	186009418	186009413

VanGuard FIT Cartridges	1.7 µm	2.5 µm	5 µm
2.1 x 5 mm	186009373	186009402	186009421
3.9 x 5 mm	-	186009403	186009422

Atlantis Premier BEH Z-HILIC, 95 Å Columns

	1.7 µm		2.5 µm		5 µm	
	Column	VanGuard FIT Column	Column	VanGuard FIT Column	Column	VanGuard FIT Column
2.1 x 50 mm	186009978	186009981	186009985	186009988	186009999	186010002
2.1 x 100 mm	186009979	186009982	186009986	186009989	186010000	186010003
2.1 x 150 mm	186009980	186009983	186009987	186009990	186010001	186010004
4.6 x 50 mm	-	-	186009992	186009995	186010006	186010010
4.6 x 100 mm	-	-	186009993	186009996	186010007	186010011
4.6 x 150 mm	-	-	186009994	186009997	186010008	186010012
4.6 x 250 mm	-	-	-	-	186010009	186010013

VanGuard FIT Cartridges	1.7 µm	2.5 µm	5 µm
2.1 x 5 mm	186009984	186009991	186010005
3.9 x 5 mm	-	186009998	186010014

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