VisionHT™ Columns

One Platform for UHPLC, HPLC and PREP

- Easy method transfer between UHPLC, HPLC and preparative chromatography
- Broad selectivity range—unique complementary phase chemistries
- Maximize speed and resolution with sub 2µm on any LC system

Separate complex samples with excellent resolution with VisionHT™ high performance columns. They are available with 1.5, 3, 5 and 10µm particle sizes and six different phase selectivities spanning the full polarity spectrum. The same base silica and bonding chemistries are used across all particle sizes therefore offering simple method transfer between UHPLC, HPLC and preparative systems.

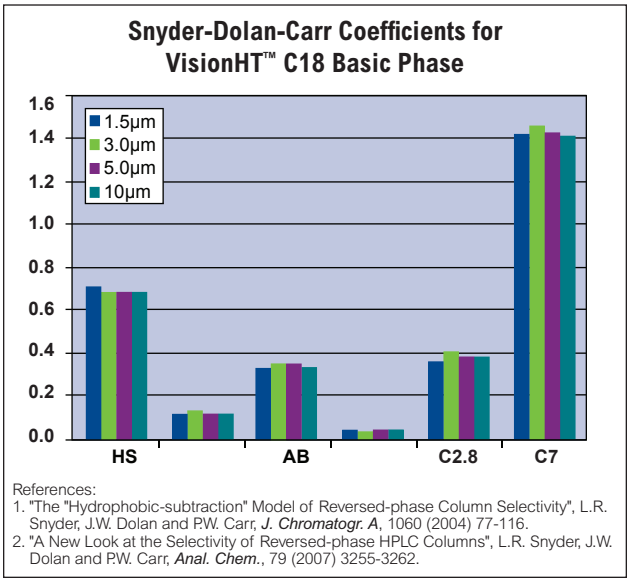
VisionHT™ Phase Specifications

Phase	Pore Size (Å)	Surface Area (m^2/g)	Carbon Load (%)	Endcapped	Chromatographic Properties	Application/ Benefit	USP L-code
C18 HighLoad	120	220	11	Yes	Ultra-high purity silica, fully bonded.	General purpose for broad range compounds, classic selectivity, high-capacity for hydrophobic compounds.	L1
C18 Basic	120	220	5	Proprietary	Ultra-high purity silica. Controlled silica surface exposure gives dual mode separation with polar and non-polar analytes.	Alternate reversed-phase selectivity. High polar retention especially with compounds having two or more polar groups. Excellent sensitivity and peak shape for basic compounds, without the need for acidified mobile phases.	L1
C18 Classic	100	200	6	Yes	Lower carbon load. Slight silica exposure.	Reversed-phase separations with reduced bonding optimized for speed. Some additional polar retention.	L1
C18 Polar	100	200	5	No	High silica exposure, low carbon load. Uniform coverage of inert vicinal silanols.	Unique polar selectivity. Low carbon load gives fastest reversed-phase elution times while retaining polar compounds longer.	L1
HILIC	120	220	—	No	Polar phase with shorter equilibration times. Shipped in ACN/Water.	Peak reversal compared to reversed-phase. Ideal for very polar compounds with high organic mobile phases for improved sensitivity by MS.	L3
Silica	120	220	—	No	Traditional normal phase for use in 100% organic mobile phases.	For isomeric separation of non-aqueous compatible compounds by absorption chromatography.	L3

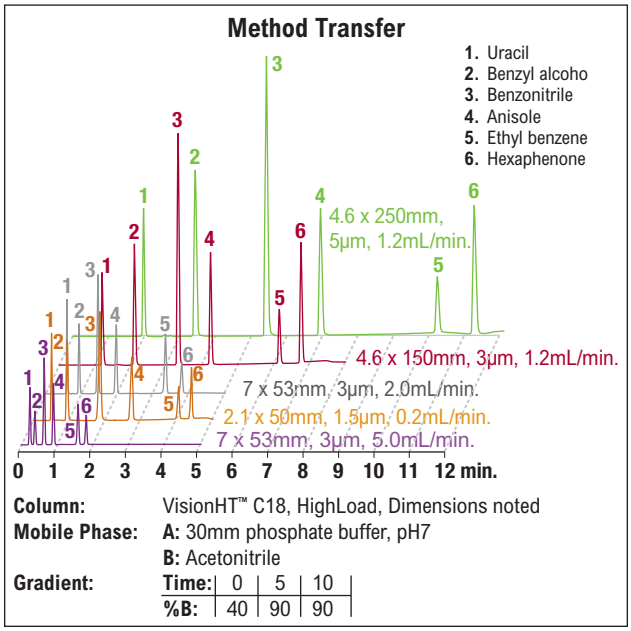
Simple Method Transfer

Optimizing and transferring methods between HPLC, UHPLC and preparative systems is not a simple and intuitive task. However, when the same base silica and bonding is available in sub-2, 3, 5, and 10µm particles and in a variety of column formats, methods can be more easily transferred across system types and between laboratories, improving efficiency and productivity.

Identical Selectivity Across All Particle Sizes



References:
1. "The "Hydrophobic-subtraction" Model of Reversed-phase Column Selectivity", L.R. Snyder, J.W. Dolan and P.W. Carr, *J. Chromatogr. A*, 1060 (2004) 77-116.
2. "A New Look at the Selectivity of Reversed-phase HPLC Columns", L.R. Snyder, J.W. Dolan and P.W. Carr, *Anal. Chem.*, 79 (2007) 3255-3262.

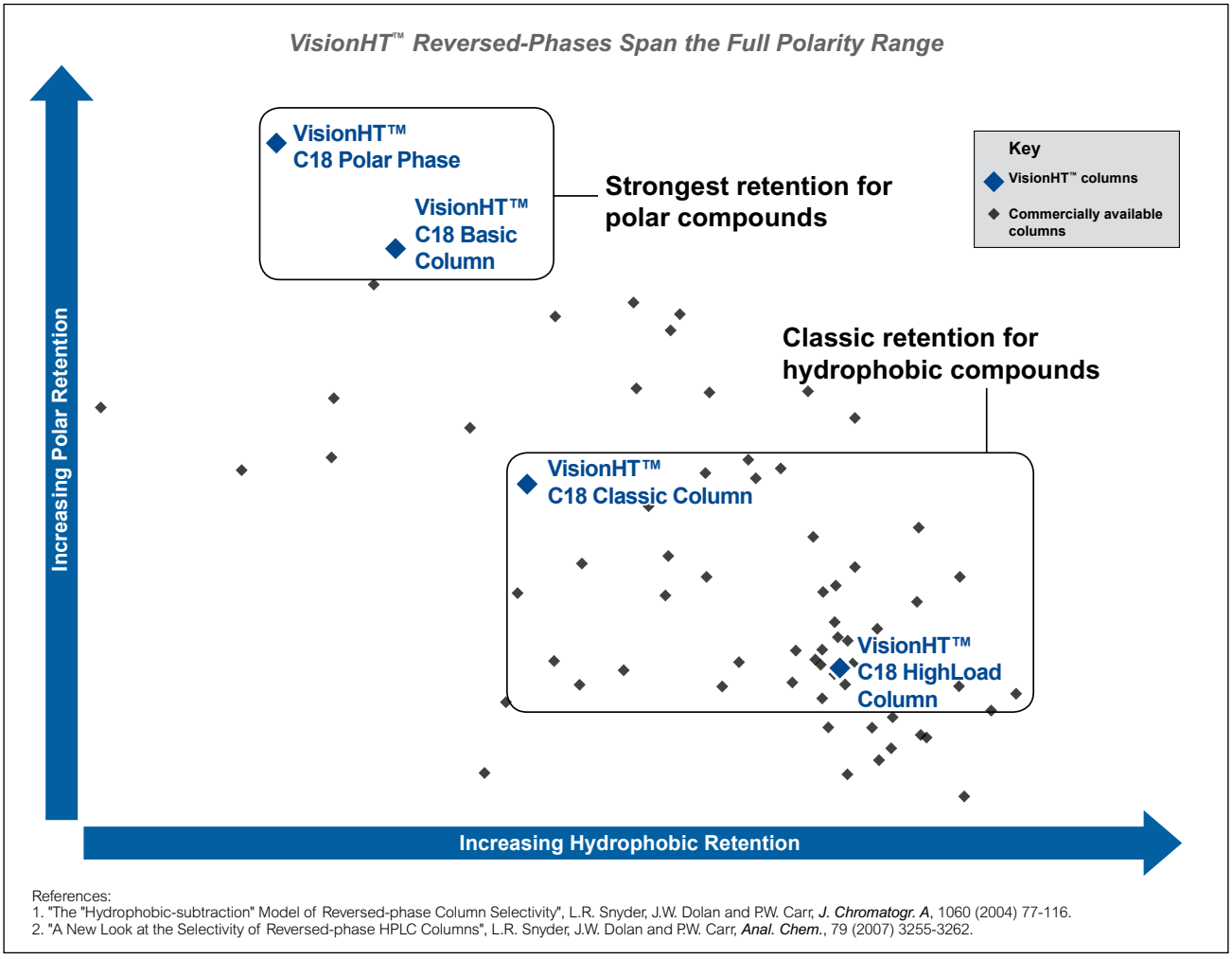


Column: VisionHT™ C18, HighLoad, Dimensions noted
Mobile Phase: **A:** 30mm phosphate buffer, pH7
B: Acetonitrile
Gradient:

Time:	0	5	10
%B:	40	90	90

Broad Selectivity Range

Four reversed-phase column chemistries offer complementary selectivity. The unique VisionHT™ C18 Polar and Basic phases retain polar compounds while the C18 HighLoad has a more traditional reversed-phase selectivity. Using phases with orthogonal selectivity gives confidence that if one phase does not produce the separation the other will.



References:
1. "The "Hydrophobic-subtraction" Model of Reversed-phase Column Selectivity", L.R. Snyder, J.W. Dolan and P.W. Carr, *J. Chromatogr. A*, 1060 (2004) 77-116.
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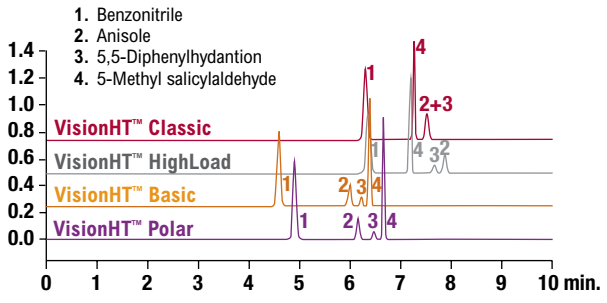
Different Selectivities of VisionHT™ Phases, Neutral Compounds

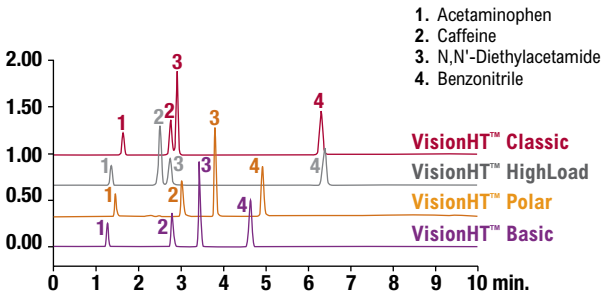


Column: Various VisionHT™ Phases, 1.5µm, 2.0 x 50mm
Mobile Phase: **A:** ACN **B:** Water
Gradient:

Time:	10
%B:	90

Flow Rate: 0.2mL/min
Detector: UV 220nm

Different Selectivities of VisionHT™ Phases, Polar Compounds



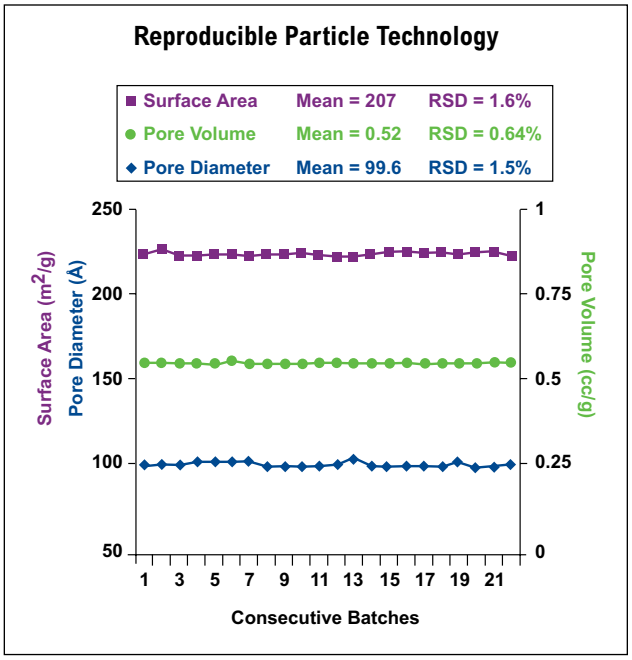
Column: Various VisionHT™ Phases, 1.5µm, 2.0 x 50mm
Mobile Phase: **A:** ACN **B:** Water
Gradient:

Time:	10
%B:	90

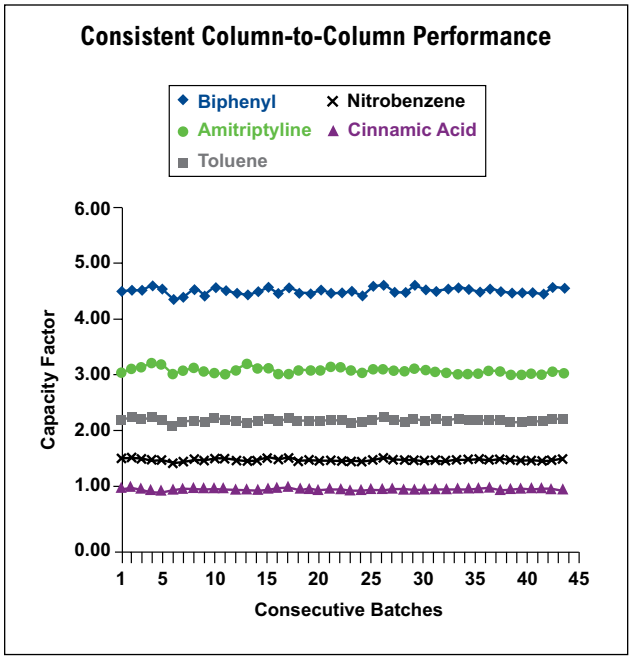
Flow Rate: 0.2mL/min
Detector: UV 220nm

Consistent and Reliable Performance

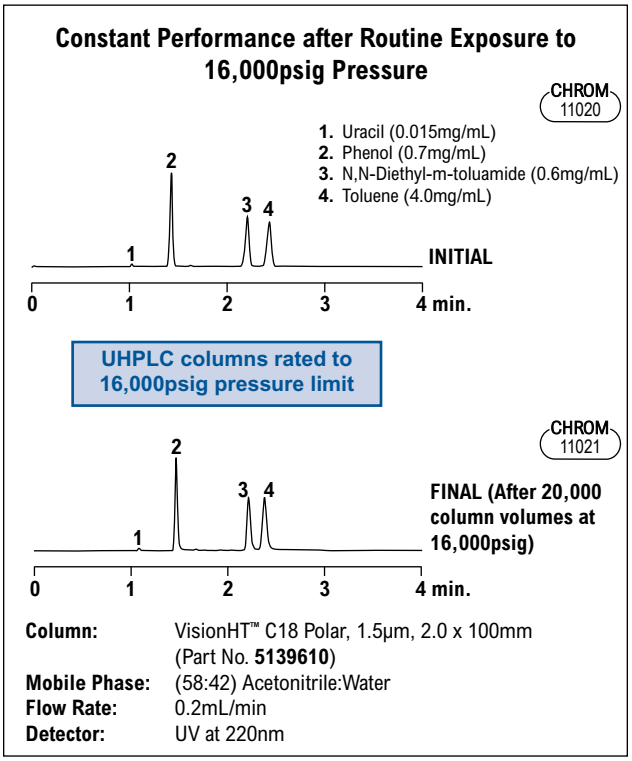
Ultra-high mechanical strength silica and robust bonding chemistry minimize variations in capacity and selectivity. Media consistency combined with reproducible column packing methods delivers reliable performance and long column lifetime.



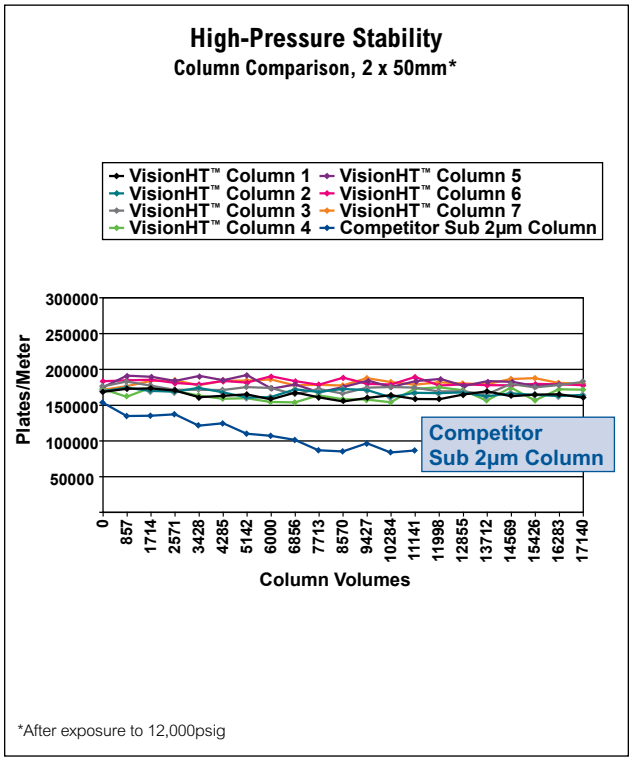
VisionHT™ silica's surface area, pore volume, and pore diameter are highly reproducible.



VisionHT™ media and advance packing methods produce columns with highly consistent capacity and selectivity.



Before and after chromatograms show a consistent level of performance after exposure to 16,000psig pressures for 20,000 column volumes.



Competitive columns lose performance over time under high-pressure conditions while VisionHT™ columns remain stable.

Method Development Ultra MD® Kits — Experience Broad Selectivity Range of the VisionHT™ Phases

Ultra MD® kits include 4 phases with orthogonal selectivity to enable fast and efficient method development for the separation of very polar to very hydrophobic compounds.

VisionHT™ Column Ultra MD® Kits

Description	Phases	Dimensions	Part No.
Ultra MD® Kit 1	C18 Classic, C18 Polar, C18 HighLoad, C18 Basic	2 x 100mm	**5142692**
Ultra MD® Kit 2	C18 Classic, C18 Polar, C18 HighLoad, C18 Basic	2 x 50mm	**5142693**
Ultra MD® Kit 3	C18 Classic, C18 Polar, C18 HighLoad, C18 Basic	1 x 50mm	**5142691**

VisionHT™ Guard Columns — Protect Your Column to Minimize Downtime and Reduce Cost

Couple the zero-dead volume integral guard directly to any VisionHT™ column, with no loss in efficiency.

VisionHT™ Columns

Format		i.d. (mm)	Length (mm)	Particle Size (µm)	C18 HighLoad Part No.	C18 Basic Part No.	C18 Classic Part No.	C18 Polar Part No.	HILIC Part No.	Silica Part No.
UHPLC	U	1	20	1.5	**5142540**	**5141902**	**5139555**	**5139556**	**5141910**	—
		1	30	1.5	**5142541**	**5141903**	**5139559**	**5139601**	**5141912**	—
		1	50	1.5	**5142542**	**5141904**	**5139603**	**5139604**	**5141913**	**5141921**
		1	100	1.5	**5142543**	**5141905**	**5139607**	**5139608**	**5141914**	**5141923**
		2	20	1.5	**5142544**	**5141906**	**5139557**	**5139558**	**5141916**	—
		2	30	1.5	**5142545**	**5141907**	**5139600**	**5139602**	**5141917**	—
		2	50	1.5	**5142546**	**5141908**	**5139605**	**5139606**	**5141919**	**5141922**
		2	100	1.5	**5142547**	**5141909**	**5139609**	**5139610**	**5141920**	**5141924**
		2	150	1.5	**5148861**	**5148862**	**5148863**	**5148864**	**5149010**	—
Expedite™	E	2.1	20	1.5	**5151986**	**5152009**	**5152043**	**5152077**	—	—
		4.6	20	1.5	**5151985**	**5152008**	**5152042**	**5152076**	—	—
Microbore	M	2.1	50	3	**5151981**	**5152004**	**5151948**	**5152072**	**5152091**	—
		2.1	100	3	**5151980**	**5152003**	**5151947**	**5152071**	—	—
		2.1	150	3	**5151979**	**5152002**	**5151946**	**5152070**	**5152090**	**5152116**
Solvent Reducer	SR	3	100	3	**5151978**	**5152001**	**5152025**	**5152069**	—	—
		3	150	3	**5151977**	**5152000**	**5152024**	**5152068**	—	—
		3	250	3	**5151975**	**5151998**	**5152022**	**5152066**	**5152089**	**5152115**
		3	150	5	**5151976**	**5151999**	**5152023**	**5152067**	—	—
		3	250	5	**5151974**	**5151997**	**5152021**	**5152065**	**5152088**	**5152114**
Analytical	A	4.6	50	3	**5151973**	**5151996**	**5152020**	**5152064**	**5152087**	**5152113**
		4.6	100	3	**5151972**	**5151995**	**5152019**	**5152063**	—	—
		4.6	150	3	**5151971**	**5151994**	**5152018**	**5152062**	**5152086**	**5152112**
		4.6	150	5	**5151970**	**5151993**	**5152017**	**5152061**	**5152085**	**5152111**
		4.6	250	5	**5151920**	**5151921**	**5152016**	**5152060**	**5152084**	—
Rocket™	R	7	33	1.5	**5151984**	**5152007**	**5152041**	**5152075**	**5152110**	—
		7	53	3	**5151983**	**5152006**	**5152040**	**5152074**	**5152093**	—
		7	53	1.5	**5151982**	**5152005**	**5151949**	**5152073**	**5152092**	—
Preparative	P	10	150	5	**5151987**	**5152010**	**5152044**	**5152078**	—	—
		10	250	5	**5151988**	**5152011**	**5152045**	**5152079**	—	—
		22	150	5	**5151989**	**5152012**	**5152046**	**5152080**	—	—
		22	250	5	**5151990**	**5152013**	**5152047**	**5152081**	—	—
		22	250	10	**5151991**	**5152014**	**5152048**	**5152082**	—	—
Capillary Guard*	G	1	5	1.5	**5142549**	**5141953**	**5141950**	**5141951**	**5141955**	**5141957**
		2	5	1.5	**5142548**	**5141952**	**5141594**	**5141595**	**5141954**	**5141956**
All-Guard™**	G	2.1	7.5	3	**5155906**	**5155908**	**5155907**	**5155909**	**5155911**	**5155912**
		4.6	7.5	5	**5155900**	**5155902**	**5155901**	**5155903**	**5155904**	**5155905**

*Requires Capillary holder, Part No. **3118351**.

Requires All-Guard™ Holder, Part No. **80101.

more info

For detailed information on column formats, see page 3.

technical assistance

Contact Tech Support: Email: discoverysciences@grace.com
Online: www.discoverysciences.com