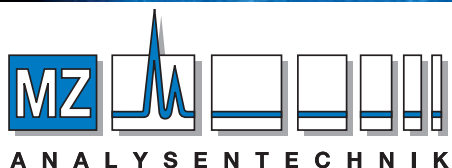
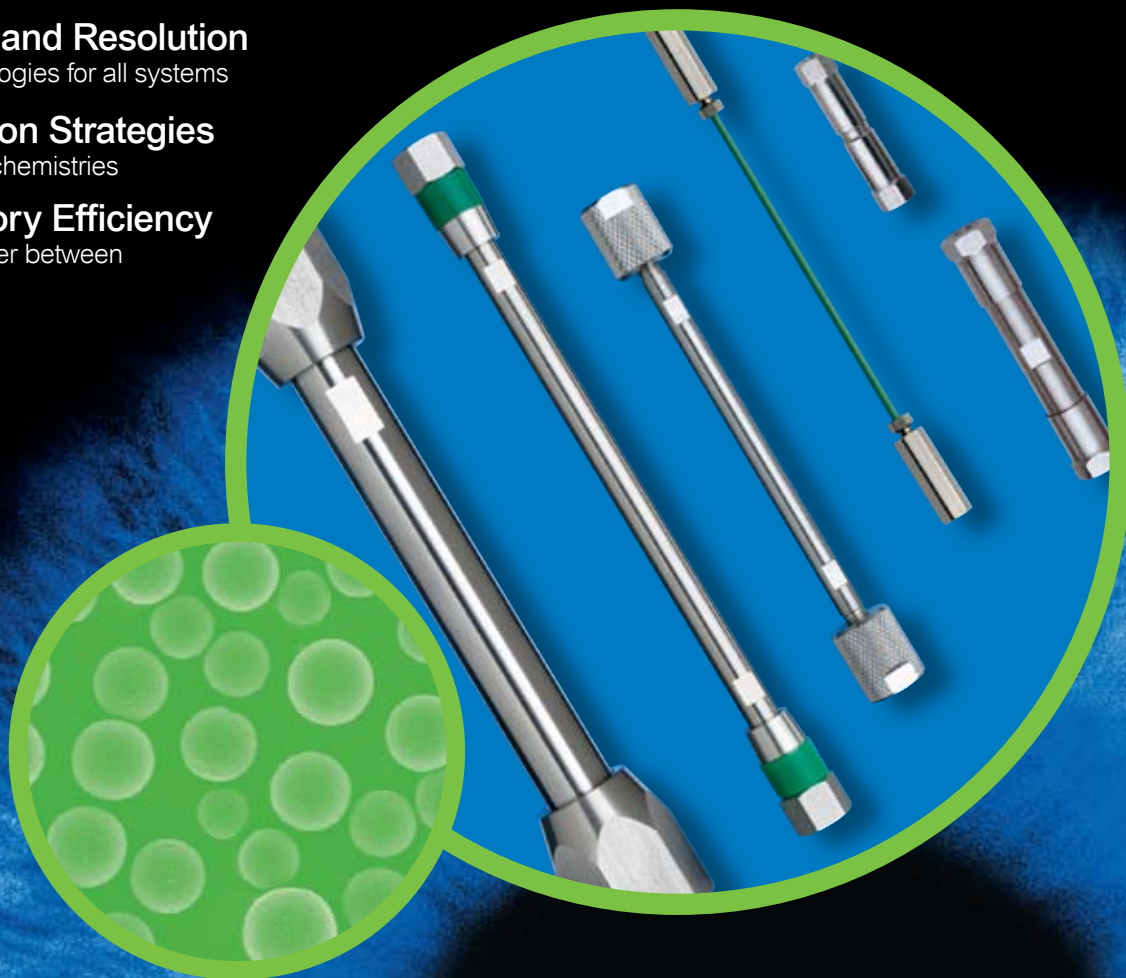


VisionHT™ Media Platform

Different systems, Different applications, One media platform.

See a Path to Greater Productivity

- **Maximize Speed and Resolution**
High-throughput technologies for all systems
- **Simplify Separation Strategies**
Complementary phase chemistries
- **Improve Laboratory Efficiency**
Seamless method transfer between
UHPLC, HPLC, and Prep



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The Path to Greater Productivity

Greater demands are placed on today's scientists and lab managers to be more productive with time and resources. Faster separations accelerate output from a single workstation, but there is significantly more to gain by standardizing on a single media platform that unifies all your instruments. Increase laboratory productivity and streamline R&D processes to help you achieve your ultimate goal — getting products to market faster.

Solve the Modern Laboratory Dilemma

To address the fundamental shift from HPLC to fast LC, Grace Davison Discovery Sciences combined its silica knowledge and sub-2µm expertise to create a particle technology that delivers performance and speed on all of your instruments.

The VisionHT™ media platform has the mechanical strength required for ultra-high pressure use and the flexibility to expand seamlessly to larger particle sizes and multiple phase chemistries. With a variety of formats to choose from, method transfer between UHPLC, traditional, and preparative systems is simple and quick. Gain productivity from within your lab and throughout the process by standardizing on one consistent and reliable media platform.



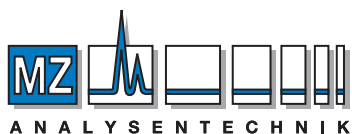
Grace Particle Technology

Identical base silica and bonding for 1.5, 3, 5, and 10µm particles.

Grace Product Ownership

Grace has been making silica for over a century and producing chromatography innovations for 3 decades. From silica production to final column packing, strict process-control standards provide reproducible and reliable product. Have confidence your separations will be done right — now and for years to come.

- Certified in ISO 9001, 14000 and 13485 procedures
- FDA 21 CFR 820 for medical devices
- Full traceability from base silica to final product
- Extensive process control for batch-to-batch and column-to-column reproducibility
- Experienced local technical support and a global sales team



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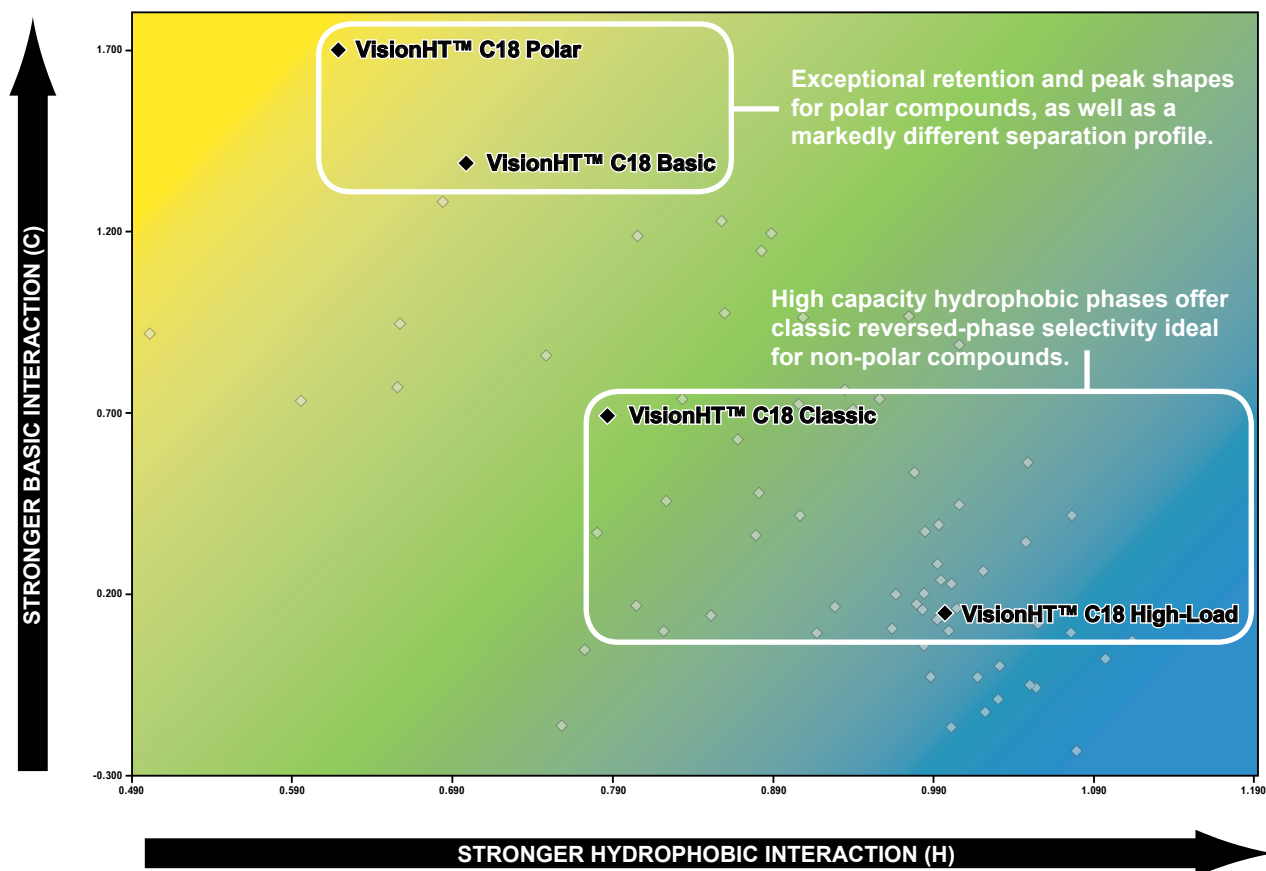
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www.mz-at.de

Complementary Phase Selectivities Simplify Separations

Often in an effort to improve sample throughput, a lab will run a “standard method” with a single media, but speed means nothing if you cannot achieve the separation. VisionHT™ media platform has six unique column chemistries, from the classical high-load C18 to a highly polar-retentive chemistry. Using phases with complementary selectivity gives confidence that if one phase does not produce the separation, the other will. Resolution — every time.

VisionHT™ Reversed-Phase Media Spans the Full Polarity Spectrum








VisionHT™ Phase Specifications									
Packing	Particle Size	Carbon Load	Pore Size	Surface Area	Endcapped	pH Range*	Feature	Recommended Usage	
C18 High-Load	1.5, 3, 5, 10µm	11%	120Å	220m ² /g	Yes	1–10	Ultra-high purity silica. Fully bonded.	General purpose for broad range of compounds. Classic selectivity, high-capacity for hydrophobic compounds.	
C18 Basic	1.5, 3, 5, 10µm	5%	120Å	220m ² /g	Proprietary	1–10	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 2 or more polar groups. Excellent sensitivity and peak shape for basic compounds. 100% aqueous compatible.	
C18 Classic	1.5, 3, 5, 10µm	6%	100Å	200m ² /g	Yes	1–10	Lower carbon load. Slight silica exposure.	Reversed-phase separations with reduced bonding optimized for speed. Some additional polar retention.	
C18 Polar	1.5, 3, 5, 10µm	5%	100Å	200m ² /g	No	1–10	High silica exposure. Low carbon load. Uniform coverage of inert vicinal silanols.	Unique polar selectivity. Low carbon load gives fast reversed-phase elution times while retaining polar compounds longer. 100% aqueous compatible.	
HILIC	1.5, 3, 5, 10µm	NA	120Å	220m ² /g	No	2–8	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.	
Silica	1.5, 3, 5, 10µm	NA	120Å	220m ² /g	No	2–8	Traditional normal-phase for use in 100% organic mobile phases.	For isomeric separation of non-aqueous compatible compounds by absorption chromatography.	

*Choice of buffer and amount of organic solvent is critical at pH >8.

Multiple Grace® Column Formats

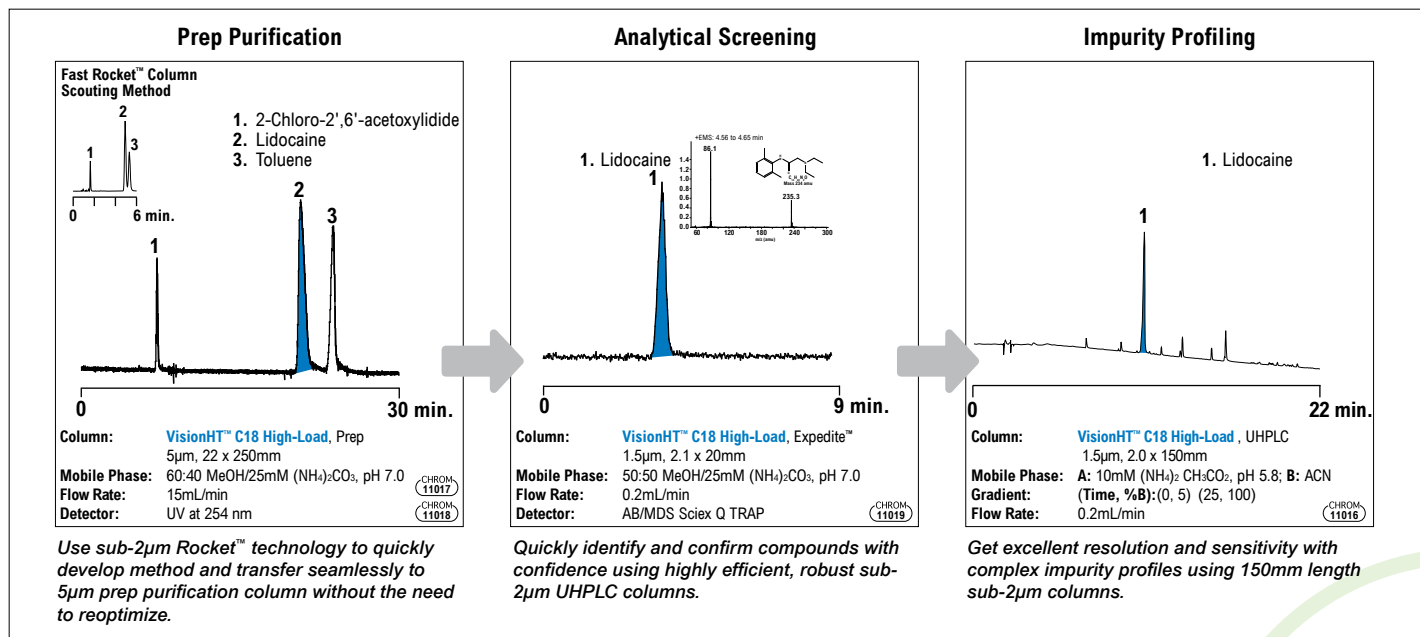
The versatility of the VisionHT™ media platform allows you to choose the right phase chemistry and pack it in any Grace® column format.

Preparative Formats	Analytical Formats	Rocket™ Formats	Expedite™ Formats	UHPLC Formats
Semi-Prep and Preparative Systems	Traditional HPLC Systems	Traditional HPLC Systems	Low Volume Systems, Microbore Systems	Ultra-high Pressure, Alternate Fast LC Systems
				
Packed under high pressure, these preparative columns deliver maximum efficiency and resolution to yield high purity fractions. Speed up prep LC purifications by moving to shorter columns packed with smaller VisionHT™ particles.	Flexible column dimensions address a number of today's laboratory concerns, from solvent savings to more stringent analytical requirements. Convert traditional 4.6 i.d.s to smaller diameter 2.1 or 3mm i.d. columns to reduce solvent consumption and increase sensitivity.	Avoid capital expense and get high-throughput with conventional HPLC by using current equipment more economically. Large 7mm i.d. allows fast flow rates that "sweep" the large (>2mL) traditional LC system volume and balances the column-to-system volume ratio. Get fast separations with minimal sample diffusion and excellent peak shapes.	Maximize sample throughput on systems optimized for low volume. Extremely low-dead volume design minimizes sample diffusion and delivers highly efficient separations. Short column lengths maintain low backpressures, allowing more speed from traditional pressure-rated systems.	Grace® UHPLC formats maximize sub-2µm media benefits from UHPLC and alternate fast LC systems. The low volume design uses screens, instead of frits, to minimize sample diffusion and maintain peak integrity and efficiency. 16,000psig pressure ratings allow fast flow rates, decreasing run times 10-fold.
i.d.: 10, 22mm Length: 70, 150, 250mm Pressure Limit: 8kpsig	i.d.: 2.1, 3, 4.6mm Length: 50, 100, 150, 250mm Pressure Limit: 10kpsig	i.d.: 7mm Length: 33, 53mm Pressure Limit: 10kpsig	i.d.: 2, 4.6mm Length: 10, 20mm Pressure Limit: 10kpsig	i.d.: 1, 2mm Length: 20, 30, 50, 100, 150mm Pressure Limit: 16kpsig

Improve Laboratory and Organizational Efficiency

As a sample moves through the R&D process, chromatography is performed many times for multiple reasons, and many laboratories have a mixture of LC system types. Optimizing and transferring methods between systems and laboratories is not a simple and intuitive task. However, when the identical media is available in sub-2, 3, 5, and 10µm particles and in a variety of column formats, methods can be transferred seamlessly across system types and between laboratories, improving laboratory efficiency and productivity.

Gain Productivity and Streamline Processes



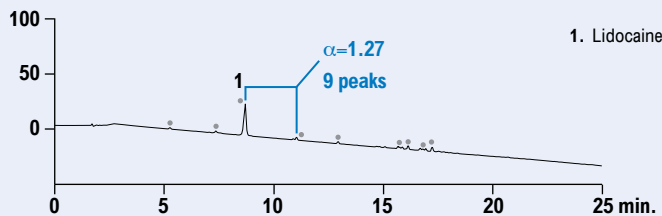
The same VisionHT™ phase follows lidocaine throughout the drug discovery process — from preparative purification and high-throughput analytical screening, to high-resolution impurity profiling. Vary the particle size and format to suit the system and goals of the separation. Standardize on one consistent, reliable media and streamline R&D processes.

Speed and Resolution on Any System

Resource constraints demand more output from existing instrumentation. VisionHT™ media's efficient sub-2µm particle technology not only accelerates separations, but also can provide more chromatographic information. By combining smaller particle sizes and column diameters, sensitivity is increased greater than 5x over traditional HPLC. Get speed and resolution from both traditional and fast LC systems with optimized high-throughput column formats. Rocket™, Expedite™, and UHPLC column formats have the ideal column geometry to obtain sub-2µm benefits regardless of system type.

Traditional 5µm Media with Standard Analytical System

Column: Analytical, 150 x 4.6mm, 5µm
Flow Rate: 1.0mL/min

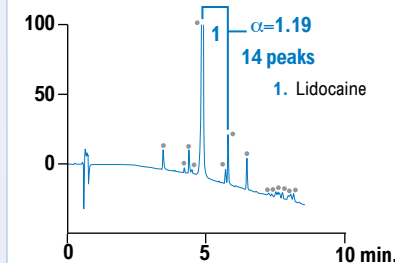
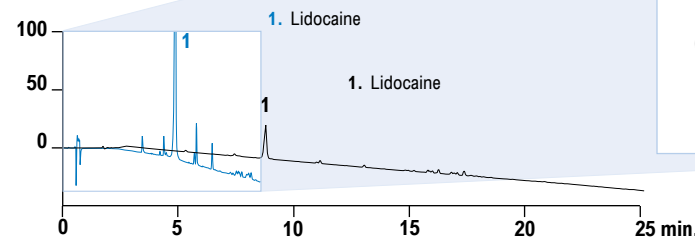


CHROM-11013

More Speed with Fast LC Systems

45% faster analysis and 10x greater sensitivity, compared to traditional HPLC, while maintaining similar selectivity. Resolution and sensitivity improvements double the amount of peaks identified.

Column: UHPLC, 50 x 2.0mm, 1.5µm
Flow Rate: 0.2mL/min

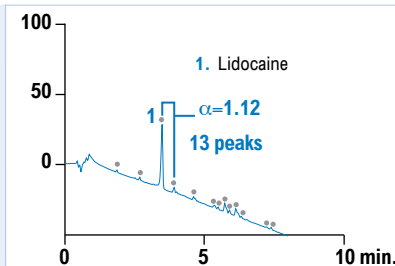
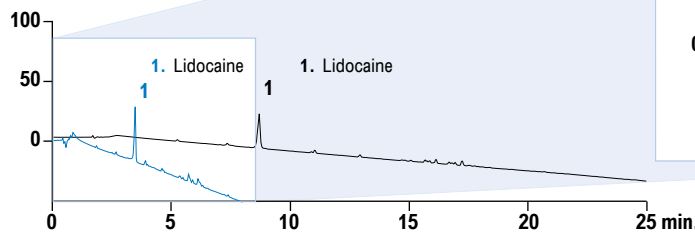


CHROM-11014
CHROM-11013

More Speed with Traditional Systems

2.3x faster analysis while maintaining similar selectivity on existing, traditional HPLC systems.

Column: Rocket™, 53 x 7mm, 3µm
Flow Rate: 2.3mL/min

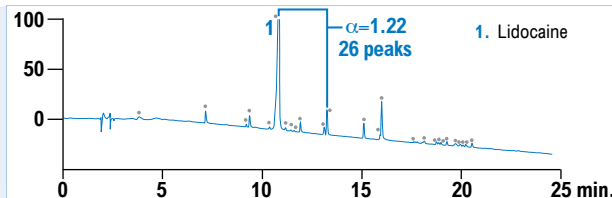
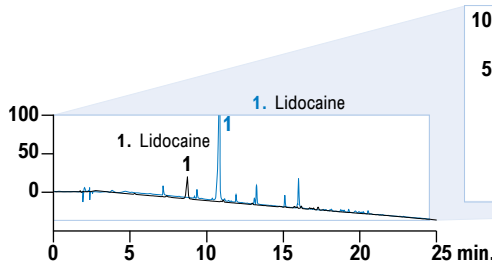


CHROM-11015
CHROM-11013

More Resolution with Fast LC Systems

Use longer sub-2µm columns for 3x greater peak identification and 5x greater sensitivity than traditional HPLC.

Column: UHPLC, 150 x 2.0mm, 1.5µm
Flow Rate: 0.2mL/min



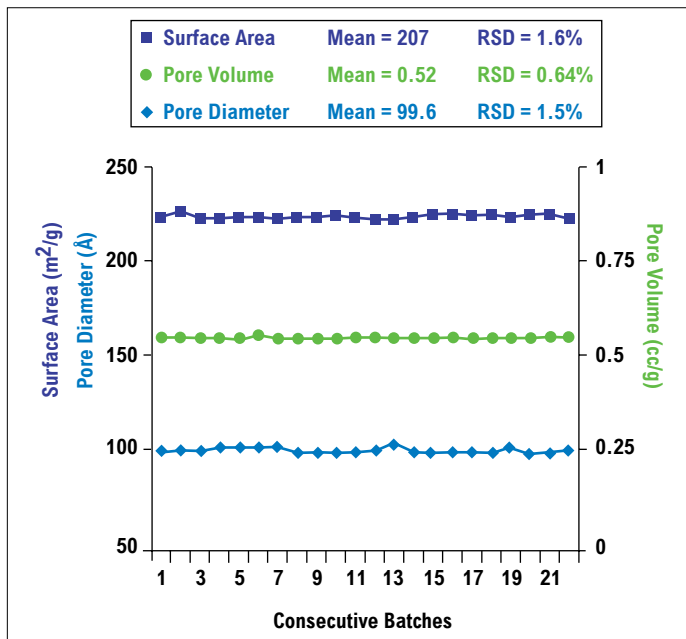
CHROM-11016
CHROM-11013

Improve throughput and data quality for lidocaine impurity profiles by seamlessly transferring from traditional HPLC to highly efficient sub-2µm columns.

Consistent and Reliable Performance

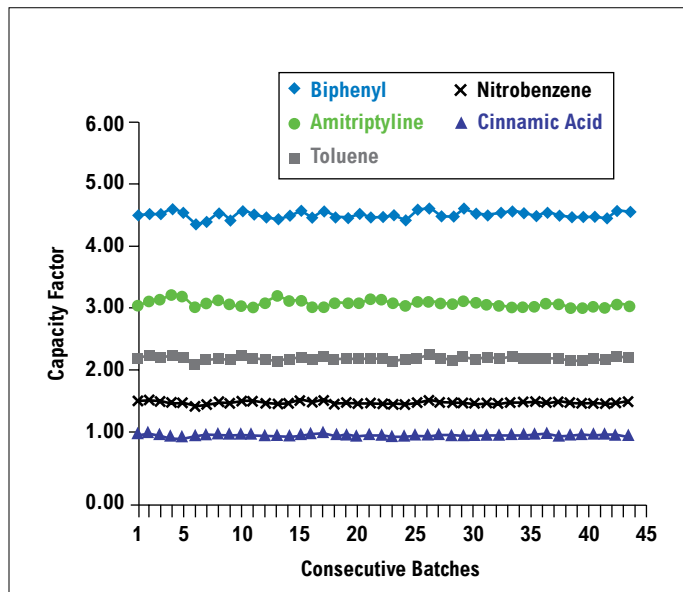
Grace's reproducible particle technology produces ultra-high mechanical strength silica and robust bonding chemistry to minimize variations in capacity and selectivity. It is this media consistency combined with reproducible column packing methods that delivers reliable performance and long column lifetime.

Reproducible Particle Technology



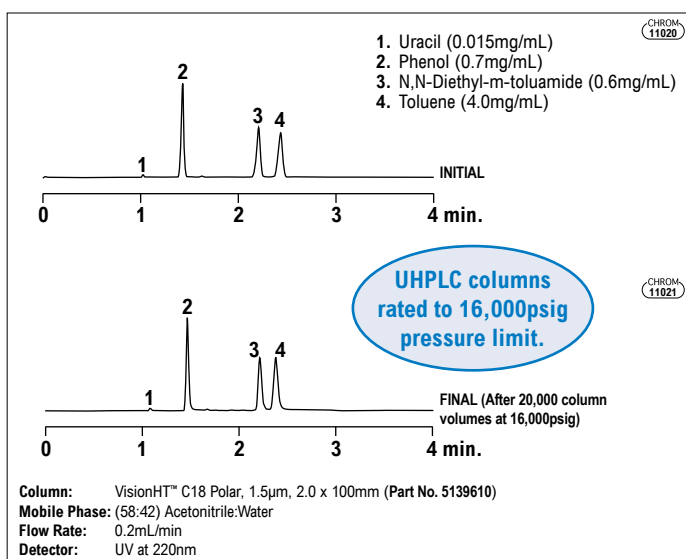
VisionHT™ silica's surface area, pore volume, and pore diameter are exceptionally consistent.

Consistent Column-to-Column Performance



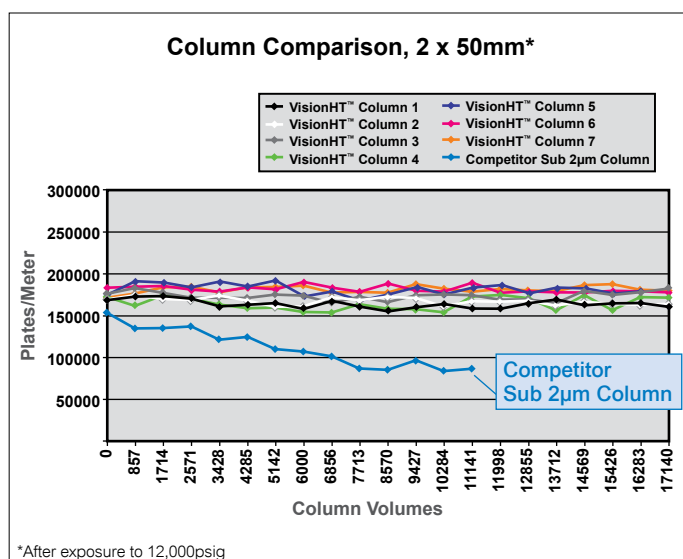
VisionHT™ media and advance packing methods produce columns with highly consistent capacity and selectivity.

Constant Performance after Routine Exposure to 16,000psig Pressure



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

Consistent High-Pressure Stability



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

Ordering Information

VisionHT™ Media Platform Columns									
Format	Length	i.d.	Particle size	C18 High-Load	C18 Basic	C18 Classic	C18 Polar	HILIC	Silica
Traditional	250	4.6	5	5151920	5151921	5152016	5152060	5152084	—
Traditional	150	4.6	5	5151970	5151993	5152017	5152061	5152085	5152111
Traditional	150	4.6	3	5151971	5151994	5152018	5152062	5152086	5152112
Traditional	100	4.6	3	5151972	5151995	5152019	5152063	—	—
Traditional	50	4.6	3	5151973	5151996	5152020	5152064	5122087	5152113
Solvent Miser	250	3	5	5151974	5151997	5152021	5152065	5152088	5152114
Solvent Miser	250	3	3	5151975	5151998	5152022	5152066	5152089	5152115
Solvent Miser	150	3	5	5151976	5151999	5152023	5152067	—	—
Solvent Miser	150	3	3	5151977	5152000	5152024	5152068	—	—
Solvent Miser	100	3	3	5151978	5152001	5152025	5152069	—	—
Microbore	150	2.1	3	5151979	5152002	5151946	5152070	5152090	5152116
Microbore	100	2.1	3	5151980	5152003	5151947	5152071	—	—
Microbore	50	2.1	3	5151981	5152004	5151948	5152072	5152091	—
Rocket™	53	7	1.5	5151982	5152005	5151949	5152073	5152092	—
Rocket™	53	7	3	5151983	5152006	5152040	5152074	5152093	—
Rocket™	33	7	1.5	5151984	5152007	5152041	5152075	5152110	—
Expedite™	20	4.6	1.5	5151985	5152008	5152042	5152076	—	—
Expedite™	20	2.1	1.5	5151986	5152009	5152043	5152077	—	—
Semi-Prep	150	10	5	5151987	5152010	5152044	5152078	—	—
Semi-Prep	250	10	5	5151988	5152011	5152045	5152079	—	—
Semi-Prep	150	22	5	5151989	5152012	5152046	5152080	—	—
Semi-Prep	250	22	5	5151990	5152013	5152047	5152081	—	—
Semi-Prep	250	22	10	5151991	5152014	5152048	5152082	—	—
UHPLC	150	2	1.5	5148861	5148862	5148863	5148864	5149010	—
UHPLC	100	2	1.5	5142547	5141909	5139609	5139610	5141920	5141924
UHPLC	50	2	1.5	5142546	5141908	5139605	5139606	5141919	5141922
UHPLC	30	2	1.5	5142545	5141907	5139600	5139602	5141917	—
UHPLC	20	2	1.5	5142544	5141906	5139557	5139558	5141916	—
UHPLC	100	1	1.5	5142543	5141905	5139607	5139608	5141914	5141923
UHPLC	50	1	1.5	5142542	5141904	5139603	5139604	5141913	5141921
UHPLC	30	1	1.5	5142541	5141903	5139559	5139601	5141912	—
UHPLC	20	1	1.5	5142540	5141902	5139555	5139556	5141910	—

VisionHT™ UHPLC Guard Cartridges

VisionHT™ guards protect your column to minimize down time and reduce cost.



Replace existing endfitting with the integral guard endfitting.



Stand-alone guards expand applications beyond column protection.

VisionHT™ UHPLC Guard Cartridges*

Packing	Format	i.d. x Length	Qty.	Part No.
C18 High-Load, 1.5µm	Ultra High-Pressure	1 x 5mm	3/pk	5142549
	Ultra High-Pressure	2 x 5mm	3/pk	5142548
C18 Basic, 1.5µm	Ultra High-Pressure	1 x 5mm	3/pk	5141953
	Ultra High-Pressure	2 x 5mm	3/pk	5141952
C18 Classic, 1.5µm	Ultra High-Pressure	1 x 5mm	3/pk	5141950
	Ultra High-Pressure	2 x 5mm	3/pk	5141594
C18 Polar, 1.5µm	Ultra High-Pressure	1 x 5mm	3/pk	5141951
	Ultra High-Pressure	2 x 5mm	3/pk	5141595
HILIC, 1.5µm	Ultra High-Pressure	1 x 5mm	3/pk	5141955
	Ultra High-Pressure	2 x 5mm	3/pk	5141954
Silica, 1.5µm	Ultra High-Pressure	1 x 5mm	3/pk	5141957
	Ultra High-Pressure	2 x 5mm	3/pk	5141956
Integral Guard Column Holder For UHPLC VisionHT™				3118351
Stand-Alone Guard Holder				3118350

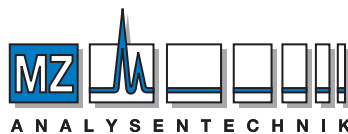
*Other guards available. Call for ordering information.

VisionHT™ UltraMD Screening Kits

Whether developing a new method, screening samples in a high-throughput lab, or improving an existing analysis, the VisionHT™ UltraMD kits can help optimize your separation.

VisionHT™ UltraMD Screening Kits

Kit	Phases	Dimensions	Part No.
UltraMD Kit 1	C18 Classic, C18 Polar, C18 High-Load, C18 Basic	2 x 100mm	5142692
UltraMD Kit 2	C18 Classic, C18 Polar, C18 High-Load, C18 Basic	2 x 50mm	5142693
UltraMD Kit 3	C18 Classic, C18 Polar, C18 High-Load, C18 Basic	1 x 50mm	5142691

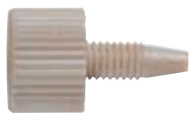


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HPLC Accessories to Complement Any System

High-Pressure HPLC Fittings

- Inert and biocompatible construction
- Finger-Tight™ or hex-head formats
- One-piece integrated ferrule



Finger-Tight™ Fittings



Hex-Head Fittings

High-Pressure HPLC Fittings Specifications

Maximum Pressure:	Finger-Tight™ 5000psig; Hex-head 8000psig
Thread Type:	10-32 UNF
Typical Use:	1/16" o.d. tubing connections

High-Pressure HPLC Fittings

Length	Color	Material	Qty	Part No.
One-Piece Finger-Tight™ Fittings				
Short	Natural	PEEK	10pk	32233
Short	Black	Graph-Tite™	10pk	32343
Long	Natural	PEEK	10pk	32235
One-Piece Hex-Head Fittings				
Short	Natural	PEEK	10pk	32236
Short	Black	Graph-Tite™	10pk	32347
Long	Natural	PEEK	10pk	32238
Long	Black	Graph-Tite™	10pk	32349

Stainless Steel Two-Piece Hex-Head Fittings



Stainless Steel Two-Piece Hex-Head Fittings Specifications

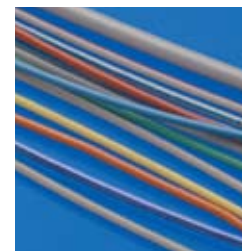
Maximum Pressure:	10,000psig
Thread Type:	10-32 UNF
Typical Use:	1/16" o.d. Tubing Connections

Stainless Steel Two-Piece Hex-Head Fittings

Description	Qty	Part No.
1/16" Short Male Nut (A)	5pk	3112423
1/16" Long Male Nut (B)	5pk	5125919
1/16" Extra-Long Male Nut (C)	5pk	5126166
1/16" Ferrules (D)	5pk	3112447

PEEK Tubing

- Chemically inert and biocompatible
- High strength polymer
- Easy to cut with razor blade or tubing cutters



Solid Color PEEK Tubing

Color	o.d.	i.d.	Maximum Pressure (psig)	Length	Part No.
Red	1/16"	0.005"	7,000	10' (3.05m)	35720
				50' (15.25m)	35721
Yellow	1/16"	0.007"	7,000	10' (3.05m)	35722
				50' (15.25m)	35723
Blue	1/16"	0.010"	5,000	10' (3.05m)	35728
				50' (15.25m)	35729
Orange	1/16"	0.020"	5,000	10' (3.05m)	35726
				50' (15.25m)	35727
Green	1/16"	0.030"	4,000	10' (3.05m)	35724
				50' (15.25m)	35725
Natural	0.071"	0.030"	4,000	10' (3.05m)	35776
				50' (15.25m)	35778
				1/8"	0.062"
				50' (15.25m)	35717
	1/8"	0.080"	3,000	10' (3.05m)	35718
				50' (15.25m)	35719

Having trouble with your autosampler vials? Contact Grace to learn about our new LC Certified Vials.



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