

Accucore UHPLC and HPLC Columns Phase Overview

Ultimate core performance
to maximize your investment

Phase overview

Founded on state-of-the-art solid core technology and utilizing vast experience in phase bonding and packing, Accucore UHPLC and HPLC columns provide a robust chromatography solution to enhance laboratory workflow and efficiency. Available in a wide range of stationary phase selectivities and compatible with almost any instrument, these columns provide an excellent return on investment.

Accucore Vanquish UHPLC columns

Using 1.5 μm solid core particles, Thermo Scientific™ Accucore™ Vanquish™ UHPLC columns allow UHPLC users to enjoy performance benefits over columns packed with conventional sub-2 μm fully porous particles.

Accucore HPLC columns

Containing solid core particles, which are engineered to a diameter of 2.6 μm and a very narrow particle size distribution. Accucore HPLC columns allow high speed, high resolution separations.

Accucore HPLC columns for biomolecules

The range of Accucore HPLC columns packed with 150 Å pore diameter particles allows biomolecule separations to benefit from the superb resolution and high speed enabled by solid core technology.

Accucore XL HPLC columns

Using 4 μm solid core particles, Accucore XL HPLC columns allow users of conventional HPLC methods to enjoy performance far beyond that of columns packed with 5 μm , 4 μm or even 3 μm fully porous particles.

Phase details

Column	Phase name	Particle type (μm)	Carbon load (%)	USP category
Accucore Vanquish UHPLC columns	C18+	1.5	6.5	L1
Accucore HPLC columns	RP-MS	2.6	7	–
	C18	2.6	9	L1
	C8	2.6	5	L7
	aQ	2.6	9	L1
	Polar Premium	2.6	8	L60
	Biphenyl	2.6	6	L11
	Phenyl-Hexyl	2.6	5	L11
	PFP	2.6	5	L43
	Phenyl-X	2.6	6	–
	C30	2.6	5	L62
	HILIC	2.6	–	L3
	Urea-HILIC	2.6	–	–
	Accucore columns for biomolecules	150-C18	2.6	7
150-C4		2.6	2	L26
150-Amide-HILIC		2.6	–	–
Accucore XL HPLC columns	C18	4.0	7	L1
	C8	4.0	4	L7

Particle details

Particle diameter (μm)	Porous layer thickness (μm)	Particle size distribution ($D_{90/10}$)	Pore diameter (Å)	Surface area (m^2/g)
1.5	0.25	1.2	80	110
2.6	0.5	1.12	80	130
2.6	0.5	1.12	150	80
4.0	0.6	1.15	80	90

pH stability

Phases	pH range
Accucore C18, 150-C18, XL C18	1 to 11
Accucore Polar Premium	1.5 to 10.5
Accucore/Accucore Vanquish RP-MS, C18+, C8, aQ, 150-C4, XL C8	2 to 9
Accucore Biphenyl, Phenyl-Hexyl, PFP, Phenyl-X, C30, HILIC, Urea-HILIC, 150-Amide-HILIC	2 to 8

Temperature stability

Maximum temperature 70 °C	Based on testing on Accucore C18
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Flow rate, injection volume and backpressure

Columns	Column ID (mm)	Optimum flow rate (mL/min)	Optimum injection volume (µL)	Maximum backpressure rating (bar)
Accucore Vanquish UHPLC columns	2.1	0.4	1	1500
Accucore HPLC columns	2.1	0.4	1	600
	3.0	0.8	3	600
	4.6	1.8	5	600
Accucore columns for biomolecules	0.075	0.0003	1	800
	2.1	0.4	1	600
	3.0	0.8	3	600
	4.6	1.8	5	600
Accucore XL HPLC columns	2.1	0.3	2	600
	3.0	0.6	5	600
	4.6	1.3	10	600

Shipping solvents

Columns	Solvent
All other columns	Acetonitrile/water
Biphenyl	Methanol

General cleaning procedure

Before starting ensure that the solvent in the column is miscible with the cleaning solvents. Using 50% of the working flow rate, flush the column with 20 column volumes of each of the solvents below in the order shown.

Phase names	Solvents
RP-MS, C18, C18+, C8, aQ, Polar Premium, Biphenyl, Phenyl-Hexyl, PFP, Phenyl-X, C30, 150-C18, 150-C4, XL C18, XL C8	<ol style="list-style-type: none"> 1. 90% water/10% acetonitrile (for buffer removal if required) 2. 50% tetrahydrofuran/50% acetonitrile 3. Acetonitrile 4. Re-equilibrate with mobile phase
HILIC, Urea-HILIC, 150-Amide-HILIC	<ol style="list-style-type: none"> 1. 30% water/70% acetonitrile (for buffer removal if required) 2. 50% water/50% acetonitrile 3. Re-equilibrate with mobile phase

Phase properties and characterization

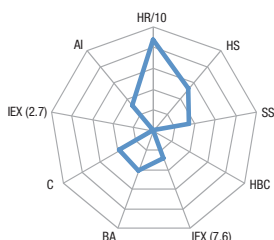
Accucore UHPLC/HPLC columns are available in 18 different phases to provide an unrivalled range of selectivities.

Each of the bonded phases is manufactured using our advanced bonding technology and is

characterized using a detailed testing regime.

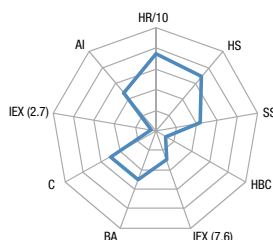
Refer to the Accucore technical guide for full details, or visit thermofisher.com/accucore. The radar plots below show the results of the characterization and allow for quick and easy comparison of the phase selectivities.

Accucore Vanquish C18+



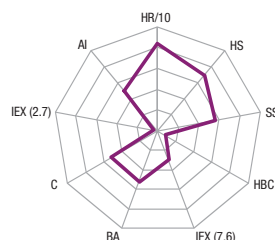
Optimum retention for non-polar analytes. Excellent combination of speed and quality of separation.

Accucore RP-MS



Optimized for MS detection, excellent combination of speed and quality of separation.

Accucore C18



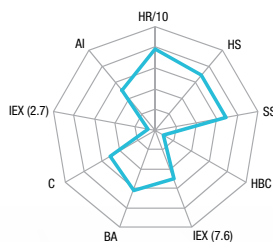
Optimum retention for non-polar analytes.

Accucore C8



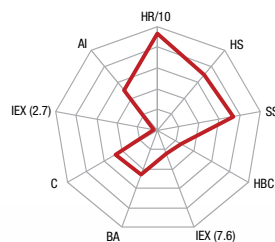
Lower hydrophobicity than C18 recommended for analytes with moderate hydrophobicity.

Accucore aQ



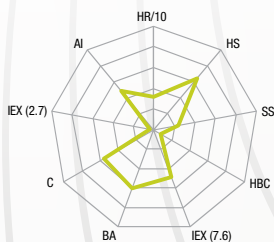
Compatible with 100% aqueous mobile phases, special selectivity for polar analytes.

Accucore Polar Premium



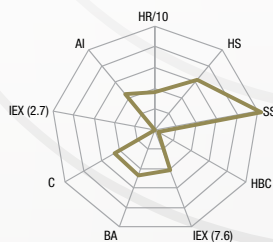
Rugged amide embedded C18 phase that offers complementary selectivity to conventional C18.

Accucore Phenyl-Hexyl



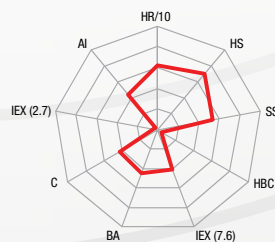
Unique selectivity for aromatic and moderately polar analytes.

Accucore Phenyl-X



Unique reversed-phase shape selectivity with high aromatic selectivity.

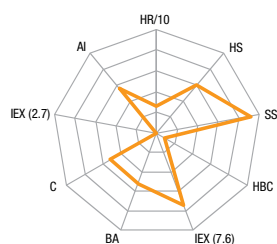
Accucore C30



High shape selectivity for hydrophobic, long chain, structurally related isomers.

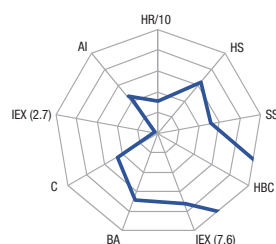


Accucore PFP



Alternative selectivity to C18, particularly for halogenated analytes.

Accucore Biphenyl



π - π interactions provide alternative selectivity to C18 and phenyl hexyl chemistries; good retention for small polar analytes

Accucore HILIC

HILIC

Enhanced Retention of polar and hydrophilic analytes.

Accucore Urea-HILIC

HILIC

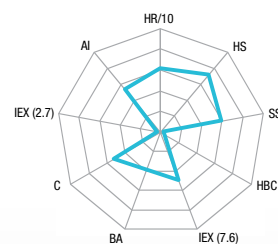
Unique HILIC selectivity and low ion exchange activity.

Accucore 150-Amide-HILIC

HILIC

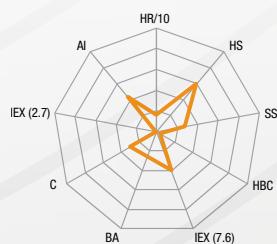
Designed for the separation of hydrophilic biomolecules in HILIC mode. An excellent choice for glycan separations.

Accucore 150-C18



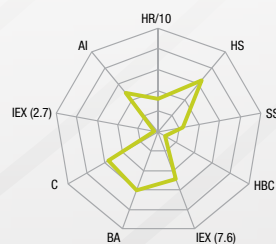
Phase designed for the separation of peptides.

Accucore 150-C4



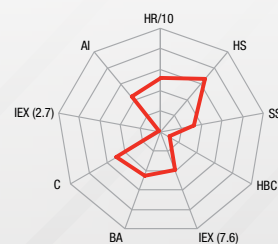
Lower hydrophobicity for optimal retention of proteins and larger peptides.

Accucore XL C18



Compatible with conventional HPLC methods providing optimum retention for non-polar analytes.

Accucore XL C8



Lower hydrophobicity than C18 recommended for analytes with moderate hydrophobicity and compatible with conventional HPLC methods.

Ordering information

Accucore UHPLC/HPLC columns

Description	Particle size (µm)	Length (mm)	2.1 mm ID	3.0 mm ID	4.6 mm ID
Accucore Vanquish C18+	1.5	50	27101-052130	–	–
		100	27101-102130	–	–
		150	27101-152130	–	–
Accucore C18	2.6	30	17126-032130	17126-033030	17126-034630
		50	17126-052130	17126-053030	17126-054630
		100	17126-102130	17126-103030	17126-104630
		150	17126-152130	17126-153030	17126-154630
Accucore RP-MS	2.6	30	17626-032130	17626-033030	17626-034630
		50	17626-052130	17626-053030	17626-054630
		100	17626-102130	17626-103030	17626-104630
		150	17626-152130	17626-153030	17626-154630
Accucore C8	2.6	30	17226-032130	17226-033030	17226-034630
		50	17226-052130	17226-053030	17226-054630
		100	17226-102130	17226-103030	17226-104630
		150	17226-152130	17226-153030	17226-154630
Accucore aQ	2.6	30	17326-032130	17326-033030	17326-034630
		50	17326-052130	17326-053030	17326-054630
		100	17326-102130	17326-103030	17326-104630
		150	17326-152130	17326-153030	17326-154630
Accucore Polar Premium	2.6	50	28026-052130	28026-053030	28026-054630
		100	28026-102130	28026-103030	28026-104630
		150	28026-152130	28026-153030	28026-154630
		250	28026-252130	–	–
Accucore Biphenyl	2.6	50	17826-052130	–	–
		100	17826-102130	–	–
Accucore Phenyl-Hexyl	2.6	30	17926-032130	17926-033030	17926-034630
		50	17926-052130	17926-053030	17926-054630
		100	17926-102130	17926-103030	17926-104630
		150	17926-152130	17926-153030	17926-154630
Accucore PFP	2.6	30	17426-032130	17426-033030	17426-034630
		50	17426-052130	17426-053030	17426-054630
		100	17426-102130	17426-103030	17426-104630
		150	17426-152130	17426-153030	17426-154630
Accucore Phenyl-X	2.6	50	27926-052130	27926-053030	27926-054630
		100	27926-102130	27926-103030	27926-104630
		150	27926-152130	27926-153030	27926-154630
		250	27926-252130	–	–
Accucore C30	2.6	50	27826-052130	27826-053030	27826-054630
		100	27826-102130	27826-103030	27826-104630
		150	27826-152130	27826-153030	27826-154630
		250	27826-252130	–	–
Accucore HILIC	2.6	30	17526-032130	17526-033030	17526-034630
		50	17526-052130	17526-053030	17526-054630
		100	17526-102130	17526-103030	17526-104630
		150	17526-152130	17526-153030	17526-154630
Accucore Urea-HILIC	2.6	50	27726-052130	27726-053030	27726-054630
		100	27726-102130	27726-103030	27726-104630
		150	27726-152130	27726-153030	27726-154630
		250	27726-252130	–	–

Accucore HPLC columns for biomolecules

Description	Particle size (µm)	Length (mm)	2.1 mm ID	3.0 mm ID	4.6 mm ID
Accucore 150-C18	2.6	30	16126-032130	16126-033030	16126-034630
		50	16126-052130	16126-053030	16126-054630
		100	16126-102130	16126-103030	16126-104630
		150	16126-152130	16126-153030	16126-154630
Accucore 150-C4	2.6	30	16526-032130	16526-033030	16526-034630
		50	16526-052130	16526-053030	16526-054630
		100	16526-102130	16526-103030	16526-104630
		150	16526-152130	16526-153030	16526-154630
Accucore 150-Amide-HILIC	2.6	50	16726-052130	16726-053030	16726-054630
		100	16726-102130	16726-103030	16726-104630
		150	16726-152130	16726-153030	16726-154630
		250	16726-252130	–	–

Thermo Scientific™ Accucore™ nanoViper™ columns

Description	Particle size (µm)	Length (mm)	75 µm ID
Accucore 150-C18	2.6	150	16126-157569
		500	16126-507569
Accucore 150-C4	2.6	150	16526-157569
		500	16526-507569
Accucore 150-Amide-HILIC	2.6	150	16726-157569

Accucore XL HPLC columns

Description	Particle size (µm)	Length (mm)	2.1 mm ID	3.0 mm ID	4.6 mm ID
Accucore XL C18	4	50	74104-052130	74104-053030	74104-054630
		100	74104-102130	74104-103030	74104-104630
		150	74104-152130	74104-153030	74104-154630
		250	74104-252130	74104-253030	74104-254630
Accucore XL C8	4	50	74204-052130	74204-053030	74204-054630
		100	74204-102130	74204-103030	74204-104630
		150	74204-152130	74204-153030	74204-154630
		250	74204-252130	74204-253030	74204-254630

Accucore Defender Guard cartridges (4/pk)

Description	Particle size (µm)	Length (mm)	2.1 mm ID	3.0 mm ID	4.6 mm ID
Accucore C18	2.6	10	17126-012105	17126-013005	17126-014005
Accucore RP-MS	2.6	10	17626-012105	17626-013005	17626-014005
Accucore C8	2.6	10	17226-012105	17226-013005	17226-014005
Accucore aQ	2.6	10	17326-012105	17326-013005	17326-014005
Accucore Polar Premium	2.6	10	28026-012105	–	–
Accucore Biphenyl	2.6	10	17826-012105	–	–
Accucore Phenyl-Hexyl	2.6	10	17926-012105	17926-013005	17926-014005
Accucore PFP	2.6	10	17426-012105	17426-013005	17426-014005
Accucore Phenyl-X	2.6	10	27926-012105	–	–
Accucore C30	2.6	10	27826-012105	–	–
Accucore HILIC	2.6	10	17526-012105	17526-013005	17526-014005
Accucore Urea-HILIC	2.6	10	27726-012105	–	–
Accucore 150-C18	2.6	10	16126-012105	16126-013005	16126-014005
Accucore 150-C4	2.6	10	16526-012105	16526-013005	16526-014005
Accucore 150-Amide-HILIC	2.6	10	16726-012105	–	–

Accucore XL Guard cartridges (4/pk)

Description	Particle size (µm)	Length (mm)	2.1 mm ID	3.0 mm ID	4.6 mm ID
Accucore XL C18	4	10	74104-012101	74104-013001	74104-014001
Accucore XL C8	4	10	74204-012101	74204-013001	74204-014001

Thermo Scientific™ UNIGUARD™ Direct-Connection Guard cartridge holders

Description	2.1 mm ID	3.0 mm ID	4.6 mm ID
UNIGUARD Drop-In Guard cartridge holder	852-00	852-00	850-00
Standard Replacement Tip	850-RT	850-RT	850-RT

Accucore kits

For validation of the performance of Accucore columns or verification of the optimum selectivity for user's separations.

Accucore Validation kit

Validate the reproducibility of Accucore. Contains 3 Accucore C18 HPLC columns.

Description	Particle size (µm)	Length (mm)	2.1 mm ID
Accucore Validation kit	2.6	50	17126-052130-3V

Accucore Narrow Selectivity kit

Verify optimum selectivity over a narrow range. Contains 1 each of Accucore C18, RP-MS and aQ HPLC columns.

Description	Particle size (µm)	Length (mm)	2.1 mm ID
Accucore Narrow Selectivity kit	2.6	50	17X26-052130-3VA
		100	17X26-102130-3VA
		150	17X26-152130-3VA

Accucore Wide Selectivity kit

Verify selectivity over a wide range. Contains 1 each of Accucore C18, Phenyl-Hexyl and PFP HPLC columns.

Description	Particle size (µm)	Length (mm)	2.1 mm ID
Accucore Wide Selectivity kit	2.6	50	17X26-052130-3VB
		100	17X26-102130-3VB
		150	17X26-152130-3VB

Accucore Polar Selectivity kit

Verify selectivity for polar analytes. Contains 1 each of Accucore aQ, PFP and HILIC HPLC columns.

Description	Particle size (µm)	Length (mm)	2.1 mm ID
Accucore Polar Selectivity kit	2.6	100	17X26-102130-3VC
		150	17X26-152130-3VC

Find out more at thermofisher.com/accucore