

WATERS COLUMNS AND ANALYTICAL STANDARDS AND REAGENTS SELECTION GUIDE

Waters' comprehensive family of columns offer scientists a diverse range of selectivity and particle size choices that provide exceptional scalability within UPLC, UHPLC, HPLC, and preparative LC applications. In addition, Waters' growing family of QC Reference Materials and application-specific standards help users to effortlessly confirm column and system performance.

| CORTECS UPLC, UHPLC,
and HPLC Columns
 | Particle/Ligand | Ligand Carbon USP pH
Donaity Lood Endcapped Close No. Bongo
 | Temperature Surface | Performance
 | Application | ACQUITY UPLC and XSelect
HPLC/UHPLC Columns | Particle/Ligand | Ligand Carbon
Density Load Endcar
 | oped Close No Banga | Temperature Surface | Performance
 | Application |
|---
---|-----------------
--
---|---|---|---|---
---|---
---|---|--|--|
|
 | |
 | Low pH = 45 $^{\circ}$ C 100 m ² /m | Neutrals QC
 | Reversed-Phase QC | | | 2.2 umpl/m ² 15%
 | | Low pH = 80 $^{\circ}$ C 195 m ² /c | Neutrals QC
 | Reversed-Phase QC |
| C₁₈+
UPLC: 1.6 μm
UHPLC: 2.7 μm
HPLC: 2.7 μm
 | | Performance Benefits: General purpose reversed-phase column designed to maximize efficiency. A charged-surface-silica solid-core particle enables excellent peak shape for basic compounds at low pH, especially in low concentration modifier mobile phases.
 | High pH = 45 °C100 m²/gBonding: Trifunctional C_{18} , fullyendcapped, bonded to a chargedsurface-silica solid-core substrate. | Reference Material
P/N: 186006360
 | Reference Material
P/N: 186006363 | CSH C₁₈
UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm | • | 2.3 µmoi/m ² 15% Yes
Performance Benefits: General purpose rever
excellent pH stability and rapid mobile-phase i
Charged Surface Hybrid (CSH [™]) Technology en
logities comparing the phase is compared
 | rsed-phase column that offers
re-equilibration for method development.
nables superior peak shape and increased | High pH = 45 °C $185 \text{ m}^{-7}\text{g}$ Bonding: Trifunctional C18, fully
endcapped, bonded to a Charged
Surface Hybrid (CSH) substrate. | Reference Material
P/N: 186006360
Preparative
Chromatography Mix
 | Reference Material
P/N: 186006363 |
| 0
 | | 2.7 umol/m^2 6.6% Yes L1 $2-8$
 | Low pH = $45 \degree C$ 100 m ² /g | Neutrals QC
 | Reversed-Phase QC | Сен | | 2.2 umpl/m ² 140/
 | . 111 111 | Low pH = 80 °C $185 \text{ m}^2/\text{c}$ | P/N: 186006703
Neutrals QC
 | Reversed-Phase QC |
| UPLC: 1.6 μm
UHPLC: 2.7 μm
HPLC: 2.7 μm
 | | Performance Benefits: General purpose reversed-phase column designed to maximize efficiency. Provides balanced retention of acids, bases, and neutrals at low- and mid-range pH.
 | High pH = 45 °C
Bonding: Trifunctional C ₁₈ , fully
endcapped bonded to a silica
solid-core substrate. | P/N: 186006360
 | Reference Material
P/N: 186006363 | Phenyl-Hexyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5.5 μm | • | Performance Benefits: General purpose altern
pi-pi interactions with polyaromatic compound
reproducibility at pH extremes. Charged Surface
superior peak shape and increased loading ca
 | ds, while maintaining excellent
ce Hybrid (CSH) Technology enables
pacity for basic compounds. | High pH = 45 °C
Bonding: Trifunctional C_6 phenyl,
fully endcapped, bonded to a
Charged Surface Hybrid (CSH)
substrate. | Reference Material
P/N: 186006360
 | Reference Material
P/N: 186006363 |
| ТЗ
 | | 16.umol/m ² 47% Yes 11 2-8
 | Low pH = 45 °C $100 \text{ m}^2/\text{g}$ | Neutrals QC
Reference Material
 | Reversed-Phase QC | CSH | | 2.3 umol/m ² 10% No
 | 1/3 1_8 | Low pH = 60 °C $_{185 \text{ m}^2/\text{g}}$ | Neutrals QC
 | Reversed-Phase QC |
| UPLC: 1.6 μm
UHPLC: 2.7 μm
HPLC: 2.7 μm
 | | Performance Benefits: Aqueous mobile phase compatible column designed to maximize efficiency. Provides balanced retention for both polar and non-polar compounds.
 | High pH = 45 °C
Bonding: Intermediate T3 (C ₁₈)
bonding and endcapping, bonded to
a silica solid-core particle substrate. | P/N: 186006360
 | P/N: 186006363 | Fluoro-Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5 5 μm | • | Performance Benefits: General purpose colur
of analyte selectivity, especially when using lor
Hybrid (CSH) Technology enables superior pea
for basic compounds
 | nn that provides a very high degree
w pH mobile phases. Charged Surface
ak shape and increased loading capacity | High pH = 45 °C
Bonding: Trifunctional propyl
fluorophenyl, non-endcapped,
bonded to a Charged Surface
Hybrid (CSH) substrate | Reference Material
P/N: 186006360
 | Reference Material
P/N: 186006363 |
| C ₈
 | | 3.4 µmol/m ² 4.5% Yes L7 2-8
 | Low pH = 45 °C 100 m ² /g | Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material | | | $2.3 \text{ umol}/\text{m}^2$ 15% Vac
 | <u> </u> | Low pH = 80 °C $185 \text{ m}^2/\text{g}$ | Cytochrome c
 | Peptide Retention |
| UPLC: 1.6 μm
UHPLC: 2.7 μm
HPLC: 2.7 μm
 | • | Performance Benefits : General purpose column designed to maximize efficiency. Similar selectivity, but shorter retentivity when compared to typical C ₁₈ phases.
 | Bonding : Trifunctional C_8 , fully
endcapped, bonded to a silica
solid-core substrate. | P/N: 186006360
 | P/N: 186006363 | Peptide CSH C₁₈, 130A
UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm | • | Performance Benefits: Works particularly wel
applications. Specifically QC tested with a tryp
acid containing eluents.
 | I with 0.1% formic acid for LC or LC-MS
tic digest of cytochrome <i>c</i> using 0.1% formic | High pH = 45 °C Its in rig Bonding: Trifunctional C18, fully endcapped, bonded to a Charged Surface Hybrid (CSH) substrate. | Digestion Standard
P/N: 186006371
 | Standard
P/N: 186006555 |
| Shield RP18
 | | 3.2 µmol/m ² 6.4% Yes L1 2-8
 | Low pH = 45 °C
High pH = 45 °C 100 m²/g | Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material | | | 3.2 µmol/m ² 15% Yes
 | s L1 1-8 | Low pH = $45 \degree C$ 230 m ² /g | Neutrals QC
 | Reversed-Phase QC |
| UPLC: 1.6 μm
UHPLC: 2.7 μm
HPLC: 2.7 μm
 | | Performance Benefits : Excellent method development column designed to give maximum efficiency. Provides alternative selectivity when compared to typical C ₁₈ phases, especially for phenolic compounds.
 | Bonding : Monofunctional
embedded polar C ₁₈ , fully
endcapped, bonded to a silica
solid-core substrate. | P/N: 186006360
 | P/N: 186006363 | HSS C ₁₈
UPLC: 1.8 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm | ۲ | Performance Benefits: Resistant to acid hydro
retention and superior peak shape.
 | olysis at low pH, this column offers increased | High pH = 45 C
Bonding : High coverage
trifunctional C_{18} , fully endcapped,
bonded to a High Strength Silica
(HSS) substrate. | P/N: 186006360
 | P/N: 186006363 |
| Phenyl
 | _ | 3.2 µmol/m ² 5.9% Yes L11 2-8
 | Low pH = 45 °C 100 m²/g
High pH = 45 °C | Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material | | | 1.6 umol/m² 8% No
 | L1 2-8 | Low pH = 45 °C $230 \text{ m}^2/\text{g}$ | Neutrals QC
 | Reversed-Phase QC |
| UHPLC: 2.7 μm
HPLC: 2.7 μm
HILIC
 | W | Performance Benefits: Excellent method development column designed to give maximum efficiency as well as alternate selectivity, particularly in regard to polyaromatic compounds.
 | Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to a silica
solid-core substrate. | P/N: 186006360
 | P/N: 186006363 | HSS C ₁₈ SB
UPLC: 1.8 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm | ۲ | Performance Benefits: Unique, non-endcappe
method development scientists. Offers unique
under low pH conditions.
 | ed C ₁₈ chemistry designed specifically for
selectivity for bases (SB) when operating | High pH = 45 °C
Bonding: Intermediate coverage
trifunctionally bonded C ₁₈ , non-
endcapped, bonded to a High
Strength Silica (HSS) substrate | Reference Material
P/N: 186006360
 | Reference Material
P/N: 186006363 |
| UPLC: 1.6 μm
 | 6 | N/A UNDONDED NO L3 I-5
 | High pH = 45 °C | P/N: 186007226
 | P/N: 186007226 | | |
 | | Low pH = 45 °C $200 - 37$ | Neutrals QC
 | Reversed-Phase QC |
| HPLC: 2.7 μm
 | | Performance Benefits : High efficiency column designed for retention of extremely polar, basic, water-soluble analytes.
 | Bonding : Unbonded, high-purity, silica solid-core substrate. |
 | | HSS T3
UPLC: 1.8 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm | ۲ | Performance Benefits: Aqueous mobile-phase exceptional polar compound retention.
 | e compatible column designed for | High pH = 45 °C 230 m ² /g
Bonding : Intermediate T3
(C_{18}) bonding and endcapping,
bonded to a High Strength Silica | Reference Material
P/N: 186006360
 | Reference Material
P/N: 186006363 |
| ACQUITY UPLC and XBridge
 | | Ligand Carbon _ , USP pH
 | Temperature Surface | Performance
 | Application | Pentide HSS T3 100Å | | 16 umal/m ² 110/ Vac
 | | (HSS) substrate.
Low pH = 45 °C $220 \text{ m}^2/\text{g}$ | Cytochrome c
 | Peptide Retention |
| BEH C ₁₈
 | Particle/Ligand | DensityLoadEndcappedClass No.Range3.1 µmol/m²18%YesL11-12
 | LimitsAreaLow pH = 80 °C185 m²/gHigh pH = 60 °C185 m²/g | Standards
Neutrals QC
Reference Material
P/N: 186006360
 | Standards
Reversed-Phase QC
Reference Material
P/N: 186006363 | UPLC: 1.8 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm | ۲ | Performance Benefits: Aqueous mobile-phase
exceptional polar compound retention in prote
 | e compatible column designed for
eins. | High pH = 45 °C250 m /gBonding: T3 (C_{18}) bonding and
endcapping, bonded to a High
Strength Silica (HSS) substrate. | Digestion Standard
P/N: 186006371
 | Standard
P/N: 186006555 |
| UHPLC: 2.5 μm <i>XP</i>
 | - | Performance Benefits: General purpose column ideally suited for method
development due to extreme pH stability and applicability to the broadest
 | Bonding: Irifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene | Preparative
Chromatography Mix
 | | HSS PFP | | 3.2 µmol/m ² 7% No
 | L43 2-8 | Low pH = 45 °C
High pH = 45 °C 230 m²/g | Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material |
| HPLC: 3.5, 5, 10 μm
 | | range of compound classes.
 | bhugeu hybriu (ben) substrate. | P/N: 186006703
 | | UPLC: 1.8 μm | ۲ | Performance Benefits: A general purpose coll
differences for Lewis bases through pi-pi inter
 | umn designed to maximize selectivity
actions. The rigid aromatic ring provides | Bonding : Trifunctional pentafluoro-
phenyl, non-endcapped, bonded to a | P/N: 186006360
 | P/N: 186006363 |
| BEH C ₈
 | | 3.2 µmol/m ² 13% Yes L7 1-12
 | Low pH = 60 °C 185 m²/g
High pH = 60 °C | Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material | HPLC: 3.5, 5 μm | | additional selectivity based on shape, dipole m
 | noment, and hydrogen bonding interactions. | High Strength Silica (HSS) substrate. |
 | |
| UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
 | • | Performance Benefits : General purpose column with shorter retentivity than a typical C ₁₈ , suited for method development due to extreme pH stability and applicability for the
 | Bonding : Trifunctional C ₈ , fully endcapped, bonded to an Ethylene | P/N: 186006360
Preparative
 | P/N: 186006363 | HSS CN | | 2.0 µmol/m ² 5% No
 | L10 2-8 | Low pH = 45 °C
High pH = 45 °C 230 m²/g | Neutrals QC
Reference Material
 | - |
| HPLC: 3.5, 5, 10 μm
 | | broadest range of compound classes.
 | Bridged Hybrid (BEH) substrate. | Chromatography Mix
P/N: 186006703
 | | UPLC: 1.8 µm | ۲ | Performance Benefits: A general purpose colla
 | umn that shows contrasting | Bonding: Sterically hindered, | P/N: 186006360
 | |
| BEH Shield RP18
 | | 3.3 µmol/m ² 17% Yes L1 2-11
 | Low pH = 50 °C
High pH = 45 °C 185 m²/g | Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material | HPLC: 3.5, 5 μm | | for both reversed- and normal-phase separatio
 | ons. | non-endcapped, bonded to a High
Strength Silica (HSS) substrate. |
 | |
| UPLC: 1.7 um
 | | Performance Benefits: Alternate selectivity compared to straight chain C ₁₀ .
 | Bonding: Monofunctional | P/N: 186006360
 | P/N: 186006363 | | |
 | | |
 | |
| IIHPI C: 2.5 um XP
 | | narticularly with phenolic analytes. Compatible with 100% aqueous-phase composition
 | embedded polar C10 fully | Preparative
 | | | |
 | | |
 | |
| UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm
 | • | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition.
 | embedded polar C_{18} , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703
 | | Atlantis UPLC, UHPLC,
and HPLC Columns | Particle/Ligand | Ligand Carbon Endcar
 | usp pH | Temperature Surface | Performance
 | Application |
| UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm
 | - | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition.
 | embedded polar C_{18} , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703
Neutrals QC
Reference Material
 | Reversed-Phase QC
Reference Material | Atlantis UPLC, UHPLC,
and HPLC Columns | Particle/Ligand | Ligand Carbon Endcar
Density Load
 | oped USP pH
Class No. Range | Temperature Surface
Limits Area | Performance
Standards
Neutrals QC
 | Application
Standards
Reversed-Phase QC |
| UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm
BEH Phenyl
UPLC: 1.7 μm
 | • | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition. 3.0 μmol/m² 15% Yes L11 1–12 Performance Benefits: Excellent method development column for alternate selectivity,
 | embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C
High pH = 60 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl, | Preparative
Chromatography Mix
P/N: 186006703
Neutrals QC
Reference Material
P/N: 186006360
 | Reversed-Phase QC
Reference Material
P/N: 186006363 | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 17 um | Particle/Ligand | Ligand Carbon Endcar Density Load Endcar 1.6 μmol/m² 17% Yes
 | oped USP pH
Class No. Range | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gPanding: Mixed mode C. (onign | Performance
Standards
Neutrals QC
Reference Material
P/N: 186006360
 | Application
Standards
Reversed-Phase QC
Reference Material
P/N: 186006363 |
| UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm
BEH Phenyl
UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm
BEH HILIC
 | • | 3.0 µmol/m² 15% Yes L11 1-12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. N/A Unbonded No 1.3 1-9
 | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C
High pH = 60 °C
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C
185 m ² /g | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC
 | Reversed-Phase QC
Reference Material
P/N: 186006363
HILIC QC | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 1.7 μm
UHPLC: 2.5 μm
HPLC: 5 μm | Particle/Ligand | Ligand
Density Carbon
Load Endcar
Endcar 1.6 μmol/m ² 17% Yes Performance Benefits: Excellent retention of p
selectivity when compared to traditional C ₁₈ pl
Excellent low- and high-pH stability, low MS bl
mobile phases.
 | USP
Class No.pH
RangesL782-10polar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueous | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C_{18} /anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle. | Performance
Standards
Neutrals QC
Reference Material
P/N: 186006360
 | Application
Standards
Reversed-Phase QC
Reference Material
P/N: 186006363 |
| UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm
BEH Phenyl
UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm
BEH HILIC
UPLC: 1.7 μm
 | • | 3.0 µmol/m² 15% Yes L11 1–12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. N/A Unbonded No L3 1–9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes.
 | embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
High pH = 60 °C 185 m ² /g
Bonding : Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding : Unbonded Ethylene | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226
 | Reversed-Phase QC
Reference Material
P/N: 186006363
HILIC QC
Reference Material
P/N: 186007226 | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 1.7 μm
UHPLC: 2.5 μm
HPLC: 5 μm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.New MS bl
mobile phases.1.6 μmol/m²14%Yes
 | USP
Class No.PH
RangesL782-10polar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueoussL12-8 | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C_{18} /anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/g | Performance
Standards
Neutrals QC
Reference Material
P/N: 186006360
Neutrals QC
Reference Material
P/N: 186006360
 | Application
Standards
Reversed-Phase QC
Reference Material
P/N: 186006363
Reversed-Phase QC
Reference Material
P/N: 186006363 |
| UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5, 10 μm
BEH Phenyl
UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm
BEH HILIC
UPLC: 1.7 μm
UHPLC: 2.5 μm <i>XP</i>
HPLC: 3.5, 5 μm
 | • | a.0 µmol/m² 15% Yes L11 1–12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. N/A Unbonded No L3 1–9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes. Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent. L3 1–9
 | Bonding: Trifunctional C18, fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.Low pH = 80 °C
High pH = 60 °C185 m²/gBonding: Trifunctional C6 phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.Low pH = 45 °C
High pH = 45 °C185 m²/gBonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703
Neutrals QC
Reference Material
P/N: 186006360
HILIC QC
Reference Material
P/N: 186007226
 | Reversed-Phase QC
Reference Material
P/N: 186006363
HILIC QC
Reference Material
P/N: 186007226 | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 1.7 μm
UHPLC: 2.5 μm
HPLC: 5 μm
Silica T3
HPLC: 3, 5, 10 μm | Particle/Ligand | Ligand
Density Carbon
Load Endcar
Endcar 1.6 μmol/m² 17% Yes Performance Benefits: Excellent retention of p
selectivity when compared to traditional C ₁₈ pl
Excellent low- and high-pH stability, low MS bl
mobile phases. 1.6 μmol/m² 14% Yes Performance Benefits: Designed for enhance
superior stability under low pH conditions and
 | USP
Class No.pH
RangesL782-10polar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueoussL12-8d polar compound retention, offering
is compatible with 100% aqueous | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C_{18} /anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonded | Performance
Standards
Neutrals QC
Reference Material
P/N: 186006360
Neutrals QC
Reference Material
P/N: 186006360
Preparative
Chromatography Mix
 | Application
Standards
Reversed-Phase QC
Reference Material
P/N: 186006363
Reversed-Phase QC
Reference Material
P/N: 186006363 |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide
 | • | anticularly with phenolic analytes. Compatible with 100% aqueous-phase composition.3.0 µmol/m²15%YesL111-12Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase.N/AUnbondedNoL31-9Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes. Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent.7.5 µmol/m²12%NoL682-11
 | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
·
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material
 P/N: 186007226 | Reversed-Phase QC
Reference Material
P/N: 186006363
HILIC QC
Reference Material
P/N: 186007226
HILIC QC
Reference Material | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 1.7 μm
UHPLC: 2.5 μm
HPLC: 5 μm
Silica T3
HPLC: 3, 5, 10 μm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.New Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.Yes
 | USP
Class No.pH
RangesL782-10polar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueoussL12-8d polar compound retention, offering
lis compatible with 100% aqueous | Temperature
LimitsSurface
AreaLow pH = $60 \degree C$
High pH = $60 \degree C$ $270 \ m^2/g$ Bonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = $45 \degree C$
High pH = $45 \degree C$
High pH = $45 \degree C$ $330 \ m^2/g$ Bonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate. | Performance
Standards
Neutrals QC
Reference Material
P/N: 186006360
Neutrals QC
Reference Material
P/N: 186006360
Preparative
Chromatography Mix
P/N: 186006703
 | Application
Standards
Reversed-Phase QC
Reference Material
P/N: 186006363
Reversed-Phase QC
Reference Material
P/N: 186006363 |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 3.5, 5 μm
 | • | a.0 μmol/m² 15% Yes L11 1–12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. N/A Unbonded No L3 1–9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes. Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent. 1–9 7.5 μmol/m² 12% No L68 2–11 Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence
 | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
High pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703 Neutrals QC
Reference Material
P/N: 186006360 HILIC QC
Reference Material
P/N: 186007226 HILIC QC
Reference Material
P/N: 186007226
 | Reversed-Phase QC Reference Material P/N: 186006363 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 1.7 μm
UHPLC: 2.5 μm
HPLC: 5 μm
Silica T3
HPLC: 3, 5, 10 μm
Silica HILIC
HPLC: 3, 5 μm | Particle/Ligand | Ligand
Density Carbon
Load Endcar
Endcar 1.6 μmol/m² 17% Yes Performance Benefits: Excellent retention of p
selectivity when compared to traditional C ₁₈ pl
Excellent low- and high-pH stability, low MS bl
mobile phases. No 1.6 μmol/m² 14% Yes Performance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases. No No Unbonded No Performance Benefits: Excellent for retention
and hot phases. No
 | USP
Class No. pH
Range s L78 2-10 polar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueous 2-8 s L1 2-8 d polar compound retention, offering
lis compatible with 100% aqueous 1-5 of very polar, basic, water soluble 1-5 | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate. | Performance
Standards Neutrals QC Reference Material P/N: 186006360 Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186007226
 | Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226 |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm
 | • | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition.3.0 μmol/m²15%YesL111–12Performance Benefits: Excellent method development column for alternate selectivity,
particularly in regard to polyaromatic compounds. Povides unique level of pH stability
for a phenyl bonded phase.N/AUnbondedNoL31–9Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes
Specifically designed and tested for HILIC separations using mobile phases containing
high concentrations of organic solvent.7.5 μmol/m²12%NoL682–11Performance Benefits: Rugged HILIC stationary phase designed to separate a wide
range of very polar compounds. Especially good at separating carbohydrates
(saccharides) using high concentrations of organic modifier, elevated temperature, and
high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence3.1 µmol/m²18%YesL11–12
 | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g | Preparative
Chromatography Mix
P/N: 186006703 Neutrals QC
Reference Material
P/N: 186006360 HILIC QC
Reference Material
P/N: 186007226 HILIC QC
Reference Material
P/N: 186007226 Output P/N: 186007226
 Direction Standard | Reversed-Phase QC Reference Material P/N: 186006363 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Peptide Retention Standard | Atlantis UPLC, UHPLC, and HPLC Columns BEH C ₁₈ AX UPLC: 17 μm UHPLC: 2.5 μm HPLC: 5 μm Silica T3 HPLC: 3, 5, 10 μm Silica HILIC HPLC: 3, 5 μm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.No1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solv
 | USP
Class No.PH
RangeaL782-10bL782-10colar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8dpolar compound retention, offering
tis compatible with 100% aqueousbL31-5of very polar, basic, water soluble
HILLIC separations using mobile phases
rent. | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate. | Performance
Standards Neutrals QC Reference Material P/N: 186006360 Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186007226
 | Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226 |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm | | and year of the presence of the p | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Output P/N: 186007226 P/N: 186007226 P/N: 186007226 P/N: 186007226 P/N: 186007226 | Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226P/N: 186007226 | Atlantis UPLC, UHPLC,
and HPLC ColumnsBEH C18 AX
UPLC: 17 μm
UHPLC: 2.5 μmBEH C18 AX
UPLC: 5 μmSilica T3
HPLC: 3, 5, 10 μmSilica HILIC
HPLC: 3, 5 μmSilica dC18
HPLC: 3, 5, 10 μm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr
with 100% aqueous mobile phases.Yes | OpedUSP
Class No.PH
RangeaL782-10bL782-10colar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueous2-8aL12-8dpolar compound retention, offering
lis compatible with 100% aqueous1-5of very polar, basic, water soluble
HILC separations using mobile phases
rent.1-3aL13-7 | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high | Performance
Standards Neutrals QC Reference Material P/N: 186006360 Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186007226 Neutrals QC Reference Material P/N: 186007226 Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186007226 | Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226Reversed-Phase QC
Reference Material
P/N: 186007226Reversed-Phase QC
Reference Material
P/N: 186006363 |
| UHPLC: 2.5 μm XP
HPLC: 3.5, 5, 10 μm
BEH Phenyl
UPLC: 1.7 μm
UHPLC: 2.5 μm XP
HPLC: 3.5, 5 μm
BEH HILIC
UPLC: 1.7 μm
UHPLC: 2.5 μm XP
HPLC: 3.5, 5 μm
BEH Amide
UPLC: 1.7 μm
UHPLC: 2.5 μm XP
HPLC: 3.5, 5 μm
 | | 3.0 μmol/m² 15% Yes L11 1-12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent. 1-9 7.5 μmol/m² 12% No L68 2-11 Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 3.1 µmol/m² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C18 LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-12 1-12
 | embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
High pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC
Reference Material P/N: 186007226 Output P/N: 186007226 | Reversed-Phase QC Reference Material P/N: 186006363 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Peptide Retention Standard P/N: 186006555 | Atlantis UPLC, UHPLC,
and HPLC ColumnsBEH C18 AX
UPLC: 17 μm
UHPLC: 2.5 μmBEH C18 AX
UPLC: 5 μmSilica T3
HPLC: 3, 5, 10 μmSilica HILIC
HPLC: 3, 5 μmSilica dC18
HPLC: 3, 5, 10 μm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr
with 100% aqueous mobile phases.Yes
 | OpedUSP
Class No.PH
RangeaL782-10bDolar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8dDolar compound retention, offering
tis compatible with 100% aqueousbL31-5of very polar, basic, water soluble
HILC separations using mobile phases
rent.Ja-7aL13-7 | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate. | Performance
Standards Neutrals QC Reference Material P/N: 186006360 Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186007226 Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703
 | Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226Reversed-Phase QC
Reference Material
P/N: 186007226P/N: 186006363 |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm
 | | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition. 3.0 μmol/m² 15% Yes L11 1-12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. L13 1-9 N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes. Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent. 1-9 7.5 μmol/m² 12% No L68 2-11 Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 3.1 μmol/m² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C ₁₈ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. L1 1-12
 | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material
P/N: 186007226 Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006371 | Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555 | Atlantis UPLC, UHPLC, and HPLC Columns BEH C ₁₈ AX UPLC: 17 μm UHPLC: 2.5 μm HPLC: 5 μm Silica T3 HPLC: 3, 5, 10 μm Silica HILIC HPLC: 3, 5 μm Silica dC ₁₈ HPLC: 3, 5, 10 μm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr
with 100% aqueous mobile phases.Yes
 | OpedUSP
Class No.PH
RangeaL782-10bolar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueous2-8aL12-8d polar compound retention, offering
l'is compatible with 100% aqueous1-5of very polar, basic, water soluble
HILLIC separations using mobile phases
rent.3-7aL13-7 | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate. | Performance
StandardsNeutrals QC
Reference Material
P/N: 186006360P/N: 186006360Preparative
Chromatography Mix
P/N: 186006703HILIC QC
Reference Material
P/N: 186007226P/N: 186007226Neutrals QC
Reference Material
P/N: 186007226P/N: 186007226Preparative
Chromatography Mix
P/N: 186006360Preparative
P/N: 186007226P/N: 186007226P/N: 186007226P/N: 186006360Preparative
P/N: 186006360Preparative
P/N: 186006703
 | Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226Reversed-Phase QC
Reference Material
P/N: 186007226P/N: 186006363 |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 10 μm Peptide BEH C ₁₈ , 300Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm
 | | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition.3.0 µmol/m²15%YesL111-12Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase.N/AUnbondedNoL31-9Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytesSpecifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent.7.5 µmol/m²12%NoL682-11Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence3.1 µmol/m²18%YesL11-12Performance Benefits: pH and temperature stable, small pore, C18 LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents.1-123.1 µmol/m²12%YesL11-12Performance Benefits: pH and temperature stable, wide pore, C18 LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents.1-12
 | embedded polar C ₁₈ , fully
emdcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
High pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703 Neutrals QC
Reference Material
P/N: 186006360 HILIC QC
Reference Material
P/N: 186007226 HILIC QC
Reference Material
P/N: 186007226 Digestion Standard
P/N: 186006723 Cytochrome c
Digestion Standard
P/N:
186006703 Cytochrome c
Digestion Standard
P/N: 186006703 Cytochrome c
Digestion Standard
P/N: 186006703 P/N: 186006703 Cytochrome c
Digestion Standard
P/N: 186006371 Preparative
Chromatography Mix
P/N: 186006371 Preparative
Chromatography Mix
P/N: 186006371 | Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555 | Atlantis UPLC, UHPLC,
and HPLC ColumnsBEH C18 AXUPLC: 17 μmUHPLC: 2.5 μmHPLC: 5 μmSilica T3HPLC: 3, 5, 10 μmSilica HILICHPLC: 3, 5 μmSilica dC18HPLC: 3, 5, 10 μmSunFire HPLCColumns | Particle/Ligand | Ligand
DensityCarbon
LoadEndcard1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of f
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr
with 100% aqueous mobile phases.Yes
 | opedUSP
Class No.PH
RangeaL782-10oolar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8d polar compound retention, offering
is compatible with 100% aqueousbL31-5of very polar, basic, water soluble
HILIC separations using mobile phases
rent.3-7aL13-7aL13-7apounds. Designed for compatibilityappedUSP
Class No.PH
Range | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate.Temperature
LimitsSurface
Area | Performance
Standards Neutrals QC
Reference Material
P/N: 186006360 P/N: 186006360 Preparative
Chromatography Mix
P/N: 186006703 HILIC QC
Reference Material
P/N: 186007226 Neutrals QC
Reference Material
P/N: 186007226 Neutrals QC
Reference Material
P/N: 186006703 Preparative
Chromatography Mix
P/N: 186006360 Preparative
Chromatography Mix
P/N: 186006703 Preparative
Chromatography Mix
P/N: 186006703
 | Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226Reversed-Phase QC
Reference Material
P/N: 186007226PIN: 186006363Application
Standards |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm Peptide BEH C ₁₈ , 300Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm
 | | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition. 3.0 μmol/m ² 15% Yes L1 1-12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes. Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent. 1-9 7.5 μmol/m ² 12% No L68 2-11 Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 3.1 μmol/m ² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C ₁₈ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-12 Queformance Benefits: pH and temperature stable, wide pore, C ₁₈ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-12 Queformance Benefits: PH and temperature stable, wide pore, C ₁₈ LC column f
 | embedded polar C ₁₈ , fully
embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative
Chromatography Mix
P/N: 186006703 Neutrals QC Reference Material
P/N: 186006360 HILIC QC Reference Material
P/N: 186007226 HILIC QC Reference Material
P/N: 186007226 P/N: 186007226 HILIC QC Reference Material
P/N: 186007226 P/N: 186007226 Digestion Standard
P/N:
186006371 Preparative
Chromatography Mix
P/N: 186006703 Cytochrome c
Digestion Standard
P/N: 186006703 Preparative
Chromatography Mix
P/N: 186006371 Preparative
Chromatography Mix
P/N: 186006703 | Reversed-Phase QC Reference Material P/N: 186006363 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Peptide Retention Standard P/N: 186006555 Peptide Retention Standard P/N: 186006555 | Atlantis UPLC, UHPLC,
and HPLC ColumnsBEH C18 AXUPLC: 17 μmUHPLC: 2.5 μmHPLC: 5 μmSilica T3HPLC: 3, 5, 10 μmSilica HILICHPLC: 3, 5 μmSilica dC18HPLC: 3, 5, 10 μmSunFire HPLCColumns | Particle/Ligand | Ligand
DensityCarbon
LoadEndcard1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr
with 100% aqueous mobile phases.YesLigand
DensityCarbon
LoadEndcard3.5 μmol/m²16%Yes
 | opedUSP
Class No.PH
RangeaL782-10oolar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8d polar compound retention, offering
is compatible with 100% aqueousbL31-5of very polar, basic, water soluble
HILIC separations using mobile phases
rent.3-7aL13-7aL13-7appounds. Designed for compatibilityaUSP
Class No.PH
RangeaL12-8 | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate.Temperature
LimitsSurface
AreaLow pH = 50 °C
Limits340 m²/g | Performance
Standards Neutrals QC
Reference Material
P/N: 186006360 P/N: 186006360 Preparative
Chromatography Mix
P/N: 186006703 HILIC QC
Reference Material
P/N: 186007226 Neutrals QC
Reference Material
P/N: 186007226 Neutrals QC
Reference Material
P/N: 186007226 Preparative
Chromatography Mix
P/N: 186006703 Preparative
Chromatography Mix
P/N: 186006703 Preparative
Chromatography Mix
P/N: 186006703 Performance
Standards Neutrals QC
Beference Material
 | Application
Standards Reversed-Phase QC
Reference Material
P/N: 186006363 Reversed-Phase QC
Reference Material
P/N: 186006363 HILIC QC
Reference Material
P/N: 186007226 Reversed-Phase QC
Reference Material
P/N: 186006363 P/N: 186006363 Reversed-Phase QC
Reference Material
P/N: 186006363 Reversed-Phase QC
Reference Material
P/N: 186006363 Reversed-Phase QC
Reference Material |
| UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C ₁₈ , 130Å UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm Peptide BEH C ₁₈ , 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH C ₄ , 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm
 | | 3.0 µmol/m² 15% Yes L11 1-12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. L11 1-12 N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HILIC separations using mobile phases containing high concentrations of organic solvent. L68 2-11 7.5 µmol/m² 12% No L68 2-11 Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high PH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 3.1 µmol/m² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C ₁₈ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. L1 1-12 2.4 µmol/m² 8% No L26 1-10 Performance Benefits: pH and temperature stable, wide pore, C ₄ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-10 <t< td=""><td>embedded polar C₁₈, fully
emdcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m²/g
Bonding: Trifunctional C₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m²/g
High pH = 45 °C 185 m²/g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m²/g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m²/g
Bonding: Trifunctional C₁₈, fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m²/g
Bonding: Trifunctional C₁₈, fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m²/g
Bonding: Trifunctional C₁₈, fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.</td><td>Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 MassPREP Protein Standard Mix P/N: 186004900</td><td>Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555MassPREP Protein
Standard Mix
P/N: 186004900</td><td>Atlantis UPLC, UHPLC,
and HPLC ColumnsBEH C18 AX
UPLC: 17 µm
UHPLC: 2.5 µmIPLC: 5 µmSilica T3
HPLC: 3, 5, 10 µmSilica HILIC
HPLC: 3, 5 µmSilica dC18
HPLC: 3, 5, 10 µmSunFire HPLC
ColumnsSilica C18
HPLC: 3, 5, 10 µm</td><td>Particle/Ligand</td><td>Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of f
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar com
with 100% aqueous mobile phases.YesLigand
DensityCarbon
LoadEndcar3.5 μmol/m²16%YesPerformance Benefits: General purpose meth
loading capacity, particularly for basic analytesYes</td><td>opedUSP
Class No.PH
RangeaL782-10oolar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8dpolar compound retention, offering
is compatible with 100% aqueousaL31-5of very polar, basic, water soluble
HILIC separations using mobile phases
rent.3-7aL13-7aL13-7apounds. Designed for
compatibilityaL12-8bL12-8aL12-8bL12-8bL12-8bL12-8cond development column. Very high
sin low pH mobile phases. Ideally
ays.</td><td>Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gLow pH = 45 °C
High pH = 45 °C340 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate.Low pH = 50 °C
High pH = 40 °C340 m²/gBonding: Difunctional C18, fully
endcapped, bonded C18, fully
endcapped, bonded c340 m²/g</td><td>Performance
StandardsNeutrals QC
Reference Material
P/N: 186006360P/N: 186006360Preparative
Chromatography Mix
P/N: 186006703HILIC QC
Reference Material
P/N: 186007226P/N: 186006703HILIC QC
Reference Material
P/N: 186006703P/N: 186006703Preparative
Chromatography Mix
P/N: 186006703Performance
StandardsP/N: 186006703Performance
StandardsP/N: 186006703Preparative
Chromatography Mix
P/N: 186006703Performance
StandardsP/N: 186006703Preparative
Chromatography Mix
P/N: 186006703Performance
StandardsPerformance
Perparative
P/N: 186006703Preparative
P/N: 186006703Preparative
P/N: 186006360Preparative
Preparative
P/N: 186006703</td><td>Application
StandardsReversed-Phase QC
Reference Material
P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226Reversed-Phase QC
Reference Material
P/N: 186006363P/N: 186006363Reversed-Phase QC
Reference Material
P/N: 186006363P/N: 186006363P/N: 186006363</td></t<> | embedded polar C ₁₈ , fully
emdcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate. | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix
P/N: 186006703 MassPREP Protein Standard Mix P/N: 186004900 | Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555MassPREP Protein
Standard Mix
P/N: 186004900 | Atlantis UPLC, UHPLC,
and HPLC ColumnsBEH C18 AX
UPLC: 17 µm
UHPLC: 2.5 µmIPLC: 5 µmSilica T3
HPLC: 3, 5, 10 µmSilica HILIC
HPLC: 3, 5 µmSilica dC18
HPLC: 3, 5, 10 µmSunFire HPLC
ColumnsSilica C18
HPLC: 3, 5, 10 µm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retention of f
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvYes1.6 μmol/m²12%YesPerformance Benefits: Retention of polar com
with 100% aqueous mobile phases.YesLigand
DensityCarbon
LoadEndcar3.5 μmol/m²16%YesPerformance Benefits: General purpose meth
loading capacity, particularly for basic analytesYes
 | opedUSP
Class No.PH
RangeaL782-10oolar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8dpolar compound retention, offering
is compatible with 100% aqueousaL31-5of very polar, basic, water soluble
HILIC separations using mobile phases
rent.3-7aL13-7aL13-7apounds. Designed for compatibilityaL12-8bL12-8aL12-8bL12-8bL12-8bL12-8cond development column. Very high
sin low pH mobile phases. Ideally
ays. | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gLow pH = 45 °C
High pH = 45 °C340 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate.Low pH = 50 °C
High pH = 40 °C340 m²/gBonding: Difunctional C18, fully
endcapped, bonded C18, fully
endcapped, bonded c340 m²/g | Performance
StandardsNeutrals QC
Reference Material
P/N: 186006360P/N: 186006360Preparative
Chromatography Mix
P/N: 186006703HILIC QC
Reference Material
P/N: 186007226P/N: 186006703HILIC QC
Reference Material
P/N: 186006703P/N: 186006703Preparative
Chromatography Mix
P/N: 186006703Performance
StandardsP/N: 186006703Performance
StandardsP/N: 186006703Preparative
Chromatography Mix
P/N: 186006703Performance
StandardsP/N: 186006703Preparative
Chromatography Mix
P/N: 186006703Performance
StandardsPerformance
Perparative
P/N: 186006703Preparative
P/N: 186006703Preparative
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Low pH = 60 °C 395 m ² /g High pH = 60 °C 395 m ² /g	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Objection Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 MassPREP Protein Standard Mix P/N: 186004900	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186004900BEH125 Protein Standard Mix	Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AX UPLC: 17 μm UHPLC: 2.5 μm HPLC: 5 μmSilica T3 HPLC: 3, 5, 10 μmSilica HILIC HPLC: 3, 5 μmSilica dC18 HPLC: 3, 5, 10 μmSunFire HPLC ColumnsSilica C18 HPLC: 3, 5, 10 μm	Particle/Ligand	Ligand DensityCarbon LoadEndcar1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C18 pl Excellent low- and high-pH stability, low MS bl mobile phases.Yes1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for H containing high concentrations of organic solvNo1.6 µmol/m²12%YesPerformance Benefits: Retention of polar corr with 100% aqueous mobile phases.YesLigand DensityCarbon LoadEndcar3.5 µmol/m²16%Yes3.5 µmol/m²12%Yes3.5 µmol/m²12%Yes	opedUSP Class No.PH RangeaL782-10oplar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueousaL12-8dL12-8dL31-5of very polar, basic, water soluble HILLIC separations using mobile phases rent.3-7aL13-7aL13-7aL13-7apounds. Designed for compatibilitybpedUSP Class No.PH RangeaL12-8aL12-8bod development column. Very high sin low pH mobile phases. Ideally ays.2-8	Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.	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Povides unique level of pH stability for a phenyl bonded phase. 1-9 N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HLIC separations using mobile phases containing high concentrations of organic solvent. 1-9 7.5 µmol/m² 12% No L68 2-11 Performance Benefits: Rugged HILC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 3.1 µmol/m² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C ₁₈ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-12 2.4 µmol/m² 8% No L26 1-10 Performance Benefits: pH and temperature stable, wide pore, C ₁₈ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-10 2.4 µmol/m² 8% No L26 <td< td=""><td>embedded polar C₁₈, fully emdcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m²/g Bonding: Trifunctional C₆ phenyl, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 45 °C 185 m²/g High pH = 45 °C 185 m²/g Bonding: Unbonded Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 185 m²/g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m²/g Bonding: Trifunctional C₁₈, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. 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Low pH = 60 °C 395 m²/g</td><td>Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Digestion Standard P/N: 186006371 Preparative Cytochrome c Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006373 Preparative Chromatography Mix P/N: 186006703 MassPREP Protein Standard Mix P/N: 186004900 BEH125 Protein Standard Mix P/N: 186006519</td><td>Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186004900BEH125 Protein Standard Mix P/N: 186006519</td><td>Atlantis UPLC, UHPLC, and HPLC Columns BEH C₁₈ AX UPLC: 17 µm UHPLC: 2.5 µm HPLC: 5 µm Silica T3 HPLC: 3, 5, 10 µm Silica HILIC HPLC: 3, 5 µm Silica dC₁₈ HPLC: 3, 5, 10 µm SunFire HPLC Columns Silica C₁₈ HPLC: 3.5, 5, 10 µm</td><td>Particle/Ligand Image: Contract of the second secon</td><td>Ligand DensityCarbon LoadEndcar1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C18 pl Excellent low- and high-pH stability, low MS bl mobile phases.Yes1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. 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Designed for compatibility3-7apounds. Designed for compatibility2-8aL12-8aL12-8boedUSP Class No.PH RangeaL12-8boed development column. Very high s in low pH mobile phases. Ideally ays.2-8aL72-8bool development column. Very high s in low pH mobile phases. Less for most analytes.2-8</td><td>Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.</td><td>Performance StandardsNeutrals QC Reference Material P/N: 186006360P/N: 186006360Preparative Chromatography Mix P/N: 186006703HILIC QC Reference Material P/N: 186007226Reference Material P/N: 186006703HILIC QC Reference Material P/N: 186006703P/N: 186006703HILIC QC Reference Material P/N: 186006703P/N: 186006703Preparative Chromatography Mix P/N: 186006703Performance StandardsNeutrals QC Reference Material P/N: 186006703Preparative Chromatography Mix P/N: 186006360Preparative Chromatography Mix P/N: 186006360Preparative Chromatography Mix P/N: 186006300Preparative Chromatography Mix P/N: 186006300Preparative P/N: 186006300Preparative P/N: 186006300Preparative P/N: 186006300Preparative P/N: 186006300Preparative P/N: 186006300Preparative P/N: 186006300Preparative P/N: 186006300</td><td>Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363</td></td<>	embedded polar C ₁₈ , fully emdcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. 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Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Proprietary monofunctional C ₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m ² /g High pH = 60 °C 395 m ² /g High pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate.	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Cytochrome c Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Standard Mix P/N: 186006703 HILIC QC BEH125 Protein Standard Mix P/N: 186006519 BEH125 Protein Standard Mix P/N: 186006519	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186004900BEH125 Protein Standard Mix P/N: 186006519BEH200 SEC Protein Standard Mix P/N: 186006519	Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AX UPLC: 1.7 μm UHPLC: 2.5 μm HPLC: 5 μmSilica T3 HPLC: 3, 5, 10 μmSilica HILIC HPLC: 3, 5 μmSilica dC18 HPLC: 3, 5, 10 μmSunFire HPLC ColumnsSilica C18 HPLC: 3.5, 5, 10 μmSilica C18 HPLC: 3.5, 5, 10 μm	Particle/Ligand Image: Contract of the second secon	Ligand DensityCarbon LoadEndcar1.6 μmol/m217%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C18 pl Excellent low- and high-pH stability, low MS bl mobile phases.Yes1.6 μmol/m214%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for H containing high concentrations of organic solutionsNo1.6 μmol/m212%YesPerformance Benefits: Retention of polar com with 100% aqueous mobile phases.YesLigand DensityCarbon LoadEndcar3.5 μmol/m216%YesSecformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assaYes3.5 μmol/m212%YesSecformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assaYes3.5 μmol/m212%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assaYesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes hydrophobic, therefore, less retentive than C18	opedUSP Class No.pH RangesL782-10oplar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueoussL12-8d polar compound retention, offering is compatible with 100% aqueousbL31-5of very polar, basic, water soluble HILIC separations using mobile PHLIC separations using mobile HILIC separatio	Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C1B/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C1B) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Difunctional C1B bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 40 °C340 m²/gBonding: Difunctional C1B, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C2B, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/g	Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186007226 Neutrals QC Reference Material P/N: 186006703 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006703 Neutrals QC Reference Material P/N: 186006703 Neutrals QC Reference Material P/N: 186006703 Neutrals QC Reference Material P/N: 186006703	Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Keversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363
UHPLC: 2.5 μm XP HPLC: 3.5, 5, 10 μm BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C18, 130Å UPLC: 1.7 μm UPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C18, 130Å UPLC: 1.7 μm UPLC: 3.5, 5, 10 μm Peptide BEH C4, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH C4, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH SEC, 125Å UPLC: 1.7 μm HPLC: 3.5 μm		3.0 µmol/m² 15% Yes L11 1-12 Performance Benefits: Excellent method development column for alternate selectivity, particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. 1-9 N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HLIC separations using mobile phases containing high concentrations of organic solvent. 1.3 1-9 7.5 µmol/m² 12% No L68 2-11 Performance Benefits: Rugged HILIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 3.1 µmol/m² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C1 _B LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1 1-12 S4 µmol/m² 12% Yes L1 1-12 Performance Benefits: pH and temperature stable, wide pore, C1 _B LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-10 2.4 µmol/m² 8% <t< td=""><td>embedded polar C₁₈, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m²/g Bonding: Trifunctional C₆ phenyl, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 45 °C 185 m²/g High pH = 45 °C 185 m²/g Bonding: Unbonded Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 185 m²/g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m²/g Bonding: Trifunctional C₁₈, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m²/g Bonding: Trifunctional C₁₈, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m²/g Bonding: Trifunctional C₁₈, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m²/g Bonding: Proprietary monofunctional C₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m²/g High pH = 60 °C 220 m²/g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 220 m²/g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate.</td><td>Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Otyochrome c Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Standard Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 BEH125 Protein Standard Mix P/N: 186004900 BEH125 Protein Standard Mix P/N: 186006519</td><td>Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186004900BEH125 Protein Standard Mix P/N: 186006519BEH200 SEC Protein Standard Mix P/N: 186006518</td><td>Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AXUPLC: 17 μmUHPLC: 2.5 μmHPLC: 5 μmSilica T3HPLC: 3, 5, 10 μmSilica HILICHPLC: 3, 5 μmSilica dC18HPLC: 3, 5, 10 μmSunFire HPLC ColumnsSilica C18HPLC: 3.5, 5, 10 μmSilica C18HPLC: 3.5, 5, 10 μm</td><td>Particle/Ligand Image: Contract of the second secon</td><td>Ligand DensityCarbon LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retentional C18 plExcellent low- and high-pH stability, low MS bl mobile phases.1.6 μmol/m²14%1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for H containing high concentrations of organic solveNo1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr with 100% aqueous mobile phases.NoLigand DensityCarbon LoadEndcar3.5 μmol/m²16%Yes3.5 μmol/m²12%Yes3.5 μmol/m²12%Yes3.5 μmol/m²12%YesArformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assided for purific</td><td>oped USP Class No. PH Range s L78 2-10 oplar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueous 2-8 s L1 2-8 d polar compound retention, offering is compatible with 100% aqueous 1-5 of very polar, basic, water soluble HILIC separations using mobile phases rent. 3-7 s L1 3-7 opodd USP Class No. pH Range s L1 2-8 od development column. Very high s in low pH mobile phases. Ideally ays. 2-8 od development column. Very high s in low pH mobile phases. Less for most analytes. 2-8</td><td>Temperature LimitsSurface Area$Low pH = 60 °C$ High pH = $60 °C$$270 m^2/g$Bonding: Mixed-mode C_{18}/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.$Low pH = 45 °C$ High pH = $45 °C$$330 m^2/g$Bonding: Intermediate T3 (C_{18}) bonding and endcapping, bonded to a high purity silica substrate.$Low pH = 45 °C$ High pH = $45 °C$ Bonding: Unbonded high purity silica substrate.$Low pH = 45 °C$ High pH = $45 °C$ Bonding: Unbonded high purity silica substrate.$Low pH = 45 °C$ High pH = $45 °C$ Bonding: Difunctional C_{18} bonding, fully endcapped, bonded to a high purity silica substrate.$Low pH = 50 °C$ High pH = $40 °C$$Surface$ Area$Low pH = 50 °C$ High pH = $40 °C$$340 m^2/g$Bonding: Difunctional C_{18}, fully endcapped, bonded to a high purity silica substrate.$Low pH = 50 °C$ High pH = $40 °C$$Surface$ Area$Low pH = 40 °C$ High pH = $40 °C$$Surface$ High pH = $40 °C$$Surface$ High pH = $40 °C$$Surface$ High pH = $40 °C$$Surface$ High pH = $40 °C$$Surface$ Area$Low pH = 40 °C$$Surface$ High pH = $40 °C$$Surface$ High pH = $40 °C$$Surface$$Surface$ High pH = $40 °C$$Surface$ High pH = $40 °C$$Surface$$Surface$$Surface$$Surface$$Surface$$Surface$$Surface$$Surface$</td><td>Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006360</td><td>Application Standards Reversed-Phase QC Reference Material P/N: 186006363 Reversed-Phase QC Reference Material P/N: 186006363 HILIC QC Reference Material P/N: 186007226 Reversed-Phase QC Reference Material P/N: 186006363 Application Standards Reversed-Phase QC Reference Material P/N: 186006363 P/N: 186006363 Reversed-Phase QC Reference Material P/N: 186006363 P/N: 186006363</td></t<>	embedded polar C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₆ phenyl, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 45 °C 185 m ² /g High pH = 45 °C 185 m ² /g Bonding: Unbonded Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 185 m ² /g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Proprietary monofunctional C ₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m ² /g High pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate.	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Otyochrome c Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Standard Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 BEH125 Protein Standard Mix P/N: 186004900 BEH125 Protein Standard Mix P/N: 186006519	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186004900BEH125 Protein Standard Mix P/N: 186006519BEH200 SEC Protein Standard Mix P/N: 186006518	Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AXUPLC: 17 μmUHPLC: 2.5 μmHPLC: 5 μmSilica T3HPLC: 3, 5, 10 μmSilica HILICHPLC: 3, 5 μmSilica dC18HPLC: 3, 5, 10 μmSunFire HPLC ColumnsSilica C18HPLC: 3.5, 5, 10 μmSilica C18HPLC: 3.5, 5, 10 μm	Particle/Ligand Image: Contract of the second secon	Ligand DensityCarbon LoadEndcar1.6 μmol/m²17%YesPerformance Benefits: Excellent retentional C18 plExcellent low- and high-pH stability, low MS bl mobile phases.1.6 μmol/m²14%1.6 μmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for H containing high concentrations of organic solveNo1.6 μmol/m²12%YesPerformance Benefits: Retention of polar corr with 100% aqueous mobile phases.NoLigand DensityCarbon LoadEndcar3.5 μmol/m²16%Yes3.5 μmol/m²12%Yes3.5 μmol/m²12%Yes3.5 μmol/m²12%YesArformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assided for purific	oped USP Class No. PH Range s L78 2-10 oplar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueous 2-8 s L1 2-8 d polar compound retention, offering is compatible with 100% aqueous 1-5 of very polar, basic, water soluble HILIC separations using mobile phases rent. 3-7 s L1 3-7 opodd USP Class No. pH Range s L1 2-8 od development column. Very high s in low pH mobile phases. Ideally ays. 2-8 od development column. Very high s in low pH mobile phases. Less for most analytes. 2-8	Temperature LimitsSurface Area $Low pH = 60 °C$ High pH = $60 °C$ $270 m^2/g$ Bonding: Mixed-mode C_{18} /anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle. $Low pH = 45 °C$ High pH = $45 °C$ $330 m^2/g$ Bonding: Intermediate T3 (C_{18}) bonding and endcapping, bonded to a high purity silica substrate. $Low pH = 45 °C$ High pH = $45 °C$ Bonding: Unbonded high purity silica substrate. $Low pH = 45 °C$ High pH = $45 °C$ Bonding: Unbonded high purity silica substrate. $Low pH = 45 °C$ High pH = $45 °C$ Bonding: Difunctional C_{18} bonding, fully endcapped, bonded to a high purity silica substrate. $Low pH = 50 °C$ High pH = $40 °C$ $Surface$ Area $Low pH = 50 °C$ High pH = $40 °C$ $340 m^2/g$ Bonding: Difunctional C_{18} , fully endcapped, bonded to a high purity silica substrate. $Low pH = 50 °C$ High pH = $40 °C$ $Surface$ Area $Low pH = 40 °C$ High pH = $40 °C$ $Surface$ High pH = $40 °C$ $Surface$ Area $Low pH = 40 °C$ $Surface$ High pH = $40 °C$ $Surface$ High pH = $40 °C$ $Surface$ $Surface$ High pH = $40 °C$ $Surface$ High pH = $40 °C$ $Surface$ $Surface$ $Surface$ $Surface$ $Surface$ $Surface$ $Surface$ $Surface$	Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006360	Application Standards Reversed-Phase QC Reference Material P/N: 186006363 Reversed-Phase QC Reference Material P/N: 186006363 HILIC QC Reference Material P/N: 186007226 Reversed-Phase QC Reference Material P/N: 186006363 Application Standards Reversed-Phase QC Reference Material P/N: 186006363 P/N: 186006363 Reversed-Phase QC Reference Material P/N: 186006363 P/N: 186006363
UHPLC: 2.5 μm XP BEH Phenyl UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UHPLC: 2.5 μm XP HPLC: 3.5, 5 μm Peptide BEH C18, 130Å UPLC: 1.7 μm UHPLC: 3.5, 5, 10 μm Peptide BEH C18, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH C4, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH SEC, 125Å UPLC: 1.7 μm HPLC: 3.5 μm Protein BEH SEC, 200Å UPLC: 1.7 μm HPLC: 3.5 μm												
 | | particularly with phenolic analytes. Compatible with 100% aqueous-phase composition.3.0 µmol/m²15%YesL111-12Performance Benefits: Excellent method development column for alternate selectivity,
particularly in regard to polyaromatic compounds. Povides unique level of PH stability
for a phenyl bonded phase.N/AUnbondedNoL31-9Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes
Specifically designed and tested for HLLC separations using mobile phases containing
high concentrations of organic solvent.1.682-11Performance Benefits: Rugged HLLC stationary phase designed to separate a wide
range of very polar compounds. Especially good at separating carbohydrates
(saccharide) using high concentrations of organic modifier, elevated temperature, and
high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence1.123.1 µmol/m²18%YesL11-12Performance Benefits: pH and temperature stable, small pore, C ₁₉ LC column
for peptides. Specifically QC tested with a tryptic digest of cytochrome c using
0.1% TFA containing eluents.1.122.4 µmol/m²12%YesL11-12Performance Benefits: pH and temperature stable, wide pore, C ₁₉ LC column
for peptides. Specifically QC tested with a tryptic digest of cytochrome c using
0.1% TFA containing eluents.1.331-82.4 µmol/m²8%NoL331-8Performance Benefits: pH and temperature stable, wide pore, C ₄ LC column
for poteins. Specifically QC tested with protein mixture.1.831-8Performance Benefits: pH
 | embedded polar C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₆ phenyl,
fully endcapped, bonded to an
Ethylene Bridged Hybrid (BEH)
substrate.
Low pH = 45 °C 185 m ² /g
High pH = 45 °C 185 m ² /g
Bonding: Unbonded Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 90 °C 185 m ² /g
Bonding: Trifunctional amide
bonded to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 80 °C 185 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Trifunctional C ₁₈ , fully
endcapped, bonded to an Ethylene
Bridged Hybrid (BEH) substrate.
Low pH = 80 °C 90 m ² /g
Bonding: Proprietary monofunctional
C ₄ bonding to an Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 60 °C 395 m ² /g
Bonding: Diol bonded to a high
pore volume Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 60 °C 220 m ² /g
Bonding: Diol bonded to a high
pore volume Ethylene Bridged
Hybrid (BEH) substrate.
Low pH = 60 °C 220 m ² /g
High pH = 60 °C 220 m ² /g
High pH = 60 °C 80 m ² /g | Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Digestion Standard P/N: 186006371 Preparative
Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 MassPREP Protein Standard Mix P/N: 186006519 BEH125 Protein Standard Mix P/N: 186006519 BEH200 SEC Protein Standard Mix P/N: 186006518 | Reversed-Phase QC
Reference Material
P/N: 186006363HILIC QC
Reference Material
P/N: 186007226HILIC QC
Reference Material
P/N: 186007226Peptide Retention
Standard
P/N: 186006555Peptide Retention
Standard
P/N: 186006555MassPREP Protein
Standard Mix
P/N: 186004900BEH125 Protein
Standard Mix
P/N: 186006519BEH200 SEC Protein
Standard Mix
P/N: 186006518BEH450 SEC Protein
Standard Mix
P/N: 186006518 | Atlantis UPLC, UHPLC,
and HPLC Columns
BEH C ₁₈ AX
UPLC: 17 µm
UHPLC: 2.5 µm
HPLC: 5 µm
Silica T3
HPLC: 3, 5, 10 µm
Silica dC ₁₈
HPLC: 3, 5, 10 µm
SunFire HPLC
Columns
Silica C ₁₈
HPLC: 3.5, 5, 10 µm
Silica C ₁₈
HPLC: 3.5, 5, 10 µm
Silica C ₁₈
HPLC: 3.5, 5, 10 µm | Particle/Ligand | Ligand
DensityCarbon
LoadEndcar1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p
selectivity when compared to traditional C18 pl
Excellent low- and high-pH stability, low MS bl
mobile phases.Yes1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance
superior stability under low pH conditions and
mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention
analytes. Specifically designed and tested for H
containing high concentrations of organic solvNo1.6 µmol/m²12%YesPerformance Benefits: Retention of polar com
with 100% aqueous mobile phases.YesLigand
DensityCarbon
LoadEndcar3.5 µmol/m²16%Yes3.5 µmol/m²12%YesSite dfor purification and impurity profile assis3.5 µmol/m²1.6 µmol/m²12%YesPerformance Benefits: General purpose meth
loading capacity, particularly for basic analytes
suited for purification and impurity profile assis3.5 µmol/m²12%YesPerformance Benefits: General purpose meth
loading capacity, particularly for basic analytes
suited for purification and impurity profile assis3.5 µmol/m²12%YesPerformance Benefits: General purpose meth
loading capacity, particularly for basic analytes
suited for purification and impurity profile assisLigand
DensityCarbon
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EndcarLigand
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LoadEndcar
 | opedUSP
Class No.PH
RangeaL782-10olar acidic analytes, and an alternative
hases, especially for ionizable analytes.
leed, and compatible with 100% aqueousaL12-8dL31-5of very polar, basic, water soluble
HILIC separations using mobile
products.3-7of very polar, basic, water soluble
HILIC separations using mobile
products.9of very polar, basic, water soluble
HILIC separations using mobile
products.3-7of very polar, basic, water soluble
HILIC separations using mobile
products.9of development column. Very high
sin low pH mobile phases. Ideally
ays.2-8of development column. Very high
sin low pH mobile phases. Less
for most analytes.2-8oud development column. Very high
sin low pH mobile phases. Less
for most analytes.2-8opedUSP
Class No.PH
Range | Temperature
LimitsSurface
AreaLow pH = 60 °C
High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion
-exchange bonding, fully endcapped,
bonded to a highly retentive
BEH 95 Å particle.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18)
bonding and endcapping, bonded
to a high purity silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Unbonded high purity
silica substrate.Low pH = 45 °C
High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding,
fully endcapped, bonded to a high
purity silica substrate.Low pH = 50 °C
High pH = 40 °C340 m²/gBonding: Difunctional C18, fully
endcapped, bonded to a high purity
silica substrate.Low pH = 50 °C
High pH = 40 °C340 m²/gBonding: Difunctional C18, fully
endcapped, bonded to a high purity
silica substrate.Low pH = 40 °C
High pH = 40 °C340 m²/gBonding: Difunctional C18, fully
endcapped, bonded to a high purity
silica substrate.Low pH = 40 °C
High pH = 40 °C340 m²/gBonding: Difunctional C8, fully
endcapped, bonded to a high purity
silica substrate.Low pH = 40 °C
High pH = 40 °C340 m²/gBonding: Difunctional C8, fully
endcapped, bonded to a high purity
silica substrate.Low pH = 40 °C
High pH = 40 °C340 m²/gBonding: Difunctional C8, fully
endcapped, bonded to a high purity
silica substrate. | Preparative
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HPLC: 2.5 μm XP BEH Phenyl UPLC: 1.7 μm UPLC: 3.5, 5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Peptide BEH C18, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH C4, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH SEC, 125Å UPLC: 1.7 μm HPLC: 3.5 μm Protein BEH SEC, 200Å UPLC: 1.7 μm HPLC: 3.5 μm		particularly with phenolic analytes. Compatible with 100% aqueous-phase composition. 3.0 µmol/m ³ 15% Yes L11 1-12 Performance Benefits: Excellent method development column for alternate selectivity. particularly in regard to polyaromatic compounds. Provides unique level of pH stability for a phenyl bonded phase. 1-9 N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HLIC separations using mobile phases containing high concentrations of organic solvent. 1-9 7.5 µmol/m ² 12% No L68 2-11 Performance Benefits: Rugged HLIC stationary phase designed to separate a wide trage of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence 13.1 µmol/m ² 18% Yes L1 1-12 Performance Benefits: pH and temperature stable, small pore, C1 ₁₈ C. Column for petides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-10 3.1 µmol/m ² 12% No L33 1-8 Performance Benefits: pH and temperature stable, wide pore, C1 ₂ LC column for proteins. Specifically QC tested with protein mixture. 1-10 2.	embedded polar C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₆ phenyl, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 45 °C 185 m ² /g High pH = 45 °C 185 m ² /g Bonding: Unbonded Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 185 m ² /g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Proprietary monofunctional C ₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate.	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Freparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006371	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186004900BEH125 Protein Standard Mix P/N: 186006519BEH200 SEC Protein Standard Mix P/N: 186006518BEH450 SEC Protein Standard Mix P/N: 186006518	Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AX UPLC: 1.7 µm UHPLC: 2.5 µmSilica T3 HPLC: 5 µmSilica T3 HPLC: 3, 5, 10 µmSilica HILIC HPLC: 3, 5 µmSilica dC18 HPLC: 3, 5, 10 µmSunFire HPLC ColumnsSunFire HPLC ColumnsSilica C18 HPLC: 3.5, 5, 10 µmSilica C28 HPLC: 3.5, 5, 10 µmSilica C28 HPLC: 3.5, 5, 10 µmSunFire HPLC; 2.7 µm UPLC: 2.7 µm UHPLC: 2.7 µm	Particle/Ligand Image: Constraint of the second	Ligand DensityCarbon LoadEndcar1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C18 pl Excellent low- and high-pH stability, low MS bl mobile phases.Yes1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for I containing high concentrations of organic solutions to analytes. Specifically designed and tested for I containing high concentrations of organic solutions and use solutions1.6 µmol/m²12%YesPerformance Benefits: Retention of polar cont with 100% aqueous mobile phases.Ligand DensityCarbon LoadLigand DensityYesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assis3.5 µmol/m²12%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes hydrophobic, therefore, less retentive than C18Ligand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadFerformance Benefits: Intended for reversed- digested monoclonal antibudias (mabel and colligested monoclonal antibudi	opedUSP Class No.pH RangesL782-10oplar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueoussL12-8d polar compound retention, offering is compatible with 100% aqueous1-5of very polar, basic, water soluble HILIC separations using mobile phases rent.1-5of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases9of very polar, basic, water soluble HILIC separations using mobile phases9of very polar, basic, water soluble HILIC separations using mobile phases9of very polar, basic, water soluble HILIC separations using mobile phases9of very polar, basic, water soluble HILIC separations using mobile phases9of very polar, basic, water soluble HILIC separations using mobile phases9opedUSP Class No.PH RangesL12-8od development column. Very high s in low pH mobile phases. Leess for most analytes.2-8opedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH Range <td>Temperature LimitsSurface AreaLow pH = 60 °C270 m²/gBonding: Mixed-mode C_{18}/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Difunctional C18 bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C28, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C22.2 m²/gBonding: Difunctional C28, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Polyphenyl bonding onto a solid-core. silica narticle with 450 Å</td> <td>Performance Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006703</td> <td>Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363P/N: 186006363</td>	Temperature LimitsSurface AreaLow pH = 60 °C270 m²/gBonding: Mixed-mode C_{18} /anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Difunctional C18 bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C28, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C22.2 m²/gBonding: Difunctional C28, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Polyphenyl bonding onto a solid-core. silica narticle with 450 Å	Performance Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006703	Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363P/N: 186006363
HPLC: 2.5 μm XP BEH Phenyl UPLC: 1.7 μm UPLC: 2.5 μm XP HPLC: 3.5, 5 μm BEH HILIC UPLC: 1.7 μm UPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UPLC: 3.5, 5 μm BEH Amide UPLC: 1.7 μm UPLC: 3.5, 5 μm Peptide BEH C18, 130Å UPLC: 1.7 μm UPLC: 3.5, 5, 10 μm Peptide BEH C18, 300Å UPLC: 1.7 μm UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH C4, 300Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH SEC, 125Å UPLC: 1.7 μm HPLC: 3.5, 5, 10 μm Protein BEH SEC, 125Å UPLC: 1.7 μm HPLC: 3.5 μm Protein BEH SEC, 200Å UPLC: 1.7 μm HPLC: 3.5 μm Protein BEH SEC, 450Å UPLC: 1.7 μm HPLC: 3.5 μm Protein BEH SEC, 450Å UPLC: 2.5 μm HPLC: 3.5 μm		particularly with phenolic analytes. Compatible with 100% aqueous-phase composition.3.0 µmol/m²15%YesL111-12Parformance Benefits: Excellent method development column for alternate selectivity, particularly in regart to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase.N/AUnbondedNoL31-9Parformance Benefits: Excellent for retention of very polar, basic, water soluble analytes Specifically designed and tested for HLIC separations using mobile phases containing high concentrations of organic solvent.1-9Parformance Benefits: Rugged HLIC stationary phase designed to separate a wide range of very polar compounds. Especially good at separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and fluorescence (saccharides) using becifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents.1-12Performance Benefits: pH and temperature stable, wide pore, Ct LC column for proteins. Specifically QC tested with protein mixture.1-82.4 µmol/m²15%NoL331-8Performance Benefits: MId size pore S	embedded polar C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₆ phenyl, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 45 °C 185 m ² /g High pH = 45 °C 185 m ² /g Bonding: Unbonded Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 185 m ² /g High pH = 90 °C 185 m ² /g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Proprietary monofunctional C ₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g High pH = 60 °C 80 m ² /g	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 P/N: 186006371 Preparative Chromatography Mix P/N: 1860065	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186006519BEH125 Protein Standard Mix P/N: 186006518BEH200 SEC Protein Standard Mix P/N: 186006518BEH450 SEC Protein Standard Mix P/N: 186006518	Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AX UPLC: 1.7 μm UHPLC: 2.5 μm HPLC: 5 μmSilica T3 HPLC: 3, 5, 10 μmSilica HILIC HPLC: 3, 5 μmSilica dC18 HPLC: 3, 5, 10 μmSunFire HPLC ColumnsSunFire HPLC ColumnsSilica C18 HPLC: 3.5, 5, 10 μmSilica C28 HPLC: 3.5, 5, 10 μmSilica C28 HPLC: 3.5, 5, 10 μmSunFire ColumnsSilica C28 HPLC: 3.5, 5, 10 μmSilica C29 HPLC: 2.7 μm UHPLC: 2.7 μm HPLC: 2.7 μm HPL	Particle/Ligand Image: Constraint of the second	Ligand DensityCarbon LoadEndcar Endcar1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C18 pl Excellent low- and high-pH stability, low MS bl mobile phases.Yes1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for H containing high concentrations of organic solve1.6 µmol/m²12%YesPerformance Benefits: Retention of polar com with 100% aqueous mobile phases.Ligand DensityCarbon LoadLigand DensityCarbon Load3.5 µmol/m²16%YesPerformance Benefits: General purpose meth 	OpedUSP Class No.PH RangeaL782-10oolar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueousaL12-8d polar compound retention, offering is compatible with 100% aqueousaL31-5of very polar, basic, water soluble HILIC separations using mobile phasesaL13-7aL13-7aL12-8bpedUSP Class No.PH RangeaL12-8bopedUSP Class No.PH RangeaL72-8bod development column. Very high s in low pH mobile phases. Ideally ays.2-8bopedUSP Class No.PH RangeaL72-8bopedUSP Class No.PH RangebopedUSP Class No.PH RangebopedUSP Class No.2-8bopedL12-8bopedL22-8bopedL32-7bopedL12-7phase analysis of intact or sub-unit- ntibody-drug conjugates (ADCs) using	Temperature LimitsSurface AreaLow pH = 60 °C270 m²/gBonding: Mixed-mode $C_{18}/anion$ -exchange bonding, fully endcapped, bonded to a highy retentive BEH 95 Å particle.Low pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C330 m²/gBonding: Difunctional C18 bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C22.2 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C22.2 m²/gBonding: Polyphenyl bonding onto a solid-core, silica particle with 450 ÅLow pH = 90 °C22.2 m²/gBonding: Polyphenyl bonding onto a solid-core, silica particle with 450 Å	Performance Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006703 Preparative Chromatography Mix P/N: 186006703	Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363P/N: 186006363
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Low pH = 80 °C 90 m ² /g Bonding: Proprietary monofunctional C ₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate.	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Specifically designed and tested for I containing high concentrations of organic solv1.6 µmol/m²12%YesPerformance Benefits: Retention of polar com with 100% aqueous mobile phases.1.6 µmol/m²16%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analyte suited for purification and impurity profile asset3.5 µmol/m²12%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analyte suited for purification and impurity profile asset3.5 µmol/m²12%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analyte hydrophobic, therefore, less retentive than C ₁₈ Ligand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand Density <td>OpedUSP Class No.PH RangeaL782-10polar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueousaL12-8d polar compound retention, offering l'is compatible with 100% aqueous1-5of very polar, basic, water soluble HILIC separations using mobile phases rent.1-5of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases.2-8od development column. Very high s in low pH mobile phases. Less for most analytes.PH RangeopedUSP Class No.PH Rangeod development column. Very high s in low pH mobile phases. Less for most analytes.2-7phase analysis of intact or sub-unit- ntibody-drug conjugates (ADC) using2-12AN/A2-12</td> <td>Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Polyphenyl bonding onto a solic-core, silica particle with 450 Å pores, fully endcapped.Recommended to maintain at 30 °CNon porous</td> <td>Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006360 Preparative P/N: 186006360 Preparative Chromatography Mix P/N: 186006360 Preparative P/N: 186008927 P/N: 18600892</td> <td>Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Application StandardsReversed-Phase QC Reference Material P/N: 186006363P/N: 186006363Mab Subunit StandardsMab Subunit StandardsMab Subunit StandardsMab Subunit StandardsP/N: 186008927Mab Subunit StandardsP/N: 186008927</td>	OpedUSP Class No.PH RangeaL782-10polar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueousaL12-8d polar compound retention, offering l'is compatible with 100% aqueous1-5of very polar, basic, water soluble HILIC separations using mobile phases rent.1-5of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases3-7of very polar, basic, water soluble HILIC separations using mobile phases.2-8od development column. 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Compades unique level of pH stability for a phenyl bonded phase.N/AUnbondedNoL31-9Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HLIC separations using mobile phases containing high concentrations of organic solvent.L682-11Performance Benefits: Rugged HLIC stationary load as separating carbohydrates (saccharides) using high concentrations of organic modifier, elevated temperature, and high pH. Compatible with all modern detectors including MS, ELSD, UV, and Huorescence3.1 µmol/m²18%YesL11-12Performance Benefits: pH and temperature stable, small pore, Cla LC column for petides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents.1-10Performance Benefits: pH and temperature stable, wide pore, Cla LC column for petides. Specifically QC tested with protein mixture.1-10Performance Benefits: pH and temperature stable, wide pore, Cla LC column for porteins. 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Less for most analytes.2-8opedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedN/A2-12opedN/A2-12for cation-exchange analysis of intact or sub-unit- ntibody-drug conjugates (ADCs) usingopen due to the sub-unit- ntibody due to the sub-unit- ntibod</td> <td>Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Dolyphenyl bonding onto a solid-core, silica particle with 450 ÅRecommended to maintain at 30 °CNon porousBonding: S03Non porous</td> <td>Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006360 Preparative P/N: 18600892 P/N: 18600892 P/N</td> <td>Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Application StandardsReversed-Phase QC Reference Material P/N: 186006363P/N: 186006363Mab Subunit StandardsMab Subunit StandardsmAb Subunit StandardsP/N: 186008927mAb Subunit StandardsP/N: 186008927</td>		particularly with phenolic analytes. 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Low pH = 80 °C 185 m ² /g High pH = 60 °C 185 m ² /g High pH = 60 °C 194 m ² /g High pH = 90 °C 194 m ² /g	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 BEH125 Protein Standard Mix P/N: 186006519 BEH125 Protein Standard Mix P/N: 186006518 BEH450 SEC Protein Standard Mix P/N: 186006518 MassPREP OST Standard Mix P/N: 186004135 P/N: 186004135	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186006519BEH125 Protein Standard Mix P/N: 186006519BEH200 SEC Protein Standard Mix P/N: 186006518BEH450 SEC Protein Standard Mix P/N: 186006318BEH450 SEC Protein Standard Mix P/N: 186004135Clycan Performance EN: 186004135	Atlantis UPLC, UHPLC, and HPLC ColumnsBEH C18 AX UPLC: 1.7 µm UHPLC: 2.5 µm HPLC: 5 µmSilica T3 HPLC: 3, 5, 10 µmSilica HILIC HPLC: 3, 5 µmSilica dC18 HPLC: 3, 5, 10 µmSunFire HPLC ColumnsSilica C18 HPLC: 3.5, 5, 10 µmSilica C28 HPLC: 3.5, 5, 10 µmSilica C38 HPLC: 3.5, 5, 10 µmSunFire HPLC ColumnsSilica C48 HPLC: 3.5, 5, 10 µmSilica C38 HPLC: 3.5, 5, 10 µmBioResolve UPLC, UHPLC And HPLC ColumnsSuperior HPLC: 3.7 µm HPLC: 3.7 µm HPLC: 3.9 µm HPLC: 3.9 µm HPLC: 3.9 µm HPLC: 3.9 µm HPLC: 3.9 µm HPLC: 3.9 µm	Particle/Ligand • • • • Particle/Ligand •	Ligand DensityCarbon LoadEndcar Endcard1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C ₁₈ pl Excellent low- and high-pH stability, low MS bid mobile phases.1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for P containing high concentrations of organic solve1.6 µmol/m²12%YesPerformance Benefits: Retention of polar corr with 100% aqueous mobile phases.Ligand DensityCarbon LoadLigand DensityCarbon LoadS.5 µmol/m²16%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile asse3.5 µmol/m²12%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes hydrophobic, therefore, less retentive than C ₁₈ Ligand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityCarbon LoadLigand DensityPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes hydrophobic, therefore, less retentive than C ₁₈ N/AN/AN/AN/AN/AN/AN/AN/AN/AN/AN/A	OpedUSP Class No.PH RangeaL782-10c)L782-10olar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueousaL12-8d) polar compound retention, offering is compatible with 100% aqueous1-5of very polar, basic, water soluble HLIC separations using mobile phases rent.3-7of very polar, basic, water soluble HLIC separations using mobile of very polar, basic, water soluble HLIC separations using mobile phases is in low pH mobile phases. Ideal s in low pH mobile phases. Less for most analytes.PH RangeopedUSP Class No.PH RangeaL12-8od development column. Very high s in low pH mobile phases. Less for most analytes.2-8opedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH Rangeof development column. Very high s in low pH mobile phases. Less for most analytes.2-8opedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedUSP Class No.PH RangeopedN/A2-12opedN/A2-12for cation-exchange analysis of intact or sub-unit- ntibody-drug conjugates (ADCs) usingopen due to the sub-unit- ntibody due to the sub-unit- ntibod	Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Difunctional C18 bonding, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Dolyphenyl bonding onto a solid-core, silica particle with 450 ÅRecommended to maintain at 30 °CNon porousBonding: S03Non porous	Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186006703 HILIC QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006360 Preparative P/N: 18600892 P/N: 18600892 P/N	Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Application StandardsReversed-Phase QC Reference Material P/N: 186006363P/N: 186006363Mab Subunit StandardsMab Subunit StandardsmAb Subunit StandardsP/N: 186008927mAb Subunit StandardsP/N: 186008927
HPLC: 2.5 µm XP HPLC: 3.5, 5, 10 µm BEH Phenyl UPLC: 1.7 µm UPLC: 2.5 µm XP HPLC: 3.5, 5 µm BEH HILIC UPLC: 1.7 µm UPLC: 2.5 µm XP HPLC: 3.5, 5 µm BEH Amide UPLC: 1.7 µm UPLC: 2.5 µm XP HPLC: 3.5, 5 µm Peptide BEH C18, 130Å UPLC: 1.7 µm UPLC: 3.5, 5, 10 µm Peptide BEH C18, 300Å UPLC: 1.7 µm UPLC: 3.5, 5, 10 µm Protein BEH C4, 300Å UPLC: 1.7 µm HPLC: 3.5, 5, 10 µm Protein BEH SEC, 125Å UPLC: 1.7 µm HPLC: 3.5, 5, 10 µm Protein BEH SEC, 125Å UPLC: 1.7 µm HPLC: 3.5 µm Protein BEH SEC, 450Å UPLC: 1.7 µm HPLC: 3.5 µm Protein BEH SEC, 450Å UPLC: 2.5 µm HPLC: 3.5 µm QUPLC: 1.7 µm HPLC: 2.5 µm HPLC: 3.5 µm QUPLC: 1.7 µm HPLC: 3.5 µm UPLC: 1.7 µm <		particularly with phenolic analytes. Compatible with 100% aqueous-phase composition. 3.0 µmol/m² 15% Yes L1 1-12 Performance Benefits: Excellent method development column for alternate selectivity. particularly in regard to polyaromatic compounds. Povides unique level of pH stability for a phenyl bonded phase. 1-9 N/A Unbonded No L3 1-9 Performance Benefits: Excellent for retention of very polar, basic, water-soluble analytes Specifically designed and tested for HLIC separations using mobile phases containing high concentrations of organic solvent. 1.58 2-11 Performance Benefits: Rugged HLIC stationary phase designed to separate a wide transe of very polar compounds. Especially good at separating carbohydrates (Sacchardes) using high concentrations of organic modifier, elevated temperature, and high ph. Compatible with altryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-12 Performance Benefits: pH and temperature stable, small pore, Ct ₁₀ LC column for peptides. Specifically QC tested with a tryptic digest of cytochrome c using 0.1% TFA containing eluents. 1-10 Performance Benefits: pH and temperature stable, wide pore, Ct ₄ LC column for proteins. Specifically QC tested with protein mixture. 1-8 Performance Benefits: pH and temperature stable, wide pore, Ct C column for proteins. Specifically QC tested with protein standards. 1-8 Performance Benefits: pH and temperature stable, wide pore, Ct C column for proteins. Specifically QC tested wi	embedded polar C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₆ phenyl, fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 45 °C 185 m ² /g High pH = 45 °C 185 m ² /g Bonding: Unbonded Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 185 m ² /g High pH = 90 °C 185 m ² /g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 185 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 80 °C 90 m ² /g Bonding: Proprietary monofunctional C ₄ bonding to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 395 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 220 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 80 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 185 m ² /g Bonding: Diol bonded to a high pore volume Ethylene Bridged Hybrid (BEH) substrate. Low pH = 60 °C 194 m ² /g Bonding: Trifunctional C ₁₈ , fully endcapped, bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 194 m ² /g Bonding: Trifunctional amide bonded to an Ethylene Bridged Hybrid (BEH) substrate. Low pH = 90 °C 194 m ² /g	Preparative Chromatography Mix P/N: 186006703 Neutrals QC Reference Material P/N: 186006360 HILIC QC Reference Material P/N: 186007226 HILIC QC Reference Material P/N: 186007226 Otyochrome c Digestion Standard P/N: 186006371 Preparative Chromatography Mix P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 Cytochrome c Digestion Standard P/N: 186006703 BEH125 Protein Standard Mix P/N: 186006703 BEH125 Protein Standard Mix P/N: 186006519 BEH125 Protein Standard Mix P/N: 186006519 BEH450 SEC Protein Standard Mix P/N: 186006518 BEH450 SEC Protein Standard Mix P/N: 186006518 Glycan Performance Text Standard P/N: 186004135	Reversed-Phase QC Reference Material P/N: 186006363HILIC QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Peptide Retention Standard P/N: 186006555Peptide Retention Standard P/N: 186006555MassPREP Protein Standard Mix P/N: 186006519BEH125 Protein Standard Mix P/N: 186006519BEH200 SEC Protein Standard Mix P/N: 186006518BEH450 SEC Protein Standard Mix P/N: 186006518BEH450 SEC Protein Standard Mix P/N: 186006318BEH450 SEC Protein Standard Mix P/N: 186006342MassPREP OST Standard P/N: 186004135Glycan Performance Test Standard P/N: 186006349Dextran Calibration Standard	Atlantis UPLC, UHPLC, and HPLC Columns BEH C ₁₈ AX UPLC: 1.7 µm UHPLC: 2.5 µm FILC: 3 5, 10 µm Silica T3 HPLC: 3, 5, 10 µm Silica dC ₁₈ HPLC: 3, 5, 10 µm SunFire HPLC Columns Silica C ₁₈ HPLC: 3.5, 5, 10 µm Silica C ₁₈ HPLC: 3.5, 5, 10 µm	Particle/Ligand •	Ligand DensityCarbon LoadEndcar1.6 µmol/m²17%YesPerformance Benefits: Excellent retention of p selectivity when compared to traditional C ₁₈ pd Excellent low- and high-pH stability, Iow MS bd mobile phases.1.6 µmol/m²14%YesPerformance Benefits: Designed for enhance superior stability under low pH conditions and mobile phases.NoNoUnbondedNoPerformance Benefits: Excellent for retention analytes. Specifically designed and tested for I containing high concentrations of organic solvYes1.6 µmol/m²12%YesPerformance Benefits: Retention of polar com with 100% aqueous mobile phases.NoLigand DensityCarbon LoadEndcar3.5 µmol/m²16%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes suited for purification and impurity profile assisYes3.5 µmol/m²12%YesPerformance Benefits: General purpose meth loading capacity, particularly for basic analytes hydrophobic, therefore, less retentive than C ₁₈ Ligand DensityCarbon LoadEndcarS.5 µmol/m²0.95%YesPerformance Benefits: Intended for reversed- digested monoclonal antibodies (mAbs) and an LC-UV and LC-MS.N/AN/AN/AN/AN/AN/AN/A	OpedUSP Class No.PH RangeaL782-10olar acidic analytes, and an alternative hases, especially for ionizable analytes. leed, and compatible with 100% aqueousaL12-8d polar compound retention, offering is compatible with 100% aqueous1-5of very polar, basic, water soluble HILIC separations using mobile phases rent.1-5of very polar, basic, water soluble HILIC separations using mobile phases rent.2-7of very polar, basic, water soluble HILIC separations using mobile phases sin low pH mobile phases. Ideally ays.9bpedUSP Class No.PH RangeaL12-8od development column. Very high s in low pH mobile phases. Ideally ays.2-8bopedUSP Class No.PH RangeaL72-8od development column. Very high s in low pH mobile phases. Less for most analytes.PH RangeaL12-7phase analysis of intact or sub-unit- ntibody-drug conjugates (ADCS) using2-12AN/A2-12	Temperature LimitsSurface AreaLow pH = 60 °C High pH = 60 °C270 m²/gBonding: Mixed-mode C18/anion -exchange bonding, fully endcapped, bonded to a highly retentive BEH 95 Å particle.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Intermediate T3 (C18) bonding and endcapping, bonded to a high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Unbonded high purity silica substrate.Low pH = 45 °C High pH = 45 °C330 m²/gBonding: Difunctional C18 bonded to a high purity silica substrate.Low pH = 50 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C18, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 40 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 40 °C High pH = 50 °C340 m²/gBonding: Difunctional C8, fully endcapped, bonded to a high purity silica substrate.Low pH = 90 °C High pH = 50 °C22.2 m²/gBonding: Polyphenyl bonding onto a solid-core, silica particle with 450 Å pores, fully endcapped.Recommended to maintain at 30 °CNon porousRecommended to maintain at 30 °CNon porous	Performance Standards Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 HILIC QC Reference Material P/N: 186007226 Neutrals QC Reference Material P/N: 186006360 Preparative Chromatography Mix P/N: 186006703 Preparative Chromatography Mix P/N: 186006360 Preparative Chromatography Mix P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186006360 Preparative P/N: 186008927 Preparative P/N: 186008	Application StandardsReversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186007226HILIC QC Reference Material P/N: 186007226Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Reversed-Phase QC Reference Material P/N: 186006363Mab Subunit StandardsMab Subunit StandardsMab Subunit StandardsMab Subunit StandardsMab Subunit StandardsP/N: 186008927Mab Charge Variant StandardsP/N: 186009057

										F/IN: 160000641	UPLC Colun	nns	Performance Renefits and Ronding	Performance	Application
		715	NI / A	No		0 11	Low pH = 90 °C	$0.2 m^{2}/\pi$	Glycoprotein	Glycoprotein			r erformance Benefits und Bonding	Standards	Standards
Glycoprotein BEH Amide, 300Å		7.15 µmoi/m-	N/A	INO	L08	2-11	High pH = 90 °C	93 m²/g	Performance Test	Performance Test				IEV Cation	IEV Cotion
	0	Performance Benefits: A HILIC column for LC and LC-MS analyses of alvcoproteins.				Bonding: Trifunctional amide		Standard	Standard	BioSuite /	Protein-Pak		Test Standard	Test Standard	
		glycoprotein fragments, glycopeptides, and released and labeled glycans.			bonded to an Ethylene Bridged Hybrid (BEH) substrate.		P/N: 186008010 P/N: 1860	P/N: 186008010	008010 DEAE, SP,	Hi Res CM	These series of cation- and anion-exchange columns include strong (SP) and weak (CM) cation – as well as strong (SP) and weak anion (DEAE) exchangers bonded to a pH stable (i.e., pH 2–12), methacrylic ester-based polymeric resin. They were developed and tested to maximize component	P/N: 186006870	P/N: 186006870		
UPLC: 1.7 μm													1710.10000070		
												resolution and recovery of various biomolecules that include proteins and peptides.	IEX Anion	IEX Anion	
											(HPLC)	(UPLC)	······································	Test Standard	Test Standard
											(20)	(0. 20)		P/N: 186006869	P/N: 186006869

Primary Manufacturer of Chromatographic Media

• Waters maintains a Quality Management System in compliance with ISO 9001:2008.

• Waters owns and controls every step of the process, from raw materials to final product (few suppliers are capable of doing this). Understanding and controlling our processes makes the difference in product performance in your laboratory.

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