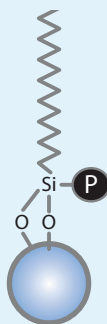


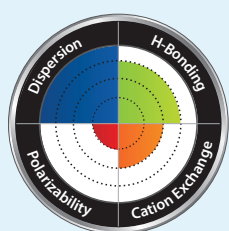
Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	15%
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L1
phase category:	modified C18
ligand type:	proprietary polar modified and functionally bonded C18



Aqueous C18

USLC® Column Interaction Profile
(See page 161 for more information.)



Ultra Preparative Columns

Using Restek® Ultra columns for preparative applications can save you time, solvents, and money. By utilizing the right phase for your prep analysis, you can make sure your peaks are resolved and your compounds are pure. The Ultra line has high loading and features high-purity silica.

USLC® Phases for Preparative HPLC

Ultra Aqueous C18 HPLC Prep Columns

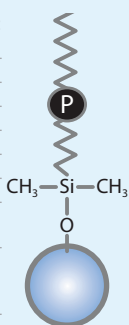
Chromatographic Properties

The Restek® Aqueous C18 is a rugged, reversed-phase column with a well-balanced retention profile. It can effectively retain more types of solutes than a conventional C18 and is ideal for multicomponent LC-MS analyses. The general-purpose Aqueous C18 boasts high reproducibility and compatibility with many mobile phase conditions—even 100% aqueous. And when used with a gradient, it eliminates the all-too-common issue of multiple compounds eluting near the column void time.

Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9178557	9178558	9178559
100 mm	9178517	9178518	9178519
150 mm	9178567	9178568	9178569
250 mm	9178577	9178578	9178579

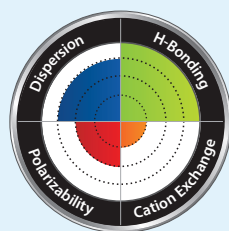
Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	12%
end-cap:	no
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L68
phase category:	polar embedded alkyl
ligand type:	proprietary polar functional embedded alkyl



IBD

USLC® Column Interaction Profile
(See page 161 for more information.)



Ultra IBD HPLC Prep Columns

Chromatographic Properties

The Restek® IBD is a polar-embedded column that acts as a strong hydrogen bonder and may be the most versatile column available today. With a unique polar group, this column is very retentive and selective for acids. It also provides symmetrical peak shape for strong bases. Restek's IBD is compatible with 100% aqueous mobile phases and can be used under reversed-phase or HILIC conditions to retain very polar, ionic compounds in highly organic mobile phases.

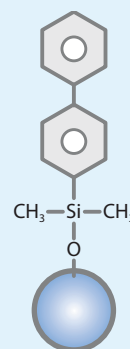
Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9175557	9175558	9175559
100 mm	9175517	9175518	9175519
150 mm	9175567	9175568	9175569
250 mm	9175577	9175578	9175579

Ultra Biphenyl Prep Columns

Chromatographic Properties

Since 2005, the Restek® Biphenyl has offered a greater degree of dispersion than conventional phenyls and a greater degree of polarizability than phenyl hexyls, creating higher selectivity and a greater range of usability. Because of these heightened interactions, this column shows substantial increases in retention—especially for dipolar, unsaturated, or conjugated solutes—and enhanced orthogonal selectivity when using methanol mobile phases. It is ideal for increasing sensitivity and selectivity in LC-MS analyses.

Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9109557	9109558	9109559
100 mm	9109517	9109518	9109519
150 mm	9109567	9109568	9109569
250 mm	9109577	9109578	9109579

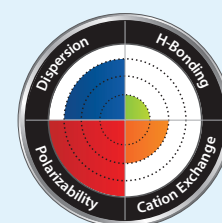


Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	15%
end-cap:	yes
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase:	L11
phase category:	phenyl
ligand type:	unique Biphenyl

Biphenyl

USLC® Column Interaction Profile
(See page 161 for more information.)

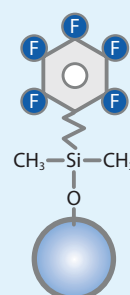


Ultra PFP Propyl Prep Columns

Chromatographic Properties

The Restek® PFP Propyl is a great choice for the retention and selectivity of charged bases, electronegative compounds, and amine-containing compounds. Unlike a conventional cyano column, the Restek® PFP Propyl is much more amenable to LC-MS because it is more reliable and efficient with acidic mobile phases. This versatile column is also compatible with highly aqueous mobile phases and HILIC separations.

Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9179557	9179558	9179559
100 mm	9179517	9179518	9179519
150 mm	9179567	9179568	9179569
250 mm	9179577	9179578	9179579

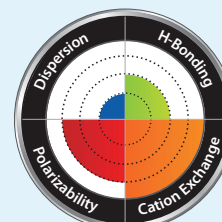


Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	11%
end-cap:	yes
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L43
phase category:	fluorophenyl propyl
ligand type:	pentafluoro-phenyl propyl

PFP Propyl

USLC® Column Interaction Profile
(See page 161 for more information.)



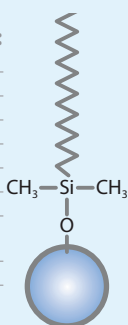
Before You Buy a Prep Column...

PLEASE NOTE: We strongly recommend ordering a semi-prep or prep column only after evaluating the desired separation on an equivalent analytical-scale column. Because we cannot reuse a column or the silica it contains once it has left our facility, we cannot accept returns of large-scale columns.

Traditional Phases for Preparative HPLC

Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	20%
end-cap:	yes
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L1
phase category:	C18, octadecylsilane
ligand type:	monomeric C18



C18

Ultra C18 HPLC Prep Columns

Chromatographic Properties

The general-purpose Restek® C18 is a conventional monomeric octadecylsilane column suitable for analyses of a wide range of compounds from acidic through slightly basic.

Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9174557	9174558	9174559
100 mm	9174517	9174518	9174519
150 mm	9174567	9174568	9174569
250 mm	9174577	9174578	9174579

Ultra C8 HPLC Prep Columns

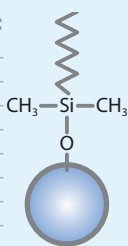
Chromatographic Properties

Our C8 is a conventional monomeric octylsilane column offering a shorter alkyl chain to provide less hydrophobic retention and improved basic peak shape over a traditional C18 phase. Like our C18, this general-purpose Restek® C8 is suitable for a wide range of compounds from acidic through slightly basic.

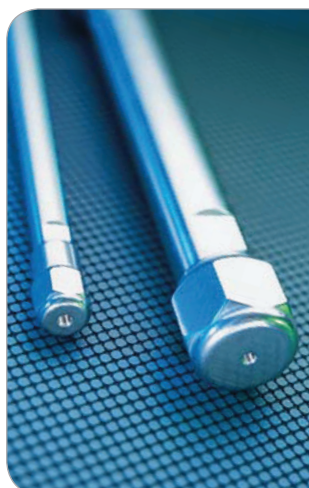
Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9103557	9103558	9103559
100 mm	9103517	9103518	9103519
150 mm	9103567	9103568	9103569
250 mm	9103577	9103578	9103579

Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	12%
end-cap:	yes
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L7
phase category:	C8, octylsilane
ligand type:	monomeric C8



C8



Before You Buy a Prep Column...

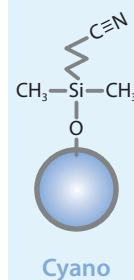
PLEASE NOTE: We strongly recommend ordering a semi-prep or prep column only after evaluating the desired separation on an equivalent analytical-scale column. Because we cannot reuse a column or the silica it contains once it has left our facility, we cannot accept returns of large-scale columns.

Ultra Cyano HPLC Prep Columns

Chromatographic Properties

The Restek® Cyano is a traditional monomeric cyanopropylsilane that is recommended for assays where alternate selectivity, or confirmation, to a C18 or C8 column is desired. It can be used in normal-phase, reversed-phase (best with mobile phase pH between 5 and 7), and HILIC modes. It is an excellent choice for the analysis of protonated bases.

Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9106557	9106558	9106559
100 mm	9106517	9106518	9106519
150 mm	9106567	9106568	9106569
250 mm	9106577	9106578	9106579



Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
carbon load:	8%
end-cap:	yes
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L10
phase category:	cyano
ligand type:	cyanopropyl silane



Ultra Silica HPLC Prep Columns

Chromatographic Properties

Base-deactivated spherical silica is useful for normal-phase or HILIC separations.

Length	10 mm ID cat.#	21.2 mm ID cat.#	30 mm ID cat.#
5 µm Columns			
50 mm	9100557	9100558	9100559
100 mm	9100517	9100518	9100519
150 mm	9100567	9100568	9100569
250 mm	9100577	9100578	9100579



Column Characteristics:

particle size:	5 µm, spherical
pore size:	100 Å
end-cap:	no
pH range:	2.5 to 8
temperature limit:	80 °C
USP phase code:	L3
phase category:	bare silica
ligand type:	none

Ultra Bulk Packing Materials (5 µm)

Use our bulk packing materials to pack your own columns!

- Prepare your own columns in conventional or custom dimensions.
- Consistent, high-quality materials.

Our extensive QC program ensures the high quality and reproducibility of these silicas. You can be confident that you are getting consistent, high-quality product when you source your silica from Restek.

Use these materials for easy scale-up to preparative chromatography or for packing your own columns.

Description	qty.	cat.#
5 µm Ultra Bulk Packing Materials		
Ultra C1 Bulk Packing	10 g/btl.	91015
Ultra C4 Bulk Packing	10 g/btl.	91025
Ultra C8 Bulk Packing	10 g/btl.	91035
Ultra C18 Bulk Packing	10 g/btl.	91745
Ultra Amino Bulk Packing	10 g/btl.	91075
Ultra Cyano Bulk Packing	10 g/btl.	91065
Ultra Silica Bulk Packing	10 g/btl.	91005



also available

Other stationary phases and particle sizes are also available in bulk; call Customer Service or your local Restek® representative for details.