

RESTEK[®] ESSENTIALS

2017.2



New and In Stock Now!

The next level of True Blue Performance

Topaz GC inlet liners feature revolutionary technology and inertness to deliver the next level of:

Deactivation • Reproducibility • Productivity

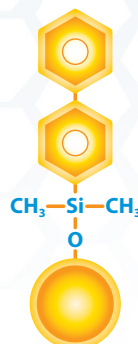


RESTEK
MORE INSIDE!



Raptor

LC Columns



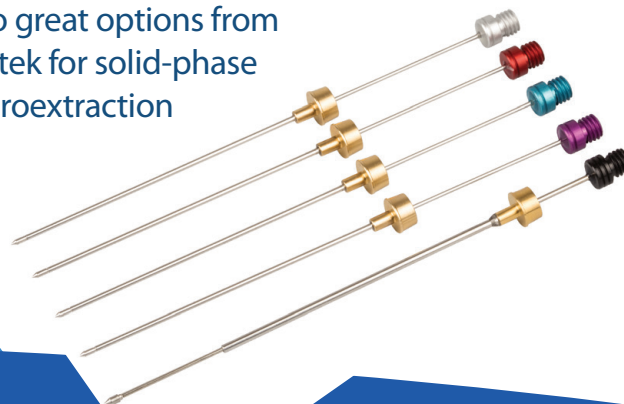
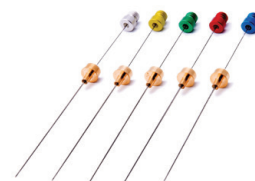
Time-Tested Restek Biphenyl Phase:

The established choice for bioanalytical testing since 2005—in a rugged, reproducible Raptor LC column.



High-Performing SPME Fibers and Rugged Stainless Steel SPME Arrows

Two great options from Restek for solid-phase microextraction



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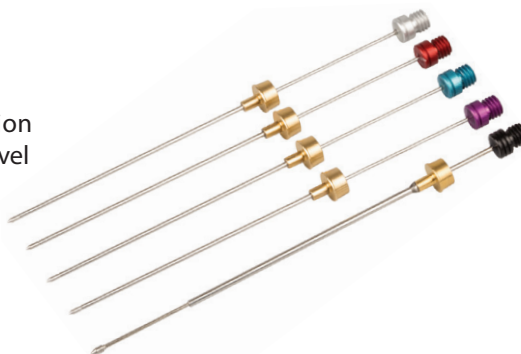
1 (of 8) 2017.2

For Solid-Phase Microextraction (SPME), Look No Further Than Restek

Set Your Sights on Superior Performance with Restek PAL SPME Arrow

The Restek PAL SPME Arrow system is a revolutionary change in microextraction that combines exceptional robustness with faster extraction times and trace-level sensitivity. SPME Arrows outperform traditional SPME fibers and allow labs to improve efficiency and productivity.

- Rugged stainless steel construction ensures longer lifetimes.
- Faster extraction means higher sample throughput.
- Better sensitivity allows lower LODs.

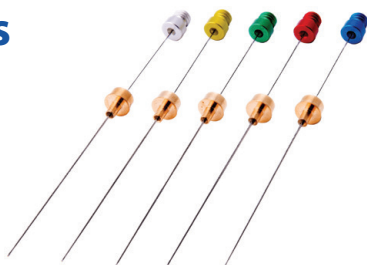


Description	Material	Hub Color	Thickness (μm)	Needle Diameter (mm)	Recommended Analytes	qty.	cat.#
SPME Arrow	Polydimethylsiloxane (PDMS)	Red	100 μm	1.1 mm	Volatile, 60–275 g/mol*	ea.	27485
SPME Arrow	Polydimethylsiloxane (PDMS)	Black	250 μm	1.5 mm	Volatile, 60–275 g/mol (high capacity)*	ea.	27484
SPME Arrow	Polyacrylate	Gray	100 μm	1.1 mm	Polar, semivolatile, 80–300 g/mol*	ea.	27488
SPME Arrow	Carbon Wide Range (WR)/PDMS	Light Blue	120 μm	1.1 mm	Highly volatile, 30–225 g/mol*	ea.	27487
SPME Arrow	Divinylbenzene (DVB)/PDMS	Violet	120 μm	1.1 mm	Amines and polar compounds, 60–300 g/mol*	ea.	27486
SPME Arrow Method Development Kit						Set of 5	27489

*These molecular weight ranges are a reasonable approximation; however, end users should verify suitability for their specific application. All Restek PAL SPME Arrows have 20 mm of phase bonded onto stainless steel. Note that a GC inlet conversion kit is required in order to use a Restek PAL SPME Arrow.

High-Performing SPME Fibers Now Available from Restek

- Suitable for a wide range of analytes and samples.
- Reliable performance meets or exceeds other brands.
- Robust aluminum hub is more durable than plastic.



Description*	Max. Temp.	Recommended Operating Temp.	Restek Hub Color	Similar to Supelco Hub Color	ea. cat.#	3-pk. cat.#	5-pk. cat.#
Polydimethylsiloxane (PDMS) Fiber, Nonpolar							
7 μm	340 °C	200–340 °C	Green	Green	27482.1	27482.3	27482.5
30 μm	280 °C	200–280 °C	Golden	Yellow	27481.1	27481.3	27481.5
100 μm	280 °C	200–280 °C	Red	Red	27480.1	27480.3	27480.5
Polyacrylate (PA) Fiber, Polar							
85 μm	280 °C	200–280 °C	Gray	White	27478.1	27478.3	27478.5
Carbon Wide Range (WR)/PDMS Fiber, Bipolar							
95 μm	300 °C	220–300 °C	Dark Blue	Black	27479.1	27479.3	27479.5

*All Restek PAL SPME fibers are 10 mm in length and are housed in a 23-gauge needle. The phase is bonded onto a fused silica fiber core.



SPME Performance Test Mix (2 components)

An essential mix for establishing the performance of SPME fibers and SPME Arrows.

Nitrobenzene (98-95-3) 2-Nitrotoluene (88-72-2)

1 μg/mL in water:methanol (99:1), 1 mL/ampul cat.# 31015 (3-pk)

SPME MicroCenter Caps and Septa

Micro-thin septum center pierces easily without bending needles or breaking SPME fibers.

Description	Type	Color	Septa Material	100-pk. cat.#	1,000-pk. cat.#
SPME Vial Cap, 18 mm	Screw-Thread		MicroCenter PTFE/Silicone	23852	23853
SPME Vial Cap, 20 mm	Bi-Metal Crimp	Blue	MicroCenter PTFE/Silicone	23854	23855
SPME Vial Cap, 20 mm	Bi-Metal Crimp	Red	MicroCenter PTFE/Silicone	23856	23857
SPME Vial Cap, 20 mm	Steel Crimp	Gold	MicroCenter PTFE/Silicone	23858	23859
SPME Vial Septa, 18 mm			MicroCenter PTFE/Silicone	23850	23851



Raptor

LC Columns

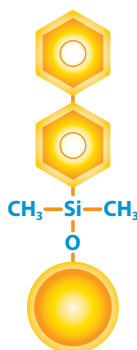
Selectivity Accelerated



- Higher efficiency for **drastically faster analysis times**.
- Better selectivity for **substantially improved resolution**.
- **Increased sample throughput** with existing HPLC instrumentation.
- Long-lasting ruggedness for **dependable reproducibility**.

Time-Tested Restek Biphenyl Phase: The Established Choice for Bioanalytical Testing Since 2005

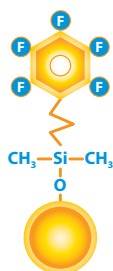
- Ideal for bioanalytical testing applications like drug and metabolite analyses.
- Heightened selectivity and retention for compounds that are hard to resolve or elute early on C18 and other phenyl chemistries.
- Limits ionization suppression and allows simple, MS-friendly mobile phases.
- Restek's most popular LC stationary phase applied to 2.7 and 5 μ m Raptor SPP core-shell silica.



Length	2.1 mm cat.#	3.0 mm cat.#	4.6 mm cat.#
2.7 μm Columns			
30 mm	9309A32	9309A3E	9309A35
50 mm	9309A52	9309A5E	9309A55
100 mm	9309A12	9309A1E	9309A15
150 mm	9309A62	9309A6E	9309A65
5 μm Columns			
30 mm	—	930953E	—
50 mm	9309552	930955E	9309555
100 mm	9309512	930951E	9309515
150 mm	9309562	930956E	9309565
250 mm	—	—	9309575

The Raptor Suite of Innovative Reversed-Phase Columns

Reliably Versatile Restek FluoroPhenyl Phase:



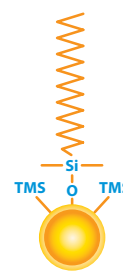
Get the power of HILIC and RP modes in one LC column.

Acid-Resistant Restek ARC-18 Phase:



Ahead of the curve for large, multiclass lists by mass spec.

General-Purpose Restek C18 Phase:



Raptor speed, efficiency, and ruggedness are now in C18.

Roc LC Columns:

The Reliable Cornerstone for Your LC Lab



- Exceptional value.
- Solid and reliable performance.
- 5 phases covering 98% of USP methods.
- Minimal packaging for compact storage.

Get more of what you want, and less of what you don't, with Roc LC columns from Restek.

Find the entire Roc HPLC column line and order now at www.restek.com/roc



Roc LC Guard Column Holder & Cartridges

Description	qty.	10 x 4.0 mm	cat.#
Roc C8 Guard Cartridge	3-pk.		953350210
Roc C18 Guard Cartridge	3-pk.		953450210
Roc Cyano Guard Cartridge	3-pk.		953650210
Roc Phenyl-Hexyl Guard Cartridge	3-pk.		953550210
Roc Silica Guard Cartridge	3-pk.		953050210
Description	qty.		cat.#
Roc LC Guard Column Holder for 10 x 4.0 mm Roc Guard Cartridges	ea.		25812

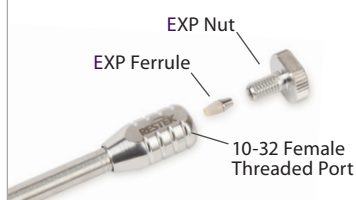
Opti-Max Check Valves: High Performance, Easy Installation

- Valve removes with tubing still attached for faster maintenance and less fitting wear.
- Rugged stainless steel body with ceramic ball and seat ensure longevity in harsh acetonitrile environments.
- Individually tested to industry-leading specifications.

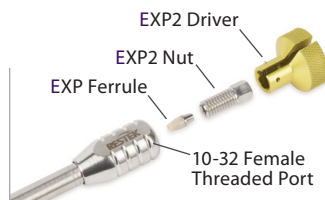


EXP and EXP2 Fittings

Reusable fittings for easy, reliable HPLC & UHPLC connections for 10-32 fittings and 1/16" tubing



EXP hand-tight fitting style achieves effortless HPLC seals—no tools needed for a 8,700+ psi seal.



Compact **EXP2 fitting** fits in tight spaces and allows 20,000+ psi seals without wrenches.

- Both **EXP hand-tight** and **EXP hex-head** styles wrench tighten for reliable UHPLC use up to 20,000+ psi!
- Patented ferrule can be installed repeatedly without compromising high-pressure seal.
- Non-swaged ferrules mean vendor-specific tubing is not required.
- Precision design provides zero-dead-volume (ZDV) connection to any 10-32 female port.

EXP Reusable Fittings for HPLC & UHPLC

for 10-32 fittings and 1/16" tubing
EXP Hand-Tight Fittings

Description	qty.	cat.#
EXP Hand-Tight Fitting (Nut w/Ferrule)	ea.	25937
EXP Hand-Tight Fitting (Nut w/Ferrule)	10-pk.	25938
EXP Hand-Tight Nut (w/o Ferrule)	ea.	25939



EXP2 Reusable Fittings for HPLC & UHPLC

for 10-32 fittings and 1/16" tubing

Description	qty.	cat.#
EXP2 Fitting (2 nuts, 2 ferrules, 1 driver)	2-pk.	25783
EXP2 Fitting (10 nuts, 10 ferrules, 1 driver)	10-pk.	25784
EXP2 Driver (driver only)	ea.	25785



*Rated to 20,000+ psi (1,400 bar) and tested to 30,000 psi (2,068 bar).

WARNING: Do not use EXP ferrules with standard nuts. Failure to use EXP fittings according to the included instructions may result in unsafe UHPLC connections and/or non-ZDV connections.

Hybrid Ferrule U.S. Patent No. 8201854, Optimize Technologies. Optimize Technologies EXP Holders are Patent Pending. Other U.S. and Foreign Patents Pending. The Opti- prefix is a registered trademark of Optimize Technologies, Inc.

For hex-head fittings, hand-tight couplers, and replacement ferrules, visit www.restek.com/exp

Detector Lamps

We offer a full selection of deuterium, xenon, and other replacement lamps for your HPLC system—whether it's Agilent, PerkinElmer, Shimadzu, Thermo, or Waters.





Accurately Quantify 380 Pesticides Using LC-MS/MS and GC-MS/MS

with Restek's Multiresidue Pesticide CRM Kits

- CRM kits include comprehensive lists of pesticides of global concern.
- Formulated for maximum long-term stability.
- Manufactured and QC-tested in our ISO-accredited labs.

LC Multiresidue Pesticide Kit

Contains 204 compounds.

Contains 1 mL each of these mixtures. cat.# 31971 (kit)

GC Multiresidue Pesticide Kit

Contains 203 compounds.

Contains 1 mL each of these mixtures. cat.# 32562 (kit)

Full compound lists, transition tables, and individual standard ampuls are available at www.restek.com/multiresidue

Restek Air Valve Excellence

RAVE Valves

Now Standard on SilcoCan and TO-Can Sampling Canisters

- **Proven long life**—engineered to exceed 15,000 cycles.
- **Leak-free performance**—helium leak tested to 1×10^{-6} mL/sec.
- **Effortless operation**—finger turn for full valve closure (only 10 in-lb).
- **Enhanced damage resistance**—valve seats are work hardened; wetted surfaces have no moving parts.

SilcoCan Air Sampling Canisters with RAVE Valve

Description	1 L Volume cat.#	3 L Volume cat.#	6 L Volume cat.#	15 L Volume cat.#
2-Port RAVE Valve	27400	27404	27408	27412
2-Port Siltek-Treated RAVE Valve	27401	27405	27409	27413
3-Port RAVE Valve with Gauge*	27402	27406	27410	27414
3-Port Siltek-Treated RAVE Valve with Gauge*	27403	27407	27411	27415
Without Valve	22090	22091	22092	22093

TO-Can Air Sampling Canisters with RAVE Valve

Description	1 L Volume cat.#	3 L Volume cat.#	6 L Volume cat.#	15 L Volume cat.#
2-Port RAVE Valve	27416	27418	27420	27422
3-Port RAVE Valve with Gauge*	27417	27419	27421	27423
Without Valve	22094	22095	22096	22097

*Range of standard gauge is -30" Hg to 60 psi.

Do not exceed canister maximum pressure of 40 psig (2.75 bar).

**COMING SOON:
RAVEN Valves for
Entech Canisters**



Resprep

Resprep EPH SPE Cartridges

These new SPE tubes offer complete extractable petroleum hydrocarbon (EPH) fractionation.

Description	Volume	15-pk. cat.#
Resprep EPH Fractionation SPE Cartridge	25 mL, 5 g	25859



Restek Offers a Comprehensive Suite of CRMs Developed Specifically for Medical Cannabis Analysis

- New!**
- THCV
 - THCA-A
 - THC
 - CBC
 - CBG
 - CBN
 - CBD
 - CBDA
 - Terpenes
 - Residual Solvents
 - Pesticides
 - QuEChERS Internal & Quality Control

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Revolutionary technology and inertness deliver the next level of

True Blue Performance:

- **Deactivation**—unbelievably low breakdown for low-level GC analyses.
- **Reproducibility**—unbeatable manufacturing and QC for superior reliability.
- **Productivity**—unparalleled cleanliness for maximized uptime and throughput.

Patented



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Featured Topaz Liners:

RESTEK RESTEK

Agilent

Split Injection: 23305 | 23300

Splitless Injection: 23303 | 23302

RESTEK RESTEK

PerkinElmer

Split Injection: 23450 | 23449

Splitless Injection: 23451

RESTEK RESTEK

Sciex/Bruker/Varian

Split Injection: 23328

Splitless Injection: 23332 | 23331

RESTEK RESTEK

Shimadzu

Split Injection: 23319 | 23320

Splitless Injection: 23336 | 23322

RESTEK RESTEK

Thermo Scientific

Split Injection: 23444 | 23267

Splitless Injection: 23447 | 23446

www.restek.com/topaz



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- Officially listed USP S1A and S1NS material.
- Ideal for many USP and ASTM methods.
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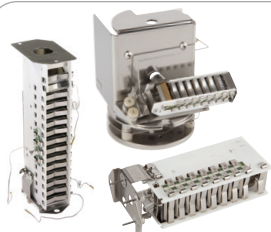
Affordable
Reliable
Safe

CE

Choose Gas Generators from Restek for High-Purity Carrier and Fuel Gas

Model #	Capacity	Delivery Pressure	ea. cat. #
H2PEMPD-510	510 cc/min	100 psig	22144
H2PEMPD-510	510 cc/min	175 psig	22145
H2PEMPD-650	650 cc/min	100 psig	22146
H2PEMPD-650	650 cc/min	175 psig	22147
H2PEMPD-850	850 cc/min	100 psig	22148
H2PEMPD-850	850 cc/min	175 psig	22149
H2PEMPD-1100	1,100 cc/min	100 psig	22150
H2PEMPD-1100	1,100 cc/min	175 psig	22151
H2PEMPD-1300	1,300 cc/min	100 psig	22152
H2PEMPD-1300	1,300 cc/min	175 psig	22153

Visit www.restek.com/gas for our full selection of generators.



ETP Electron Multipliers for Mass Spectrometry

Description	qty.	cat. #
for Agilent 5970 GC-MS	ea.	23072
for Agilent 5971, 5972, GC GC-MS	ea.	23073
for Agilent 5973 & 5975 GC-MS (includes mount for initial installation)*†	ea.	23074
for Agilent 5973 & 5975 GC-MS and LC-MSD (Replacement Multiplier)*†	ea.	23075
New! for Shimadzu QP5000 MS	ea.	23840

*Note: The electron multipliers have been specifically developed to retrofit the original manufacturer's equipment. The detector incorporates a modular design to facilitate ease of replacement and additional innovations intended to enhance performance. First-time installation requires a mount that includes the mechanical housing. After initial installation, only the replacement electron multiplier is required.

†This unit is designed for use in the 5975, 5973 GC, and the LC-MSD (not for 5975C Triple Axis Detector).

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Restek Refined

Biodiesel Solutions:

Innovative Products for Simple,
Reliable Biodiesel Analysis



Rtx-Biodiesel TG Columns (fused silica)

Description	temp. limits	cat. #
10 m, 0.32 mm ID, 0.10 µm	to 330/380 °C	10292
10 m, 0.32 mm ID, 0.10 µm with 2 m x 0.53 mm ID Retention Gap*	to 330/380 °C	10291
15 m, 0.32 mm ID, 0.10 µm	to 330/380 °C	10294
15 m, 0.32 mm ID, 0.10 µm with 2 m x 0.53 mm ID Retention Gap*	to 330/380 °C	10293

*Connected with Alumaseal connector.

MXT-Biodiesel TG Columns

(Siltek-treated stainless steel)

Description	temp. limits	3.5" Coil cat. #	7" diameter 11-pin cage cat. #
14 m, 0.53 mm ID, 0.16 µm with 2 m Integra-Gap*	-60 to 380/430 °C	70289 -273	70289
10 m, 0.32 mm ID, 0.10 µm	-60 to 380/430 °C	—	70292
10 m, 0.32 mm ID, 0.10 µm with 2 m x 0.53 mm ID Retention Gap**	-60 to 380/430 °C	—	70290
15 m, 0.32 mm ID, 0.10 µm	-60 to 380/430 °C	—	70293
15 m, 0.32 mm ID, 0.10 µm with 2 m x 0.53 mm ID Retention Gap**	-60 to 380/430 °C	—	70291
2 m x 0.53 mm MXT Biodiesel TG Retention Gap	-60 to 380/430 °C	—	70294

*Total column length = 16 meters.

**Connected with low dead volume MXT connector.

Visit www.restek.com/biodiesel for Stabilwax columns, reference standards, accessories, and more!



Leverage the outstanding inertness, low bleed,
and high reproducibility of Rxi 3-in-1 technology to gain:

- Accurate Data
- The Right Results Fast
- Maximized Instrument Uptime

Featured Rxi Phases:

For Glycol Ethers

Rxi-1301Sil MS Columns

High thermal stability shortens analysis times while separating key isomers.

Description	temp. limits	qty.	cat. #
30 m, 0.25 mm ID, 0.25 µm	-60 to 320 °C	ea.	16094

For Nitrosamines

Rxi-5Sil MS Columns

Prevent contaminant carryover and reach temps needed for optimal separations.

Description	temp. limits	qty.	cat. #
30 m, 0.25 mm ID, 1.00 µm	-60 to 320/350 °C	ea.	13653

For PAHs in Food

Rxi-17Sil MS Columns

Ensure accurate, reliable trace-level analysis and quantification over a wide range of PAHs.

Description	temp. limits	qty.	cat. #
15 m, 0.25 mm ID, 0.25 µm	40 to 340/360 °C	ea.	14120
30 m, 0.25 mm ID, 0.25 µm	40 to 340/360 °C	ea.	14123

For PCB Congeners

Rxi-XLB Columns

Unique selectivity separates PCB congeners, including 31 and 28.

Description	temp. limits	qty.	cat. #
30 m, 0.25 mm ID, 0.25 µm	30 to 340/360 °C	ea.	13723

For Residual Solvents & Terpenes

Rxi-624Sil MS Columns

Fully separate residual solvents and 38 terpenes via headspace analysis without interference.

Description	temp. limits	qty.	cat. #
30 m, 0.25 mm ID, 1.40 µm	-20 to 300/320 °C	ea.	13868

Put Rxi columns to work in your lab.

Visit www.restek.com/rxi
and order yours today.

Restek's PLOT Column Family —

The Benchmark for Performance!

Minimized particle release • Stable retention times
Outstanding peak symmetry

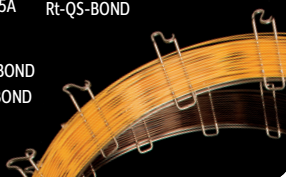
PLOT Columns Available In:

Fused Silica Rt Column Phases:

Rt-Alumina BOND/MAPD	Rt-Alumina BOND/CFC	Rt-Silica BOND	Rt-S-BOND
Rt-Alumina BOND/Na ₂ SO ₄	Rt-Q-BOND	Rt-Q-BOND	Rt-U-BOND
Rt-Alumina BOND/KCl	Rt-MSieve 5A	Rt-QS-BOND	

Metal MXT Column Phases:

MXT-Alumina BOND/MAPD	MXT-Q-BOND
MXT-Alumina BOND/Na ₂ SO ₄	MXT-S-BOND
MXT-MSieve 5A	

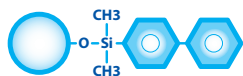


Rxi Guard/Retention Gap Columns

Nominal ID	Nominal OD	5-Meter cat. #	5-Meter/6-pk. cat. #	10-Meter cat. #
0.25 mm	0.37 ± 0.04 mm	10029	10029-600	10059
0.32 mm	0.45 ± 0.04 mm	10039	10039-600	10064
0.53 mm	0.69 ± 0.05 mm	10054	10054-600	10073



- **Long-lasting and reproducible**—even with rapid cycling and elevated UHPLC pressures.
- **Fully scalable between HPLC and UHPLC**—easily transfer and optimize methods.
- **Premium quality**—backed by our 100% Pure Satisfaction guarantee.



Force Biphenyl LC Columns

(USP L11)

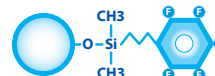
Length	2.1 mm	3.0 mm	4.6 mm
1.8 µm Columns			
30 mm	9629232		
50 mm	9629252	962925E	
100 mm	9629212	962921E	
3 µm Columns			
30 mm	9629332		
50 mm	9629352	962935E	
100 mm	9629312	962931E	9629315
150 mm	9629362	962936E	9629365
5 µm Columns			
50 mm	9629552	962955E	
100 mm	9629512	962951E	9629515
150 mm	9629562	962956E	9629565
250 mm			9629575



Force C18 LC Columns

(USP L1)

Length	2.1 mm	3.0 mm	4.6 mm
1.8 µm Columns			
30 mm	9634232		
50 mm	9634252	963425E	
100 mm	9634212	963421E	
3 µm Columns			
30 mm	9634332		
50 mm	9634352	963435E	
100 mm	9634312	963431E	9634315
150 mm	9634362	963436E	9634365
5 µm Columns			
50 mm	9634552	963455E	
100 mm	9634512	963451E	9634515
150 mm	9634562	963456E	9634565
250 mm			9634575



Force FluoroPhenyl LC Columns (USP L43)

Length	2.1 mm	3.0 mm	4.6 mm
1.8 µm Columns			
30 mm	9639232		
50 mm	9639252	963925E	
100 mm	9639212	963921E	
3 µm Columns			
30 mm	9639332		
50 mm	9639352	963935E	
100 mm	9639312	963931E	9639315
150 mm	9639362	963936E	9639365
5 µm Columns			
50 mm	9639552	963955E	
100 mm	9639512	963951E	9639515
150 mm	9639562	963956E	9639565
250 mm			9639575

To order yours now, visit www.restek.com/force

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Pure Chromatography

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