

# Chromatography

Consumables and Supplies

Genuine PerkinElmer Products — Genuine Value

► VOLUME 4 2010 – 2011

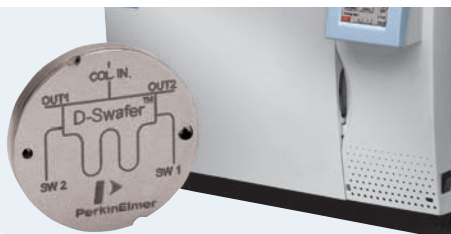
PerkinElmer — The Clear Choice in Chromatography



▲ **NEW!** Flexar FX-15 UHPLC System

## SWAFER Micro-Channel Wafer Technology

**NEW!**



See page 30 for details.

## Nitrogen Generators!

The newest membrane technology for safe production of pure nitrogen gas.



**NEW!**

See page 29 for details.



**NEW!**

## FlowMark™ Electronic Flowmeter!

Compact handheld meter with data output via USB port.

See page 37 for details.

## Thermal Desorber Tubes SVI™ Soil Vapor Intrusion™ Tubes

**NEW!**

See page 53 for details.



**NEW!**



## **New Investments – Local Support – Proven Quality!**

For over 50 years, PerkinElmer has helped our global laboratory partners meet their most demanding application measurement challenges. Our experience in Chromatography, Spectroscopy and Material Characterization gives us a unique advantage in providing holistic and comprehensive solutions for laboratories in universities and key market segments like Environmental, Energy, and Food & Product Safety.

When you order our precision-designed, genuine PerkinElmer consumables and accessories, you can enjoy the peace of mind, ease of ordering, and best-in-class service. You'll get the results you need – accurately and on time. PerkinElmer selects only the highest quality products for our consumables portfolio and invests heavily to test and validate the quality of our products.

## Ordering Information

### Interchim

211 bis Avenue Kennedy - BP 1140  
03103 Montluçon Cedex

Tel 33 (0)4 70 03 88 55

Hotline 33 (0)4 70 03 73 09

email [interchrom@interchim.com](mailto:interchrom@interchim.com)

## Return Goods Policy

Before returning any item to PerkinElmer, please obtain a Return Authorization Number from a customer service representative. Call your local PerkinElmer office and please have the following information ready:

- Our Order Number or your Purchase Order Number
- The PerkinElmer part numbers of the items that you wish to return
- Reason for return

Our customer service representative will provide you with a Return Authorization Number and the return address. We cannot accept any returns without a Return Authorization Number. Policy may vary. Please contact your local PerkinElmer representative for details.

## Technical Support

For technical assistance, please contact your local PerkinElmer Customer Care Representative. See local office listings to the left.

*Check with your local PerkinElmer Customer Care center for current pricing.*

*PerkinElmer and the PerkinElmer logo are registered trademarks of PerkinElmer, Inc. All other product and company names mentioned herein may be the trademarks or registered trademarks of their respective owners.*

*PerkinElmer is not responsible for typographical or photographic errors that may appear in this catalog. We reserve the right to make adjustments or corrections due to changing market conditions, product discontinuations, or typographical or photographic errors in advertisements or product descriptions. Terms and conditions and item availability are subject to change without notice.*

## Table of Contents

### Liquid Chromatography

NEW Flexar Series UHPLC System .....	4-7
NEW Flexar Autosampler and Accessories .....	8-11
Conventional Columns .....	12-15
Cartridge Columns .....	16-21
Sample Loops Tubing .....	22
Fingertight® Fittings .....	23
HPLC Pump Accessories .....	24-26
Flow Cells .....	27
Detector Lamps .....	28
Nitrogen Generators .....	29

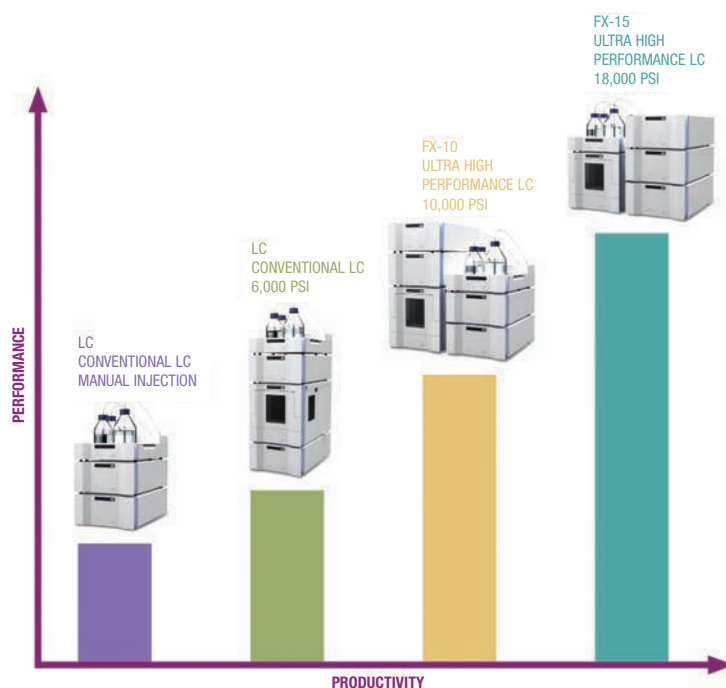


### Gas Chromatography

Clarus 600 GC and GC/MS .....	30-31
GC Organic Standards .....	32
Filters .....	33-35
Leak Detector and IR Temperature Gun .....	36
Flowmeters .....	37
Ferrules, Syringes and Liners .....	38-39
Vials, Caps and Septa .....	40-41
Elite Series Capillary Columns .....	42-44
Applications Kits .....	45
Headspace/Traps .....	46
Headspace Vials and Caps .....	47-51
Packed Traps .....	52
Thermal Desorption .....	54
Air Monitoring .....	55
Generators .....	56-57
Compressor .....	58
One Source Service .....	59



# Power and Flexibility in UHPLC



## New Flexar™ UHPLC System from PerkinElmer

With Flexar UHPLC, you'll be able to transfer your existing methods to achieve faster, more predictable results while reducing your solvent consumption by up to 90%. The FX-15's patented, dual reciprocating, 18,000 psi pump offers the widest operating range with exceptional compositional accuracy and retention time repeatability. The value and performance of the FX-10 microbinary pump offers minimal disruption in your method development phase and analytical approach so you can easily port your existing methods. And with the powerfully easy new Chromera® software, instrument control is taken to a whole new level. Performance, flexibility and predictability — Flexar.

### Benefits of Flexar UHPLC:

- Improved separation efficiency
- Up to 90% reduction in solvent consumption — saving you money
- Up to 10x productivity gains — helping you do more in less time

### Flexar UHPLC Systems

Description	Part No.
Flexar FX-10 UHPLC Platform	<b>NFLR0210</b>
Flexar FX-10 UHPLC Pump	<b>N2910640</b>
Flexar FX-10 UHP Pump Master	<b>N2910641</b>
"Flexar Bottle Manager, 3-channel Vacuum Degassing" tubing kit	<b>N2600581</b>

### Flexar UHPLC Systems

Description	Part No.
Flexar FX-15 UHPLC Platform	<b>NFLR0215</b>
Flexar FX-15 UHPLC Pump	<b>N2910531</b>
"Flexar Bottle Manager, 3-channel Vacuum Degassing" tubing kit	<b>N2600581</b>

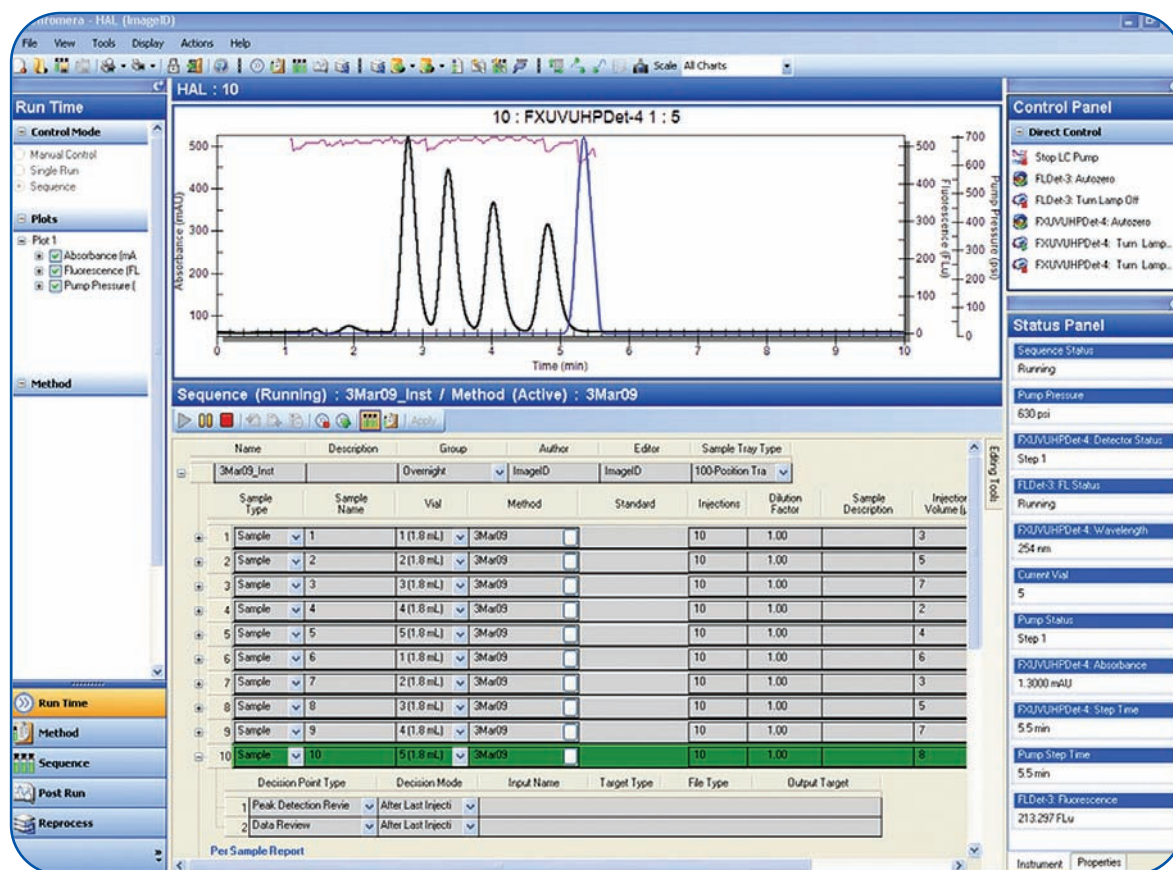
# Chromera® Chromatography Data System



## The Powerfully Easy CDS

One click and you'll see: CDS doesn't get any easier than Chromera. Combining intuitive ease of use with powerful functionality and configurability, Chromera delivers the most streamlined way to get from the analysis you need to the information your enterprise demands. It's powerfully easy.

## Information-rich Desktop offers instrument control at-a-glance



## Features and Benefits:

### Powerful

- Instrument Control: NEW patented "Device Descriptors" control instruments. No channels limitation, trackable instrument status
- Designed for UHPLC: interactive graphical methods optimization environment with immediate feedback; ability to overlay pressure profile run after run. Extend runtime of chromatogram in real time
- Graphics: Multichannel graphics for multiple signal channel monitoring (including system status channels to get 'the pulse of the system' real-time)
- Feedback: Instrument-at-a-glance status panel provides real-time feedback of complete LC system
- Batch Sequencing: all the functions for setting up and reviewing a sequence and results are within a single environment

### Easy

- Shallow footprint GUI: Most functions only one or two clicks away, using familiar Microsoft™ Outlook user interface
- Simple and obvious method editor: a single-point access to all instrument parameters, regardless of how complex the instrument configuration; Convenient tools for point-and-click method optimization
- Intuitive Sequence Wizard: Create complex sample tables easily; Convenient auto-fill and other editing functions; Decision Points for real-time and post-processing data evaluation
- Peak Integration Wizard: Makes integration process easy and straight forward
- Report Wizard: allows creating numerous styles of reports and printouts using the same tool

# Flexar UHPLC Systems...

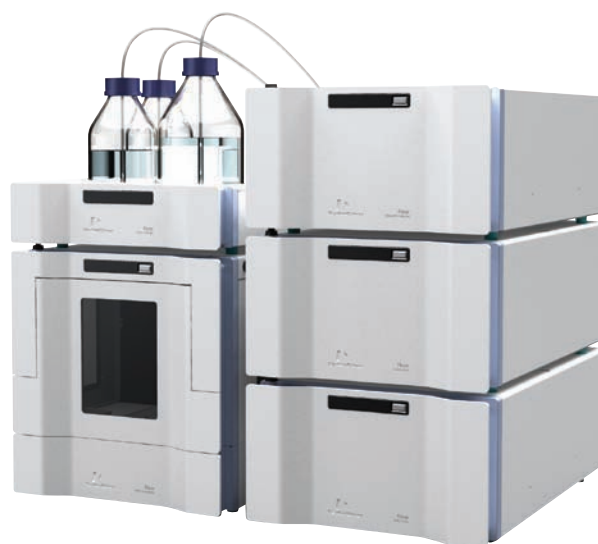
you don't have to pay **more** to  
**achieve so much**

## FX-10 UHPLC System

**NEW!**



## FX-15 UHPLC System



### FX-10: High Value UHPLC

- Micro Binary 10,000 psi pump package
- High efficiency FX UHPLC autosampler
- Column oven for retention time reproducibility and viscosity reduction
- High speed FX UV/VIS detector (100 pt/sec) with high efficiency 2.4 $\mu$ L flow cell
- Straightforward method transfer to UHPLC

### FX-15: Ultimate in UHPLC

- Dual reciprocating 18,000 psi pump with exceptional compositional accuracy, retention time reproducibility and automatic piston wash
- High efficiency FX UHPLC autosampler
- Column oven for retention time reproducibility and viscosity reduction
- High speed FX UV/VIS detector (100 pt/sec) with high efficiency 2.4 $\mu$ L flow cell

## Syringes and Kits **NEW!**

PerkinElmer syringe kits for high pressure applications are manufactured for precise liquid delivery. All of these glass syringes come with precision stainless steel plungers. They are used for sampling and flushing and are available in a large variety of sizes. The 250  $\mu$ L syringe comes standard with both the Series 225 and Series 275 Autosamplers.

### Syringe Kits

Description	Part No.
100 $\mu$ L w/ 200 $\mu$ L Buffer Tubing	N2936051
250 $\mu$ L w/ 500 $\mu$ L Buffer Tubing	N2936052
500 $\mu$ L w/ 1,000 $\mu$ L Buffer Tubing	N2936053
1000 $\mu$ L w/ 2,000 $\mu$ L Buffer Tubing	N2936054
2500 $\mu$ L w/ 2,000 $\mu$ L Buffer Tubing	N2936055

### Syringes

Description	Part No.
Sample Needle w/ fittings	N2936009
Air Guide Needle (62 mm)	N2936000
Bio Compatible Sample Needle w/tubing Connector Needle (80 mm)	N2936010 N2936342

### FX-15 UHPLC Pump Accessories

Description	Part No.
Replacement 0.5 $\mu$ m filter frits for FX-15 (4-pack)	N2911224
High pressure FX-15 piston seal kit	N2911221
Piston wash bottle kit	N2601616

### FX-10 & FX-15 UHPLC System Accessories

Description	Part No.
0.005" ID PEEK tubing (blk), 50 cm	N2916200
0.004" ID PEEK tubing (red), 50 cm	N2916059
Connector tubing, Flexar iso/binary/quaternary pump to autosampler, SS	N2916210
Connector tubing, dual mixer connection ( $\leq$ 250 $\mu$ L), SS	N2916216
Connector tubing, dual mixer connection ( $\approx$ 350 $\mu$ L), SS	N2916217
Connector tubing, FX-10 pump A (upper) to T-mixer, SS	N2916213
Connector tubing, FX-10 pump B (lower) to T-mixer, SS	N2916214
Connector tubing, FX-10 purge valve to filter/scavenger, SS	N2916212
Connector tubing, FX-10 injector to column, SS	N2916215
Connector tubing, FX-10 pump A (upper) to dual mixers, SS	N2916218
Connector tubing, FX-10 pump B (lower) to dual mixers, SS	N2916219
Connector tubing, FX-15 pump to in-line mixer, SS	N2916222
Connector tubing, FX-15 pump to dual mixers, SS	N2916224
Connector tubing, FX-15 injector to column, std, SS	N2916223
Connector tubing, FX-15 injector to column, 33 cm, SS	N2916201
3cmm scavenger cartridge holder	02580178
Spheri5 scavenger columns (5-pack)	02580202

### Microsyringes (For Manual Injection)

Syringes are used for accurate and precise liquid delivery. Each syringe is hand-fitted to assure maximum accuracy. Our syringes are composed of glass barrels and precision stainless steel needles. The needle features a blunt tip, required for use with a Rheodyne injector.

### Microsyringes (For Manual Injection)

Description	Part No.
10 $\mu$ L Syringe	09904937
25 $\mu$ L Syringe	09904823
50 $\mu$ L Syringe	09904941
100 $\mu$ L Syringe	09904822
Rheodyne 22-gauge Blunt Needle with Luer Hub	09904943

# Flexar UHPLC System Accessories **NEW!**

### High Pressure Static Mixers **NEW!**

Static Mixers are important in facilitating complete mobile phase blending, resulting in improved retention performance. These mixers should be used as part of Series 275, FX10, or FX15 LC systems, where high pressure blending is required. Mixers incorporate a highly efficient cross-flow shearing mechanism which produces vortex sheer mixing over a wide range of volumes. They are now offered in 18,000 psi pressure max flavor.

A good first choice selection is a volume of about half the flow rate volume. For example, when pumping at a 0.5 mL/min flow rate, a 350  $\mu$ L mixer provides good mixing with very good baseline stability.

### High Pressure Analytical Static Mixers

Description	Part No.
50 $\mu$ L In-Line High Pressure Mixer Assembly, SS	N2911200
150 $\mu$ L In-Line High Pressure Mixer Assembly, SS	N2911201
250 $\mu$ L In-Line High Pressure Mixer Assembly, SS	N2911202
350 $\mu$ L In-Line High Pressure Mixer Assembly, SS	N2911205
500 $\mu$ L In-Line High Pressure Mixer Assembly, SS	N2911203
150 $\mu$ L High Pressure Binary High Pressure Mixing-T, SS	N2911206
10 $\mu$ L Binary Mixing-T, SS	N2911170
Binary high pressure T-Mixer, SS, 50 uL	N2911212
Binary high pressure T-Mixer, SS, 350 uL	N2911210
Binary high pressure T-Mixer, SS, 500 uL	N2911211
T-connector, SS	N2911127

### Solvent and Sample Filtration **NEW!**

Syringe filters are important for high pressure applications of effectively filter samples to prevent premature column performance loss and possible flow restriction of the narrow tubing that is typically required for high pressure LC applications.

### Syringe Filters

Description	Pore Size	Part No.
PVDR 13 mm Filter (pkg. 100)	0.45 $\mu$ m	02542783
Nylon 17 mm Filter (pkg. 100)	0.45 $\mu$ m	02542880
Nylon 17 mm Filter (pkg. 100)	0.20 $\mu$ m	02542881
Nylon 30 mm Filter (pkg. 100)	0.45 $\mu$ m	02542882
Nylon 30 mm Filter (pkg. 100)	0.20 $\mu$ m	02542883
PTFE 17 mm Filter (pkg. 100)	0.20 $\mu$ m	02542884
PTFE 30 mm Filter (pkg. 100)	0.45 $\mu$ m	02542885
PTFE 30 mm Filter (pkg. 100)	0.20 $\mu$ m	02542886

### Disposable Syringes

Description	Part No.
Disposable Syringes, Luer-Lock Tips, 1 mL	02542890
Disposable Syringes, Luer-Lock Tips, 3 mL	02542891

# Flexar Autosamplers and

## Inject with Greater precision



Best-in-class cycle time. Wide injection volume range. Excellent injection reproducibility. Precisely what you need to increase your sample throughput and efficiency.

- Injects sample volumes as little as 1  $\mu\text{L}$  at pressures up to 18,000 psi with the FX UHPLC Autosampler
- Loads sample in only 8 seconds (in partial fill mode)
- Three injection modes: full loop, partial fill and  $\mu\text{L}$ -pickup with no sample waste
- Peltier cooling/heating mode option for operation at 4  $^{\circ}\text{C}$  to 40  $^{\circ}\text{C}$ . Will reach 4  $^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , achievable even at ambient temperatures up to 25  $^{\circ}\text{C}$ .

### Flexar or Series 225/275 Autosampler Trays

Description	Part No.
25-Position 6 mL Vial Sample Tray	<b>N2936045</b>
80-Position 2 mL Vial plus (5) 6 mL Vial Tray (for derivatization)	<b>N2936046</b>
80-Position 2 mL Vial Tray with Dilution Tray	<b>N2930676</b>
96-well Microtiter	<b>N9302562</b>
96-well 'Deep-well' Microtiter	<b>N9302560</b>
96-well 7 mm Pre-slit Silicone Plate mat/Seal	<b>N9302555</b>
96-well 'Shallow' Microtiter Plate Adaptor (supports dual microtiter plates)	<b>N2936048</b>
96-well 'Deep' Microtiter Plate Adaptor (supports dual microtiter plates)	<b>N2936049</b>
100-Position 2 mL Vial Sample Tray	<b>N2936042</b>
(200) 0.2 mL Microvial plus (5) 2 mL Vial Tray	<b>N2936043</b>

All Flexar autosamplers can be upgraded in the field for Peltier cooling and heating. All Flexar autosamplers include:

- 100-sample tray
- 100 2mL vials
- 100 2mL screw top cap with cross slit vial septum
- Tubing to connect to waste reservoir
- All cables required for connection to a TotalChrom or Chromera Operating Environment
- I/O cable (Pump Start / Ready-In)
- Service Manager SW CD
- User's Manual
- Nuts and ferrules
- All fuses for 120–240 V

### Flexar Autosamplers and Upgrade Kits

#### Flexar LC Autosampler

Description	Part No.
High throughput autosampler with exceptionally low carryover. Operates up to 6100 psi (420 bar). Provides flexible injection modes: full-loop, partial-fill and $\mu\text{L}$ -Pickup (no sample waste). Peltier cooling and heating options available as field upgrades. Comes standard with 100 $\mu\text{L}$ loop and 250 $\mu\text{L}$ sample flush syringe.	<b>N2930660</b>

#### Flexar Peltier LC Autosampler

Description	Part No.
High throughput autosampler with exceptionally low carryover. Operates up to 6100 psi (420 bar). Provides flexible injection modes: full-loop, partial-fill and $\mu\text{L}$ -Pickup (no sample waste). Built-in Peltier cooling comes standard. Peltier heating option available as field upgrade. Comes standard with 100 $\mu\text{L}$ loop and 250 $\mu\text{L}$ sample flush syringe.	<b>N2930661</b>

#### Flexar FX UHPLC Autosampler

Description	Part No.
High throughput UHPLC autosampler with exceptionally low carryover. Operates up to 18,000 psi (1,241 bar). Provides flexible injection modes: full-loop, partial-fill and $\mu\text{L}$ -Pickup (no sample waste). Built-in Peltier cooling comes standard. Peltier heating option available as field upgrade. Comes standard with 10 $\mu\text{L}$ loop and 250 $\mu\text{L}$ sample flush syringe.	<b>N2930664</b>

#### Field Upgrade Peltier Kits

Description	Part No.
Flexar and Series 225 Upgrade Kit (from standard to Peltier Cooling option)	<b>N2930672</b>
Flexar and Series 225 Upgrade Kit (from standard to Peltier Cooling and Heating option)	<b>N2930673</b>
Flexar and Series 225 Upgrade Kit (from Peltier Cooling to Peltier Cooling and Heating option)	<b>N2930669</b>

## Vials, Caps and Septa Kits from PerkinElmer

### PerkinElmer Supplies – Tested and Approved

We have expanded our product selection to include additional vial types, new version caps and mating septa in a kit format for easier customer ordering. This reference guide contains both current and new product information. Tested to meet your application requirements and guaranteed for fit and compatibility.

### LC Vials, Caps and Septa

PerkinElmer offers a variety of vials, caps and septa to fulfill your application needs. Our screw thread vial caps use the revolutionary Inter-Seal®. Using a process that bonds silicone/PTFE and other elastomeric compounds directly into thermoplastic closures eliminates liner fallout, while still providing the excellent resealability and multiple injection capability. No adhesives are used in many markets including: environmental, diagnostic packaging, pharmaceutical packaging, cosmetic and food packaging.



### 2.0 mL Vials, Caps and Septa

#### Vials\*

Description	Pkg	Part No.
2 mL 11 mm Clear Glass Crimp Vials	100	<b>N9301385</b>
2 mL 11 mm Amber Glass Crimp Vials	100	<b>N9302680</b>
2 mL 11 mm Clear Snap Top Vial	100	<b>N9303418</b>
2 mL 11 mm Clear Snap Wide Opening Vials with Write-On Patch and Fill Lines	100	<b>N9306207</b>
2 mL 11 mm Amber Snap Wide Opening Vials with Write-On Patch and Fill Lines	100	<b>N9306208</b>
2 mL 10 mm Clear Glass Screw Top Vials with Write-On Label and Fill Lines	100	<b>N9306053</b>
2 mL 10 mm Amber Glass Screw Top Vials with Write-On Label and Fill Lines	100	<b>N9306057</b>
2 mL 10 mm Screw Top Vial Caps, Black Polypropylene with PTFE/Slit White Silicone	100	<b>N9306052</b>
2 mL 9 mm Clear Screw Top Vial	100	<b>N9306201</b>
2 mL 9 mm Amber Glass Screw Top Vial	100	<b>N9306220</b>

#### Caps/Septa\*

Description	Pkg	Part No.
11 mm Snap Cap Polyethylene Cross-cut Slit (no Septum)	1000	<b>04978532</b>
11 mm Snap Cap Polyethylene Single Slit (no Septum)	1000	<b>N9307023</b>
10 mm PTFE/Silicone Single Slit Screw Cap Black	100	<b>N9306052</b>
10 mm PTFE/Silicone No Slit Screw Cap Black	100	<b>N9306205</b>
11 mm Crimp Green Aluminum Cap w/Teflon® Rubber Septa	100	<b>N9302684</b>
11 mm Crimp Red Aluminum Cap w/Teflon® Rubber Septa	100	<b>N9302685</b>
11 mm Crimp Blue Aluminum Cap w/Teflon® Rubber Septa	100	<b>N9302686</b>
11 mm Crimp Silver Aluminum Cap w/Teflon® Rubber Septa	100	<b>N9306015</b>

\* Also see Convenience Kits for additional vials and caps sold separately.

### 0.2 mL Micro Vials, Caps and Septa

#### Caps/Septa:

Description	Pkg	Part No.
8 mm Silver Aluminum Crimp Cap PTFE/Rubber	1000	<b>03300806</b>
PTFE/Pre-Slit White Silicone Polyethylene Press-On Cross-Slit Cap for 8 mm Vials	1000	<b>N9302141</b>

#### Crimp Top Vials:

Description	Pkg	Part No.
Glass Microvials, Tapered, 0.2 mL, 8 mm o.d. Top*	500	<b>N9302136</b>

#### Autosampler Vial Sleeve:

Description	Pkg	Part No.
12 x 32 Glass Vial Support Sleeve for 2 mL 8 mm Micro Vials (N9302136)	25	<b>N9307027</b>

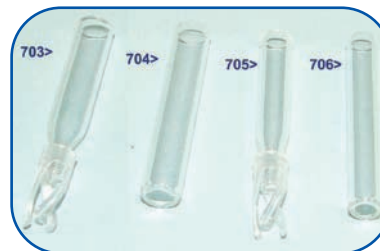
#### Micro Vial Kit:

Description	Pkg	Part No.
Polyethylene Includes 300 µL Tapered Vial, Blue Polypropylene Cap with Bonded Silicone/PTFE Septa	500	<b>N9306080</b>

\* To be used with Glass Vial Support Sleeve (N9307227).

# Flexar Autosampler

## Vials, Caps and Septa Kits from PerkinElmer



### Kits for your LC Autosampler

**NEW!**

#### Autosampler Vial Starter Kits

Complete and convenient starter kits for your volatile and standard applications. Each kit contains everything you need to run your LC instruments under two convenient part numbers. Each kit contains syringes, vials, caps and a vial rack.

Description	Pkg.	Part No.
<b>LC Screw top Starter Kit: N2930366</b>		
30 mL Pump Priming Syringes	3	09904849
Racks for 50 12 mm Vials	2	N9301303
Polypropylene Screw Caps PTFE/Silicone (Pkg/100)	4	N9306052
2 mL 10 mm Screw Top Vials w/Label and Fill Lines (Pkg/100)	2	N9306053
2 mL 10 mm Screw Top Amber Vials w/Label and Fill Lines (Pkg/100)	2	N9306057
25 µL Blunt Syringes	2	09904823
1/16 Union Tubes	2	09903289
Nut and Ferrules (Pkg/6)	1	02540274
<b>LC Crimp top Starter Kit: N2930365</b>		
Crimper Tool (Manual)	1	00090699
Racks for 50 12 mm Vials	2	N9301303
2 mL 11 mm Crimp Top Vials (Pkg/100)	3	N9301385
2 mL 11 mm Crimp Top Amber Vials (Pkg/100)	1	N9302680
25 µL Blunt Syringes	1	09904823
11 mm De-capper Tool (Manual)	1	N9301390
11 mm Silver Crimp Top Caps w/Septa (Pkg/100)	4	N9306015

### Autosampler Vial Glass Inserts

#### Vial Glass Inserts:

Description	Pkg.	Part No.
6 mm x 29 mm Clear Glass Insert, Rimless Pulled Point with Bottom Spring, 250 µL Usable Volume	100	<b>N9300703</b>
6 mm x 31 mm Clear Glass Flat Bottom Insert, 400 µL Usable Volume	100	<b>N9300704</b>
Use with:		
10 mm 2 mL Amber Screw Top Vial w/White "P" Icon w/Patch		N9306057
10 mm 2 mL Clear Screw Top Vial w/White "P" Icon w/Patch		N9306053
11 mm Clear Large Opening Snap Ring Vial w/Black "P" Icon		N9303418
11 mm Clear Large Opening Crimp Vial w/Black "P" Icon		N9306231
9 mm 2 mL Amber Screw Top Vial w/Black "P" Icon		N9306220
9 mm 2 mL Clear Screw Top Vial w/Black "P" Icon		N9306201
5 mm x 29 mm Clear Glass Insert, Rimless Pulled Point with Bottom Spring, 150 µL Usable Volume	100	<b>N9300705</b>
5 mm x 31 mm Clear Glass Flat Bottom Insert, 200 µL Usable Volume	100	<b>N9300706</b>
Use with:		
11 mm Standard Amber Crimp Vial w/Black "P" Icon		N9302680
11 mm Standard Clear Crimp Vial w/Black "P" Icon		N9301385
8 mm 2 mL Clear Screw Top Vial w/Black "P" Icon		N9302945

#### 6 mL Vials and Caps

Description	Pkg.	Part No.
6 mL Glass Large-Volume Vials with 20 mm o.d. Top	125	<b>N9302134</b>
Polyethylene Press-On Slit Caps/Septa or 20 mm o.d. Top Vials	25	<b>N2936083</b>

### Syringe Filters

**NEW!**

Syringe filters are important for high-pressure applications to effectively filter samples to prevent premature column performance loss and possible flow restriction of the narrow tubing.

Description	Pkg.	Pore Size	Part No.
PVDR 13 mm Filter	100	0.45 µm	<b>02542783</b>
Nylon 17 mm Filter	100	0.45 µm	<b>02542880</b>
Nylon 17 mm Filter	100	0.20 µm	<b>02542881</b>
Nylon 30 mm Filter	100	0.45 µm	<b>02542882</b>
Nylon 30 mm Filter	100	0.20 µm	<b>02542883</b>
PTFE 17 mm Filter	100	0.20 µm	<b>02542884</b>
PTFE 30 mm Filter	100	0.45 µm	<b>02542885</b>
PTFE 30 mm Filter	100	0.45 µm	<b>02542886</b>

### Micro Vial Kit and Polypropylene Vial/Cap Kits

Description	Pkg.	Part No.
Polyethylene Micro Vial Kit – Pkg/500 Includes: 300 L Tapered Screw Top Vials (Pkg/500) Blue Polypropylene 9 mm Caps w/Bonded Silicone/PTFE Septa (Pkg/500)	500	<b>N9306080</b>
1.5 mL Polypropylene Screw Top Amber Vial With Fill Lines, Teflon®/ Silicone Septa and Cap With Single Slit	100	<b>N9301735</b>
1.5 mL Polypropylene Screw Top Clear Vial With Fill Lines, Teflon®/ Silicone Septa and Cap With Single Slit	100	<b>N9301736</b>



## Easy-to-order Convenience Kits (Vials and Caps/Septa also Sold Separately)

Description	Pkg.	Part No.
Certified LC Clean™ Non-Slit Cap/Vial Convenience Kit – Pkg/100: 9 mm 2 mL Screw Top Vial with 9 mm Blue Screw Top Cap Clear Non-Slit PTFE/Silicone (LC Clean™)	100	<b>N9300707</b>
Certified LC Clean™ Pre-Slit Cap/Vial Convenience Kit – Pkg/100: 9 mm 2 mL Screw Top Vial with 9 mm Gray Screw Top Cap Clear Pre-Slit PTFE/Silicone (LC Clean™)	100	<b>N9300708</b>
9 mm Pre-Slit PTFE/Silicone Screw Cap Convenience Kit – Pkg/100: 9 mm Pre-Slit PTFE/Silicone Screw Cap Assembly (Pkg/100) 9 mm 2 mL Clear Screw Vial Kit (Pkg/100)	1 1	<b>N9300701</b> N9306203 N9306201
9 mm Red Rubber Screw Cap Convenience Kit – Pkg/100: 9 mm Red Rubber/Screw Cap Assembly (Pkg/100) 9 mm Clear 2 mL Vial Kit (Pkg/100)	1 1	<b>N9300699</b> N9306200 N9306201
9 mm PTFE/Silicone Screw Cap Convenience Kit – Pkg/100: 9 mm PTFE/Silicone Screw Cap Assembly (Pkg/100) 9 mm Clear 2 mL Vial Kit (Pkg/100)	1 1	<b>N9300700</b> N9306202 N9306201
11 mm Pre-Slit PTFE/Silicone Snap Convenience Kit – Pkg/100: 11 mm Pre-Slit PTFE/Silicone Snap Cap Assembly (Pkg/100) 11 mm 2 mL Clear Snap Vial Kit (Pkg/100)	1 1	<b>N9300697</b> N9303416 N9303418
11 mm PTFE/Silicone/PTFE Snap Convenience Kit – Pkg/100: 11 mm PTFE/Silicone/PTFE Snap Cap Assembly (Pkg/100) 11 mm 2 mL Clear Snap Vial Kit (Pkg/100)	1 1	<b>N9300698</b> N9303417 N9303418
10 mm Clear Pre-Slit PTFE/Silicone Screw Cap Convenience Kit – Pkg/100: 10 mm Pre-Slit PTFE/Silicone Screw Cap Assembly (Pkg/100) 10 mm 2 mL Clear Screw Vials with Write-On Patch and Fill Lines (Pkg/100)	1 1	<b>N9300695</b> N9306052 N9306053
10 mm Amber Pre-Slit PTFE/Silicone Screw Cap Convenience Kit – Pkg/100: 10 mm Pre-Slit PTFE/Silicone Screw Cap Assembly (Pkg/100) 10 mm Amber Screw Top Vials with Write-On Patch and Fill Lines (Pkg/100)	1 1	<b>N9300696</b> N9306052 N9306057
11 mm PTFE/Silicone Snap Convenience Kit – Pkg/100: 11 mm PTFE/Silicone Snap Cap Assembly (Pkg/100) 11 mm 2 mL Clear Snap Vial Kit (Pkg/100)	1 1	<b>N9300702</b> N9303419 N9303418
11 mm Red Rubber Crimp Convenience Kit – Pkg/100: 11 mm Red Rubber/Silver Crimp Assembly (Pkg/100) 11 mm 2 mL Clear Vial Kit (Pkg/100)	1 1	<b>N9300502</b> N9306230 N9306231
11 mm Red Rubber Crimp Convenience Kit – Pkg/500: 11 mm Red Rubber/Silver Crimp Assembly (Pkg/100) 11 mm 2 mL Clear Vial Kit (Pkg/100)	5 5	<b>N9300503</b> N9306230 N9306231
11 mm PTFE/Silicone Crimp Convenience Kit – Pkg/100: 11 mm PTFE/Silicone Crimp Assembly (Pkg/100) 11 mm 2 mL Clear Vial Kit (Pkg/100)	1 1	<b>N9300500</b> N9306228 N9306231
11 mm PTFE/Silicone/PTFE Crimp Convenience Kit – Pkg/100: 11 mm PTFE/Silicone/PTFE Crimp Assembly (Pkg/100) 11 mm 2 mL Clear Vial Kit (Pkg/100)	1 1	<b>N9300501</b> N9306229 N9306231

## Liquid Chromatography Laboratory Bottle Kits

Description	Part No.
1x5 Liter Bottle with Cap and Teflon Insert, 2 Meters PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601610</b>
1x2 Liter Bottle with Cap and Teflon Insert, 1 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601611</b>
1x1 Liter Bottle with Cap and Teflon Insert, 1 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601612</b>
1x0.5 Liter Bottle with Cap and Teflon Insert, 1 Meter PTFE 1/8" Tubing and 1x40 µm SS Solvent Frit	<b>N2601613</b>
1 Cap with Teflon Insert, 1 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601614</b>
1 Cap with Teflon Insert, 1 Meter PTFE 1/8" Tubing and 1x40 µm SS Solvent Frit	<b>N2601615</b>
1x0.5 Liter Bottle with Cap and Dual Teflon Insert, 2 pcs of 2 Meter PTFE 1/8" Tubing (Piston Wash Function)	<b>N2601616</b>
1 Cap with Dual Teflon Insert, 2 pcs of 2 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit (Piston Wash Function)	<b>N2601617</b>

# Brownlee Conventional Columns from

## Which Column Do I Need?

- Brownlee Analytical
- Brownlee Aquapore®
- Brownlee Bio
- Brownlee CHOICE™
- Brownlee pH-ex C18
- Brownlee Spheri-5®
- Brownlee Validated™



Having the right stationary phase for your separation is the first step in selecting the appropriate column. This should be based on sample solubility and on chemical differences among the sample compounds.

Depending on the mode of separation you will use, PerkinElmer has the right column for you. In reversed-phase separations, the mobile phase is more polar than the stationary phase. Sample hydrophobicity also is a major determinant of the separation mode. In reversed-phase separations, the mobile phase is more polar than the stationary phase, which is traditionally a straight alkyl chain, most often C18.

The majority of HPLC analyses are performed in reversed-phase mode, due to the fact that the analytes of interest can be dissolved in water, or mixtures of water and a polar organic solvent such as methanol or acetonitrile.

In normal phase separations, the mobile phase is less polar than the stationary phase. Cyano phases are commonly used in either reversed-phase or normal-phase mode. A stationary phase incorporating both polar and nonpolar functionality can be used in either reversed-phase or normal-phase mode.

## Brownlee Analytical

PerkinElmer's all-purpose HPLC column line for conventional as well as high-speed LC separations. The Brownlee Analytical family is available in 3 or 5  $\mu$ , and lengths ranging from 30 – 250 mm, in 2.1 mm and 4.6 mm i.d.

## Brownlee Aquapore®

This is a wide-pore silica-based support suitable for the separation of large biopolymers.

## Brownlee Bio

Wide-pore silica that is excellent for peptide and protein separation. Columns are available in 5  $\mu$ , and lengths ranging from 30 – 250 mm, in 2.1 mm and 4.6 mm i.d.

## Brownlee CHOICE™

This line of columns is made of 60 Å silica which results in large surface area, high carbon loads and high retention compounds. Columns are available in 3 or 5  $\mu$ , and lengths ranging from 30 – 250 mm, in 2.1 mm and 4.6 mm i.d.

## Brownlee pH-ex C18

Brownlee pH-ex C18, HPLC columns utilize a patented polycarbosilane barrier layer that protects the silica particles from extremely basic conditions. This layer uses multiple attachment points to the silica particle which yields a modified surface with enhanced stability. A second layer is then attached, providing the functional group (C18). Using this approach to shield the silica surface, a highly durable stationary phase is created. These columns are designed to be used in a pH range of 1 – 12 and have shown no loss of efficiency after 50 hours in a pH of 12 at 60 °C.



## Brownlee Spheri-5®

This is small-pore silica-based sorbent for separating small molecules. Both monofunctional (comb-pre) and polyfunctional (polymerized loop-type) C8 and C18 sorbents available.

## Brownlee Validated™

These columns are made on high-purity Type B silica with inherent low silanophilic activity. They exhibit excellent peak shape for a wide range of compounds, while also having a wide number of phases. Columns are available in 3 or 5  $\mu$ , and lengths ranging from 30 – 250 mm, in 2.1 mm or 4.6 mm i.d.

## Brownlee Columns for HRes™ Fast-LC

Recent developments in LC column technology have now made the use of sub 3  $\mu$ m particle packing materials practical. These smaller particle size materials allow higher mobile phase linear velocities to be used, without the decrease in separation efficiency experienced with conventional larger particle size packings. This translates into higher throughput and higher productivity. To conserve mobile phase, these sub 3  $\mu$ m column materials are typically packed into 2.1 mm i.d. columns so that flow rates (mobile phase volume) are kept low. However, smaller sized packings result in elevated operating pressures. Technological advances in pump and injector designs have also kept pace, and these columns can be used at pressures as high as 10,000 psi with the PerkinElmer Series 275 or up to 15,000 psi using FX15 LC systems.

The rugged construction of this new line of small particle columns for high pressure application yield excellent longevity and reproducibility. These packings exhibit an exceptionally tight particle size distribution for excellent resolving power and are packed at elevated pressures to assure column stability even at high pressure applications. Each column is tested to ensure the highest level of quality and efficiency in high pressure LC testing.

## Features and Benefits

- Sub 3  $\mu$ m particle technology and 2.1 mm i.d. for higher separation efficiency
- Packed to withstand higher operating pressures
- Wide choice of stationary phases

Description	Length	i.d.	Particle Size	Part No.
Brownlee HRes Biphenyl	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303911</b>
Brownlee HRes Biphenyl	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303912</b>
Brownlee HRes Biphenyl	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303913</b>
Brownlee HRes PFP Propyl	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303914</b>
Brownlee HRes PFP Propyl	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303915</b>
Brownlee HRes PFP Propyl	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303916</b>
Brownlee HRes Aqueous C18	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303917</b>
Brownlee HRes Aqueous C18	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303918</b>
Brownlee HRes Aqueous C18	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303919</b>
Brownlee HRes IBD	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303920</b>
Brownlee HRes IBD	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303921</b>
Brownlee HRes IBD	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303922</b>
Brownlee HRes Analytical C18	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303852</b>
Brownlee HRes Analytical C18	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303853</b>
Brownlee HRes Analytical C18	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303854</b>
Brownlee HRes Analytical DB Silica	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303970</b>
Brownlee HRes Analytical DB Silica	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303971</b>
Brownlee HRes Analytical DB Silica	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303972</b>
Brownlee HRes Analytical DB Cyano	30 mm	2.1 mm	1.9 $\mu$ m	<b>N9303973</b>
Brownlee HRes Analytical DB Cyano	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303974</b>
Brownlee HRes Analytical DB Cyano	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303975</b>
Brownlee HRes Analytical DB PAH	50 mm	2.1 mm	1.9 $\mu$ m	<b>N9303995</b>
Brownlee HRes Analytical DB PAH	100 mm	2.1 mm	1.9 $\mu$ m	<b>N9303996</b>

Consult your area sales representative for quantity discounts



## Brownlee Columns

Choose only genuine PerkinElmer Brownlee™ columns for the best separation results. Six different column types to meet all your analytical needs.

### Features and Benefits

- Each column individually tested and certificate provided
- End fittings compatible with a variety of HPLC systems
- Do not require MPLC holders

*Conventional columns do not require MPLC holders.*

## Conventional Columns

Column	Functionality	Pore Diameter Å	% Carbon	End Cap	Applications
Analytical	Amino	110	2	No	Excellent for carbohydrate analysis
Analytical	C18 & C8	110	13	Yes	Superior for non-basic analytes
Analytical	Cyano	110	4	Yes	General purpose for normal or reversed-phase
Analytical	Biphenyl	110	–	Yes	U.S. EPA Method 8330
Analytical	Phenyl	110	6	Yes	General purpose for neutral analytes
Analytical	Silica	110	–	–	Ideal for polar analytes
Analytical	PAH	110	–	Yes	Maximum resolution of polynuclear aromatic hydrocarbons
Aquapore®	AX-300	300	–	–	Used for ion exchange chromatography
Aquapore	Octyl C8	300	–	–	Used for reversed-phase chromatography
Aquapore	ODS C18	300	–	–	Silica based support used for the separation of large biopolymers
Bio	C18	300	6	Yes	High molecular weight compounds and proteins
Bio	C8	300	–	–	High molecular weight compounds and proteins
CHOICE™	Basix	60	12	Yes	Ideal for LC/MS. Excellent for amine-containing compounds and basic pharmaceuticals
CHOICE	C18	60	27	Yes	Excellent for explosives or steroids
CHOICE	Biphenyl	60	23	Yes	Highly retentive and selective phase for aromatic compounds
CHOICE	Organic acids	60	–	No	Used for challenging organic acids
CHOICE	PFP propyl	60	17	Yes	Ideal for MS, ELSD, or NPD detection of nucleosides, nucleotides, purines, pyrimidines or halogenated compounds
Spheri-5®	C8, C18, C18 ODS and Silica	80	–	–	Excellent for separating small molecules both non-functional and polyfunctional
Validated™	Amino	100	2	No	Ideal for carbohydrates
Validated	C1	100	5	–	Least retentive reversed-phase hydrocarbon packing
Validated	C4	100	9	Yes	High bonding coverage and base deactivation
Validated	Aqueous C18	100	15	No	Excellent for highly water-soluble or poorly organic-soluble compounds
Validated	C18	100	20	Yes	Used for the detection of anilines, barbiturates, carbonyls, fat-soluble vitamins, fatty acids, glycerides, phthalates
Validated	C8	100	12	Yes	Less hydrophobic retention than C18
Validated	Carbamate	100	–	–	Fast analysis of carbamates
Validated	Cyano	100	8	Yes	Basic pharmaceuticals and steroids
Validated	IBD	100	12	No	Unique separation for acids, bases, zwitterions and other polar compounds
Validated	PFP	100	7	Yes	Ideal for taxons and precursors or halogenated compounds
Validated	Phenyl	100	10	Yes	Separation of fatty acids, polynuclear aromatic hydrocarbons, purines and pyrimidines
Validated	Quat	100	–	–	High purity, base deactivated reversed-phase packing

# Conventional Columns for all HPLC

## Extensive column selection meets all your analytical needs

### Brownlee Analytical/Specialty Columns

pH Range: 2.5 to 7.5

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

#### Brownlee Analytical Amino

Ideal for mono and disaccharide analyses. Most popular amino-based stationary phase. Routine analysis of simple sugars, using isocratic elution and a refractive index detector or an evaporative light scattering detector.

100 mm	4.6 mm	5 µm	80 °C	110 Å	2%	No	<b>N9303503</b>
150 mm	4.6 mm	5 µm	80 °C	110 Å	2%	No	<b>N9303504</b>

#### Brownlee Analytical C8

Shorter retention times for hydrophobic compounds. Reliable performance with symmetrical peak shapes for neutral to acidic compounds.

100 mm	4.6 mm	5 µm	80 °C	110 Å	7%	Yes	<b>N9303515</b>
150 mm	4.6 mm	5 µm	80 °C	110 Å	7%	Yes	<b>N9303517</b>

#### Brownlee Analytical C18

Suitable for a wide range of acidic to neutral hydrophobic compounds. Excellent all purpose column.

100 mm	4.6 mm	3 µm	80 °C	110 Å	13%	Yes	<b>N9303507</b>
100 mm	4.6 mm	5 µm	80 °C	110 Å	13%	Yes	<b>N9303512</b>
150 mm	4.6 mm	5 µm	80 °C	110 Å	13%	Yes	<b>N9303513</b>

#### Brownlee Analytical Cyano

Suitable for analyses of a wide range of compounds from acidic through slightly basic. Highly-base-deactivated spherical silica.

150 mm	4.6 mm	5 µm	80 °C	110 Å	4%	Yes	<b>N9303522</b>
--------	--------	------	-------	-------	----	-----	-----------------

#### Brownlee Analytical PAH

Specifically designed for challenging analyses of polynuclear aromatic hydrocarbons.

150 mm	3.2 mm	5 µm	80 °C	110 Å		Yes	<b>N9303430</b>
250 mm	2.1 mm	5 µm	80 °C	110 Å		Yes	<b>N9303530</b>

#### Brownlee Analytical Phenyl

Unique selectivity especially for aromatic compounds.

150 mm	4.6 mm	5 µm	80 °C	110 Å	6%	Yes	<b>N9303524</b>
--------	--------	------	-------	-------	----	-----	-----------------

#### Brownlee Analytical Silica

Good general purpose packing for normal phase separations.

150 mm	4.6 mm	5 µm	80 °C	110 Å		Yes	<b>N9303525</b>
--------	--------	------	-------	-------	--	-----	-----------------

### Brownlee Bio

pH Range: 2.5 to 7.5

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

#### Brownlee Bio C8

Wide-bore HPLC column. High proportion of pore/surface area available for large molecule separations.

150 mm	2.1 mm	5 µm		300 Å	6%	Yes	<b>N9303658</b>
150 mm	4.6 mm	5 µm		300 Å	6%	Yes	<b>N9303659</b>

#### Brownlee Bio C18

Excellent for separating peptides or proteins. Wide-pore HPLC column.

150 mm	2.1 mm	5 µm		300 Å	5%	Yes	<b>N9303648</b>
150 mm	4.6 mm	5 µm		300 Å	6%	Yes	<b>N9303649</b>

### Brownlee Choice

pH Range: 2.5 to 7.5

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

#### Brownlee CHOICE Basix

Excellent choice for analytes containing amine group functionality.

150 mm	4.6 mm	5 µm	80 °C	60 Å	12%	Yes	<b>N9303618</b>
--------	--------	------	-------	------	-----	-----	-----------------

#### Brownlee CHOICE C18

Excellent choice for LC/MS. Highly retentive phase for hydrophobic and slightly polar analytes.

100 mm	2.1 mm	3 µm	80 °C	60 Å	27%	Yes	<b>N9303620</b>
100 mm	4.6 mm	3 µm	80 °C	60 Å	27%	Yes	<b>N9303621</b>
150 mm	2.1 mm	5 µm	80 °C	60 Å	27%	Yes	<b>N9303627</b>
150 mm	4.6 mm	5 µm	80 °C	60 Å	12%	Yes	<b>N9303628</b>

#### Brownlee CHOICE Organic Acids

Enhanced retention and selectivity for polar organic acids. Retention is stable and reproducible even with 100% aqueous mobile phase specified in the AOAC method.

150 mm	4.6 mm	5 µm	80 °C	60 Å			<b>N9303631</b>
250 mm	2.1 mm	5 µm	80 °C	60 Å			<b>N9303632</b>

#### Brownlee CHOICE Propyl

Highly retentive for basic analytes. Excellent separation of nucleosides, nucleotides, purines, pyrimidines, halogenated compounds, beta blockers and tricyclic antidepressants.

150 mm	4.6 mm	5 µm	80 °C	60 Å	17%	Yes	<b>N9303644</b>
--------	--------	------	-------	------	-----	-----	-----------------

For a full listing of Brownlee conventional columns, please visit:  
[www.perkinelmer.com/lcsupplies](http://www.perkinelmer.com/lcsupplies)

## Brownlee Validated

pH Range: 2.5 to 7.5

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

### Brownlee Validated Amino

Good for normal phase analytes of mono- and disaccharides or similar compounds.

150 mm	4.6 mm	5 µm	80 °C	100 Å	2%		<b>N9303534</b>
--------	--------	------	-------	-------	----	--	-----------------

### Brownlee Validated Aqueous C18

Highly base deactivated. Compatible with highly aqueous mobile phases.

150 mm	4.6 mm	5 µm	80 °C	100 Å	15%		<b>N9303546</b>
--------	--------	------	-------	-------	-----	--	-----------------

### Brownlee Validated C1

Least retentive reversed phase hydrocarbon packing.

150 mm	4.6 mm	5 µm	80 °C	100 Å	5%		<b>N9303718</b>
--------	--------	------	-------	-------	----	--	-----------------

### Brownlee Validated C4

High bonding coverage and base deactivation. Less retention than C18 or C8 phases.

150 mm	4.6 mm	5 µm	80 °C	100 Å	9%	Yes	<b>N9303720</b>
--------	--------	------	-------	-------	----	-----	-----------------

### Brownlee Validated C8

Retentive, high purity-base deactivated reversed phase packing.

150 mm	2.1 mm	5 µm	80 °C	80 Å	12%	Yes	<b>N9303566</b>
150 mm	4.6 mm	5 µm	80 °C	80 Å	12%	Yes	<b>N9303567</b>

### Brownlee Validated C18

Excellent general purpose phase column. Retentive high purity packing.

150 mm	2.1 mm	5 µm	80 °C	100 Å	20%	Yes	<b>N9303556</b>
150 mm	4.6 mm	5 µm	80 °C	100 Å	20%	Yes	<b>N9303558</b>

### Brownlee Validated Carbamate

A unique stationary phase specifically designed for carbamate analysis. This column is compatible with fluorescence or LC/MS detection, and is designed for fast analysis times, reducing solvent usage.

100 mm	4.6 mm	3 µm	80 °C	100 Å			<b>N9303569</b>
--------	--------	------	-------	-------	--	--	-----------------

### Brownlee Validated Cyano

High purity Cyano phase with few silanol sites. Less sensitive to small amounts of water present in the mobile phase.

150 mm	4.6 mm	5 µm	80 °C	100 Å	10%	Yes	<b>N9303575</b>
--------	--------	------	-------	-------	-----	-----	-----------------

### Brownlee Validated IBD

Unique selectivity and a high level of base-deactivation. Reduces or eliminates the need for mobile phase additives.

150 mm	4.6 mm	3 µm	80 °C	100 Å	12%		<b>N9303593</b>
150 mm	4.6 mm	5 µm	80 °C	100 Å	12%		<b>N9303582</b>

### Brownlee Validated PFP

Unique selectivity for compounds containing organohalogens or other basic functional groups.

150 mm	4.6 mm	5 µm	80 °C	100 Å	7%	Yes	<b>N9303599</b>
--------	--------	------	-------	-------	----	-----	-----------------

### Brownlee Validated Phenyl

High purity, highly retentive base-deactivated phase, especially designed for aromatic analytes.

150 mm	4.6 mm	5 µm	80 °C	100 Å	10%	Yes	<b>N9303606</b>
--------	--------	------	-------	-------	-----	-----	-----------------

## Brownlee Spheri-5®

pH Range: 2.5 to 7.5

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

### Brownlee Spheri-5 C8

Small pore silica-based sorbent for separating small molecules both non-functional and polyfunctional.

250 mm	4.6 mm	5 µm					<b>07120012</b>
--------	--------	------	--	--	--	--	-----------------

### Brownlee Spheri-5 C18

250 mm	4.6 mm	5 µm					<b>07120016</b>
--------	--------	------	--	--	--	--	-----------------

### Brownlee Spheri-10 C18

Small pore silica-based sorbent for separating small molecules both non-functional and polyfunctional.

250 mm	4.6 mm	10 µm					<b>07120001</b>
--------	--------	-------	--	--	--	--	-----------------

## Brownlee pH-ex C18

pH Range:  
1.0 to 12.0

**NEW!**

Especially useful for applications requiring high/low pH ranges (1–12). A silica based C18 column with exceptional stability.

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

30 mm	4.6 mm	3 µm	80 °C	140 Å			<b>N9303855</b>
50 mm	4.6 mm	3 µm	80 °C	140 Å			<b>N9303856</b>
100 mm	4.6 mm	3 µm	80 °C	140 Å			<b>N9303857</b>
150 mm	4.6 mm	3 µm	80 °C	140 Å			<b>N9303858</b>

## Conventional Column Kits

**NEW!**

Length	i.d.	Particle Size	Temp. Limit	Pore Size	Carb. Load	End Cap	Part No.
--------	------	---------------	-------------	-----------	------------	---------	----------

### Method Validation Column Kit

Includes set of three identical Brownlee Validated C18 columns from different lots. Ideal to check robustness in the method validation process. Packing materials of varying lot #'s.

150 mm	4.6 mm	5 µm					<b>N9303950</b>
--------	--------	------	--	--	--	--	-----------------

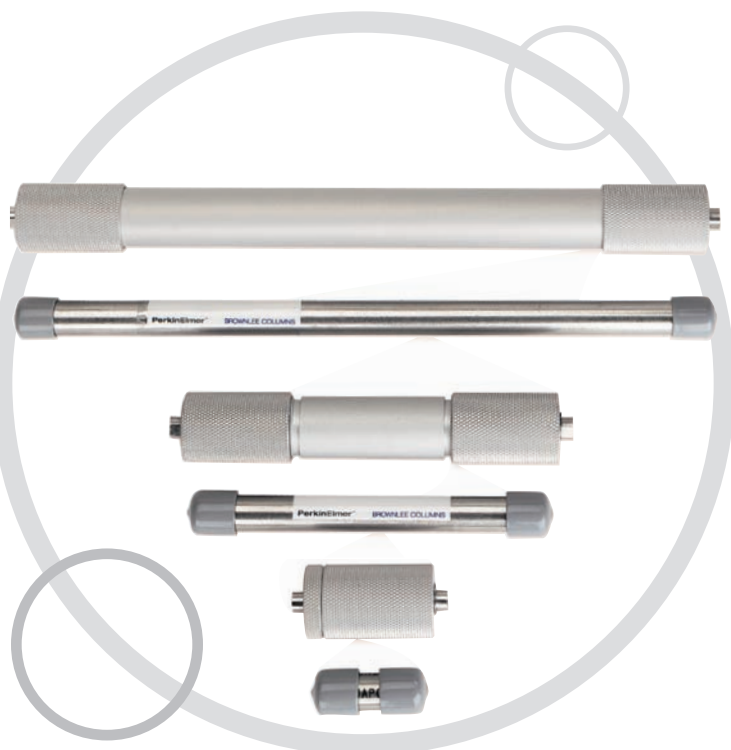
### C18 Lot Specific Column Kit

Includes 3 Brownlee Validated C18 columns. Ideal tool for the R & D and Contract Lab applications working on specific projects and studies. Identical lot# specific packing material guaranteed. Absolute minimal variability and one convenient kit for long-term use.

150 mm	4.6 mm	5 µm					<b>N9303951</b>
--------	--------	------	--	--	--	--	-----------------

Purchase 2 or more on  
**Brownlee Cartridge Columns and Save!!!!**

# Brownlee Cartridge Columns for Quality



## Brownlee Sorbents

PerkinElmer Brownlee™ cartridge columns are offered in a wide range of sorbent material. Choose the right sorbent for the analysis and mode of separation being used.

**Aquapore®** – is a wide-pore, silica-based support suitable for the separation of large biopolymers.

**Spheri-5®** – is a small-pore, silica-based solvent for separating small molecules. Both monofunctional (comb-type) and polyfunctional (polymerized loop-type) C8 and C18 sorbents are available.

**Polypore®** – is a polymer-based (microporous, 10 µm) sorbent for the analysis of organic acids and sugars.

**Validated™** – is a small-pore, silica-based C18 sorbent for small molecules, specifically for consistent pharmaceutical assays.

**Pecosphere™** – is a small-pore, silica-based sorbent for HPLC of small molecules.

**Reduced Activity** – is a small-pore, base deactivated silica-based, reversed-phase sorbent (C18 or C8) developed for HPLC of basic analytes and pharmaceuticals.

**CHOICE™** – is a small-pore, base deactivated silica-based, reversed-phase sorbent (C18) developed for LC/MS separations.

**Peco HCODS** – is especially suited for reversed-phase separation of proteins and peptides.

## Brownlee Cartridge Columns

Column	Functionality	Pore Diameter Å	% Carbon	End Cap	Applications
Aquapore	AX-300 (anion exchange)	300	-	-	Silica-based support for larger anionic compounds
Aquapore	OD-300 (C18)	300	10	Yes	Silica-based support for larger compounds by reversed-phase
Aquapore	RP-300 (C8)	300	5	Yes	Same as above, but for slightly more polar compounds
Aquapore	BU-300 (C4)	300	3	Yes	Same as above, but for even somewhat more polar compounds
Choice	C18	100	12	Yes	For high speed/efficiency separation of basic compounds/pharmaceuticals
Choice	C8	100	7	Yes	For high speed/efficiency separation of basic compounds/pharmaceuticals
Choice	PFPF (Pentafluorophenylpropyl)	100	5	Yes	For high speed/efficiency separation of basic drugs, especially for LC/MS
Pecosphere	C18, monofunctional	80	11	Yes	Reversed-phase column for fast separation of smaller compounds
Pecosphere CR	C18	80	11	Yes	Same as above, but for more basic compounds
Pecosphere CR	C8	80	11	Yes	Same as above, but, also, for slightly more polar compounds
Peco HCODS	C18, polyfunctional	300	9	No	Especially suited for reversed-phase separation of proteins and peptides
Polypore	CA (calcium form), Mixed Mode	Microporous	-	-	Especially suited for separation of organic acids, as well as sugars
Polypore	H (hydrogen form), Mixed Mode	Microporous	-	-	Especially suited for separation of sugars, as well as organic acids
Reduced Activity	C18	80	12	Yes	Reversed-phase sorbent geared for fast separation of basic compounds/pharmaceuticals
Reduced Activity	C8	80	5	Yes	Same as above, but for slightly more polar compounds
Spheri-5	RP-18 (monofunctional C18)	80	11	Yes	Reversed-phase separation of smaller compounds
Spheri-5	ODS (polyfunctional C18)	80	14	Yes	Same as above, but with somewhat different selectivity
Spheri-5	RP-8 (monofunctional C8)	80	6	Yes	Reversed-phase separation of more basic smaller compounds
Spheri-5	Phenyl (C5)	80	6	Yes	Especially suited for hydrophobic interaction separation of biomolecules, where the activity of the compound must be preserved
Spheri-5	Amino	80	3	No	Normal-phase separation of smaller, relatively more polar compounds
Spheri-5	Cyano	80	4	No	Same as above, but with somewhat different selectivity
Spheri-5	Silica	80	-	-	Same as above, but with different selectivity
Validated	C18	100	18	Yes	Reversed-phase separations in which very little variation in both lot-to-lot and column-to-column variability can be tolerated
VeloSep	RP-18 (C18)	100	14	Yes	Reversed-phase column for high through-put and minimal solvent usage
VeloSep	RP-8 (C8)	100	7	Yes	Same as above, but for slightly more polar compounds

# and Flexibility

## Brownlee™ Analytical Cartridge Columns for conventional and narrowbore HPLC

Analytical cartridges from the Brownlee line are available in three lengths (30, 100 and 220 mm) and two internal diameters (4.6 and 2.1 mm). The MPLC cartridge system allows direct coupling of a cartridge to a guard without any dead-volume. Changing cartridges is easy with the finger-tight cartridge design, which does not require any wrench tightening of the holder or disconnecting of tubing from the LC system.

### Features and Benefits

- Quality – manufactured under ISO-9001 certified quality control procedures
- Quick and easy cartridge change with the finger-tight design
- Flexible – same reusable holder for 2.1 and 4.6 mm cartridges
- Economical – less expensive than conventional columns

### Brownlee CHOICE™

The CHOICE™ columns provide the speed and efficiency appropriate for LC/MS. Each column's separation requirements vary depending on the system, sample and mass spectrometer.

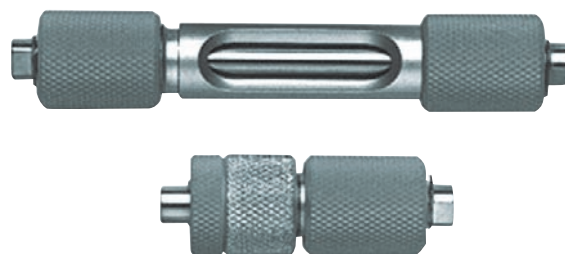
### Brownlee PECO

PerkinElmer pioneered the development of Fast HPLC and introduced the popular 3 x 3 column. This column is capable of rapid analysis, as short as one to two minutes. The 83 mm long 3 x 8 column with > 10,000 plates can separate many complex mixtures in less than 10 minutes. Peco cartridges are available with MPLC® holders. Three cartridge lengths (33, 83 and 150 mm) are available in 4.6 mm i.d.

### Brownlee Preparative

Preparative columns are 10 mm i.d. cartridges, packed with Aquapore® 20 µm, 300 Å sorbents. Save time with high-pressure preparative runs up to 3000 psi and achieve high performance with the 20 µm, 300 Å sorbents. Typical sample capacity of the 250 mm cartridge is 50 mg to 1 g of material; the typical flow rate is 4 – 10 mL/min.

For a full listing of Brownlee cartridge columns, please visit:  
[www.perkinelmer.com/lcsupplies](http://www.perkinelmer.com/lcsupplies)



Peco MPLC holders (83 and 33 mm).

### Brownlee VeloSep®

VeloSep columns are 3.2 mm i.d. cartridges packed with 3 µm reversed-phase support for high throughput analysis and reduced solvent consumption. VeloSep is packed with 3 µm C8 or C18 sorbents and available in 40 or 100 mm lengths.

### Brownlee Validated

Brownlee Validated sorbent is derived from a neutral "Type B" silica with inherent low silanophobic activity. Each sorbent is tested to meet stringent specifications for the separation of basic, neutral and acidic test probes. A high-temperature bonding technique is coupled with an exhaustive end-capping procedure to ensure maximum coverage of the silica surface. A proprietary treatment step is used to further eliminate any trace residual metals in the silica that create active absorptive sites. This is a highly deactivated column which yields excellent peak shape for difficult base analytes, pharmaceuticals and small peptides.

### NewGuard Columns

NewGuard cartridges are small guard cartridges (15 mm x 3.2 mm i.d.) packed with 5 or 7 µm sorbents. NewGuard columns prolong column life 2 to 5 times by eliminating particulates, contaminants and strongly bound sample components. They act as disposable, replaceable heads of your analytical columns. NewGuard columns are easily coupled to MPLC cartridges or conventional columns.

### Brownlee MPLC/Peco Holders

MPLC cartridge system ensures leak-free operation up to 7000 psi, with only finger-tightening. The high-pressure seal in each end assembly actually seals tighter as pressure increases. No wrenches are required and there is no need to disconnect any tubing to your LC system when changing a cartridge. MPLC cartridges can be directly coupled to another using a union.

Purchase 2 or more **Brownlee Cartridge Columns** and **Save!!!**

Consult Interchim for Volume Discounts and Promotions.

Delivering enhanced VALUE and outstanding SAVINGS on the products you use most!

# Brownlee MPLC Cartridge Columns for

## Brownlee cartridge columns offer an extensive range of phases and column lengths

### Ion Exchange

Column	Description	30 mm x 4.6 mm i.d.* 2 per package Part No.	30 mm x 2.1 mm i.d.* 2 per package Part No.	100 mm x 4.6 mm i.d.** 1 per package Part No.
AX-300, Aquapore®	7 µm, 300 Å, weak anion	07110073	07110074	07110075
Polypore® CA	10 µm, polymeric, calcium form	07110091		07110093
Polypore H	10 µm, polymeric, hydrogen form	07110085		07110087

### Polar Phase

Column	Description	30 mm x 4.6 mm i.d.* 2 per package Part No.	30 mm x 2.1 mm i.d.* 2 per package Part No.	100 mm x 4.6 mm i.d.** 1 per package Part No.
Amino, Spheri-5®	Aminopropyl, 5 µm, 80 Å	07110037		07110039
Cyano, Spheri-5	Cyanopropyl, 5 µm, 80 Å	07110043		07110045
Silica, Spheri-5	5 µm, 80 Å	07110031	07110032	07110033
Silica, Spheri-10	10 µm, 80 Å	07110145		

### Reversed Phase

Column	Description	30 mm x 4.6 mm i.d.* 2 per package Part No.	30 mm x 2.1 mm i.d.* 2 per package Part No.	100 mm x 4.6 mm i.d.** 1 per package Part No.
BU-300, Aquapore Butyl C-4	7 µm, 300 Å	07110061	07110062	
Cyano, Spheri-5	Cyanopropyl, 5 µm, 80 Å	07110043		07110045
OD-300, Aquapore ODS	C-18, 7 µm, 300 Å	07110235	07110234	07110232
ODS, Spheri-5	C-18, polyfunctional, 5 µm, 80 Å	07110019	07110020	07110021
Phenyl, Spheri-5	Phenyl, 5 µm, 80 Å	07110025		07110027
RP-8, Spheri-5	C-8, monofunctional, 5 µm, 80 Å	07110001	07110002	07110003
RP-18, Spheri-5	C-18, monofunctional, 5 µm, 80 Å	07110013	07110014	07110015
RP-300, Aquapore Octyl C-8	7 µm, 300 Å	07110055	07110056	07110057
Pecosphere C18	C-18, monofunctional, non-reduced, 3µm, 80A	02580164		0258-0220
Pecosphere 3CR ***	C-8, Base Deactivated, 3 µm	02580191		
Pecosphere 3CR ***	C-18, Base Deactivated, 3 µm	02580195		

Pecosphere C18 100 x 3.2 mm monofunctional, non-reduced, 3 µm, 80A column **0258-0221**

# Choice and Variety



## Scavenger Columns

Column	Description	33 mm x 4.6 mm i.d.* 5 per package Part No.
Silica Scavenger	10 µm	02580203
C18 Scavenger	Monofunctional, 10 µm, 80Å	02580202



## Ion Exchange

Column	Description	100 mm x 2.1 mm i.d.** 1 per package Part No.	220 mm x 4.6 mm i.d.** 1 per package Part No.	220 mm x 2.1 mm i.d.** 1 per package Part No.
AX-300, Aquapore	7 µm, 300 Å, weak anion		07110077	
Polypore® CA	10 µm, polymeric, calcium form		07110095	
Polypore H	10 µm, polymeric, hydrogen form		07110089	

## Polar Phase

Column	Description	100 mm x 2.1 mm i.d.** 1 per package Part No.	220 mm x 4.6 mm i.d.** 1 per package Part No.	220 mm x 2.1 mm i.d.** 1 per package Part No.
Amino, Spheri-5	Aminopropyl, 5 µm, 80 Å		07110041	
Cyano, Spheri-5	Cyanopropyl, 5 µm, 80 Å		07110047	
Silica, Spheri-5	5 µm, 80 Å		07110035	

## Reversed Phase

Column	Description	100 mm x 2.1 mm i.d.** 1 per package Part No.	220 mm x 4.6 mm i.d.** 1 per package Part No.	220 mm x 2.1 mm i.d.** 1 per package Part No.
BU-300, Aquapore Butyl C-4	7 µm, 300 Å	07110064		
Cyano, Spheri-5	Cyanopropyl, 5 µm, 80 Å		07110047	
OD-300, Aquapore ODS	C-18, 7 µm, 300 Å	07110233	07110231	07110236
ODS, Spheri-5	C-18, polyfunctional, 5 µm, 80 Å	07110022	07110023	07110024
Phenyl, Spheri-5	Phenyl, 5 µm, 80 Å		07110029	
RP-8, Spheri-5	C-8, monofunctional, 5 µm, 80 Å	07110004	07110005	07110006
Pecosphere 3CR	C-18, Base Deactivated, 3 µm			
RP-18, Spheri-5	C-18, monofunctional, 5 µm, 80 Å	07110016	07110017	07110018
Pecosphere 3CR	C-8, Base Deactivated, 3 µm			
RP-300, Aquapore Octyl C-8	7 µm, 300 Å	07110058	07110059	07110060
Pecosphere C18	C-18, monofunctional, nonreduced, 3 µm, 80 Å	0258-0220		

\* Requires Holder (07150028) \*\* Requires Holder (07150014) \*\*\* Requires Holder (07150015)

# Brownlee NewGuard Cartridge Columns

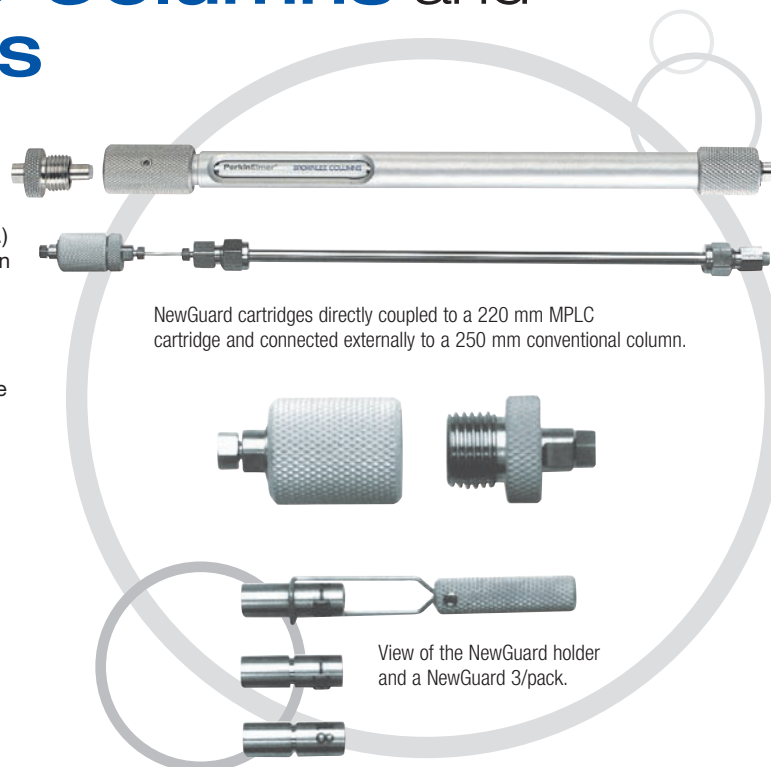
## Guard Cartridge Columns and Accessories

### NewGuard Columns

NewGuard cartridges are small guard cartridges (15 mm x 3.2 mm i.d.) packed with 5 or 7 µm sorbents. NewGuard cartridges prolong column life by eliminating particulates, contaminant's, and strongly bound sample components. They act as replaceable, disposable heads of your analytical columns. There is negligible loss of efficiency and little effect on retention or resolution. NewGuards are available in a convenient 3-pack and can be coupled directly to any MPLC cartridge with a union (07150018).

### Features and Benefits

- Prolong column life by 2 to 5 times
- Protect your column from particulates and strongly bound sample components
- Optimized dimensions to prevent loss of resolution
- Easy coupling to MPLC cartridges or conventional columns
- Finger-tight seal to 7000 psi using NewGuard holders
- Can be used for sample preconcentration (connected to sample injection loop)



NewGuard cartridges directly coupled to a 220 mm MPLC cartridge and connected externally to a 250 mm conventional column.

View of the NewGuard holder and a NewGuard 3/pack.

### 15 mm cartridge\*, 3.2 mm i.d., 3 per pkg.

Description	Part No.
Amino, Aquapore® Amino, 7 µm spherical	07110098
Anion, Aquapore Anion, 7 µm spherical	07110102
Cyano, Aquapore Cyano, 7 µm spherical	07110100
Diol, Aquapore Diol, 7 µm spherical	07110105
Phenyl, Aquapore Phenyl, 7 µm spherical	07110096
RP-2, Aquapore Dimethyl, 7 µm spherical	07110086
RP-4, Aquapore Butyl, 7 µm spherical	07110088
RP-8, Aquapore Octyl, 7 µm spherical	07110090
RP-18, Aquapore ODS, 7 µm spherical	07110092
Silica, Aquapore Silica, 7 µm spherical	07110106
Validated®, C18, 5 µm spherical	00402237

\* Requires holder (07150001)

Note: Actual bed length of NewGuard is about 13 mm

### Standards Solutions

Test Mix	
Description	Part No.
LC Gradient Test Mix	N9334010
Universal test mix for reversed-phase (5 mL/pkg.)	00890893
Standards	
Description	Part No.
HPLC SV Calibration Mix #5/610 PAH	00891542
HPLC 610 Calibration Mix A	00891543
HPLC 610 Calibration Mix B	00891544
















### Replacement Seals for MPLC and Prep-10 Holders

Item	Description	Part No.
Prep-10 Inlet Seal	One each (Prep-10 Seal Replacement Kit tools required)	07150012
Prep-10 Outlet Seal	One each (Prep-10 Seal Replacement Kit tools required)	07150026
Seals for MPLC Holders	Two 7000 psi seals (Seal Replacement Kit tools required)	07150024
Seal Replacement Kit for MPLC Holders	Tools and two 7000 psi seals	07150023



# and Holders for choice and variety

## MPLC/Peco™ Holders

The patented MPLC cartridge system ensures leak-free operation up to 7000 psi, with only finger-tightening. The high-pressure seal in each end assembly actually seals tighter as pressure increases. No wrenches are required, and there is no need to disconnect any tubing to your LC system when changing a cartridge. Each MPLC cartridge can be directly coupled to another using a union.

Name	Description		Part No.
Universal Holder Kit	Includes 100 and 220 mm holder bodies, 2 end assemblies, 1 union, 1 NewGuard end assembly.		07150025
NewGuard® Holder	Holds a single NewGuard cartridge or a single 20 mm CHOICE™ cartridge.		07150001
30 mm Holder	Holds a single MPLC and CHOICE 30 mm cartridge. (Do Not use with Pecosphere column)		07150013
33 mm Pecosphere Holder	Holds 33 mm Fast LC Peco cartridge only.		07150028
50 mm Holder	Holds a single 50 mm CHOICE cartridge only.		N2580030
83 mm Peco Holder	Holds 83 mm Fast LC Peco cartridge only.		07150029
100 mm Holder	Holds a single MPLC 100 mm cartridge.		07150014
150 mm Holder	Holds a single MPLC 150 mm cartridge.		07150030
220 mm Holder	Holds a single MPLC 220 mm cartridge.		07150015
250 mm Holder	Holds a single MPLC 250 mm cartridge.		07150031
100 mm NewGuard System Holder	Holder for a NewGuard and a 100 mm coupled cartridge.		07150016
220 mm NewGuard System Holder	Holder for a NewGuard and a 220 mm coupled cartridge.		07150017
130 mm MPLC System Holder	Holder for a 30 and 100 mm coupled cartridge.		07150032
Union	For direct coupling of 2 cartridge holders. (Two holder bodies and 2 end assemblies also required.)		07150018
NewGuard End Assembly	Upgrades a 30 mm holder to a NewGuard holder.		07150002
End Assembly	Holder component.		07150019
30 mm Holder Body	Holder component.		07150020
100 mm Holder Body	Holder component.		07150021
220 mm Holder Body	Holder component.		07150022

## Prep-10 Cartridge Holders

Name	Description		Part No.
100 mm Prep-10 Holder	Holds a single 100 mm Prep-10 cartridge.		07150005
250 mm Prep-10 Holder	Holds a single 250 mm Prep-10 cartridge.		07150006

## Stainless Steel Sample Loops for Flexar FX UHPLC Autosampler (up to 18,000 psi operation)

SS loops required for use with FX-10 or FX-15 systems operating above 6,200 psi. Compatible with Series 275 autosampler.

### High Pressure Sample Loops

Description	Part No.
2 $\mu$ L Sample Loop, SS	N2936071
5 $\mu$ L Sample Loop, SS	N2936056
10 $\mu$ L Sample Loop, SS	N2936057
20 $\mu$ L Sample Loop, SS	N2936058
50 $\mu$ L Sample Loop, SS	N2936059
100 $\mu$ L Sample Loop, SS	N2936060
200 $\mu$ L Sample Loop, SS	N2936061
500 $\mu$ L Sample Loop, SS	N2936062
1 mL Sample Loop, SS	N2936063
2 mL Sample Loop, SS	N2936064
5 mL Sample Loop, SS	N2936065

### Stainless Steel Sample Loops

Size	Model 7125/7010 Part No.	Model 7725 Part No.	Model 8125 Part No.
10 $\mu$ L	09904938	N9306024	
50 $\mu$ L	09904940	N9306026	
100 $\mu$ L	09904942	N9306027	41000013
200 $\mu$ L	09904818	N9306028	09904818
5 mL			N9306032

## PEEK Sample Loops for Series 200/225 and Flexar LC Autosamplers (up to 6,200 psi operation)

Note: these loops are compatible with all standard Flexar autosamplers as well as Series 225 autosamplers. Note: PEEK loops cannot be used above 6,200 psi operation therefore are NOT compatible with standard Flexar autosamplers. Stainless steel loops required for use with FX-10 or FX-15 UHPLC systems operating above 6,200 psi.

Description	Size	Part No.
PEEK Sample Loop	2 $\mu$ L	N2936072
PEEK Sample Loop	5 $\mu$ L	N2936073
PEEK Sample Loop	10 $\mu$ L	N2936074
PEEK Sample Loop	20 $\mu$ L	N2936075
PEEK Sample Loop	50 $\mu$ L	N2936076
PEEK Sample Loop	100 $\mu$ L	N2936077
PEEK Sample Loop	250 $\mu$ L	N2936078
PEEK Sample Loop	500 $\mu$ L	N2936079
PEEK Sample Loop	1 mL	N2936080
PEEK Sample Loop	2 mL	N2936081
PEEK Sample Loop	5 mL	N2936082

## PEEK Sample Loops

Sample loops are made from PEEK tubing and fittings. PEEK (poly-ether-ether-ketone) is a mechanically-strong, chemically-inert polymer, ideal for HPLC applications where metal surfaces may interact with the mobile phase or sample component. Each sample loop is supplied with two PEEK hex-head nuts and ferrules. These fittings grip the tubing in two locations for a more reliable connection.

Description	Size	Part No.
PEEK Sample Loop	20 $\mu$ L	N9306035
PEEK Sample Loop	50 $\mu$ L	N9306036
PEEK Sample Loop	200 $\mu$ L	N9306038
Internal Loop (PEEK and Ceramic)	2 $\mu$ L	N9306022

# Sample Loops and Tubing



Clean-Cut Tubing Cutter



Clean-Cut™ tubing tool is designed to cut Teflon®, Tefzel® and polymers in general but, in particular, PEEK tubing. The compact design enables every chromatographer to carry it in his pocket. A unique safety locking mechanism secures the blade when not in use.

## Tubing Accessories

Description	Part No.
Clean-Cut Tubing Cutter	ED020015
Clean-Cut Tubing Replacement Blade	ED020016
Cable/Tubing clip (J-Shaped)	NX598006

## PEEK Tubing

PEEK tubing has the strength required to withstand continuous use at HPLC pressure without swelling or bursting. The dense polymer structure of PEEK tubing eliminates the permeability to organic solvents that causes other polymer tubing, such as Tefzel®, to sweat.



Tubing and Connectors

Use PEEK with virtually any organic or inorganic liquid. PEEK tubing is not affected by halide salts, high-strength buffers or other aggressive mobile phases that degrade stainless steel.

## PEEK Tubing

Description	Length	Part No.
$\frac{1}{16}$ in o.d. x 0.007 in i.d.	5 ft	N9302678
$\frac{1}{16}$ in o.d. x 0.010 in i.d.	5 ft	N9302650
$\frac{1}{16}$ in o.d. x 0.005 in i.d. (black)	50 cm	N2916200
$\frac{1}{16}$ in o.d. x 0.004 in i.d. (red)	50 cm	N2916059
Connector tubing, Flexar/FX mixer to injector, SS		N2916211
Connector tubing, Flexar iso/binary/quaternary pump to autosampler, SS		N2916210

## Stainless Steel Tubing

■ Pre-cut and mirror-polished in 316 stainless steel

Description	Length	Part No.
$\frac{1}{16}$ in o.d. x 0.015 in i.d.	6 ft	00873036
$\frac{1}{16}$ in o.d. x 0.007 in i.d.	3 ft	02540838

# One-piece, easy-to-use Fingertight® fittings

## PEEK Fingertight® Fittings

**High-performance Fingertight® fittings for the most demanding applications.**

This PEEK Fingertight® fitting is the toughest with regard to chemical resistance and pressure. This high-performance Fingertight® fitting is recommended for the most demanding applications and will resist pressures up to 6,000 psi (400 bar). Made from a single piece of PEEK, the size permits tightening without tools.

Description	Part No.
PEEK One-Piece Fingertight® Fitting	ED020005



### Fittings: Nuts, Ferrules and Connectors

Stainless steel nuts are available in both Parker-Hannifin and Rheodyne™ formats. The nuts are used to connect 1/8 inch o.d. stainless steel tubing and feature a 10-32 thread size. PerkinElmer also offers select SSI fittings for 1/8 inch o.d. tubing in 1/4-28 thread size.



### Fittings Kits

Biocompatible Column Fittings for LC. Recommended for users of a PerkinElmer Biocompatible LC system. Contains nuts, ferrules and unions.

Part No.
N9301001

### Fittings Kit for LC

All-in-one fittings kit. The kit contains Rheodyne™ and SSI nuts and ferrules as well as Fingertight® II nuts and ferrules for toolless installation. Zero-dead-volume unions are also included. In addition you receive varying lengths of stainless steel tubing in 0.007 and 0.010 inch i.d.s, as well as 0.30 inch i.d Tefzel® tubing.

Part No.
N9301002

### Operation Kit

Recommended for purchasers of their first LC. Includes tubing, union, fittings, syringe, basic LC book and test mix.

Part No.
00890873

## Stainless Steel Fittings

Description	Part No.
Kel-F Reverse Ferrule, 1/8 inch*	09903771
Kel-F Ferrule, 1/8 inch*	09920382
Parker-Hannifin Ferrule, 1/8 inch	00873032
Parker-Hannifin Nut, 1/8 inch	09903980
Parker-Hannifin Nut & Ferrule Kit, 1/8 inch Includes: 6 nuts and 6 ferrules	00890945
Parker-Hannifin Zero-Dead-Volume Union with nuts and ferrules	09903289
Parker-Hannifin Medium-Stem SS Nut	N2916202
Rheodyne™ Ferrule, 1/8 inch	09904947
Rheodyne™ Nut, 1/8 inch long body	09904974
Rheodyne™ Nut, 1/8 inch short body	09904956
Rheodyne™ Nut and Ferrule Kit, 1/8 inch Includes: 6 ferrules, 3 short nuts and 3 long nuts	02540274
Tefzel Nut (for Reverse Ferrule), 1/8 inch*	N2601189
Tefzel Fut, 1/8 inch*	09920381
Valco Ferrule	09903891

\*The Tefzel and Kel-F fittings above are only for low pressure use (under 400 psi).

# Enhance the Performance of your HPLC

## Vacuum kits for all your degassing requirements



### Degassing Kits

Using a solvent degassing system will extend the performance of your pump. PerkinElmer offers both vacuum degassing systems that can handle all your degassing requirements.

#### Series 200 On-Line Vacuum Degasser Kit

This is a low-volume, high efficiency, on-line module for the removal of dissolved gases from HPLC solvents. The vacuum degasser is available in 3 and 5 channel models to support isocratic, binary and quaternary pumps as well as degassing of autosampler flush solvent.

Description	Part No.
3-channel Vacuum Degassing Package Includes: a Vacuum Degasser, one 1 L Bottle with Cap, one 2 L Bottle with Cap, one Organizer Tray and Accessory	<b>N2600571</b>
5-channel Vacuum Degassing Package Includes: a Vacuum Degasser, two 1 L Bottle with Caps, two 2 L Bottles with Caps, Solvent Tray and Organizer	<b>N2600570</b>
Binary Bottle Cap Kit Includes: two Caps, Tubing, Fittings and Labels required for two Solvent Bottles	<b>N2600522</b>
Quaternary Bottle Cap Kit Includes: four Caps, Tubing, Fittings and Labels required for four Solvent Bottles	<b>N2600523</b>

### Liquid Chromatography Laboratory Bottle Kits

Description	Part No.
1x5 Liter Bottle with Cap and Teflon Insert, 2 Meters PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601610</b>
1x2 Liter Bottle with Cap and Teflon Insert 1 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601611</b>
1x1 Liter Bottle with Cap and Teflon Insert 1 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601612</b>
1x0.5 Liter Bottle with Cap and Teflon Insert 1 Meter PTFE 1/8" Tubing and 1x40 µm SS Solvent Frit	<b>N2601613</b>
1 Cap with Teflon Insert 1 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit	<b>N2601614</b>
1 Cap with Teflon Insert 1 Meter PTFE 1/8" Tubing and 1x40 µm SS Solvent Frit	<b>N2601615</b>
1x0.5 Liter Bottle with Cap and Dual Teflon Insert 2 pcs of 2 Meter PTFE 1/8" Tubing (Piston Wash Function)	<b>N2601616</b>
1 Cap with Dual Teflon Insert 2 pcs of 2 Meter PTFE 1/8" Tubing and 1x10 µm SS Solvent Frit (Piston Wash Function)	<b>N2601617</b>

### Check Valves

HPLC check valves allow solvent to flow in only the desired direction. Check valves are easy to install with the torque wrench kit. For all PerkinElmer pumps an intermediate check valve is required. The input check valve, which is identical, should be ordered. The check valves of the biocompatible pumps differ from those of the stainless steel pumps in that all portions that contact fluid are composed of titanium.



### Check Valves

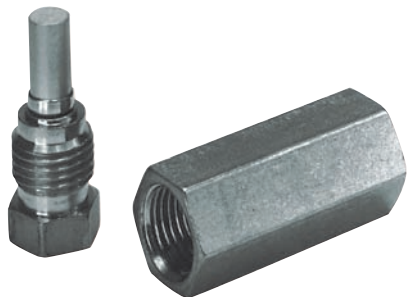
Type	Inlet/Intermediate Check valve Part No.	Outlet Check valve Part No.
Standard Stainless Steel	<b>02540177</b>	<b>02540197</b>
Micropump	<b>02540177</b>	<b>02540197</b>
Biocompatible Titanium	<b>N2600226</b>	<b>N2600192</b>

### Maintenance Kits and Tools

Description	Part No.
Biocompatible Piston Seal Replacement Kit Includes: Four Seals, Backup Rings, and O-rings	<b>N2910385</b>
Check Valve Torque Wrench	<b>02540871</b>
Diaphragm for Pulse Compensator	<b>N2601316</b>
FX-15 UHPLC Pump Accessories Replacement 0.5 µm filter frits for FX-15 (4-pack)	<b>N2911224</b>
High pressure FX-15 piston seal kit	<b>N2911221</b>
Standard Piston Seal Replacement kit for series 200 and Flexar Pump Includes: Four Seals, Backup Rings, and O-rings	<b>N2910383</b>
Insertion Tool	<b>N2601503</b>
Micropump Piston Seal Replacement Kit for series 275 and FX10 pump	<b>N2910384</b>
Piston wash bottle kit for FX-15	<b>N2601616</b>
Pulse Compensator Repair Kit Includes: Diaphragm, Elastomer Plug, and Seal	<b>N2600313</b>
Seal Removal Tool	<b>N2601295</b>
Series 200 Bio LC Pump Maintenance Kit Includes: Fuses, Seals, O-rings, and Seal Tools	<b>N2910346</b>
Series 200 Pump Maintenance Kit Includes: Fuses, Seals, O-rings, and Seal Tools	<b>N2910345</b>

### Replacement Vacuum Degasser Bottles

Description	Part No.
1 L Glass Bottle	<b>N2600497</b>
2 L Glass Bottle	<b>N2600498</b>



## Solvent Sparger and Solvent Filters

Solvent filters remove unwanted particulate matter from the LC instrument. Spargers connect directly to the solvent delivery line and are easily removed for cleaning. The scavenger column is ideal for eliminating particulate material from solvents.

## Solvent Spargers, Filters, and Scavengers

### Solvent Reservoir Sparger

Description	Size	Part No.
Stainless Steel	10 µm	<b>09903610</b>
Titanium	10 µm	<b>N2600070</b>
Stainless Steel	40 µm	<b>09903615</b>
Titanium	40 µm	<b>N2600089</b>

### Solvent Filters/Scavengers

Description	Part No.
In-Line Solvent Filter System	<b>09903606</b>
In-Line Solvent Filter Replacement Kit	<b>02540311</b>
In-Line Solvent Filter System, Titanium	<b>N2600259</b>
Replacement 2 µm Titanium Filter Element	<b>N2601477</b>
Replacement Seal for In-Line Solvent Filter	<b>N2601262</b>
3cm Scavenger Cartridge Holder	<b>02580178</b>
Spheri-5 C18 10µm Scavenger Column (5 pack)	<b>02580202</b>

### LC System Accessories

Description	Part No.
Solvent waste cup	<b>N2916019</b>
90° Elbow adapter, ¼" ID HDPP	<b>09220102</b>
Tubing clip (U-shaped, polypropylene)	<b>NX598006</b>



Mixing Head



## Static Mixers

Static mixers are used to facilitate complete mobile phase blending, resulting in improved retention performance. The mixer will most typically be used where high-pressure blending of two pump outputs is required. Mixers incorporate a highly efficient crossflow shearing mechanism which produces vortex shear mixing over a wide flow range.

## UHPLC Static Mixers (up to 18000 psi)

Description	Size	Part No.
In-Line High Pressure Mixer Assembly, SS	50 µL	<b>N2911200</b>
In-Line High Pressure Mixer Assembly, SS	150 µL	<b>N2911201</b>
In-Line High Pressure Mixer Assembly, SS	250 µL	<b>N2911202</b>
In-Line High Pressure Mixer Assembly, SS	350 µL	<b>N2911205</b>
In-Line High Pressure Mixer Assembly, SS	500 µL	<b>N2911203</b>
Binary T-Mixer, SS	10 µL	<b>N2911170</b>
Binary high pressure T-Mixer, SS	50 µL	<b>N2911212</b>
HP Binary high pressure T-Mixing, SS	150 µL	<b>N2911206</b>
Binary high pressure T-Mixer, SS	350 µL	<b>N2911210</b>
Binary high pressure T-Mixer, SS	500 µL	<b>N2911211</b>
T-connector, SS		<b>N2911127</b>

## Analytical Static Mixers (up to 6200 psi)

- Improve gradient accuracy and increase sensitivity
- Reduce baseline noise
- In-line binary format

Description	Size	Part No.
Binary T Mixer	10 µL	<b>N2911170</b>
Binary T Mixer	25 µL	<b>N2911171</b>
In-Line Mixer Assembly	150 µL	<b>N2911173</b>
In-Line Mixer Assembly	500 µL	<b>N2911172</b>
Binary T Mixer Cartridge	10 µL	<b>N2911174</b>
Binary T Mixer Cartridge	25 µL	<b>N2911175</b>
Binary T Mixer Cartridge	50 µL	<b>N2911176</b>
Binary T Mixer Cartridge	150 µL	<b>N2911177</b>
Binary T Mixer Cartridge	250 µL	<b>N2911178</b>

## Series 200 Dynamic Mixer

Series 200 Dynamic Mixer Accessory (100-240 V) – Used to facilitate complete mobile phase blending, resulting in improved retention performance. The mixer will most typically be used as part of a Series 200 Micro pump package – where high-pressure blending of 2 pump outputs is required. Three different volume mixing heads (75, 200 and 400 µL) are available.

Kit includes: Mixer Accessory, Stainless Steel “Tee” Fitting (N2911127), U.S. style AC Line Cord and 0.1 A Type T Fuse.

Part No.

**N2910520**

## Mixing Heads

Size	Part No.
75 µL	<b>N2910521</b>
200 µL	<b>N2910522</b>
400 µL	<b>N2910523</b>

# Injection valves and rotor seals for analytical HPLC



## Flom Analytical Injection Valve

The Flom Analytical Injection Valve is a very reliable manual HPLC injection valve. It comes with a built in "Inject" contact closure solvent/sample resistance and the fluid path is designed for minimal dispersion. This valve is available in either stainless steel or PEEK, depending on the application or need.

Description	Part No.
Flom Injection Valve Stainless Steel	<b>N9306073</b>
Flom Injection Valve PEEK	<b>N9306072</b>

## Injector Valve Rotor Seals

For both Series 200 Autosampler and manual injectors.

For both the Rheodyne and Flom valves, rotor seals should be periodically replaced every 6 months to a year and are available in PEEK. For the Rheodyne valve, they are also available in Vespel. PEEK is more inert towards amines and other basic biomolecules/pharmaceuticals, exhibiting less sample carryover. However, Vespel is somewhat more resilient than PEEK, providing somewhat better wear life.

Description	Part No.
Flom Rotor Seal PEEK	<b>N9306068</b>
Rheodyne 7725 Vespel Rotor Seal	<b>09904802</b>
Rheodyne 8125 Vespel Rotor Seal	<b>10070900</b>
Rheodyne 7725/9725 PEEK Rotor Seal	<b>N9306044</b>

## Rheodyne™ 9725 PEEK Bio Injection Valve

Model 9725 is inert and well-suited to the chromatography of biological molecules, including applications with aggressive mobile phases. This valve is useful in all applications in which metal contact with the mobile phase and or sample should be avoided. This valve uses PEEK vent lines and a Teflon® rotor seal and can be operated in a pH range from 0 – 14.

Description	Part No.
9725 Injection Valve for Series 200 Autosampler	<b>N9306020</b>

## Rheodyne™ 8125 Low-Dispersion Stainless Steel Injection Valve

Ideal for use in an LC/MS system, the model 8125 is designed for 1 and 2 mm microbore columns and can also be used with conventional analytical (3 to 5 mm) columns. Small flow passages produce low dispersion, maintaining the high mass sensitivity inherent in micro columns.

Description	Part No.
8125 Low-Dispersion Stainless Steel Injection Valve	<b>N9306021</b>

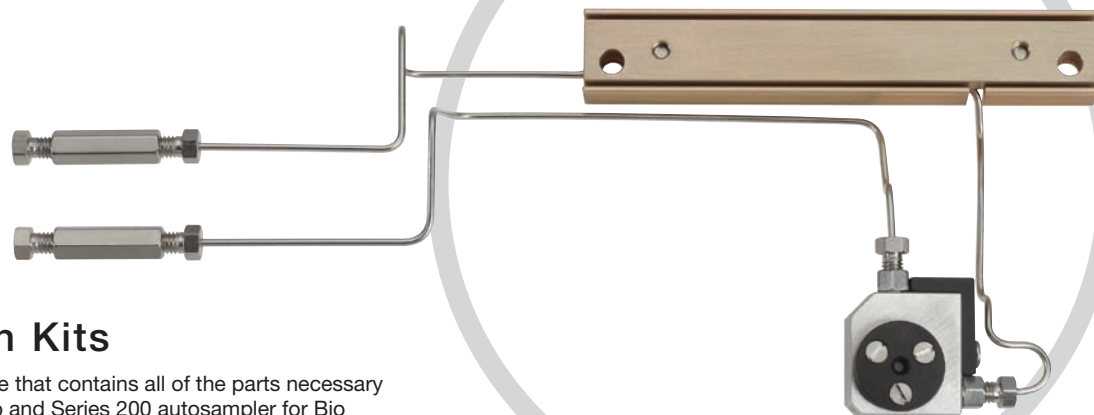
## Rheodyne™ 7725 Analytical Injection Valve

**Inject from 1 µL to 5 mL with high accuracy and precision, with the Rheodyne™ 7725 and 7725i valves.**

Rheodyne™ 7725 and 7725i valves are versatile injectors and can use both partial-filling and complete-filling methods for loading the sample loop. Wide port angles of the 7725/7725i valve provide improved access to fittings. Sample loop with a 2 µL internal capacity is also available. In a clean system, the 7725/7725i typically can make more than 30,000 injections before requiring replacement of the rotor seal.

Description	Part No.
7725 Injection Valve for Series 200 Autosampler	<b>N9306019</b>
7725i Injection Valve with Internal Switch	<b>N9306017</b>

# Interchangeable flowcells and pump accessory kits



## Bio Conversion Kits

There are two kits available; one that contains all of the parts necessary to convert the Series 200 pump and Series 200 autosampler for Bio applications. The other contains all of the parts necessary to convert only the Series 200 Pump for Bio applications.

Description	Part No.
S200 Pump and S200 Autosampler Conversion Kit	N2910035
S200 Pump Conversion Kit	N2910036

## Pump Seal Kits

Description	Part No.
High Pressure Piston Seal Replacement Kit Includes: Seals (4), Backup Rings and O-Rings	N2910383
Micropump Piston Seal Replacement Kit Includes: Seals and O-Rings	N2910384
Series 200 Pump Maintenance Kit Includes: Fuses, Seals, O-Rings and Seal Tools	N2910345



## Detector Backpressure Regulator

The detector backpressure regulator is a device that is attached to the outlet of the detector to prevent outgassing in the flowcell, eliminating variations to the detector baseline.

Detector Backpressure Regulator		
Description	Material	Part No.
40psi inline back pressure regulator		N2925090
2 – 5K psi variable back pressure regulator		N2925091
Backpressure Regulator Adjustable from 15 – 59 psi	Stainless Steel	09907126

## Flexar UVVis, Series 200/785A UV/VIS, Flexar PDA and Series 200 EP

These flowcells provide the highest detection limits possible for your sample. The 6 mm pathlength flowcell has been optimized for lower-dispersion LC analysis and is the perfect choice when using narrowbore, 2.1 mm or microbore, 1 mm columns (see Figure 1). The 3 mm pathlength is the choice for semiprep LC to avoid detector saturation at high-solute concentrations.

## UVVis, PDA and LC-135/235 FLOWCELLS

Description		Part No.
<b>Flowcells for Flexar FX-UV/Vis UHPLC Detectors</b>		
Flowcell	6 mm x 2.4 µL	N2920127
Flowcell Kit (includes flowcell & detector head plate w/ gasket)	6 mm x 2.4 µL	N2920070
<b>Flowcells for Flexar FX-UV/Vis UHPLC Detectors</b>		
Flowcell Assembly (w/ heat exchanger and zdv unions)	10 mm x 15 µL	N2920125
Flowcell	10 mm x 15 µL	N2920124
Flowcell Assembly (w/ zdv unions)	6 mm x 2.4 µL	29000544
Prep Flowcell Assembly (w/ zdv unions)	3 mm x 1.7 µL	29000545
Prep Flowcell	3 mm x 1.7 µL	29000573
<b>Flowcells for 785A UV/Vis Detectors</b>		
Flowcell	8 mm x 12 µL	29000542
Flowcell Assembly (w/ heat exchanger and zdv unions)	8 mm x 12 µL	N2920117
<b>Flowcells for Flexar FX-PDA UHPLC and Series 275 PDA Detectors</b>		
Flowcell (dual-lensed)	6 mm x 2.4 µL	N2920128
Flowcell Assembly (w/ mount)	6 mm x 2.4 µL	N2920166
<b>Flowcells for Flexar and Series 200EP PDA Detectors</b>		
Flowcell	10 mm x 15 µL	N2920126
Flowcell Assembly	10 mm x 15 µL	N2920160
<b>Flowcells for Series 200 PDA Detectors</b>		
Flowcell	10 mm x 12 µL	N2922107
Flowcell	4.5 mm x 5 µL	N2922030
<b>Flowcells for LC-135/235 PDA Detectors</b>		
Flowcell Assembly (w/ heat exchanger)	10 mm x 8 µL	N2350211
Flowcell	10 mm x 8 µL	N2350162

For outstanding **performance**, use only PerkinElmer **deuterium, tungsten** or **xenon HPLC** lamps



Our extensive quality control and inspection process demands the very best quality sources. Choosing a PerkinElmer deuterium, tungsten or xenon source provides outstanding ultraviolet and true visible performance.

- Exceptional performance anywhere in the detector's 190 – 700 nm wavelength range
- Lamp changes are quick and easy due to a unique self-aligning lamp mount

### UV/VIS Detector Lamps

#### Flexar Series/Series 200/785A UV/VIS Detector Lamps

Components	Part No.
Deuterium Lamp	N2920149
Tungsten Lamp	N2920146

#### LC-295 UV/VIS Detector Lamps

Components	Part No.
Deuterium Lamp	02712266

### Refractive Index Detector Lamps

The Flexar Series/Series 200/200s Refractive Index, with its deflection-type design, allows sensitive detection of these compounds with low noise and drift characteristics.

#### Series 200/200a

Components	Part No.
Tungsten Lamps	02712273

### Photo Diode Array Detector Lamps

The Flexar Series/Series 200/200 EP Photo Diode Array Detector provides true UV/VIS detection and high resolution spectral data. The excellent signal-to-noise characteristics make it ideally suited for low-volume or low concentration samples.

#### Flexar/Series 200 EP

Components	Part No.
Deuterium Lamp	N2925030
Tungsten Lamp	N2922011

#### Series 200

Components	Part No.
Deuterium Lamp (Phase 2)	N2922046
Tungsten Lamp	N2922011

#### LC-135C/235

Components	Part No.
Detector Lamp	N2351285

### Fluorescence Detector Lamps

The major benefit afforded by fluorescence detection is the inherent high sensitivity of the technique coupled with outstanding specificity. The Series 200a Fluorescence Detector provides signal to noise ratio of >700:1 from trace analysis using a 150 W xenon source.

#### Flexar/Series 200/200a

Components	Part No.
Xenon Lamp	N2922082

#### LC-240

Components	Part No.
Xenon Lamp	L2251157
Festoon Lamp	04969486

# Liquid Chromatography/ Mass Spectrometry

## Nitrogen Generators

PerkinElmer offers customers a new line of nitrogen generators to meet the growing need for cost effective and pure nitrogen.

Membrane Nitrogen Generators are designed to supply single or multiple LC/MS instruments with dry nitrogen at purities of 98% to 99.5%.

The generator can also be used for solvent evaporation as well as supplying dry nitrogen to analytical instruments.

### Features and Benefits

- LC/MS grade purity enhances instrument performance
- Phthalate-free
- Recommended, certified, tested, and used by all major LC/MS instrument manufacturers
- Return on investment in 6 months to 2 years
- Minimal maintenance required



### Applications

- LC/MS
- Solvent Evaporation
- Analytical instruments requiring nitrogen
- Thermal Analyzers

## Low Flow NITROFLOW Lab

### Features and Benefits

- Complete "Plug and Play" system recommended by all major LC/MS manufacturers
- 8,000 hours compressor warranty or two years
- Special design ensures quiet operation
- Dual oil-less air compressors

Components	Part No.
120 V	<b>N9306213</b>
230 V	<b>N9306214</b>

Product Specification	
Purity:	94.0 – 99.5%
Phthalate-free	
Hydrocarbon-free	
Flow Rates	10 – 50 lpm
Delivery pressure	8 bar
Ambient temperature	10 °C – 35 °C
Power consumption	1400 Watts
Noise level	<58 dB (A)
Electrical requirements	120 V / 60 Hz, 20 Amp Nema 5
Lab capacity at nominal conditions:	
Ambient temperature:	20 °C/ 68 °F
Ambient pressure:	1013 mbar(a).
Dimensions (net):	90 cm W x 31 cm D x 70 cm H
Weigh (shipping)	127.4 kg, 280 lbs

Description	Part No.
N2-22 Mid Flow Nitrogen Generator without Air Compressor	<b>N9306210</b>

Product Specification	
Purity:	95.0 – 99.5%
Atmospheric Dewpoint	-58 °F (-50 °C)
Particles >0.01 µm:	None
Suspended liquids:	None
Min./Max. operating pressure:	60/145 psig (4.0/10 barg)
Ambient operating temperature range:	60 °F – 95 °F (15 °C – 35 °C)
Inlet air temperature range:	60 °F – 95 °F (15 °C – 35 °C)
Maximum recommended inlet air temperature	110 °F (43 °C)
Electrical requirements:	None
Dimensions (net):	45 cm W x 41 cm D x 130 cm H
Weigh (shipping):	36 kg, 80 lbs

Description	Part No.
N2-35 Mid Flow Nitrogen Generator without Air Compressor	<b>N9306211</b>

Product Specifications	
Purity:	95.0 – 99.5%
Atmospheric Dewpoint	-58 °F (-50 °C)
Particles >0.01 µm:	None
Suspended liquids:	None
Min./Max. operating pressure:	60/145 psig (4.0/10 barg)
Ambient operating temperature range:	60 °F – 95 °F (15 °C – 35 °C)
Inlet air temperature range:	60 °F – 95 °F (15 °C – 35 °C)
Maximum recommended inlet air temperature	110 °F (43 °C)
Electrical requirements:	None
Dimensions (net):	45 cm W x 41 cm D x 130 cm H
Weigh (shipping):	41 kg, 90 lbs

Description	Part No.
N2-45 High Flow Nitrogen Generator without Air Oilless Compressor	<b>N9306212</b>

Product Specifications	
Purity:	95.0 – 99.5%
Hydrocarbon free	
Phthalate free	
Atmospheric Dewpoint	-58 °F (-50 °C)
Particles >0.01 µm:	None
Suspended liquids:	None
Min./Max. operating pressure:	60/145 psig (4.0/10 barg)
Recommended ambient operating temp range	72 °F (22 °C)
Inlet air temperature range:	60 °F – 95 °F (15 °C – 35 °C)
Maximum recommended inlet air temperature	110 °F (43 °C)
Inlet/Outlet ports	1/2" NPT
Electrical requirements:	None (filtration system only)
Dimensions (net):	61 cm W x 50 cm D x 140 cm H
Weigh (shipping):	114 kg, 250 lbs



Flow Rates*		
Inlet psi	Output lpm	Purity %
100	13	99.5
125	16	99.5
100	20	99.0
125	25	99.0
100	30	98.0
125	38	98.0



Flow Rates*		
Inlet psi	Output lpm	Purity %
100	20	99.5
125	25	99.5
100	30	99.0
125	37	99.0
100	46	98.0
125	57	98.0



Flow Rates*		
Inlet psi	Output lpm	Purity %
100	39	99.5
125	55	99.5
100	53	99.0
125	74	99.0
100	73	98.0
125	106	98.0

\*See [www.perkinelmer.com](http://www.perkinelmer.com) for complete listing of flow rates.

The **fastest**  
injection-to-injection  
time in conventional **gas**  
**chromatography**



Every fast-paced, high-volume laboratory shares a common goal: to speed up analytical cycle times. Now, PerkinElmer delivers with its latest innovation in GC, the high-performance **Clarus® 600 Gas Chromatograph**.

## Clarus 600 Gas Chromatograph – the innovation is simply its speed

Powered by the fastest available heat-up and cool-down conventional oven

PerkinElmer has always led the way with innovations in gas chromatography and the Clarus 600 Gas Chromatograph (GC) is no exception. It features a unique, high-performance oven with the fastest combined heat-up and cool-down rate in a conventional GC oven design.

Autosampler pre-rinse performs time-consuming syringe rinse with sample before the GC becomes ready, saving time in between runs. The resulting shorter injection-to-injection time will significantly increase your throughput and productivity by speeding up your analytical cycle time. And higher productivity means a fast return on your investment (ROI).

### QUICK GLANCE

- Oven cool-down from 450 °C to 50 °C in less than 2 minutes
- Integrated autosampler adds flexibility and automation
- Temperature programmable inlets deliver performance and flexibility for more demanding applications
- Programmable pneumatic control (PPC) adds automation efficiencies
- Exclusive optional PreVent pressure-balanced system enhances performance and productivity
- Innovative, intuitive touch-screen interface makes operation easy—no training required
- Scalable TotalChrom CDS make data management and reporting easier than ever
- PerkinElmer's complete offering allows easy integration of best-in-class mass spectrometer, headspace, headspace trap or thermal desorption

# SWAFER

## MICRO-CHANNEL WAFER TECHNOLOGY

Redefining Your GC Pathway



**NEW!**



## PerkinElmer's Swafer™

PerkinElmer's Swafer™ micro-channel wafer technology is an innovative and user-friendly approach for flowswitching and splitting applications – it delivers unparalleled hardware and application flexibility, expanding the capabilities of capillary gas chromatography (GC).

This exciting new technology can benefit most analytical laboratories. From simple techniques such as connecting two detectors to one column, and removing unwanted material from a column, to sophisticated multidimensional separations on complex samples, Swafer's capabilities cover a wide range.

### Key Benefits:

- Allows you to tackle difficult or otherwise impossible separations, delivering richer sample information which was previously unattainable
- User-friendly design and user-defined oven position allow easy setup and configuration changes, without requiring service intervention
- Complete independence of the column from injectors or detectors lets you combine injection techniques (headspace, thermal desorption, liquid, etc.), based on sample requirements
- 15 user-interchangeable configurations deliver over 18 possible modes of operation for unparalleled application flexibility
- Can be used on any Clarus 500 or 600 GC with programmable pneumatic control (PPC)

See what the Swafer can do for you – [www.perkinelmer.com/swafer](http://www.perkinelmer.com/swafer)

## Swafer Kits for New Clarus GC Systems

Description	Part No.
D-Swafer Complete Kit – for new Clarus GC units only (for Clarus 600/500 GCs with PPC) Includes all required installation hardware, user guides, and the D-Swafer.	<b>N6520273</b>
S-Swafer Complete Kit – for new Clarus GC units only (for Clarus 600/500 GCs with PPC) Includes all required installation hardware, user guides, and the S-Swafer.	<b>N6520272</b>

## Swafer Kits and Accessories for Existing Clarus GC Systems

Description	Part No.
Micro-Channel Kit for Existing Clarus 600/500 GC (for Clarus 600/500 GCs with PPC) Includes all hardware required to install a Swafer. The Swafer and installation are not included and must be purchased separately.	<b>N6520270</b>
Micro-Channel Kit for Existing Clarus 600/500 GC with PreVent Currently Installed If PreVent is already included in the GC configuration, this hardware kit provides the additional parts required to install a Swafer. The Swafer and installation are not included and must be purchased separately.	<b>N6520271</b>
D-Swafer Dean's Switch (Swafer only)	<b>N9306251</b>
S-Swafer Splitter (Swafer only)	<b>N9306262</b>

Get results better  
and faster with  
the **NEW Clarus**  
**600/560** Family  
of **GC/MS**



## Whatever you need it for the Clarus 600 GC/MS family delivers

The compact Clarus 600 GC/MS, with its advanced electronics, features the widest mass range and best-in-class detection limits of any quadrupole MS. Our high-speed scanning delivers far better peak integrity and accuracy. Its gas chromatograph has the fastest heat-up and cool-down oven in a conventional GC. Multiple pumping options offer an instrument for every lab's needs. Plus, the system is driven by our sample-centric TurboMass™ software for ease-of-use from data collection to evaluation and reporting.

### QUICK GLANCE

- EI and CI: best-in-class signal/noise specifications offer new possibilities for analysis
- Plug-and-play ion source: loosen two screws and easily change when needed
- Three pumping systems: provide the right performance to fit your needs and budget
- Smaller footprint: for economical space use
- Fastest scan rates (12,500 amu/sec): for the most accurate determination of peaks
- Widest mass range (1 – 1,200 u): encompasses a variety of applications, such as brominated flame retardants
- SIFI™ simultaneous collection of selected ion and full ion scanning data for the most productive analytical work
- UltraTune™ automated tuning for BFB/DFTTP or custom tuning on any compound for faster setup

### A model for every lab's needs:

#### Clarus 600 C GC/MS:

- Electron ionization and chemical ionization with 255 L/sec turbomolecular pump

#### Clarus 600 T GC/MS:

- Electron ionization with 255 L/sec turbomolecular pump

#### Clarus 600/560 S GC/MS:

- Electron ionization with 75 L/sec turbomolecular pump

#### Clarus 600/560 D GC/MS:

- Electron ionization with air-cooled oil diffusion pump

# Marathon Filament for PerkinElmer with GC/MS Systems



**The new Marathon™ Filament is a revolutionary, patent-pending technology developed exclusively by PerkinElmer, delivering long life even under the most difficult chromatography conditions.**

After lengthy performance testing and filament research, the new Marathon Filament has been engineered to provide exceptional long life and withstand difficult chromatography conditions. It has high resistance to demanding injections such as headspace or purge and trap and has stood up to challenging applications such as flame-retardant analysis.

The Marathon Filament is a direct replacement of the previous rhenium filament – no system changes required.

At PerkinElmer, we understand your challenges and are committed to providing the best solutions to make your life easier – the new Marathon Filament is part of our ongoing efforts to deliver the latest technology for our PerkinElmer GC/MS platform.

### Features and Benefits:

- Long life even under the most difficult chromatography conditions
- Unique white surface engineered for maximum durability and optimum performance
- Now included with all new Clarus® GC/MS systems (560 and 600 series)
- Backward compatible with all units using rhenium filaments
- Works with both electron and chemical ionization sources

#### Description

Marathon Filament for PerkinElmer GC/MS Systems

#### Part No.

**N6470012**

## Organic Calibration Standards



PerkinElmer offers a wide selection of GC and GC/MS standards. Each solution is supplied with a comprehensive Certificate of Analysis that documents quality and assurance to the highest level obtainable by a Calibration Standard.

Organic Certified Reference Materials from PerkinElmer are a new addition to an already extensive organic product line, designed to enhance your one-stop shopping experience. Each new standard is provided in convenient 1.2 mL ampules to minimize waste and comes with a pre-labeled amber glass storage vial with cap for easy use. To ensure customer satisfaction, our Organic Mixes are prepared at concentration levels that take into consideration a number of factors including: vapor pressure, evaporation, breakdown rates and dilution schemes. PerkinElmer goes the extra step by analyzing each organic standard on the Clarus 600 GC and GC/MS state-of-the-art instrumentation, to ensure that the standard conforms to the customer's exact needs.

### 600 Series Wastewater Methods Clean Water Act "Wastewaters"

#### Method 624 Standards Kit for Volatile Organic Compounds

Contains: N9331060, N9331061, N9331062, 9331063.

The U.S. EPA Method 624 is an analytical method which utilizes a TurboMatrix Headspace Purge and Trap instrument for sample prep and a Clarus 600 GC equipped with a packed column to perform the separation of the volatile organic compounds found in a 5 mL sample of municipal or industrial wastewater. To detect the eluant a Clarus 60 GC/MS is used.

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331064
<b>Mix A for Method 624</b>	
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331060
<b>Purgeable Gases Mix B for Method 624</b>	
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331061
<b>Mix C for Method 624</b>	
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331062
<b>Mix D for Method 624</b>	
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331063

For customer ease, all Organic Standards are prepared with a precision of +/- 0.5% and accompanied with a comprehensive Certificate of Analysis (lot specified by part number). Data packs are also available upon request. These include a chromatogram of the standard and quantitative report listing the values for each analyte.

### Method 8260B for Water and Solid Waste Matrices

Method 8260B is an analytical method that uses a GC/MS equipped with a capillary column to perform the separation of the volatile organic compounds found in water and a variety of solid waste matrices.

Method 524.2 is an analytical method that uses a purge and trap device for sample preparation and a GC/MS equipped with a capillary column to perform the separation of volatile organic compounds.

### Volatile Organics Combination Blend

Contains all analytes in Mixes A, C and D.

Method SW-846 is an analytical method which utilizes a Clarus 600 GC to perform the separation of the volatile organic components found in a variety of solid waste matrices. To detect the GC eluant a Clarus 600 GC/MS is used.

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331047

### Method 8260B Standards

Description	Part No.
<b>Alternate Four-Component Surrogate Standard for Method 8260B</b>	
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331042
<b>Internal Standard for Method 8260B</b>	
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331041

### Ketones for Method 8260B

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331043

### Mix B Purgeable Gases for Methods 8260B/524.2

Description	Part No.
1.2 mL @ 2,000 µg/mL in P & T Methanol	N9331048

# Merlin MicroSeal™ and SiTite™ ferrules



## Merlin MicroSeal™ Septum

The Merlin MicroSeal™ septa is a unique replacement septa employing a two-step sealing system and an advanced elastomer material.

Because the syringe needle does not pierce the septa, there is no debris and ghost peaks are greatly reduced. The MicroSeal™ septa also reduces the incidence of bent syringe needles and liner contamination. Usable in either manual or autosampler applications, this septa can improve your productivity and run reliability. Designed to be used with 23 gauge straight needle syringes. Pressure ranges from 4 to 100 psi and injection port temperatures up to 325 °C.

### Features and Benefits

- Thousands of injections before septa change
- 2-step sealing system
- No debris — no ghost peaks
- Temperatures up to 325 °C
- Pressure ranges 4 to 100 psi

Description	Pkg.	Part No.
Merlin MicroSeal™ Septum Kit Includes: Injector Port Adapter, 2 Septa and 1 Nut		<b>N9303344</b>
Merlin MicroSeal™ Septum	1	<b>N9303345</b>

**SiTite™ metal ferrules provide a continuous leak-free connection and are perfect for connecting your column to a GC/MS.**

The SiTite™ metal ferrule and nut are manufactured from the same material and therefore expand and contract at the same rate, eliminating the need to retighten, even after temperature cycling. The base of the SiTite™ ferrule forms a perfect seal with the MS interface, ensuring a leak-free connection. SiTite™ metal ferrules have a temperature limit well above the temperature capacity of the injector, MS interface or GC oven.

Description	Hole Size	Part No.
SiTite™ Ferrules Starter Kit (pkg. 10)	0.4 mm	<b>N9306090</b>
SiTite™ Ferrules Starter Kit (pkg. 10)	0.5 mm	<b>N9306091</b>
SiTite™ Ferrules Starter Kit (pkg. 10)	0.8 mm	<b>N9306092</b>
SiTite™ Ferrules (pkg. 10)	0.4 mm	<b>N9306093</b>
SiTite™ Ferrules (pkg. 10)	0.5 mm	<b>N9306094</b>
SiTite™ Ferrules (pkg. 10)	0.8 mm	<b>N9306095</b>
SiTite™ Nuts (pkg. 5)		<b>N9306096</b>

## Capillary Column Ferrules

### Graphite

Ferrule of choice for high-temperature applications up to 450 °C. Graphite seals easily and does not stick to glass columns.

### Graphite/Vespel®

15% graphite/85% polyimide ferrule recommended for use with GC/MS systems. Temperature limit 350 °C.

### Vespel®

Not reusable. Not recommended for fused silica capillary columns. Use these ferrules on 1/16 inch metal tubing and glass-lined receivers. Temperature limit 350 °C.

## Capillary Column Ferrules

Nut Size	Column i.d. / Ferrule i.d.	Graphite Part No.	Graphite/Vespel® Part No.
1/16 in	0.18 – 0.25 mm / 0.4 mm		<b>09920104</b>
1/16 in	0.18 – 0.32 mm / 0.5 mm	<b>09903700</b>	<b>09920105</b>
1/16 in	0.18 – 0.32 mm / 0.5 mm*	<b>N9306001</b>	<b>N9306000</b>
1/16 in	0.18 – 0.53 mm / 0.8 mm	<b>09920141</b>	<b>09920107</b>
1/8 in	0.18 – 0.53 mm / 1.0 mm	<b>09903394</b>	
1/8 in	0.18 – 0.32 mm / 0.5 mm*	<b>09903395</b>	
1/8 in	0.18 – 0.32 mm / 0.5 mm	<b>09903981</b>	

\*2-hole

## Injector Septa

- Thermogreen® LB-2 septum, extremely low bleed over a wide range of inlet temperatures — 100 to 350 °C. Easier needle penetration and high puncture tolerance make this septum ideal for autosamplers. This septum is already conditioned and ready to use
- BTO™ (Bleed Temperature Optimized) injector septa, 11 mm diameter. Maximum recommended operating temperature 300 °C
- PTFE/Silicone injector septa, 11 mm diameter

Description	Pkg.	Part No.
Thermogreen® Injector Septa	50	<b>N6621028</b>
Low Bleed Injector Septa	25	<b>N9303343</b>
PTFE/Silicone Injector Septa	50	<b>00090652</b>
<b>NEW!</b> Green Injection Port Septa	10	<b>N9306218</b>
<b>NEW!</b> Green Injection Port Septa	50	<b>N9306219</b>
<b>NEW!</b> Orange Injection Port Septa	50	<b>N9302972</b>

**Green** Septa Rated to 400 °C The Advanced Green Septum was created to combine significantly longer injection life, low bleed and low injection port adhesion. The result is a general use green septum made of uniquely formulated silicone rubber you can use for all your daily analyses. Packaged in a pre-cleaned glass screw top jar for high purity.

**Orange** Septa Rated to 400 °C Uniquely Formulated Silicone Rubber Septa BTO® is Bleed and Temperature Optimized for today's most demanding GC and GC/MS applications. Septa BTO® is formulated to extend low-bleed and outstanding mechanical properties of premium GC septa. It retains remarkable softness at high temperatures and has been optimized to reduce injection port adhesion. Packaged in a pre-cleaned glass screw top jar for high purity.

# Inline Gas Purifiers for Clarus GC and

**Fast** and **easy to use** Click-On  
 Inline Super Clean™ Gas Purifiers  
**save you time** and **money**

**PerkinElmer Click-On Inline Super Clean™ Purifiers reduce your maintenance system downtime**

Using the Click-On Connectors lets you change the trap without introducing contaminants into your system. Click-On connectors can replace a trap, without introducing impurities into the system. This in turn eliminates the need to flush the system.

The unique Click-On Connector fitting has a spring-loaded needle valve, which seals when a trap is removed and only opens when a new trap is connected and locked into position. When the Click-On connectors are installed into the gas line, there is no need to loosen or tighten any fittings, simply click on the new trap in seconds.

The ability to add a Click-On Inline Super Clean™ Indicator after the stainless steel trap gives the user a clear visual indication of when to change the filter. This indicator may also be used as a standalone trap.



## Features and Benefits

- Reduce system downtime with Click-On fast connectors
- High purity ensures 99.9999% pure gas
- No open gas line when changing the trap
- Helium Specific Glass Indicating Triple Trap is ideal for GC/MS
- No tools necessary to replace trap

## Product Specifications

Purifier Type	Gas Quality*	Max. Pressure	Max. Flow	Use For	H <sub>2</sub> O	Capacity O <sub>2</sub>	Hydrocarbons	Est. Lifetime
Moisture	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas He, Air, H <sub>2</sub>	21 g	NA	NA	> 3 years
Oxygen	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas	NA	3,000 mL	NA	> 3 years
Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas Air, H <sub>2</sub>	NA	NA	36 g (as <i>n</i> -butane)	> 3 years
Combination Moisture/ Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas He, Air, H <sub>2</sub>	10 g	NA	18 g (as <i>n</i> -butane)	> 2 years
Indicating Triple Moisture/ Oxygen/Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas He	3 g	400 mL	5 g (as <i>n</i> -butane)	> 1 year
Triple Moisture/ Oxygen/Hydrocarbons	99.9999%	11 bar, 160 psi	25 L/min	Inert carrier gas	6 g	1,000 mL	12 g (as <i>n</i> -butane)	> 2 years

\*Results @ 2 L/min

## Click-On Inline Purifier Compatibility Chart

Type of Gas	Moisture Filter	Oxygen Filter	Hydrocarbons Filter	Combination Filter	Triple Filter
Acetylene	√	√			
Air	√		√	√	
Carbon Dioxide			√		√
Helium	√	√	√	√	√
Hydrogen	√	√	√	√	√
Methane	√	√			
Nitrogen	√	√	√	√	√
Nitrous Oxide	√	√	√	√	√
Oxygen	√		√	√	
Propane	√	√			
P5 (5% Methane in Argon)	√	√			
P10 (10% Methane in Argon)	√	√			

## Stainless Steel Trap Kits

Description	Connector (Qty)	Part No.
Combination: Oxygen/Moisture Trap	1/8" Brass (2)	<b>N9306108</b>
Combination: Oxygen/Moisture Trap	1/8" SS (2)	<b>N9306109</b>
Combination: Moisture/Hydrocarbons Trap	1/8" Brass (2)	<b>N9306117</b>
Combination: Moisture/Hydrocarbons Trap	1/8" SS (2)	<b>N9306118</b>
Triple: Oxygen/Moisture/Hydrocarbons Trap	1/8" Brass (2)	<b>N9306110</b>
Triple: Oxygen/Moisture/Hydrocarbons Trap	1/8" SS (2)	<b>N9306111</b>
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	1/8" Brass (2)	<b>N9306112</b>
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	1/8" SS (2)	<b>N9306113</b>

## Stainless Steel Traps

Description	Part No.
Moisture Trap	<b>N9306100</b>
Oxygen Trap	<b>N9306101</b>
Hydrocarbons Trap	<b>N9306102</b>
Combination: Oxygen/Moisture Trap	<b>N9306103</b>
Combination: Moisture/Hydrocarbons Trap	<b>N9306105</b>
Triple: Oxygen/Moisture/Hydrocarbons Trap	<b>N9306104</b>
Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	<b>N9306106</b>

## Helium Specific Glass Indicating Triple Trap for your PerkinElmer Clarus GC/MS

PerkinElmer recommends the use of the Helium Specific Glass Indicating Triple Trap for your GC/MS system. This trap contains oxygen, moisture and hydrocarbons adsorbents in one trap and is packed and purged under helium.

The glass indicating trap clearly shows when the filter needs to be replaced with the use of color changes. The packing material is a silica-based environmentally friendly substitute for cobalt dioxide (blue) in the moisture indicator.

Available as a kit with the necessary 1/8" brass connectors, and as a replacement trap, this system is easy to install.

Description	Connector (Qty)	Part No.
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons		<b>N9306107</b>
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	1/8" Brass (2)*	<b>N9306114</b>
Indicating Glass Triple Gas Specific (He): Oxygen/Moisture/Hydrocarbons	1/8" SS (2)	<b>N9306116</b>

3-Cartridge Gas Purification System



AFS Manifold and Mounting Hardware



Advanced Filter System

## Advanced Filter System

The Advanced Filter System has high capacity and efficiency levels for oxygen, water and hydrocarbons. The recommended maximum flow rate is 2.0 L/min and 200 psi maximum operating pressure.

### Features and Benefits

- Two indicators, for oxygen and moisture
- Easy cartridge replacement with on/off knob
- Double seal construction for safety
- Check valves protect gas lines during cartridge replacement

System	Capacity	Efficiency
Oxygen	850 cc	< 1 ppb
Water	12 g	< 10 ppb
Hydrocarbons	8 g	< 1 ppb

A polycarbonate shield surrounds the glass indicator section of the filter is sealed, unlike other gas filters, the gas flow is secure even if the glass should break. This redundant sealing system and robust construction provides a new level of security in gas filtration. Maximum flow rate is 2.0 L/min with 200 psi max operating pressure.

Description	Part No.
Advanced Filter System (manifold and mounting hardware included)	<b>N9303963</b>
Replacement Cartridge	<b>N9303964</b>
Manifold and Mounting Hardware	<b>N9306139</b>

## 3-Cartridge Gas Purification System

This system provides for high capacity contaminant removal for GC supply gasses, and allows for individual cartridge replacement. Cartridge replacement is recommended after processing 19 cylinders of 8 m<sup>3</sup> high purity gas (99.997%).

### Features and Benefits

- All stainless steel cartridges are easy to replace
- High capacity
- Wall bracket gets the system up and out of the way

System	Capacity	Efficiency
Oxygen	1,000 cc	< 1 ppb
Water	25 g	< 30 ppb
Hydrocarbons (C5 and higher)	19 g	< 1 ppb

Description	Part No.
Purification System, 3 Head All Steel System	<b>N9306135</b>
Cartridge Set, Gas Purification All System Cart (Replacement)	<b>N9306136</b>
Cartridge, Gas Purification Moisture	<b>N9306137</b>
Cartridge, Gas Purification Hydrocarbon	<b>N9306138</b>
Cartridge, High Capacity O2 Replacement	<b>N9306004</b>
Hardware, Gas Purification Manifold/Mtg	<b>N9306140</b>
Hardware, Gas Purification Manifold/Mtg for bench or wall	<b>N9306014</b>

# Essential GC lab supplies from PerkinElmer



**NEW!**

## Portable Gas Leak Detector

The new PerkinElmer compact handheld electronic gas leak detector is the ideal solution for detecting gas leaks in your Gas Chromatography systems. Leaks in your system waste gas and can cause detector noise, baseline instability, and shorter column life. This portable unit detects minute leaks of any gas with thermal conductivity different from air. The reference gas inlet draws in ambient air for comparison to air drawn into the sample probe. A leak is detected by both LED bar graph display and audible alarm.

### Detectable Gases

Gas Type	Minimum Detectable Leak Rate (atm cc / sec)	Indicating LED Light Color
Helium	$1.0 \times 10^{-5}$	Red
Hydrogen**	$1.0 \times 10^{-5}$	Red
Nitrogen	$1.4 \times 10^{-3}$	Yellow
Argon	$1.0 \times 10^{-4}$	Yellow
Carbon Dioxide	$1.0 \times 10^{-4}$	Yellow

**Battery:** Rechargeable Ni-MH internal battery pack (6 hours normal operation)

**Universal Power Adapter Set:** US, UK, European, Australian plugs included

**Operating Temperature Range:** 32 – 120 °F (0 – 48 °C)

**Humidity Range:** 0 – 97%

**Warranty:** 1 Year

**Certifications:** CE, Japan

**Compliance:** WEEE, ROHS

## Features and Benefits

- Sleek ergonomic, hand-held design with rugged side grips
- Automatic shut-off capabilities
- Optimized sample flow path
- LED readout and audible alarm

Description	Part No.
Portable Electronic Leak Detector	<b>N9306089</b>
Soft Carrying Case	<b>N9306142</b>
Probe (fine tip)	<b>N9306063</b>

**\*\*Caution:** The PerkinElmer leak detector is not designed for determining leaks in a combustible environment. This unit may be used for determining trace amounts of hydrogen in a GC environment only.

## MiniTemp MT4 Non-contact Temperature Measurement with Laser Sighting

### Features and Benefits

- Displays thermal measurement readings in °C or °F
- Easy point and shot infrared technology in a pocket size configuration
- Great for instrument thermal test confirmation, including GC injector port and detector measurements, thermostatted LC vials, and enzymatic hydrolysis baths



**NEW!**

Non-contact Surface Temperature Measurement with Laser Sighting

### Specifications

Model	MiniTemp MT4
Temperature Range	-18 to 400 °C (0 to 750 °F)
Distance to Spot Size (D:S)	8:1
Response time	500 m/sec
Emissivity	Pre-set at 0.95
Accuracy	±2%, or ±2°C (±3 °F) whichever is greater
Typical Distance to Target (Spot)	Up to 1.5 m (4 ft)
Laser Sighting	Yes

The popular MiniTemp MT4 also includes single dot laser sighting to assist with aiming. 9 volt battery included. Recalibration is not available.

Description	Part No.
MiniTemp MT4	<b>N9306074</b>

## Basic Tool Kit

Description	Part No.
Tools come in a tool box for easy storage and use	<b>N9301327</b>

### Kit Includes:

Open-end Wrench Set (6 pc), Screwdriver Set (6 pc.), Adjustable Wrench (6 in), Chain Nose Pliers (narrow), Wire Cutters, and Wire Strippers

## Deluxe Tool Kit

Description	Part No.
Shipped in a plastic tool box for convenient storage	<b>N9301328</b>

### Kit Includes:

Open-end Wrench Set (6 pc.), Screwdriver Set (6 pc.), Adjustable Wrench (6 in), Chain Nose Pliers (narrow), Wire Cutters, Wire Strippers, Slip-joint Pliers (6 in), Long Nose No. 5 Stainless Steel Tweezers (4% inches), Needle File Set (6 pc.), Allen Key Set (11 pc. imperial sizes), and Allen Key Set (9 pc. metric sizes)

# Flow Meters

## Digital Bubble Flow Meter

The PerkinElmer Model 520 is a volumetric flow meter. It can measure the flow rate of any gas or combination of gases, such as air, without adjustment. The flow meter has a digital display and a single push-button input. It is made of stainless steel and anodized aluminum. It comes with a certificate of calibration, and is accurate to +/- 3%. The Model 520 can measure flow rates of 0.5 to 500 mL/min.



### Features and Benefits

- 0.5 to 500 mL/min flow rate
- Digital Display
- Volumetric flow measurement
- 9 V battery operation (included)
- Digital Display
- Accurate to +/- 3% of measured flow rate

Description	Part No.
Digital Bubble Flow Meter	N9302974
Replacement Glass for Digital Bubble Flow Meter	N9033429

## PerkinElmer Electronic Flowmeter 1000

The PerkinElmer Flowmeter 1000 allows for rapid real-time flow measurements. Flow rates measured in mL/min. (volumetric flow). The PerkinElmer Flowmeter 1000 can quickly calculate split ratios. Ratios are displayed in real time. Flowmeter not compatible with corrosive or flammable gases. Portable operation. (9V battery included).

### Features and Benefits

- Flow range 0.1 – 1000mL/min.
- Operating Temperature 0 to 45 °C
- Traceable to NST Primary Standard
- Split Ratio Mode
- Accuracy +/- 3%
- LCD Alphanumeric Display

Description	Part No.
PerkinElmer Electronic Flowmeter 1000	N9307029

## Soap Bubble Flow Meters

The glass soap bubble flow meters are calibrated in 1 and 10 mL two-stage or 1, 10 and 100 mL three-stage for easy flow reading. Bubble meters come complete with liquid soap, rubber squeeze bulb, miscellaneous-sized plastic tube pieces to adapt to various fittings, and instructions (stand required, but not included – N9303314).

Description	Part No.
Two-stage	00230522
Three-stage	N9300081
Stand	N9303314



## PerkinElmer FlowMark™ Electronic Flowmeter

PerkinElmer's FlowMark™ flowmeter is specifically designed for use with gas chromatography (GC) instruments. The probe is applied directly to the gas flow stream and the measured flow rate is presented on the LCD screen. Units of flow are measured in mL/min.

This unit provides continuous real-time measurements of gas streams ranging from 0.50 mL/min to 500 mL/min. Because the technology uses volumetric flow measurement, the unit is compatible with all laboratory gases. The flowmeter is designed to measure clean, dry, non-corrosive gases.

### Features and Benefits

- Measures volumetric flow for all gases across a range of 0.5 – 500 mL/min.
- NIST traceable calibration
- Explosion-proof rating for flammable and explosive gases
- Accuracy of ± 2% of flow or ± 0.05 mL/min., whichever is greater
- Over range indicator
- Auto shut-off feature
- Ergonomic design and side grips for comfort
- Measures most gas types
- Convenient storage case included
- CE, Ex (Compliance:WEEE, RoHS) certified
- Uses 2-AA batteries
- Data output via USB port
- Re-calibration service available
- Operating Temp. Range: 32 – 120 °F (0 – 48 °C)
- 1 year warranty

Description	Part No.
FlowMark™ Electronic Flowmeter	N9307086
Soft Carrying Case	N9306142

# GC injector and autosampler syringes



New Blue Barrel color design for enhanced sample volume verification (packs of 5 and 10 syringes)

## Autosampler Syringes

Syringes from PerkinElmer are individually inspected for accuracy and performance.

Recommended autosampler syringes are available in 0.5, 5 and 50  $\mu\text{L}$  capacities. For routine analyses, the metal plunger in barrel with PTFE-tipped seal is the standard syringe as shipped with each Clarus® GC instrument. Alternative syringes to use are the metal plunger in barrel or the 0.53 mm on-column injection.

Description	Part No.
50 $\mu\text{L}$ Syringe, Metal Plunger 0.63 mm o.d. needle	<b>N6101760</b>
5 $\mu\text{L}$ Syringe, Metal Plunger PTFE-tipped Seal 0.63 mm o.d. needle	<b>N6101390</b>
5 $\mu\text{L}$ Syringe, Metal Plunger PTFE-tipped Seal 0.63 mm o.d. needle BLUE Barrel (pack of 5 syringes)	<b>N6103240</b>
5 $\mu\text{L}$ Syringe, Metal Plunger PTFE-tipped Seal 0.63 mm o.d. needle BLUE Barrel (pack of 10 syringes)	<b>N6103241</b>
5 $\mu\text{L}$ Syringe, Metal Plunger 0.63 mm o.d. needle	<b>N6101251</b>
5 $\mu\text{L}$ On-column Syringe Metal Plunger 0.47 mm o.d. needle	<b>N6101380</b>
0.5 $\mu\text{L}$ Low Injection Volume Syringe, Metal Plunger 0.63 mm o.d. needle	<b>N6101252</b>
0.5 $\mu\text{L}$ Low Injection Volume Syringe Metal Plunger 0.63 mm o.d. needle BLUE Barrel (pack of 5 syringes)	<b>N6103242</b>
0.5 $\mu\text{L}$ Low Injection Volume Syringe Metal Plunger 0.63 mm o.d. needle BLUE Barrel (pack of 10 syringes)	<b>N6103243</b>
0.5 $\mu\text{L}$ Low Injection Volume Syringe, Metal Plunger 0.47 mm o.d. needle	<b>N6101253</b>

## Ultramicro Volume Syringes

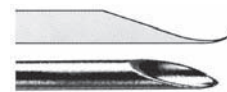
- Recommended for liquid sample injections of less than 5  $\mu\text{L}$  for gas chromatography
- Syringes come standard with needle length of 7 cm — optimum for PerkinElmer injectors

Syringe Capacity	Gauge	Length	Pack Size	Point Style	Part No.
0.5 $\mu\text{L}$	25		1		<b>N9302231</b>
1.0 $\mu\text{L}$	22		1		<b>00230177</b>
1.0 $\mu\text{L}$	26 <sup>†</sup>		1		<b>00230111</b>
2.0 $\mu\text{L}$	25	1			<b>N9302235</b>

<sup>†</sup> Recommended for PerkinElmer wide-bore capillary adapter

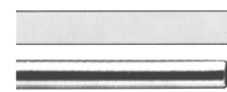
### Point Style 2

This is a general purpose point style designed for septum penetration in all chromatographic techniques. The needle has a 22° bevel to minimize coring and needle plugging.



### Point Style 3

Needle has a 90° bevel. Point style is recommended when the syringe is used for accurate pipetting of liquids. Excellent for mixing standards of very small volume.



## GC Injector Syringes

- All PerkinElmer injectors have been tested and optimized for use with a 7 cm needle
- A 7 cm needle is critical to be sure your sample is deposited in the optimal zone

### Removable Needle Syringes (RN)

Syringe Capacity	Gauge	Length	Pack Size	Point Style	Part No.
10 $\mu\text{L}$			1	#2	<b>N9302210</b>
25 $\mu\text{L}$			1	#2	<b>N9302211</b>
50 $\mu\text{L}$			1	#2	<b>N9302212</b>
100 $\mu\text{L}$			1	#2	<b>N9302213</b>

### Replacement Needles for RN Syringes

Syringe Capacity	Gauge	Length	Pack Size	Point Style	Part No.
10 $\mu\text{L}$	26S	2 in	3	#2	<b>N9302222</b>
25/50/100 $\mu\text{L}$	22S	2 in	3	#2	<b>N9302224</b>
250 $\mu\text{L}$	22S	2 in	3	#2	<b>N9302226</b>

### Fixed Needle Syringes

Syringe Capacity	Gauge	Length	Pack Size	Point Style	Part No.
10 $\mu\text{L}$ **			1	#2	<b>00230523</b>
10 $\mu\text{L}$ *			6	#2	<b>N9302230</b>
25 $\mu\text{L}$			1	#2	<b>N9302202</b>
25 $\mu\text{L}$			1	#3	<b>09904823</b>
50 $\mu\text{L}$			1	#2	<b>N9302203</b>
50 $\mu\text{L}$			1	#3	<b>09904941</b>

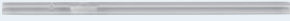
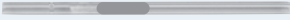



\*Savings based on one-piece price. Savings of 20% reflected in price shown.

\*\*Standard fitted with 7 cm needle.




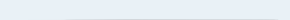
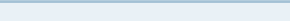


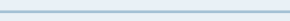
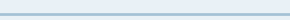
# Glass Inlet Liners

## for PerkinElmer Injector Systems


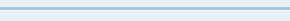
### Programmed Temperature Split/Splitless (PSS) Injector Liners

Description		Dimensions (mm) i.d. x o.d. x length	Pkg.	Part No.
Quartz Split Liner PerkinElmer Standard (ships in instrument)		2 x 4 x 86.2	1	N6121004
Quartz Split Liner with Silanized Glass Wool		2 x 4 x 86.2	1	N6121008
Quartz Split Liner with Silanized Glass Wool		2 x 4 x 86.2	5	N6121009
Quartz Splitless Liner Excellent for low-volume analysis (ships with instrument)		1 x 4 x 86.2	1	N6121006
On-Column Glass Liner		2.4 x 4 x 86.2	1	N6101539
Borosilicate Glass Split Liner This liner is loosely packed with wool for the specific use of analyzing fuel in oil		2 x 4 x 86.2	5	N9302949

### Capillary Split/Splitless Injector Liners

Description		Dimensions (mm) i.d. x o.d. x length	Pkg.	Part No.
Quartz Liner for Split Operation Good for large volume injections		4 x 6.2 x 92.1	1	N6121001
Quartz Liner for Split Operations with Silanized Glass Wool Good for large volume injection		4 x 6.2 x 92.1	1	N6121010
Quartz Liner for Split Operations with Silanized Glass Wool Good for large volume injection		4 x 6.2 x 92.1	5	N6121011
Quartz Liner for Splitless Operation Standard Injector Liner (ships with instrument)		2 x 6.2 x 92.1	1	N6121002
Glass Liner for Split Operation Universal liner for general purpose analysis		4 x 6.2 x 92.1	1	N6101052
Glass Liner for Splitless Operation Universal liner for general purpose analysis		2 x 6.2 x 92.1	1	N6101372
Precision Split Glass Liner Deactivated Surface with wool Wool can be adsorptive if fibers are broken		4 x 6.2 x 92.1	5	N6121020
Zero Dilution Glass Outer Liner Ideal for trace headspace work		2.7 x 6.3 x 69	1	N1011445
Zero Dilution Inner Liner Use with Outer Liner (N1011445)		1 x 2 x 73	1	N1011446

### Packed Column Injector Liners

Description		Dimensions (mm) i.d. x o.d. x length	Pkg.	Part No.
Wide-Bore Column On/Off Quartz Liner		6 x 4 x 92.1	1	N6121003
Wide-Bore Column Glass Liner		6 x 4 x 92.1	1	N6101375
Drilled Uniliner (hole on bottom) <b>NEW!</b> Good for PPC equipped GCs. Recommended for analysis in which compounds of interest could be affected by a tailing solvent peak.		4 x 6.2 x 92.1	5	N6502013
Gooseneck Drilled Uniliner (hole on top) <b>NEW!</b> Use for trace, active samples. Gives high recovery and linearity.		4 x 6.2 x 92.1	5	N6502014

# Autosamplers Vials, Caps and Septa

## Vials, Caps and Septa Kits from PerkinElmer



**NEW!**

### PerkinElmer Supplies – Tested and Approved

We have expanded our product selection to cover additional test applications and to make it easier for our customers to order prepackaged kits for their daily production requirements. Tested to meet your application requirements and guaranteed for fit and compatibility.

### Autosampler Crimp and Screw Top Vials, Caps and Septa

Our screw thread vials are custom designed for PerkinElmer Clarus® GCs. Manufactured from Type 33 borosilicate glass, the vials have high-temperature tolerance and are chemically inert. Color variety crimp caps offer easy identification within the laboratory on 2 mL crimp top vials. Microsampling with a maximum capacity of 200 µL can be accomplished with the use of a low-volume insert and support foot.

Description	Pkg.	Part No.
<b>CRIMP TOP VIALS:</b> (also see Convenience Kits for Additional Vials and Caps Sold Separately)		
2 mL 11 mm Crimp Top Clear Glass Vials	100	<b>N9301385</b>
2 mL 11 mm Crimp Top Amber Glass Vials	100	<b>N9302680</b>
<b>CRIMP TOP SEPTA:</b>		
11 mm Blue Crimp Caps with Teflon® Rubber Septa	100	<b>N9302686</b>
11 mm Green Crimp Caps with Teflon® Rubber Septa	100	<b>N9302684</b>
11 mm Red Crimp Caps with Teflon® Rubber Septa	100	<b>N9302685</b>
11 mm Silver Crimp Caps with Teflon® Rubber Septa	100	<b>N9306015</b>
11 mm Silver Crimp Caps with Black Viton® Septa	1000	<b>N9302784</b>
<b>SCREW TOP VIALS/CAPS/SEPTA:</b>		
2 mL 8 mm Screw Top Clear Glass Vials	100	<b>N9302945</b>
8 mm Screw Caps	100	<b>N9303441</b>
2 mL 9 mm Screw Top Clear Vials	100	<b>N9306201</b>
2 mL 9 mm Screw Top Amber Vials	100	<b>N9306220</b>
PTFE-Coated Butyl Rubber Septa for 8 mm Screw Top Vials	100	<b>N9303442</b>
<b>SNAP TOP VIALS/CAPS/SEPTA:</b>		
2 mL 11 mm Clear Snap Wide Opening Vials	100	<b>N9303418</b>
2 mL 11 mm Clear Snap Wide Opening Vials with Write-On Patch and Fill Lines	100	<b>N9306207</b>
2 mL 11 mm Amber Snap Wide Opening Vials with Write-On Patch and Fill Lines	100	<b>N9306208</b>
11 mm Pre-slit PTFE/Silicone Snap Caps	100	<b>N9303416</b>
11 mm Pre-slit PTFE/Silicone/PTFE Snap Caps	100	<b>N9303417</b>
11 mm PTFE/Silicone Snap Caps	100	<b>N9303419</b>

### Autosampler Crimp and Screw Top Vials, Caps and Septa (continued)

Description	Pkg.	Part No.
<b>WASTE AND WASH VIALS/CAPS:</b>		
Cap for Waste and Wash Vials (15 mm)	1 each	<b>09923032</b>
Clear Waste and Wash Vial 4 mL (15 mm)	1 each	<b>09923031</b>
Clear Waste and Wash Vial 4 mL (15 mm)	100	<b>N9306247</b>
Septa for Waste Wash Vials (for use with Viscous or Toxic Samples)	50	<b>N9302780</b>
Diffusers for Waste and Wash Vials	1	<b>N6101276</b>
Diffusers are sold exclusively by PerkinElmer. The conical shape allows the needle to penetrate into solvent or waste. Reduces spillage and large losses through evaporation.		
<b>INSERTS:</b>		
200-µL Low-Volume Clear Glass Insert	1000	<b>N9302681</b>
Vial Support for Insert	500	<b>N9302682</b>
<b>LOW VOLUME VIAL GLASS INSERTS:</b>		
6 mm x 29 mm Clear Glass Insert, Rimless Pulled Point with Bottom Spring, 250 µL Usable Volume	100	<b>N9300703</b>
6 mm x 31 mm Clear Glass Flat Bottom Insert, 400 µL Usable Volume	1 each	<b>N9300704</b>
Use with:		
10 mm 2 mL Amber Screw Top Vial w/ White "P" Icon w/ Patch		N9306057
10 mm 2 mL Clear Screw Top Vial w/ White "P" Icon w/ Patch		N9306053
11 mm Clear Large Opening Snap Ring Vial w/ Black "P" Icon		N9303418
11 mm Clear Large Opening Crimp Vial w/ Black "P" Icon		N9306231
9 mm 2 mL Amber Screw Top Vial w/ Black "P" Icon		N9306220
9 mm 2 mL Clear Screw Top Vial w/ Black "P" Icon		N9306201
5 mm x 29 mm Clear Glass Insert Rimless Pulled Point with Bottom Spring, 250 µL Usable Volume	100	<b>N9300705</b>
5 mm x 31 mm Clear Glass Flat Bottom Insert, 200 µL Usable Volume	100	<b>N9300706</b>
Use with:		
11 mm Standard Amber Crimp Vial w/ Black "P" Icon		N9302680
11 mm Standard Clear Crimp Vial w/ Black "P" Icon		N9301385
8 mm 2 mL Clear Screw Top Vial w/ Black "P" Icon		N9302945
<b>VIAL HOLDER RACKS:</b>		
36-Vial Capacity 20 mm Vial Holder Rack	1	<b>N9301304</b>
50-Vial Capacity 11 mm Vial Holder Rack	1	<b>N9301303</b>

See New Convenience Kits for Additional Vials, Caps and Septa

## Crimping Tools and Kits



### Autosampler Vials/Caps/Septa Kits

PerkinElmer understands your challenges and offers a variety of kits so that you can easily order and restock your laboratory supplies.

Description	Pkg.	Part No.
Autosampler Starter Kit	1	<b>N6120105</b>
Crimper Tool (Pkg/1)	1	00090699
Syringe 9000 5.0 µL 0.63 mm o.d. (Pkg/1)	1	N6101390
Vial Rack for 50 Vials 12 mm (Pkg/1)	1	N9301303
2 mL 11 mm Crimp Top Vial, Clear (Pkg/100)	1	N9301385
Decapper 11 mm Tool (Pkg/1)	1	N9301390
2 mL Crimp Top Vial, Amber (Pkg/100)	1	N9302680
11 mm Crimp Cap, Green w/ Septa	1	N9302684
11 mm Crimp Cap, Red w/ Septa (Pkg/100)	1	N9302685
11 mm Crimp Cap, Blue w/ Septa (Pkg/100)	1	N9302686
Septa for Waste/Wash Vials (Pkg/50)	2	N9302780
11 mm Crimp Cap Silver w/ Red Rubber/PTFE Septa (Pkg/100)	1	N9306015
GC Educational Consumables Kit With Electronic Crimper	1	<b>N6500570</b>
Crimper Tool 11 mm Electronic Hand Crimper w/ Battery (Pkg/1)	1	N9302592
Syringe 5.0 µL 0.63 mm o.d. (Pkg/1)	2	N6101390
Rack for 50 Vials, 12 mm (Pkg/1)	1	N9301303
11 mm Crimp Top Vial, 2 mL (Pkg/100)	2	N9301385
11 mm Crimp Cap Silver w/ Red Rubber/PTFE Septa (Pkg/100)	2	N9306015
Elite™ Column – 5-30 M x 0.25 µm x 0.25 mm (Pkg/1)	1	N9316076
GC Educational Consumables Kit With Manual Crimper	1	<b>N6500571</b>
Hand Crimper Tool (Pkg/1)	2	00090699
Syringe 5.0 µL 0.63 mm o.d. (Pkg/1)	2	N6101390
Rack for 50 Vials, 12 mm (Pkg/1)	2	N9301303
11 mm Crimp Top Vial, 2 mL (Pkg/100)	2	N9301385
11 mm Crimp Cap Silver w/ Red Rubber/PTFE Septa (Pkg/100)	2	N9306015
Elite Column – 5-30 M x 0.25 m x 0.25 mm (Pkg/1)	1	N9316076
Screw Top Autosampler Vial Convenience Kit – Pkg/100	1	<b>N9301945</b>
2 mL 8 mm Clear Screw Top Vials (Pkg/100)		
8 mm Black Caps w/ Preassembled PTFE/Rubber Septa (Pkg/100)		
Packed in a Environmentally Clean, Re-sealable Clamshell Pack		
Crimp Top Autosampler Vial Convenience Kit – Pkg/100	1	<b>N9300654</b>
2 mL 11 mm Clear Crimp Top Vials (Pkg/100)	1	N9301385
11 mm Silver Caps w/ Preassembled PTFE/Rubber Septa (Pkg/100)Packed in a Environmentally Clean, Re-sealable Clamshell Pack	1	N9306015



### Crimping Tools

Whatever your need may be, PerkinElmer offers a wide range of crimping tools for your convenience. Our universal voltage, precision control, power crimpers with adjustable settings are designed to deliver hundreds of crimps on a single battery charge.

Description	Pkg.	Part No.
<b>HAND HELD AND BENCH-TOP CRIMPERS:</b>		
8 mm Hand Crimper	1	<b>N9306127</b>
11 mm Hand Crimper	1	<b>00090699</b>
11 mm Hand Decapper	1	<b>N9301390</b>
20 mm Hand Decapper	1	<b>N9301270</b>
Bench-top Vial Crimper	1	<b>N6221006</b>
11 mm Crimper Jaws	1	<b>N6621008</b>
<b>ELECTRONIC CRIMPERS:</b>		
20 mm Electronic Universal Crimper with Global Mains Plug Pack	1	<b>N9302594</b>
20 mm Electronic Universal Decapper with Global Mains Plug Pack	1	<b>N9302595</b>
11 mm Electronic Universal Crimper with Global Mains Plug Pack	1	<b>N9302592</b>
11 mm Electronic Universal Decapper with Global Mains Plug Pack	1	<b>N9302593</b>
Electronic Crimper Battery	1	<b>N9302585</b>
Rechargeable Battery	1	<b>N9302596</b>

### Easy-to-Order Convenience Kits

Description	Pkg.	Part No.
11 mm Red Rubber Crimp Convenience Kit – Pkg/100	1	<b>N9300502</b>
11 mm Red Rubber/Silver Crimp Assembly (Pkg/100)	1	N9306230
11 mm Clear 2 mL Vial Kit (Pkg/100)	1	N9306231
11 mm Red Rubber Crimp Convenience Kit – Pkg/500	1	<b>N9300503</b>
11 mm Red Rubber/Silver Crimp Assembly (Pkg/100)	5	N9306230
11 mm Clear 2 mL Vial Kit (Pkg/100)	5	N9306231
11 mm PTFE/SIL Crimp Convenience Kit – Pkg/100	1	<b>N9300500</b>
11 mm PTFE/Sil Crimp Assembly (Pkg/100)	1	N9306228
11 mm Clear 2 mL Vial Kit (Pkg/100)	1	N9306231
11 mm PTFE/SIL/PTFE Crimp Convenience Kit – Pkg/100	1	<b>N9300501</b>
11 mm PTFE/Sil/PTFE Crimp Assembly (Pkg/100)	1	N9306229
11 mm Clear 2 mL Vial Kit (Pkg/100 )	1	N9306231
9 mm Red Rubber Screw Cap Convenience Kit – Pkg/100	1	<b>N9300699</b>
9 mm Red Rubber/Screw Cap Assembly (Pkg/100)	1	N9306200
11 mm Crimp Cap Silver w/ Red Rubber/PTFE Septa (Pkg/100)	1	N9306201
9 mm PTFE/Sil Screw Cap Convenience Kit – Pkg/100	1	<b>N9300700</b>
9 mm PTFE/Sil Screw Cap Assembly (Pkg/100)	1	N9306202
9 mm Clear 2 mL Vial Kit (Pkg/100)	1	N9306201

# Elite Series capillary columns

use only the finest quality  
high-strength fused silica

## Top 10 reasons to buy PerkinElmer Elite Series Capillary Columns

1. Finest quality of high-strength fused silica
2. Each column individually inspected and tested
3. Reproducible results
4. Crosslinked and bonded stationary phase
5. Robust column cage
6. Superior resolution
7. Wide selection of stationary phases available
8. Reduced baseline bleed
9. Lower baseline noise
10. Column lengths from 5 to 105 M

## Why choose fused silica?

Many factors influence the quality of a column. Fused silica is considered to be the purest form of glass, with fewer metal oxides (Lewis acid sites) and hydrogen bonding (surface silanol) groups. The stationary phase is cross linked (polymerized) and also bonded to the surface of the column to provide a high degree of stability, resulting in lower bleeding of the stationary phase at elevated temperatures. The superior inertness of the column means that acidic and basic compounds can be analyzed on the same column.

## Selecting the right Stationary Phase

The inherent efficiency (large number of theoretical plates) of capillary columns allows you to choose from relatively few types of phases, compared to the many varieties of packed columns previously required. Perhaps more importantly, because capillary columns are more efficient, you will see superior resolution resulting in narrower, taller peaks that allow easier integration from your data system. Identification of small peaks are facilitated by a reduced baseline bleed and lower baseline noise. Non-polar Elite-1 columns from PerkinElmer will preferentially retain non-polar compounds, whereas the PerkinElmer Elite-200 column phase provides high selectivity for analytes containing lone pair electrons, such as nitro and carbonyl groups. Elite-WAX polyethylene glycol columns are highly selective toward polar compounds such as alcohols.

## What length do I need?

Typically capillary columns are available in lengths from 15 to 105 meters. The longer the column the more resolving power, but this also increases the analysis time. Doubling a column length only increases resolution by approximately 40% but, under isothermal conditions, will double the analysis time. If using a temperature programmed analysis retention times are more dependent on the temperature than on the column length. PerkinElmer provides columns in the most popular lengths of 5, 10, 12, 15, 25, 30, 50, 60, 75, 100 and 105 meters depending upon the column i.d.

## Phase Cross Reference Chart

Phase/Description	Equivalent Capillary Phase
Elite-1, Elite-1ht 100% Dimethyl	DB-1, DB-1ht, HP-1, HP-101, Ultra-1, SPB-1, CP-Sil 5CB, Cl-Sil5CBMS, RSL-150, RSL-160, Rtx-1, BP-1, CB-1, OV-1, 007-1MS, SP-2100, SE-30
Elite-200 Trifluoropropylmethyl	DB-210, AT-210, VF-200MS, 007-210, Rtx-200
Elite-5, Elite 5ms, Elite -5ht 5% Diphenyl – 95% Dimethyl	DB-5, DB-5ms, DB-5ht, Ultra-2, SPB-5, CP-Sil8CB, RSL-200, Rtx-5, BP-5, CB-5, OV-5, 007-2(MPS-5), SE-52, SE-54, XTI-5, Rtx-5ms, PTE-5, HP-5ms
Elite-5Amine 5% Diphenyl – 95% Dimethyl Polysiloxane	PTA-5
Elite-35, Elite-35ms	DB-35, DB-35ms, Rtx-35, SPB-35, AT-35, Sup-Herb 35% Phenyl – 65% Methyl
Elite-17, Elite-17ms, Elite-17ht 50% Phenyl – 50% Methyl	DB-17, DB-17ht, HP-17, RSL-300, Rtx-50, 007-17(MPS-50), SP-2250, HP-50+
Elite-1301 6% Cyanopropylphenyl	DB-1301, Rtx-1301, CP-624
Elite-1701 14% Cyanopropylphenyl – 86% Dimethyl	DB-1701, SPB-7, CP-Sil 19CB, Rtx-1701, BP-10, CB-1701, OV-1701, 007-1701
Elite-225 50% Cyanopropylphenyl – 50% Phenyl methyl	DB-225, HP-225, SP-2330, CP-Sil 43CB, RSL-500, Rtx-225, BP-225, CB-225, OV-225, 007-225
Elite-WAX Polyethylene Glycol	DB-FFAP, HP-20M, SUPELCOWAX 10, CP-WAX 52CB, SUPEROX II, CB-WAX, STABILWAX, BP-20, Elite-CW 007-CW, Carbowax, HP-Innowax
Elite-FFAP Polyethylene Glycol – Acid Modified	DB-WAX, HP-FFAP, Nukol, SUPEROX FA, STABILWAX-DA, 007-FFAP, OV-351, DB-FFAP
Elite-608 Specialty phase for semi- volatile pesticides (EPA 608)	SPB-608, NON_PAKD Pesticide, DB-608, 007-608, HP-608
Elite-624, Elite-Volatiles Specialty phase for volatiles	DB-624, DB_VRX, VOCOL, NONPAKD AT-624, Rtx-Volatiles, Rtx-502.2, 007-624, HP-624, CP-624, Rtx-624
Elite-CLPesticides Specialty Phase for Chlorinated Pesticides	Rtx-CLPesticides
Elite-VMS Specialty Phase for Volatile Organics on GC/MS	Rtx-VMS
Elite-PONA Dimethyl polysiloxane processed for the detailed analysis of petroleum naphtha	DB-Petro100, Petrocol DH, HP-PONA, SPB-1, 007-1, RTX-1PONA

# Elite-1, Elite-200, Elite-5 Amine, and Elite-CLPesticides

## Elite-1 Dimethylpolysiloxane 100% Dimethyl Polysiloxane phase:

The 100% Dimethyl Polysiloxane is a highly versatile phase that is extremely rugged, exhibiting long column lifetime, low bleed, and high maximum operating temperatures.

### Primary Applications

Elite columns are ideal for the analysis of non-polar petrochemical samples, such as detailed hydrocarbon analysis, hydrocarbon gases, petroleum oxygenates, petroleum aromatics, fuels, waxes, oils, sulfur compounds, mercaptans, and carbon disulfide. It also is an excellent phase for solvents, chemicals, flavors, fragrances, essential oils, air toxins, chlorofluorocarbons, arson analysis, pesticides, hydrocarbons and high-temperature applications.

### Features and Benefits

- Thermal stability to 350 °C
- Low Bleed
- Low baseline noise

Description	Dimensions	Part No.
ELITE-1	30 M x 0.25 mm x 0.25 µm	<b>N9316010</b>
ELITE-1	30 M x 0.32 mm x 0.25 µm	<b>N9316023</b>
ELITE-1	60 M x 0.25 mm x 0.25 µm	<b>N9316013</b>
ELITE-1	30 M x 0.32 mm x 1.00 µm	<b>N9316024</b>
ELITE-1	60 M x 0.32 mm x 1.00 µm	<b>N9316029</b>

For our complete selection of columns please visit our web site at [www.perkinelmer.com/gcsupplies](http://www.perkinelmer.com/gcsupplies)

## Elite-5Amine 5% Diphenyl and 95% Dimethyl Polysiloxane

The tubing surface of the Elite-5Amine is chemically altered to reduce tailing of basic compounds. Thorough testing on each column ensures that every column exceeds the requirements for analyzing ppm levels of amines, without priming. The temperature program/bleed profile is measured to ensure low bleed at maximum operating temperature. This column is ideal for analyzing a wide variety of basic compounds such as alkylamines, diamines, triamines, ethanoloamines nitrogen-containing heterocycles.

### Primary Applications

Specifically designed for amines and other basic compounds.

### Features and Benefits

- Thermally stable to 315 °C
- Reduced tailing
- Low bleed at maximum operating temperature
- Eliminates column priming

Description	Dimensions	Part No.
Elite-5Amine	15 M x 0.32 mm x 1.00 µm	<b>N9316676</b>
Elite-5Amine	15 M x 0.53 mm x 3.00 µm	<b>N9316681</b>
Elite-5Amine	30 M x 0.25 mm x 0.50 µm	<b>N9316673</b>
Elite-5Amine	30 M x 0.25 mm x 1.00 µm	<b>N9316675</b>
Elite-5Amine	30 M x 0.32 mm x 1.50 µm	<b>N9316679</b>

## Elite-CLPesticides

Elite-CLPesticides is specially designed to overcome the coelutions and analyte breakdown typically encountered in chlorinated pesticide analyses for U.S. EPA methods 8081, 608 and CLP. Column bleed measured by ECD is extremely low at temperatures greater than 300 °C, which is critical for baking out the column to remove high-boiling compounds commonly found in pesticide/PCB extracts.

### Primary Applications

Chlorinated pesticides and herbicides. U.S. EPA Methods 504, 608, 619, 8081, 8151 and CLP.

### Features and Benefits

- Thermally stable to 340 °C
- Low column bleed — ideal for ECD or GC/MS analysis
- Exceeds performance criteria for U.S. EPA Methods 8081, 608, CLP
- Baseline separation in less than 15 minutes

Description	Dimensions	Part No.
Elite-CLPesticides	15 M x 0.25 mm x 0.25 µm	<b>N9316661</b>
Elite-CLPesticides	15 M x 0.53 mm x 0.50 µm	<b>N9316665</b>
Elite-CLPesticides	15 M x 0.25 mm x 0.20 µm	<b>N9316667</b>
Elite-CLPesticides	30 M x 0.32 mm x 0.50 µm	<b>N9316664</b>
Elite-CLPesticides	30 M x 0.32 mm x 0.25 µm	<b>N9316670</b>
Elite-CLPesticides	30 M x 0.53 mm x 0.42 µm	<b>N9316672</b>

## Elite-200 Trifluoropropylmethyl Polysiloxane Capillary Column

Elite-200 is considered to be one of the best capillary columns in the market today, solving many difficult separation problems not possible on any other bonded stationary phase. Due to the electrophilic nature of the fluorine-containing polymer, Elite-200 trifluoropropyl stationary phase has a unique selectivity creating interactions with compounds that contain groups displaying lone-pair electrons, or with electron-rich molecules.

### Primary Applications

Ideal for solvents, Freon®, fluorocarbons, alcohols, ketones, silanes and glycols, environmental analytes and CFCs.

### Features and Benefits

- Low bleed
- Superior inertness
- Equivalent to USP G6 phase
- Thermally stable to 340 °C

Description	Dimensions	Part No.
Elite-200	15 M x 0.25 mm x 0.10 µm	<b>N9316616</b>
Elite-200	15 M x 0.32 mm x 1.50 µm	<b>N9316632</b>
Elite-200	30 M x 0.25 mm x 0.25 µm	<b>N9316619</b>
Elite-200	30 M x 0.53 mm x 1.00 µm	<b>N9316642</b>
Elite-200	60 M x 0.53 mm x 0.25 µm	<b>N9316637</b>
Elite-200	60 M x 0.53 mm x 1.00 µm	<b>N9316643</b>

## Elite-Guard and Elite-Siltek® guard columns

### Maintain the integrity of your capillary column with a fused silica guard column

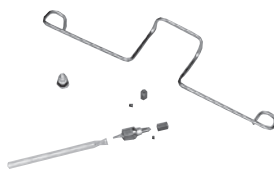
Using the Elite-Guard or Elite-Siltek® guard column lengthens the life of the capillary column and improves the analyte focusing. The 5 M length of deactivated uncoated fused silica is connected to the inlet end of the capillary column and traps nonvolatile residues, preventing them from collecting at the head of the analytical column. This length of fused silica does not contain stationary phase adding only a minimal amount of time to the analysis.

PerkinElmer offers both the intermediate-polarity deactivated guard column and the Siltek® deactivated guard column as it is important to match the polarity of the solvent and the polarity of the surface deactivation. Elite-Guard intermediate-polarity deactivated column has an operating temperature up to 325 °C. Siltek® deactivation creates a highly inert surface for very active compounds such as chlorinated pesticides with a maximum temperature range up to 380 °C.

### Features and Benefits

- Increase column life and performance
- Elite-Guard temperature range to 325 °C
- Elite-Siltek® guard temperature range to 380 °C

Description	Dimensions	Part No.
Elite-Guard	5 M x 0.10 mm	<b>N9316601</b>
Elite-Guard	5 M x 0.18 mm	<b>N9316602</b>
Elite-Guard	5 M x 0.25 mm	<b>N9301356</b>
Elite-Guard	5 M x 0.32 mm	<b>N9301357</b>
Elite-Guard	5 M x 0.45 mm	<b>N9316605</b>
Elite-Guard	5 M x 0.53 mm	<b>N9301358</b>
Elite-Siltek® Guard	5 M x 0.25 mm	<b>N9316607</b>
Elite-Siltek® Guard	5 M x 0.32 mm	<b>N9316608</b>
Elite-Siltek® Guard	5 M x 0.53 mm	<b>N9316609</b>



### Wide-Bore Adapter Kit

Contains all the parts necessary to adapt packed column injectors quickly and easily for use with wide-bore capillary columns. Includes 0-20 mL/min flow controller element, wide-bore adapter with 1/8 inch fitting, wide-bore glass liner and column support hanger.

Description	Part No.
Wide-Bore Adapter Kit	<b>N6120001</b>



### Universal Connectors

- Allows for fast, leak-free connections of fused-silica columns
- The new fused-silica tapered design allows connection of any size column and is easy to use. (Suitable for 0.1 to 0.53 mm columns)

Description	Part No.
Universal Connector (pkg. 5)	<b>N9302149</b>
Universal Y Splitter (pkg. 1)	<b>N9303448</b>
Polyimide Sealing Resin (5 g)	<b>N9301343</b>
Undeactivated Prestight Column Connectors (pkg. 5)	<b>N9303962</b>

## **NEW!** Velocity Series Capillary Columns

### Velocity-1, Velocity-5, and Velocity-Wax

Perkin-Elmer Velocity columns are excellent for standard daily test applications. They combine quality and affordability with reproducible results.

### Features and Benefits

- Excellent results for theoretical plates, selectivity, & tailing factor tests
- Robust column cage
- Low baseline noise

### Velocity-1 — 100% Dimethyl Polysiloxane

General purpose columns with a highly versatile phase that is extremely rugged, exhibiting long column lifetime, and high operating temperatures. Ideal for the analysis of non-polar petrochemical samples, such as detailed hydrocarbon analysis, hydrocarbon gases, petroleum oxygenates, petroleum aromatics, fuels, waxes, oils, sulfur compounds, mercaptans, and carbon disulfide. It also is an excellent phase for solvents, chemicals, flavors, fragrances, essential oils, air toxins, chlorofluorocarbons, arson analysis, pesticides, and hydrocarbons. Thermal stability to 350 °C.

Description	Dimensions	Part No.
Velocity-1	15 M x 0.25 mm x 0.25 µm	<b>N9306319</b>
Velocity-1	15 M x 0.25 mm x 1.00 µm	<b>N9306310</b>
Velocity-1	30 M x 0.25 mm x 0.25 µm	<b>N9306312</b>
Velocity-1	30 M x 0.25 mm x 1.00 µm	<b>N9306323</b>
Velocity-1	30 M x 0.32 mm x 0.25 µm	<b>N9306318</b>
Velocity-1	30 M x 0.32 mm x 1.00 µm	<b>N9306321</b>
Velocity-1	30 M x 0.32 mm x 3.00 µm	<b>N9306329</b>
Velocity-1	60 M x 0.25 mm x 0.25 µm	<b>N9306320</b>
Velocity-1	60 M x 0.25 mm x 1.00 µm	<b>N9306328</b>
Velocity-1	60 M x 0.32 mm x 1.00 µm	<b>N9306324</b>

### Velocity-5 — 5% Diphenyl and 95% Dimethyl Polysiloxane

This column is ideal for general purpose analyze of drugs, pesticides, hydrocarbons, essential oils and semi-volatiles and solvent impurities. Low polarity phase with thermal stability to 350 °C.

Description	Dimensions	Part No.
Velocity-5	15 M x 0.32 mm x 0.25 µm	<b>N9306325</b>
Velocity-5	30 M x 0.25 mm x 0.25 µm	<b>N9306311</b>
Velocity-5	30 M x 0.32 mm x 0.25 µm	<b>N9306313</b>
Velocity-5	30 M x 0.32 mm x 1.00 µm	<b>N9306316</b>
Velocity-5	30 M x 0.53 mm x 0.50 µm	<b>N9306326</b>
Velocity-5	30 M x 0.53 mm x 1.50 µm	<b>N9306327</b>

### Velocity-Wax — Polyethylene Glycol

This column is ideal for intermediate to high polarity compounds. Thermal stability to 250 °C.

Description	Dimensions	Part No.
Velocity-Wax	30 M x 0.32 mm x 0.25 µm	<b>N9306314</b>
Velocity-Wax	30 M x 0.25 mm x 0.25 µm	<b>N9306315</b>
Velocity-Wax	30 M x 0.32 mm x 0.50 µm	<b>N9306317</b>
Velocity-Wax	30 M x 0.53 mm x 1.00 µm	<b>N9306322</b>

### Wafer Scribes

The PerkinElmer ceramic wafer scribe is inexpensive and ideal for cutting polyimide fused silica capillary columns and guard columns. The scribe is easy to hold and simple to use. All four sides can be used as a cutting tool. (pkg. 10)



Description	Part No.
Wafer Scribes (pkg. 10)	<b>N9301376</b>

# Convenient Consumable Kits for a Variety of Applications



## NEW from PerkinElmer! Complete Consumable Application Kits

All your consumable needs in one convenient kit, designed specifically to be used within the application requirements for OVI, Environmental, Blood Alcohol and Biodiesel Materials Testing application notes\*.

### Biodiesel Application Kit ASTM 6584

				Part No.
				<b>N9300670</b>
Contents:	Pkg.	Qty.	Part No.	
Autosampler Syringe 5.0 µL (0.47 mm)	1	2	<b>N6101380</b>	
Elite-5ht Column 15 M x 0.32 mm x .10 µm	1	1	<b>N9316274</b>	
Elite Guard Column (ht) 5 M x 0.53 mm	1	1	<b>N9316609</b>	
Mini Union Connector Kit – Includes Mini Union and Nuts, 0.32 mm Ferrules and 0.53 mm Ferrules	5	1	<b>N9306128</b>	
11 mm Electronic Crimper	1	1	<b>N9302592</b>	
Crimp Vials 2 mL	100	5	<b>N9301385</b>	
Aluminum Crimp Caps 11 mm Rubber/PTFE	100	5	<b>N9306015</b>	
GC Septa	50	1	<b>N6621028</b>	
Injector Liner, Hour Glass	1	2	<b>N6101703</b>	

### Biodiesel Application Kit ASTM 6584 & D2887 SIMDIS2

				Part No.
				<b>N9300672</b>
Contents:	Pkg.	Qty.	Part No.	
Autosampler Syringe 5.0 µL (0.47 mm)	1	2	<b>N6101380</b>	
Elite-5ht Column 15 M x 0.32 mm x 0.10 µm	1	1	<b>N9316274</b>	
Elite Guard Column (ht) 5 M x 0.53 mm	1	1	<b>N9316609</b>	
Mini Union Connector Kit – Includes Mini Union and Nuts, 0.32 mm Ferrules and 0.53 mm Ferrules	5	1	<b>N9306128</b>	
Elite-MXT2887 SIMDIS Column	1	1	<b>N9316689</b>	
20 mm Electronic Crimper	1	1	<b>N9302594</b>	
Crimp Vials 2 mL	100	5	<b>N9301385</b>	
Aluminum Crimp Caps 11 mm Rubber/PTFE	100	5	<b>N9306015</b>	
GC Septa	50	1	<b>N6621028</b>	
Injector Liner, Hour Glass	1	2	<b>N6101703</b>	
Graphite Ferrules	10	1	<b>09903394</b>	

### Blood Alcohol Application Kit

				Part No.
				<b>N9300656</b>
Contents:	Pkg.	Qty.	Part No.	
20 mm Headspace Crimp Vials	1,000	1	<b>B0104236</b>	
19 mm PTFE/Butyl Caps, Springs & Septa	1,000	1	<b>N1010070</b>	
20 mm Electronic Crimper	1	1	<b>N9302594</b>	
Application Notes <b>NEW!</b>	1	1	<b>09936886</b>	
Elite-BAC-1 / 30 m x 0.32 mm x 1.8 µm	1	1	<b>N9316579</b>	
Elite-BAC-2 / 30 m x 0.32 mm x 1.2 µm	1	1	<b>N9316577</b>	
¼" to 0.5 mm 2-hole Graphite Ferrule	5	1	<b>N9306001</b>	

### Environmental Application Kit for U.S. EPA Method 8260B

				Part No.
				<b>N9300658</b>
<b>Promo Code: GC020804</b> (see details below)				
Contents:	Pkg.	Qty.	Part No.	
20 mm Headspace Crimp Vials	1,000	1	<b>B0104236</b>	
19 mm PTFE-Coated/Silicone Caps, Springs & Septa	1,000	1	<b>B4000022</b>	
20 mm Electronic Crimper, 110 V	1	1	<b>N9302571</b>	
20 mm Electronic Crimper	1	1	<b>N9302594</b>	
Application Notes <b>NEW!</b>	1	1	<b>09936885</b>	
Polyimide Deactivated	1	1	<b>N9301357</b>	
Uncoated Tubing / 5 m x 0.32 mm				
Elite-Volatiles / 30 m x 0.25 mm x 1.4 µm	1	1	<b>N9316388</b>	
Universal Connector	5	1	<b>N9302149</b>	

### OVI (Organic Volatile Impurities) Application Kit for Pharmaceuticals

				Part No.
				<b>N9300655</b>
<b>Promo Code: GC020801</b> (see details below)				
Contents:	Pkg.	Qty.	Part No.	
Elite-130 / 130 m x 0.53 mm x 3.0 µm		1	<b>N9316687</b>	
Zero Dilution Glass Outer Liner		1	<b>N1011445</b>	
Zero Dilution Glass Inner Liner		1	<b>N1011446</b>	
Polyimide Uncoated		1	<b>N9301354</b>	
Deactivated Tubing / 5 m x 0.18 mm				
20 mm Headspace Crimp Vials	1,000	1	<b>B0104236</b>	
Assembled Headspace Caps and Septa	1,000	1	<b>B4000022</b>	
20 mm Electronic Crimper	1	1	<b>N9302594</b>	
Application Notes <b>NEW!</b>	1	1	<b>09936887</b>	

### Materials Testing or Food and Beverage GC/Headspace Consumables Kit

				Part No.
				<b>N9300657</b>
<b>Promo Code: GC020803</b> (see details below)				
Contents:	Pkg.	Qty.	Part No.	
20 mm Headspace Crimp Vials	1,000	1	<b>B0104236</b>	
Assembled Headspace Caps and Septa	1,000	1	<b>N1010070</b>	
20 mm Electronic Crimper	1	1	<b>N9302594</b>	
Application Notes <b>NEW!</b>	1	1	<b>09936888</b>	

Save on your next  
Application Kits

Consult Interchim - Hotline 33 (0)4 70 03 73 09

\* For full downloadable pdf format application notes, please visit: <http://las.perkinelmer.com/applications>

# For TurboMatrix Headspace and Headspace Trap



## TurboMatrix 40 Headspace Trap

### Sample Head Assembly Replacement Parts

Description	Part No.
1 Platinum/Iridium Needle, Wide-Bore	<b>B0144169</b>
Platinum/Iridium Needle, Small-Bore	<b>B0500959</b>
Platinum/Iridium Needle, Jet	<b>B0510364</b>
Silcosteel Needle, for Headspace Trap Only	<b>N6700130</b>
Stainless Steel Needle, Wide-Bore	<b>B0131385</b>
Stainless Steel Needle, Small-Bore	<b>B0500987</b>
Stainless Steel Needle, Jet (ships with instrument)	<b>B4000011</b>
2 Needle Seal Assembly (without O-Rings)	<b>B0500833</b>
3 O-Ring for Needle Seal Assembly (pkg. 10)	<b>B0198110</b>
4 Vespel Ferrule 1/16 in. (pkg. 10)	<b>09920127</b>
5 Male Nut 1/16 in.	<b>N9302832</b>
6 GLT Adapter Tube	<b>B0503956</b>
GLT Adapter Tube, Silcosteel	<b>N6700113</b>
7 Graphite/Vespel Ferrule 1/16 in. x 0.4 mm	<b>09920104</b>
For use with 0.25 mm i.d. Transfer Line, pkg. 10	
Graphite/Vespel Ferrule 1/16 in. x 0.5 mm	<b>09903700</b>
For use with 0.32 mm i.d. Transfer Line, pkg. 10	
8 Nut 1/16 in. Swagelok	<b>N9300059</b>
9 Fused-Silica Capillary Transfer Line:	
0.25 mm i.d. x 5 m length	<b>N9301356</b>
0.32 mm i.d. x 5 m length	<b>N9301357</b>



### Solid Glass Blocking Trap

Description	Part No.
Block for use in standard headspace mode.	<b>N6701170</b>

## Sample Trays

For use on the Mid-Range or High-Capacity headspace sampler.

Description	Part No.
TurboMatrix 40 Mid-Range Sample Tray	<b>M0413592</b>
TurboMatrix 110 High-Capacity Sample Tray	<b>M0413593</b>

## Transfer Lines

Description	Tubing i.d.	Length	Part No.
Siltek Deactivated Fused-Silica	0.25 mm	5 m	<b>N9316607</b>
Siltek Deactivated Fused-Silica	0.32 mm	5 m	<b>N9316608</b>

## Miscellaneous Accessories

Description	Part No.
Gas Chromatography – Theory and Practice, Static Headspace Book by L. Ettre and B. Kolb	<b>N1011210</b>

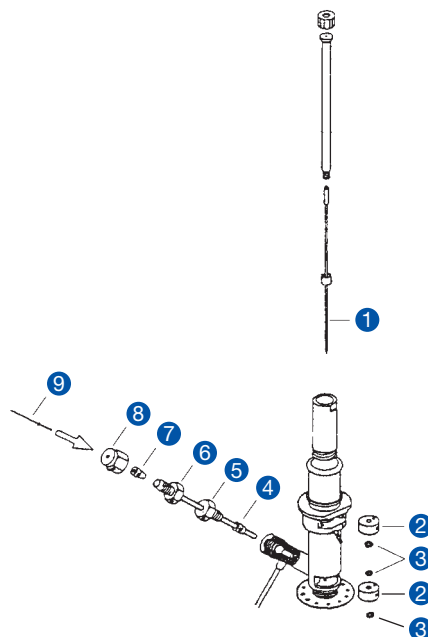
## Cold Trap Options

Headspace Trap instruments only.

Description	Part No.
TurboMatrix HS Trap Cold Trap Tube (Carbopack C)	<b>N6200150</b>
TurboMatrix HS Trap Air Monitoring Trap*	<b>M0413628</b>

\*Trap comes standard with the instrument.

## Headspace Sample Head Assembly Schematic



# Headspace Vials, Caps, and Septa Kits



from PerkinElmer

## One-step solution – from field sample to lab results

PerkinElmer offers a variety of GC headspace vials, caps and septa to fulfill your application needs. Our patented vial and cap design incorporates pressure-relief features which guarantee safe operation with the high pressure typically developed during thermostating. Ordinary vials and caps without these safety features may burst. All of our headspace vials are 20 mL, providing a maximum liquid sample volume of 15 mL. They have a greater wall thickness and round base which enables them to withstand pressure up to 60 psig. Low-volume sampling can be achieved by using a 6 mL crimp vial and vial adapter. All PerkinElmer headspace vials are manufactured to specific tolerances that are guaranteed to fit within PerkinElmer instruments.

### Features and Benefits

- Patented vial and cap design guarantees safe operation
- Manufactured to specific tolerances guaranteed to fit PerkinElmer instruments
- Lot-tested, certified and approved septa deliver reproducible results



### Headspace Screw Top Vials and Preassembled Caps

**NEW** from PerkinElmer, headspace screw top vials and preassembled caps allow for samples to be taken in the field and directly analyzed on the PerkinElmer® TurboMatrix™ Headspace Sampler\* without having to transfer the sample into another vial, streamlining the sampling process and increasing your productivity. Screw thread vials are designed for a guaranteed fit. PerkinElmer septa are lot tested for impurities. The cap is conveniently preassembled for ease-of-use and packed in clean Mylar® bags to reduce the risk of contamination.

Description	Pkg	Part No.
20 mL Headspace Screw Top Vials	100	<b>N9306075</b>
20 mL Headspace Screw Top Vials	1000	<b>N9306078</b>
18 mm PTFE/Butyl Assembled Caps/Septa 3.2 mm thickness	100	<b>N9306076</b>
18 mm PTFE/Silicone Assembled Caps/Septa 3.2 mm thickness	100	<b>N9306077</b>
18 mm Red PTFE/White Silicone metal Screw Cap/Septa 1.3 mm thickness 8 mm hole	100	<b>N6356474</b>
18 mm White PTFE/Transparent Blue Silicone metal Screw Cap/Septa 1.3 mm thickness 8 mm hole	100	<b>N6356475</b>
18 mm Blue PTFE/White Silicone metal Screw Cap/Septa 1.5 mm thickness 8 mm hole	100	<b>N6356476</b>
18 mm Gray PTFE/Red Butyl metal Screw Cap/Septa 1.6 mm thickness 8 mm hole	100	<b>N6356477</b>

#### Vial Rack Holder:

Description	Pkg	Part No.
36-Vial Polypropylene 20 mm Holder	1	<b>N9301304</b>



headspace vials/caps

### Headspace Vials with Write-on Patch and Fill Lines



Description	Pkg	Part No.
20 mL Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	1000	<b>N9303348</b>
20 mL Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	100	<b>N9303349</b>
20 mL Headspace Screw Top Vials with Write-On White Patch and Fill Lines	1000	<b>N9306241</b>
20 mL Headspace Screw Top Vials with Write-On White Patch and Fill Lines	100	<b>N9306240</b>
10 mL Clear Crimp Top Headspace Vials	100	<b>N6356478</b>
10 mL Clear Screw Top Headspace Vials	100	<b>N6356479</b>
20 mL Clear Crimp Top CTC Headspace Vials	100	<b>N6356471</b>

### Headspace Crimp-top Vials and Preassembled Caps



Description	Pkg	Part No.
6 mL Headspace Clear Glass Vial* **	125	<b>N9302134</b>
Low-Volume Vial Adapter	10	<b>N6120110</b>
20 mL Headspace Clear Glass Vial	1000	<b>B0104236</b>
20 mL Headspace Crimp Top Vials	100	<b>N9306079</b>
20 mL Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	1000	<b>N9303348</b>
20 mL Headspace Crimp Top Vials with Write-On White Patch and Fill Lines	100	<b>N9303349</b>
Red Butyl Rubber Septa/Cap/Spring	100	<b>B0159356</b>
Red Butyl Rubber Septa/Cap/Spring	1000	<b>B0159357</b>
Red Butyl Rubber Preassembled	1000	<b>N1010070</b>
Red PTFE-Coated Butyl Rubber/Cap/Spring	100	<b>B0104239</b>

\*Not compatible with TurboMatrix HS 110 headspace sampler

\*\*Use with Low-Volume Vial Adapter (N6120110)

# Headspace Crimp-top Caps and Septa



## Crimp Top Cap and Septa – GC Headspace (CTC Autosampler)

Description	Pkg	Part No.
20 mm magnetic cap/septa 8 mm hole w/3.2 mm thickness Silicone/PTFE Transparent White liner	100	<b>N6356558</b>
20 mm magnetic cap/septa 8 mm hole w/3.0 mm thickness Silicone/PTFE Transparent Blue liner	100	<b>N6356559</b>
20 mm magnetic cap/septa 8 mm hole w/3.0 mm thickness PTFE/Butyl gray	100	<b>N6356560</b>
20 mm magnetic cap/septa 8 mm hole w/3.0 mm thickness Gray Butyl liner	100	<b>N6356561</b>
20 mm magnetic cap/septa 8 mm hole w/3.0 mm thickness Pharma fix Butyl/PTFE	100	<b>N6356562</b>
20 mm magnetic cap/septa 8 mm hole w/3.2 mm thickness Aluminum/Silicone liner	100	<b>N6356563</b>
20 mm magnetic cap/septa 8 mm hole w/1.3 mm thickness Silicone/PTFE Trans Blue (SPME liner)	100	<b>N6356564</b>
20 mm magnetic bi-metal cap/septa w/3.0 mm 8 mm thickness PTFE/Blue liner	100	<b>N6356565</b>
20 mm bi-metal cap/septa w/3.0 mm Silicone 8 mm thick PTFE Transparent Blue liner	100	<b>N6356566</b>

## Headspace Crimp-top Septa and Pre-assembled Caps

Description	Pkg	Part No.
Red PTFE-Coated Butyl Rubber/Cap/Spring	1000	<b>B0104240</b>
Red PTFE-Coated Butyl Rubber Preassembled	1000	<b>B4000025</b>
Aluminum-Coated Silicone/Cap/Spring	100	<b>B0104243</b>
Aluminum-Coated Silicone/Cap/Spring	1000	<b>B0104244</b>
Aluminum-Coated Silicone Preassembled	1000	<b>B4000028</b>
PTFE-Coated Silicone/Cap/Spring	100	<b>B0104241</b>
PTFE-Coated Silicone/Cap/Spring	1000	<b>B0104242</b>
PTFE-Coated Silicone Preassembled	1000	<b>B4000022</b>
20 mm Gray Butyl/PTFE pre-assembled cap/septa/spring	1000	<b>N9306264</b>
20 mm Gray Butyl/PTFE pre-assembled cap/septa/spring clear 20 mL headspace with write-on patch and fill lines	100	<b>N9306265</b>
Gray PTFE/Butyl Kit, unassembled cap/septa/spring	100	<b>N9306266</b>
Gray PTFE/Butyl Kit, unassembled cap/septa/spring	1000	<b>N9306267</b>
20 mm Gray Butyl pre-assembled cap/septa/spring	1000	<b>N9306268</b>
20 mm Butyl pre-assembled cap/septa/spring clear 20 mL headspace with write-on patch and fill lines	100	<b>N9306269</b>
Gray Butyl Kit unassembled cap/septa/spring	100	<b>N9306270</b>
Gray Butyl Kit unassembled cap/septa/spring	1000	<b>N9306271</b>

## Septa Recommended Temperatures

Material	Upper Temp Limit at Vial	Inertness
Red Butyl Rubber	100 °C	Fair
Gray Butyl Rubber <b>NEW!</b>	130 °C	Fair
Gray PTFE-Coated Butyl Rubber <b>NEW!</b>	130 °C	Good
Red PTFE-Coated Butyl Rubber	100 °C	Good
Aluminum-Coated Silicone	210 °C	Good
PTFE-Coated Silicone	220 °C	Good

# One-step solution – from field sample to lab results – **NEW** PerkinElmer Headspace Starter Kits

## Headspace Vial, Septa, and Cap Kits

PerkinElmer understands your challenges and offers a variety of kits so that you can easily order and restock your laboratory supplies.

### Headspace Mini Starter Kit

**NEW!**

The same great consumables as the Headspace Starter Kit (N6710195) without the “Static Headspace Gas Chromatography Theory and Practice” book, and with fewer vials – 200 total (100 each crimp and screw top vials).

		Part No.	
<b>Headspace Mini Starter Kit:</b>		<b>N6710197</b>	
Contents:	Pkg.	Qty.	Part No.
20 mL Headspace Crimp Vials	100	1	<b>N9306079</b>
20 mm PTFE/Butyl Septa/Cap/Springs	100	1	<b>B0104239</b>
20 mm PTFE/Silicone Septa/Cap/Springs	100	1	<b>B0104241</b>
20 mm Aluminum Silicone Septa/Cap/Springs	100	1	<b>B0104243</b>
O-Rings	10	1	<b>B0198110</b>
Needle Seal Assemblies	1	2	<b>B0500833</b>
Pressure Gauge with Needle for Vials	1	1	<b>B0501377</b>
20 mm Hand Crimper	1	1	<b>N9302785</b>
20 mL Headspace Screw Top Vials*	100	1	<b>N9306075</b>
18 mm PTFE/Butyl Assembled Cap and Septa*	100	1	<b>N9306076</b>
18 mm PTFE/Silicone Assembled Cap and Septa*	100	1	<b>N9306077</b>

\*Not compatible with TurboMatrix HS 110 headspace sampler



### Headspace Starter Kit

Offers a variety of headspace consumables so you can evaluate different types of septa and vials for your sampling requirements.

		Part No.	
<b>TurboMatrix™ Headspace Starter Kit:</b>		<b>N6710195</b>	
Contents:	Pkg.	Qty.	Part No.
20 mL Headspace Crimp Vials	100	5	<b>N9306079</b>
20 mm PTFE/Butyl Septa/Cap/Springs	100	1	<b>B0104239</b>
20 mm PTFE/Silicone Septa/Cap/Springs	100	1	<b>B0104241</b>
20 mm Aluminum Silicone Septa/Cap/Springs	100	1	<b>B0104243</b>
O-Rings	10	1	<b>B0198110</b>
Needle Seal Assemblies	10	2	<b>B0500833</b>
Pressure Gauge with Needle for Vials	1	1	<b>B0501377</b>
“Static Headspace Gas Chromatography Theory and Practice” Book by B. Kolb and L.S. Ettre	1	1	<b>N1011210</b>
20 mm Hand Crimper	1	1	<b>N9302785</b>
20 mL Headspace Screw Top Vials*	100	5	<b>N9306075</b>
18 mm PTFE/Butyl Assembled Cap and Septa*	100	1	<b>N9306076</b>
18 mm PTFE/Silicone Assembled Cap and Septa*	100	1	<b>N9306077</b>

\*Not compatible with TurboMatrix HS 110 headspace sampler

# Headspace Convenience and Stopper Kits



## Headspace Cap and Stopper Kits

**NEW!**

Description	Pkg.	Qty.	Part No.
Butyl Rubber Stoppers with Caps	1000		<b>B0110728</b>
Butyl Rubber Stopper	100	10	B0038137
Knurled Caps	100	10	B0099814
PTFE/Silicone Injector Septa	12		<b>00091357</b>
Injection-Septa	12	1	00092388

## Choosing the Right Septa for your Analysis

Although a wide variety of septa is available, chemical compatibility and temperature are the most critical to the analysis. Temperature applies not only to the vial, but also to the temperature of the instrument's needle used for pressurization and sample transfer, which is heated to prevent condensation. A needle temperature higher than the vial temperature setting can decompose the septum material. PTFE coated silicone and aluminum-coated silicone offer the highest temperature operating limits. (See Septa Recommended Temperature Chart page 48.)

## Headspace Convenience Kits

**NEW!**

Description	Pkg.	Qty.	Part No.
<b>20 mL Butyl HS Convenience Kit</b>	100		<b>N9303990</b>
20 mm Red Butyl Assembly	100	1	N1010070
20 mL Crimp Clear Vial Kit with Write-On Patch 20 mm Cap	100	1	N9303349
<b>20 mL PTFE/Butyl HS Convenience Kit</b>	100		<b>N9303991</b>
20 mm Red PTFE/Butyl Assembly	100	1	B4000025
20 mL Crimp Clear Vial Kit with Write-On Patch 20 mm Cap	100	1	N9303349
<b>20 mL PTFE/Silicone Convenience Kit</b>	100		<b>N9303992</b>
20 mm PTFE/Silicone Assembly	100	1	B4000022
20 mL Crimp Clear Vial Kit with Write-On Patch 20 mm Cap	100	1	N9303349
<b>20 mL Al/Silicone Convenience Kit</b>	100		<b>N9303993</b>
20 mm Aluminum/Silicone Assembly	100	1	B4000028
20 mL Crimp Clear Vial Kit with Write-On Patch 20 mm Cap	100	1	N9303349

**SAVE - Volume discounts**  
available on **Vials, Caps, Septa**  
and **Convenience kits.**

Contact Interchim - Hotline 33 (0)4 70 03 73 09 - [interchrom@interchim.com](mailto:interchrom@interchim.com) - for details and promotions.

# Crimping Tools Electronic Handheld and Benchtop Crimpers



## Crimping Tools

Whatever your need may be, PerkinElmer offers a wide range of crimping tools for your convenience. Our universal voltage, precision control, power crimpers with adjustable settings are designed to deliver hundreds of crimps on a single battery charge.

### Electronic Crimpers:

Description	Pkg.	Part No.
20 mm Electronic Universal Crimper with Global Mains Plug Pack	1	N9302594
20 mm Electronic Universal Decapper with Global Mains Plug Pack	1	N9302595
11 mm Electronic Universal Crimper with Global Mains Plug Pack	1	N9302592
11 mm Electronic Universal Decapper with Global Mains Plug Pack	1	N9302593
Electronic Crimper Battery	1	N9302585
Rechargeable Battery	1	N9302596

### Electronic Crimpers Features and Benefits

- Universal voltage
- Precision control crimping
- Ergonomically-designed grip
- Numerous reproducible crimps from a single charge
- Includes standard Black & Decker® VersaPak® Gold battery and charger
- Fully rechargeable



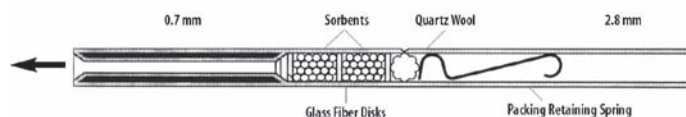
### Hand Held and Bench-top Crimpers:

Description	Pkg.	Part No.
8 mm Hand Crimper	1	N9306127
11 mm Hand Crimper	1	00090699
11 mm Hand Decapper	1	N9301390
20 mm Hand Crimper	1	N9302785
20 mm Hand Decapper	1	N9301270
Bench-top Vial Crimper	1	N6621006
11 mm Crimper Jaws	1	N6621008
20 mm Crimper Jaws	1	N6621009

# Packed traps specifically designed for PerkinElmer Thermal Desorbers

## Air Monitoring Trap

Low flow trap packed with carbonaceous sorbents suitable for ozone precursor and air toxics monitoring.



Low Flow Cold Trap



## Cold Traps

### TurboMatrix Thermal Desorption Trap Supplies

Trap supplies from PerkinElmer, the market leader in thermal desorption, will provide exceptional analytical performance. Used for U.S. EPA Method TO17, the PerkinElmer standard trap, packed with Tenax™, on the TurboMatrix™ Thermal Desorber, will improve productivity and trapping capacity. The TurboMatrix air monitoring trap is packed with carbonaceous sorbents suitable for ozone precursor and air toxics monitoring.

Description	Qty.	Part No.
<b>Cold Traps for TurboMatrix</b>		
Air Monitoring Trap	1	<b>M0413628</b>
Empty Trap	1	<b>M0413627</b>
Tenax™ TA 60/80 Packed Trap	1	<b>M0413535</b>
Carbopack® C Packed Trap	1	<b>N6200150</b>
<b>Cold Traps for ATD 400</b>		
Air Monitoring Trap	1	<b>L4275108</b>
Trap Nuts (2 required)	1	<b>L4275009</b>
Trap Tube Low Flow, Empty (Narrow-bore at one end. Allows minimum gas flow during trap desorption)	1	<b>L4275107</b>
Tenax™ TA 60/80 Packed Trap	1	<b>L4275089</b>
Empty Trap	1	<b>L4271106</b>

## Cold Traps Fittings and Accessories

Description	Qty.	Part No.
Graphite Ferrule	2	<b>L4271187</b>
SiITite™ Ferrule (GC/MS) 0.4 mm	10	<b>N9306093</b>
SiITite™ Ferrule (GC/MS) 0.5 mm	10	<b>N9306094</b>
SiITite™ Ferrule (GC/MS) 0.8 mm	10	<b>N9306095</b>
SiITite™ Nuts	5	<b>N9306096</b>
PTFE Ferrule	10	<b>L4275110</b>
Graphite/Vespel® Ferrule for ATD 400	5	<b>L1003027</b>
Valco® Graphite/Vespel® Ferrule for ATD 400	5	<b>L1003028</b>
Trap Filter Disk		<b>L1003030</b>
Trap Packing Disk	20	<b>L4271290</b>
Trap Packing Retaining Spring	5	<b>N6301054</b>
Quartz Wool (untreated)	5g	<b>N6102354</b>
Cold Trap Packing Tool		<b>L4271203</b>
Cold Trap Removal Tool		<b>L4271205</b>
Regulator 0 – 60 psig		<b>N6101474</b>
Backflush Nozzle for ATD 400		<b>L4275072</b>
Internal Standard Injection Accessory for ATD 400		<b>L4270010</b>
Liquid Nitrogen Accessory for ATD 400		<b>L4270009</b>
Gauze Loading Rig		<b>L4070023</b>
Replacement Plastic Plunger for Gauze Loading Rig		<b>L4071151</b>

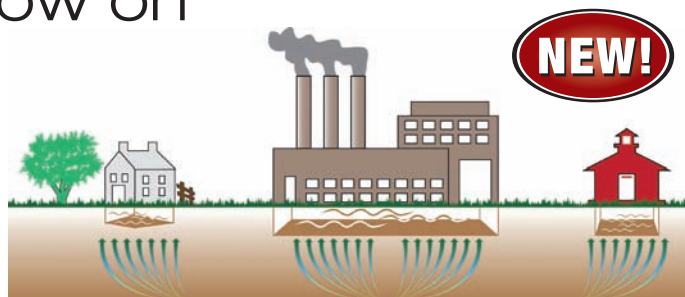
# Packing material **tube identification** and **polarity** now on **every tube!**



Unconditioned Thermal  
Desorber Tubes



Fully conditioned  
Thermal Desorber tubes shown



## SVI™ Soil Vapor Intrusion™ Tubes

Soil vapor intrusion occurs when toxic compounds that are present in the air space in soil of a contaminated location have ways of entering a building, potentially creating a health risk.

Our new multi-bed construction extends the hydrocarbon range past naphthalene while retaining the lighter components, enabling larger sample volumes, hence, enhancing detection limits. Unique design that meets the challenges and criteria of the EPA regulations for air monitoring.

- Enhanced recoveries, even of highly contaminated sites
- From chloromethane through diesel range hydrocarbons
- After the analysis, tubes are clean and ready for re-sampling reducing costs

Description	Part No.
Stainless Steel TD tubes Conditioned	<b>N9306277</b>
Stainless Steel TD tubes Un-Conditioned	<b>N9306278</b>

## Conditioned Thermal Desorber Tubes

Stainless steel and glass sample tubes are available with a wide variety of packing materials from single to multi-bed. PerkinElmer Thermal Desorber tubes will now be printed with the packing material clearly identified on each tube. In addition an arrow will also be printed, which points to the end of the tube where sample is drawn from, and also indicates the end that desorb vapors will exit.

Each tube is etched with a unique serial number for ease of traceability and adsorbent identification. Stainless steel tubes may also be fitted with clips that accept adhesive labels for identification. Packed tubes are shipped with long-term brass storage caps and all PerkinElmer thermal desorber tubes are thermally conditioned and tested for background and backpressure.

## Packed Conditioned Sample Tubes, Brass Long-Term Storage Caps (pkg. 10)

“NOT for Analytical test applications”, USE **N6200119** PTFE caps and O-ring. (pkg. 20)

Sorbent	Stainless Steel Part No.	Glass Part No.
Air Toxics	<b>N9307001</b>	<b>N9307008</b>
Carbopack® B60/80	<b>N9307002</b>	<b>N9307009</b>
Carbosieve® SIII 60/80	<b>N9307003</b>	<b>N9307010</b>
Tenax™ GR 60/80	<b>N9307004</b>	<b>N9307011</b>
Tenax™ TA 60/80	<b>N9307005</b>	<b>N9307012</b>
Chromasorb™ 60/80	<b>N9307006</b>	<b>N9307013</b>
Carbopack® B 60/80	<b>N9307000</b>	<b>N9307007</b>
Carbopack® C 60/80		
Carbosieve® SIII 60/80		
Carbotrap® C/B	<b>N9307026</b>	
NIOSH 2549	<b>N9307038</b>	<b>N9307037</b>

## Unconditioned Thermal Desorber Tubes

For your convenience, new low-cost thermal desorber tubes are offered in both stainless steel and glass. Each tube maintains its unique serial number which is etched for easy identification. Tubes are offered with a variety of sorbent packing materials for many GC applications including indoor and outdoor air monitoring, analysis of flavors and fragrances and the analysis of outgassing from packaging, polymers, pharmaceuticals and semi-conductor material. These tubes are unconditioned and ship with plastic end caps for short-term storage.

## Packed Unconditioned Sample Tubes, Plastic End Caps (pkg. 10)

Sorbent	Stainless Steel Part No.	Glass Part No.
Air Toxics	<b>N9307050</b>	<b>N9307058</b>
Carbopack® B60/80	<b>N9307051</b>	<b>N9307059</b>
Carbosieve® SIII 60/80	<b>N9307052</b>	<b>N9307060</b>
Tenax™ GR 60/80	<b>N9307053</b>	<b>N9307061</b>
Tenax™ TA 60/80	<b>N9307054</b>	<b>N9307062</b>
Chromasorb™ 60/80	<b>N9307055</b>	<b>N9307063</b>
Carbopack® B 60/80	<b>N9307056</b>	<b>N9307064</b>
Carbopack® C 60/80		
Carbosieve® SIII 60/80		
Carbotrap® C/B		<b>N9307065</b>
NIOSH	<b>N9307057</b>	<b>N9307066</b>

### Empty Sample Tubes without Caps

Description	Part No.
Stainless Steel (pkg. 10)	<b>L4270128</b>
Glass (pkg. 10)	<b>L4071594</b>
Stainless Steel (pkg. 100)	<b>L4270129</b>

### Empty Sample Tubes with Caps

Description	Part No.
Stainless Steel (pkg. 10)	<b>M0413595</b>
Glass Lined Stainless Steel (pkg. 10)	<b>M0413597</b>
Glass (pkg. 10)	<b>M0413598</b>



# Thermal Desorber kits and accessories from **PerkinElmer**



## Thermal Desorber Industrial Hygiene Application Kit

All your consumable needs in one convenient kit, designed specifically for Industrial Hygiene using Thermal Desorption\*.

## Workplace Air Monitoring Industrial Hygiene Application Kit\*\*

### Thermal Desorber Starter Kit

PerkinElmer's convenient starter kit includes all products you need to run the TurboMatrix Thermal Desorber.

#### Features and Benefits

- All items available under one part number in a convenient kit
- Guaranteed PerkinElmer parts
- Improved chromatography with exceptional analytical performance using PerkinElmer parts

**Part No.**

**M0413541**

Contents:	Pkg.	Qty.	Part No.
Glass Fiber Separator Disks	6	1	<b>L4271290</b>
Glass Sample Tubes	10	1	<b>M0413598</b>
Glass Wool	1	1	<b>54120790</b>
Graphite Ferrules	2	1	<b>L4271187</b>
O-Ring	1	1	<b>L1003006</b>
O-Ring, Viton	1	1	<b>L1003008</b>
Packing Gauze	100	1	<b>L4071034</b>
PTFE Filter Discs	10	1	<b>L1003030</b>
PTFE Filter Discs – Large	10	1	<b>L1003029</b>
Retaining Spring	50	1	<b>L4071123</b>
Sample Tube -5 mL	1	1	<b>04970673</b>
Stainless Steel Retaining Spring	2	1	<b>L6301054</b>
Stainless Steel Sample Tubes – Capped	10	1	<b>M0413595</b>
Tenax TA 60/80, Mesh -15 g	1	1	<b>04978064</b>
Trap Tube Nuts	2	1	<b>L4275009</b>
Trap Tubes	2	1	<b>M0410094</b>

**Part No.**

**N6710188**

Contents:	Pkg.	Qty.	Part No.
Cold Trap O-Ring, 0.145 i.d./0.070 w.d.	1	1	<b>09200091</b>
Cold Trap Tube (Tenax TA)	1	1	<b>L4275089</b>
Empty Glass Sample Tubes – No caps	10	1	<b>L4071594</b>
Graphite Ferrule	2	1	<b>L4271187</b>
Pen Clips for Stainless Steel Sample Tubes	10	1	<b>L4071029</b>
PTFE Ferrule	10	1	<b>L4275110</b>
PTFE Filter Disk – Either side of the cold trap	10	1	<b>L1003030</b>
Tenax TA Stainless Steel Sample Tubes	10	1	<b>N9307005</b>

\* For full downloadable pdf format application notes, please visit: <http://as.perkinelmer.com/applications>

\*\* Applicable to TurboMatrix 100/150/300/350 and 650 only.

### Thermal Desorber Caps and Accessories

Description	Pkg.	Part No.
Brass Long-Term Storage Caps Recommended for long-term storage, two required per tube. Also requires Teflon® Ferrule (L1003015).	1	<b>09908851</b>
Combined Teflon® Ferrule For use with ¼ in Brass Long-Term Storage Caps (09908851), two required per tube.	5	<b>L1003015</b>
Diffusion Caps – Standard For passive air sampling, to ensure correct diffusion path length.	10	<b>L4070207</b>
Diffusion Caps with Membrane As above, with silicone membrane inserted.	10	<b>L4070208</b>
Pen Clips For Stainless Steel Thermal Desorber Tubes.	10	<b>L4071029</b>
PFA Teflon® Ferrules For TurboMatrix Storage End Caps.	20	<b>M0413625</b>
TurboMatrix Analytical Caps PTFE caps with o-ring, required for use on the TurboMatrix instrument during analysis.	20	<b>N6200119</b>

# Cost-effective, round-the-clock air monitoring

The Model STS 25 sequential tube sampler is used for the continuous monitoring of atmospheric concentrations of volatile organic compounds.

The unit is housed in a compact weatherproof box and allows the monitoring of indoor and outdoor atmospheres. This convenient portable unit designed for pumped air sampling of up to 24 tubes, offers cost-effective, round-the-clock monitoring for the workplace and ambient air. It can be operated by a 12 V battery or can connect to 120 V/24 V mains electricity, making it extremely versatile for use in the laboratory or in the field. The sampler includes cables with jack plug connectors (for use with the monitoring pump) and a set of diffusion limiting caps. Maintenance kit and accessories are also available.

## Features and Benefits

- Portability – small, lightweight and compact
- Variable sampling times – operator adjusted from minutes to hours
- Sample integrity – diffusion limiting caps block the sample from contaminants
- Sampling versatility – heaters are included to prevent condensation

Description	Part No.
Model STS 25 Sequential Tube Sampler	L4280001
Model STS 25 Maintenance Kit Includes; Rotor Tube Seals (pkg. 50), Filter Disks (pkg. 25), Diffusion Limiting Caps (pkg. 5) and Rotor Seal (pkg. 10)	N6609060
12 V Rechargeable Battery	L4280002
Air Monitoring Pump (120 V)	L4271275
Cable (for connecting STS 25 to a generic 12 V battery)	L4285007
Diffusion Limiting Caps (pkg. 5)	L4285001
Electrical Adapter	L4280003
Allows for direct connection to wall outlet 120 V/240 V. Also acts as a battery charger for 12 V battery.	
Rotor Filter Disk	L4281023
Viton O-Ring (pkg. 50)	L4275033



## Personal Monitoring Pump

This compact and lightweight sampler combines convenience and useful functions for accurate sampling.

The personal monitoring pump offers two modes of sampling which are easily activated by turning the selector dial located at the back of the sampler. Two low-flow modes of sampling allow constant flows from 5 – 200 cc/min, as well as constant pressure for multiple sorbent-tube sampling from 1 – 350 cc/min (combined flow rates).

Description	Part No.
Personal Monitoring Pump 5 – 200 mL/min 110 V	N6102351



## Consumable Application Kits

All your consumable needs in one convenient kit, designed specifically to be used within the application requirements for Air Monitoring and Ozone Precursor application notes\*.

### Air Monitoring Application Kit

	Part No.		
	N6710187		
Contents:	Pkg.	Qty.	Part No.
Air Toxics Stainless Steel Thermal Desorber Tubes	10	1	N9307001
Air Monitoring Trap	1	1	M0413628
Methyl Silicone Column 100 m x 0.32 mm x 5 µm	1	1	N6300155

### Ozone Precursor Application Kit

	Part No.		
	N6710186		
Contents:	Pkg.	Qty.	Part No.
Alumina PLOT Column 50 m x 0.32 mm i.d.	1	1	N6301107
Air Monitoring Trap	1	1	M0413628
Methyl Silicone Column 50 m x 0.32 mm x 1.0 µm	1	1	N6301108

### Ozone Precursor Accessories

Description:	Part No.
Alumina PLOT Column. 50 m x 0.32 mm i.d.	N6301107
Nafion Dryer	04974414
Particulate Filter Kit Includes disposable filter and fittings.	N6300063
For use in the ozone precursor analyzer. Restrictor Tubing	N9301355

\* For full downloadable pdf format application notes, please visit: <http://as.perkinelmer.com/applications>

# Hydrogen and Air Gas Generators



**NEW!**

## New and Improved **next generation Generators** for your application needs

### PGX-H<sub>2</sub> Hydrogen Generators

**Pure gas hydrogen generator employ the newest membrane technology available for the safe production of pure hydrogen gas.**

This patented design is ideal for operation with gas analyzers, as fuel gas for flame tools, or as a source for pure hydrogen in plasma chambers and other isolated environments. Electrolytic membrane technology is preferred over alternative hydrogen generating techniques because it is clean, requires less maintenance and there is no need to store chemicals to maintain operation. The generators offer silent operation and require only deionized or distilled water with no caustic solutions that can affect the purity of the hydrogen.

#### Technical Specifications for PGX-H<sub>2</sub>

Electrolysis cell	PEM Membrane type
H <sub>2</sub> purity	99.9999%
Delivery pressure	100 psig – 7 barg (max)
H <sub>2</sub> flow rate	Adjustable, according to model (100 – 160 – 250 – 300 – 500 – 600 mL/min)
Safety	Auto shut-off
User interface	Set points, system status
Display	4 row x 34 character LCD, set points, status, alarms
Indicator lights	Power ON, System OK, System error
Outputs	RS232C, bi-directional
Options	Remote control Cascading via RS-485 of up to 32 units in parallel for models 250 and 500 only (patented feature)

Description	Part No.
PGX-H <sub>2</sub> 100 mL/min of hydrogen	<b>N9306058</b>
PGX-H <sub>2</sub> 160 mL/min of hydrogen	<b>N9306059</b>
PGX-H <sub>2</sub> 250 mL/min of hydrogen	<b>N9306060</b>
PGX-H <sub>2</sub> 500 mL/min of hydrogen	<b>N9306061</b>
PGX-H <sub>2</sub> Desiccant Cartridge, Fitting and Refill Kit	<b>N9306064</b>
PGX-H <sub>2</sub> Desiccant Refill (sufficient for 3 cartridge refills)	<b>N9306065</b>
PGX-H <sub>2</sub> Deionizer Bag	<b>N9307097</b>

### No Maintenance Hydrogen Generators

#### A Safe Source of Hydrogen

Both the PGX-H<sub>2</sub> and the No Maintenance Hydrogen Generators have an auto shutoff procedure that places the units in standby in the event of an internal error and selectable alarms allow the user to be informed whenever operating conditions vary from the set point.

The No Maintenance (NM-H<sub>2</sub>) Hydrogen Pure Gas Generators employ the newest membrane technology available for electrolytic production of pure hydrogen gas, including exclusive no maintenance auto-drying technology.

#### Technical Specifications for No Maintenance

Electrolysis cell	PEM Membrane type
H <sub>2</sub> purity	99.9999%
Auto Drying System	No maintenance of drying cartridges (exclusive system)
Delivery pressure	155 psig – 10 barg (max.)
H <sub>2</sub> flow rate	Adjustable, according to model (100 – 160 – 250 – 300 – 500 – 600 – 1000 mL/min)
Safety	Auto shut-off
User interface	Set points, system status
Display	4 row x 34 character LCD, set points, status, alarms
Indicator lights	Power ON, System OK, System error
Options	Remote control Cascading via RS-485 of up to 32 units in parallel for models 250 and 500 only (patented feature)

Description	Part No.
100 mL/min of hydrogen	<b>N9307070</b>
160 mL/min of hydrogen	<b>N9307071</b>
250 mL/min of hydrogen	<b>N9307072</b>
500 mL/min of hydrogen	<b>N9307073</b>
1000 mL/min of hydrogen	<b>N9307074</b>

### Accessories

Description	Part No.
Cable for Cascading	<b>N9307093*</b>
I/O Board	<b>N9307094</b>
Remote control RS-232 (Includes converter, cables, software)	<b>N9307095*</b>
Auto refill	<b>N9307096*</b>
Deionizer LE bag	<b>N9307097</b>
Triangle deionizer LE bag	<b>N9307098</b>

\* Requires I/O Board

## Zero and Ultra Air Generators

The Zero / Ultra Zero Air Generators produce laboratory grade purified air for FID (flame ionization detectors) and other detectors. Designed with safety and convenience in mind, this system will generate purified and hydrocarbon free air from an existing in-house oil-free compressed air supply, eliminating the need for inconvenient high-pressure gas cylinders. Eliminating gas cylinders reduces annual operating costs associated with materials, labor, and down-time.

The Zero / Ultra Zero Air Generator series removes HC pollutants to less than 0.1 ppm, and all forms of particles. Operation of the generator requires low levels of electrical power consumption. This complete turnkey system is engineered with the highest quality components, is easy to install, and requires minimal annual maintenance. The Ultra Zero Air Generators will remove CO and HC pollutants to less than 0.1 ppm, and NOx contaminants to 1 ppm. Carbon dioxide is also removed to about 1 ppm levels.

### Specifications for Zero Air

Part No.	N9307075	N9307076	N9307077	N9307078	N9307079
<b>Outlet Zero Air</b>	1500 mL/min	3000 mL/min	6000 mL/min	15000 mL/min	30000 mL/min
<b>Maximum Continuous Output Flow Rate</b>	1.5 L/min	3.0 L/min	6.0 L/min	15.0 L/min	30.0 L/min
<b>Electrical Requirements</b>	230/115 VAC 250 W max	230/115 VAC 250 W max	230/115 VAC 250 W max	230/115 VAC 480 W max	230/115 VAC 480 W max
<b>Temperature / Pressure Control Board</b>	N/A	Included	Included	Included	Included

Description	Part No.
1.5 L/min of air (without compressor)	<b>N9307075</b>
3.0 L/min of air (without compressor)	<b>N9307076</b>
6.0 L/min of air (without compressor)	<b>N9307077</b>
15.0 L/min of air (without compressor)	<b>N9307078</b>
30.0 L/min of air (without compressor)	<b>N9307079</b>

### Specifications for Zero and Ultra Zero Air

Outlet Hydrocarbon Concentration	< 0.1 ppm
Outlet Carbon Monoxide Concentration	< 0.1 ppm
Outlet Particles < 0.5 Microns Removed	99.99%
Outlet Air Temperature	Ambient +15 °C
Max Inlet Hydrocarbon Concentration	100 ppm
Maximum Outlet Pressure	6.5 bar
Max Inlet Carbon Monoxide Concentration	50 ppm
Max Inlet Temperature	40 °C
Inlet Pressure Range (regulated to 7 bar)	4.5 – 10 bar
Inlet Port	1/4" NPT
Outlet Port	1/8" NPT



## Ultra Zero Air Generators

### Features and Benefits

- Flow rate: < 0.1 ppm HC; < 0.1 ppm CO; < 1 ppm NOx; < 5 ppm CO2
- Produce laboratory-grade purified air for the most accurate and convenient calibration of testing equipment
- Designed with safety and convenience in mind, this system will generate purified air from an existing in-house oil-free compressed air supply, eliminating the need for inconvenient high-pressure gas cylinders
- Eliminate gas cylinders reducing annual operating costs associated with materials, labor and downtime, and reduces risk of injury to workers
- Will remove CO and HC pollutants to less than 0.1 ppm and NOx contaminants to 1 ppm. Carbon dioxide is also removed to about 1 ppm levels. Operation of the generator requires low levels of air consumption and electrical power
- Fully supported by PerkinElmer Service Organization

### Specifications for Ultra Zero Air

Part No.	N9307081	N9307082	N9307083	N9307080
<b>Outlet Ultra Zero Air</b>	1500 mL/min	3000 mL/min	6000 mL/min	15000 mL/min
<b>Outlet Carbon Dioxide Concentration</b>	< 5 ppm	< 10 ppm	< 10 ppm	< 10 ppm
<b>Outlet Nitrogen Oxides Concentration</b>	< 0.1 ppm	< 1 ppm	< 1 ppm	< 1 ppm
<b>Outlet Dewpoint</b>	< -70 °C	< -50 °C	< -50 °C	< -50 °C
<b>Electrical Requirements</b>	230/115 VAC 270 W max	230/115 VAC 270 W max	230/115 VAC 270 W max	230/115 VAC 500 W max

Description	Part No.
1.5 L/min of air (without compressor)	<b>N9307081</b>
3.0 L/min of air (without compressor)	<b>N9307082</b>
6.0 L/min of air (without compressor)	<b>N9307083</b>
15.0 L/min of air (without compressor)	<b>N9307080</b>

All models come WITHOUT a compressor.  
**Oil Free Compressor Required.**

**NEW!**

## PerkinElmer Ultra Quiet Compact Oil Free Compressor for GC Zero and Ultra Zero Air Generators

### PerkinElmer's GC Quiet Compressor

This industrial ultra quiet compact oil free 6 gallon compressor that can be utilized in the immediate laboratory area for the supply of clean air.

**Horse Power:** 0.60  
**Power Requirements:** 115V/220V/50 – 60Hz

**Output:** 2.5 CFM  
**Output:** 67 L/Min  
**Max Pressure:** 100 PSI  
**Max Pressure:** 7 bar  
**Operating Pressure PSI:** 80 – 100  
**Operating Pressure Bar:** 6 – 7  
**Noise Level:** 62 db/A  
**Tank Size:** 6.0 Gal.  
**Tank Size Liter:** 24 L  
**Dimensions:** 16 x 16 x 20 in.  
**Weight:** 54 lbs.  
**Packed Dimensions:** 19 x 18 x 23  
**Packed Weight:** 58 lbs.

#### Key Benefits:

- Ultra quiet for use in the laboratory area
- Compact size and light weight
- Commercial / Industrial grade
- 1 Year warranty on workmanship
- 5.0 micron pre-filter and regulator
- Internally powder coated air tank to prevent rust
- Pressure switch for automatic operation

Description	Part No.
115V	N9306291
220V 60Hz	N9306292
220V 50Hz	N9306293

#### GC Startup Kit

GC Startup Kit 1/8" Tubing and Fitting for (3) Gases	Part No.
Description	Qty
1/8" Tubing x 50 foot coil	1
Copper Special Cleaning	
1/8" Compression Brass Tee Two Piece Ferrule Brass	3
Tee 1/8" Com x 1/8" Comp x 1/4" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
1/4" fnpt x 1/8" Comp Fitting Brass	3
1/8" Port Connector Brass	3
1/8" Ferrule Brass	3
1/8" Compression Brass Nut	3
1/8" Compression Brass Fitting Cap	3
Tubing Cutter 1/8" Tubing	1
Teflon Tape	1

#### GC Startup Kit

GC Startup Kit 1/8" Tubing and Fitting With One Single Stage Regulator	Part No.
Description	Qty.
1/8" Tubing x 50 foot coil	1
Copper Special Cleaning	
1/8" Compression Brass Tee Two Piece Ferrule Brass	3
Tee 1/8" Com x 1/8" Comp x 1/4" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
1/4" fnpt x 1/8" Comp Fitting Brass	3
1/8" Port Connector Brass	3
1/8" Ferrule Brass	3
1/8" Compression Brass Nut	3
1/8" Compression Brass Fitting Cap	3
Tubing Cutter 1/8" Tubing	1
Teflon Tape	1
Single Stage Analytical 0 – 100 psig delivery, CGA 350 (H <sub>2</sub> , Carbon Monoxide, Ethylene)	1



## High Purity Brass Regulators

### High Purity Brass Regulators

PerkinElmer regulators are constructed of high-purity brass barstock and have stainless steel diaphragms and metal-to-metal seals. They are suitable for use with high-purity (>99.995% pure) non-corrosive gases. Regulators terminate in a 1/4 in. NPT Swagelock fitting.

#### Key Benefits:

- Barstock body construction
- Stainless steel diaphragms
- Metal-to-metal seals
- Use with high-purity carrier gas

#### High-purity Brass Regulators (Dual Stage)

CGA Fitting	Delivery Pressure Use	Delivery Pressure Range (psig)	Cylinder Pressure Gauge (psig)	Gauge (psig)	Part No.
CGA-350	H <sub>2</sub> and Ar/CH <sub>4</sub>	4 – 100	0 – 200	0 – 4000	09907128
CGA-580	He, Ar, N <sub>2</sub>	4 – 100	0 – 200	0 – 3000	09907127

#### High-purity Brass Regulators (Single Stage)

CGA Fitting	Delivery Pressure Use	Delivery Pressure Range (psig)	Cylinder Pressure Gauge (psig)	Gauge (psig)	Part No.
CGA-350	CO, H <sub>2</sub> and Ar/CH <sub>4</sub> Mixes	4 – 100	0 – 150	0 – 4000	00230091
CGA-350	CO, H <sub>2</sub>	10 – 200	0 – 400	0 – 4000	00230253
CGA-590*	Air	10 – 200	0 – 400	0 – 4000	00230090

\*Supplied with 590-580 Adapter.

#### GC Startup Kit

GC Startup Kit 1/8" Tubing and Fitting With One Dual Stage Regulator	Part No.
Description	Qty.
1/8" Tubing x 50 foot coil	1
Copper Special Cleaning	
1/8" Compression Brass Tee Two Piece Ferrule Brass	3
Tee 1/8" Com x 1/8" Comp x 1/4" fnpt Brass	3
Adjustable Safety Relief Valve Brass 50 – 150 PSI	3
1/4" fnpt x 1/8" Comp Fitting Brass	3
1/8" Port Connector Brass	3
1/8" Ferrule Brass	3
1/8" Compression Brass Nut	3
1/8" Compression Brass Fitting Cap	3
Tubing Cutter 1/8" Tubing	1
Teflon Tape	1
Dual Stage Analytical 0 – 100 psig delivery, CGA 580 (N <sub>2</sub> , Argon, He)	1

# Dependable Service coverage to enhance your productivity and performance



## Maximize instrument performance and uptime

From unplanned repair expenses to lost productivity, few events can be as disruptive as the failure of a key instrument. With a service and support plan from PerkinElmer, your lab will be protected from unplanned downtime and unexpected expense.

Planning for future service needs as part of your new instrument budget proposal or purchase order will enable your laboratory to:

- Fix the cost of ownership of mission critical or revenue generating instrumentation
- Ensure seamless continuation of support when the initial 12-month warranty expires
- Eliminate administration costs incurred by continually renewing contracts
- Avoid having to re-justify maintenance expense at a future date
- Make use of funds now that may not be available in the future

Call your local sales representative to learn more about the PerkinElmer service and support products that the most successful global corporations, research facilities and analytic laboratories use to enhance their performance.



## Three service plan options are available to meet your needs

PerkinElmer's range of multi-year service plans eliminates the risk of unbudgeted service expense and ensures instrumentation is maintained to the highest possible standard throughout its lifetime.

### Comprehensive

This plan is ideal for laboratories whose financial success depends on the consistent availability and high performance of their scientific instruments.

### Basic

This plan is ideal for medium to large laboratories that require predictable instrument performance.

### Repair

The Repair service plan is ideal for small to medium laboratories seeking to maximize limited maintenance budgets and maintain instrument performance.

## Three Options of Service Plan Packages

PerkinElmer Service Benefits	Comprehensive Maximum Uptime	Basic Managed Expense	Repair Dependable Protection
<b>Core Benefits</b>			
Priority On-Site Response	Within 48 hours		
Preventative Maintenance	2 Annual Visits	1 Annual Visit	
Training	15% off	5% off	
PerkinElmer Certified Parts	100% included	100% included	100% included
Expert Service Engineers	100% included	100% included	100% included
Travel to your Location	100% included	100% included	100% included
<b>Additional Features</b>			
Online Support Resources	100% included	100% included	100% included
Responsive Technical Support	100% included	100% included	100% included
Service History Tracking	100% included	100% included	100% included
Six Sigma & ISO Best Practices	100% included	100% included	100% included

PerkinElmer products —  
proven quality, reliability  
and results.



▼ NEW PRODUCTS

PerkinElmer—The Clear Choice in Chromatography



## Hydrogen Generators!

The newest membrane technology

**NEW!** for safe production of  
pure hydrogen gas.

See page 56 for details.



**NEW!**

### Portable Gas Leak Detector!

Compact handheld  
detector with  
audible alarm.

See pages 36 for details.



### 3-Cartridge Gas Purification System

See pages 35 for details.



### IR Temperature Gun!

Low-cost, non-contact  
temperature measurement with  
laser sighting.

See page 36 for details.

### Colored Syringes with New Blue Barrel design.

Enhanced visual sample volume verification.

**SAVE** 5 and 10 piece syringe packs

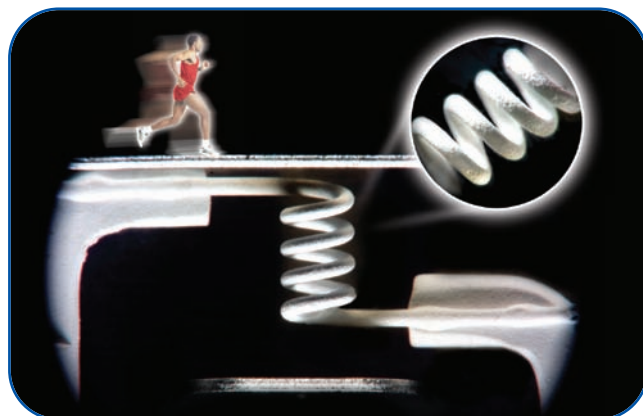
**NEW!**

See pages 38 for details.



## Marathon **NEW!** Filament for PerkinElmer GC/MS Systems

See page 31 for details.



# interchim

211 bis Avenue J.F. Kennedy - BP 1140  
03103 Montluçon cedex - France  
Hotline 33 (0)4 70 03 73 09  
Tél 33 (0)4 70 03 88 55 - Fax 33 (0)4 70 03 82 60  
e-mail [interchrom@interchim.com](mailto:interchrom@interchim.com)