



Small Devices BIG Impact

The Phenomenex Security Portfolio

- Minimize Solvent Contamination and Increase Lab Safety **SecurityCAP** 
LC SOLVENT SAFETY PRODUCTS
- Better HPLC/UHPLC Results with Fingertight, **SecurityLINK** 
UHPLC Connections in a Click
- Increase LC Column Lifetimes **SecurityGuard** 
Column Protection

Small Devices, Big Impact

Small things can have a huge impact on the quality of your chromatographic results. The Security Family of products were developed to allow you to protect the things that matter most: workplace safety, columns, results, and time efficiency.

SecurityCAP™

Mobile Phase and Solvent Waste Safety Caps

pp. 4–10

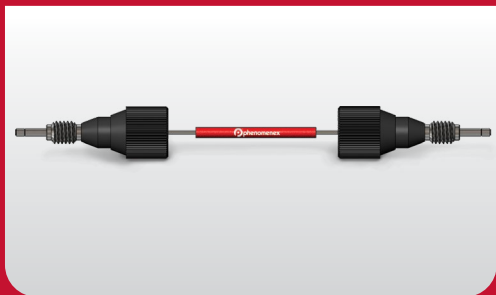


- **Increases Health and Worker Safety**
Solvent vapors and gasses are restricted to their containers
- **Protects HPLC / UHPLC Results**
Eliminates dust and other air contaminants from testing results
- **Confidence During Quality and Safety Audits**
Eliminate aluminum foil or Parafilm® covering solvent bottles

SecurityLINK™

LC Column, System, and Detector Fittings

pp. 11–17



- **Easy, No Tool Installation in a CLICK**
- **Better HPLC/UHPLC Results with Zero Dead-Volume Connections**
- **Torque Limiting Technology Prevents Overtightening and Undertightening**

SecurityGuard™

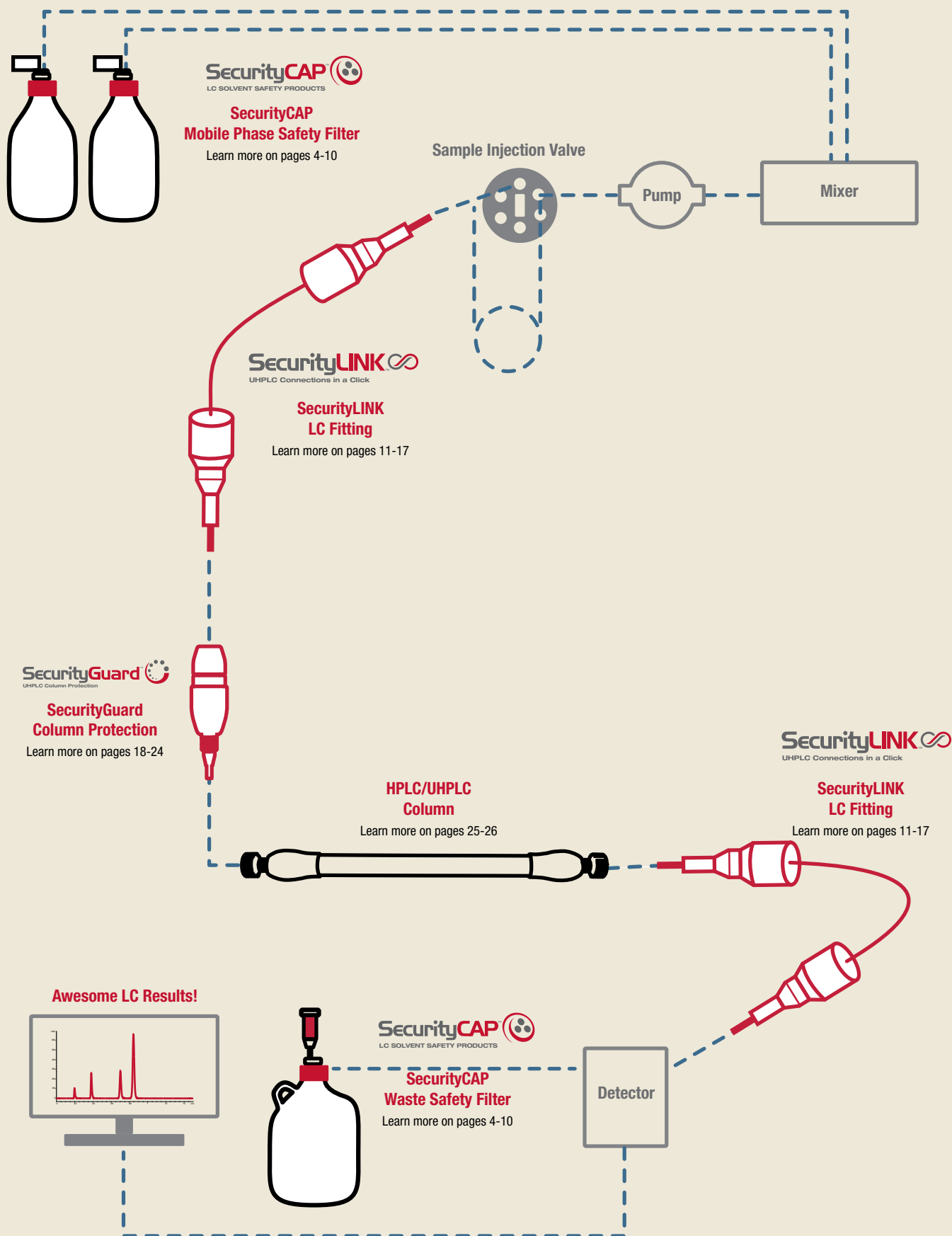
Column Protection System

pp. 18–24



- **Increased UHPLC/HPLC/PREP Column Lifetime**
- **Better Column Performance**
- **More Reproducible Chromatography**

Protect Your Entire HPLC/UHPLC Workflow Right from the Start



SecurityCAP™

LC SOLVENT SAFETY PRODUCTS



Time to Make a Change

The SecurityCAP mobile phase and solvent waste safety caps prevent dangerous vapors and gases from leaving HPLC/UHPLC solvent reservoirs. Over time, these chemicals can have a negative impact on the health of all employees and visitors in the lab. The SecurityCAP also protects HPLC/UHPLC results by preventing airborne particulates and contaminants from entering the solvent bottle, causing irreproducible results, bacterial growth, and ghost peaks. When lab safety and dependable results are a priority, you need SecurityCAPs!

- **Safer laboratory work environment**
Solvents, vapors, and gases are restricted to their containers
- **Protects HPLC/UHPLC results**
Eliminates dust and other air contaminants from affecting results
- **Easy to use**
No more twisting tubes during bottle exchange
- **Confidence during quality and safety audits**
Eliminate aluminum foil or Parafilm® covering solvent bottles

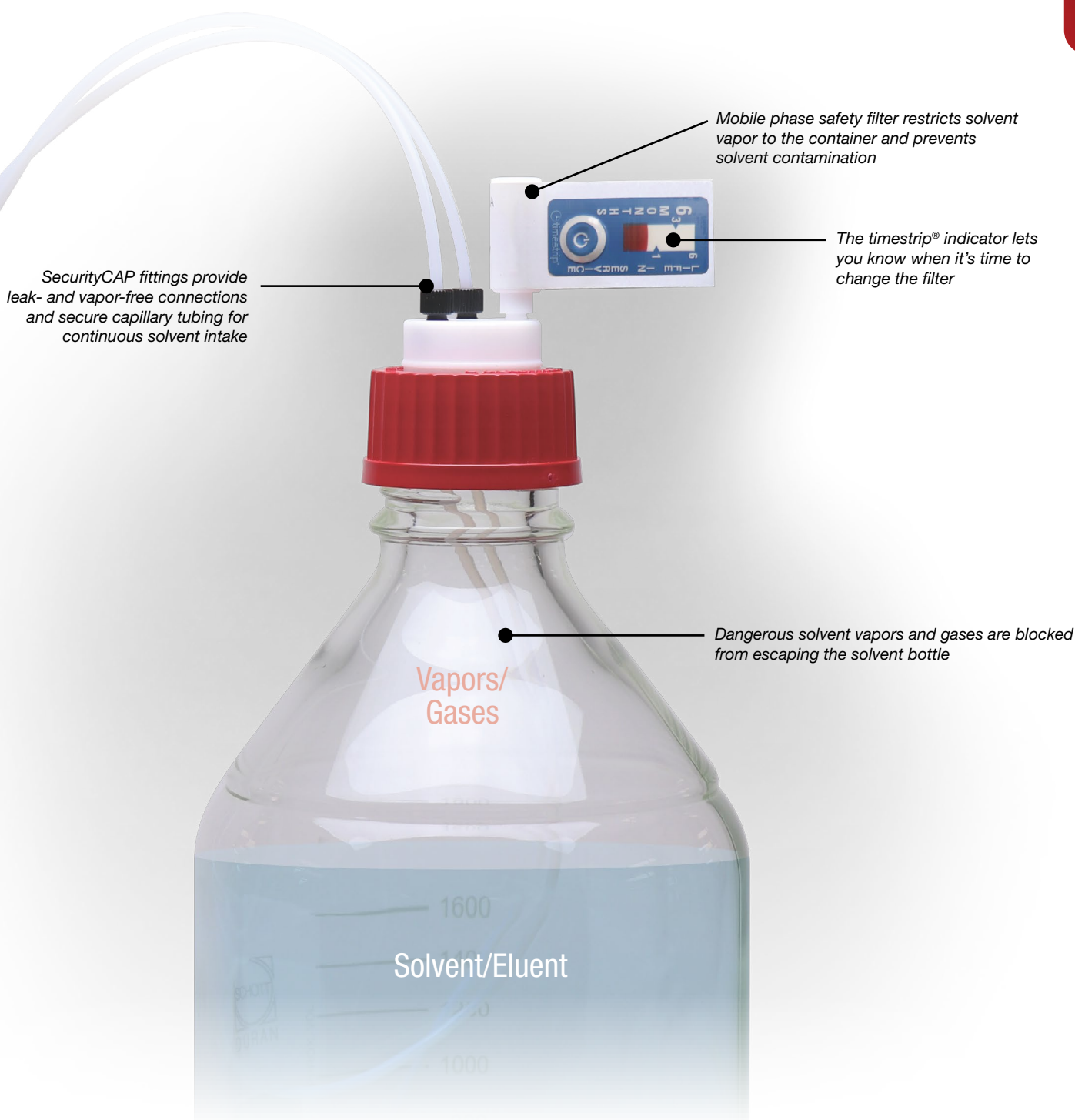


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Mobile Phase Safety Filter and Cap

The SecurityCAP mobile phase safety filters prevent hazardous solvent vapors and gases from leaving the solvent reservoir and negatively impacting the health of laboratory workers and visitors. The integrated filter membrane captures dust and other contaminants in the air and prevents them from entering the solvent container and causing potential solvent contamination or bacterial growth, which could negatively impact both your chromatography and HPLC/UHPLC system.



Solvent Waste Protection

Waste Exhaust Filter and Cap

Dispose of solvent waste safely and ensure good lab air quality with SecurityCAP exhaust filters and caps. Feel confident that volatile vapors from solvent waste containers are being captured safely, beyond fume cupboards or hoods.

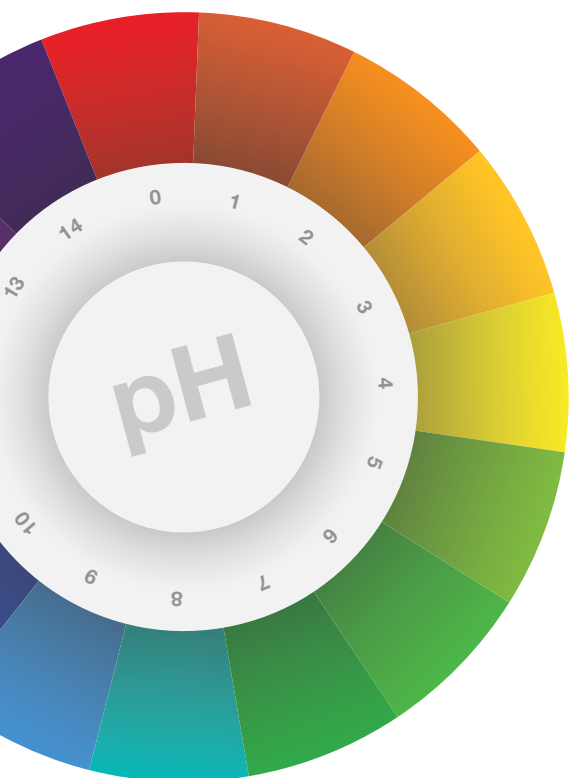


Consistent Mobile Phase pH

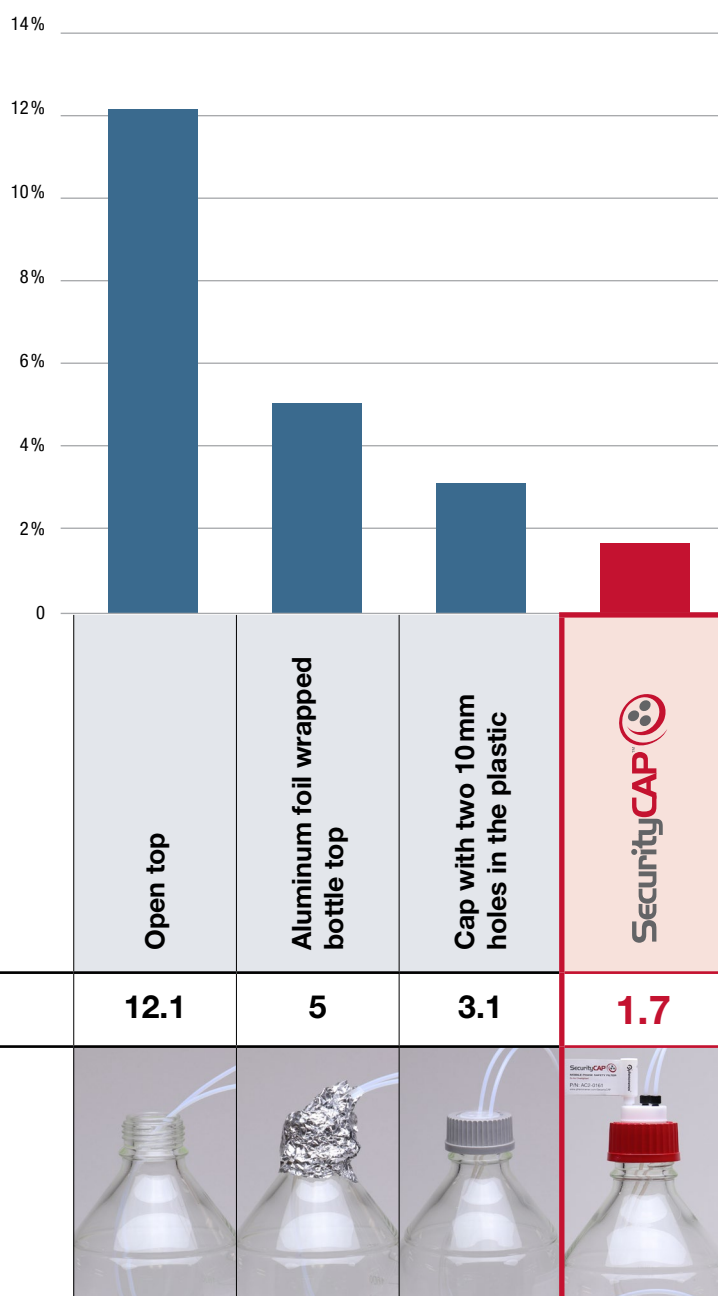
Prevent Unwanted Changes in Mobile Phase pH

As every chromatographer knows, the pH of the mobile phase can have dramatic effects on selectivity, retention, peak shape, resolution, and reproducibility of HPLC/UHPLC analysis. Because slight variations in pH can have a dramatic impact on the separation, careful mobile phase preparation and protection are essential.

When compared to other mobile phase solvent tops, SecurityCAP offers the superior solution to ensure the mobile phase pH will stay constant during use. This ensures reliable solvent/eluent conditions for results you can trust!



Change in pH over 7 days



A 1L solution of 4 mM ammonium bicarbonate buffer at pH 11 was made for each bottle and left in a hood for 7 days. The pH was checked before and after the experiment and the percent difference was calculated.

% Change in pH	12.1	5	3.1	1.7
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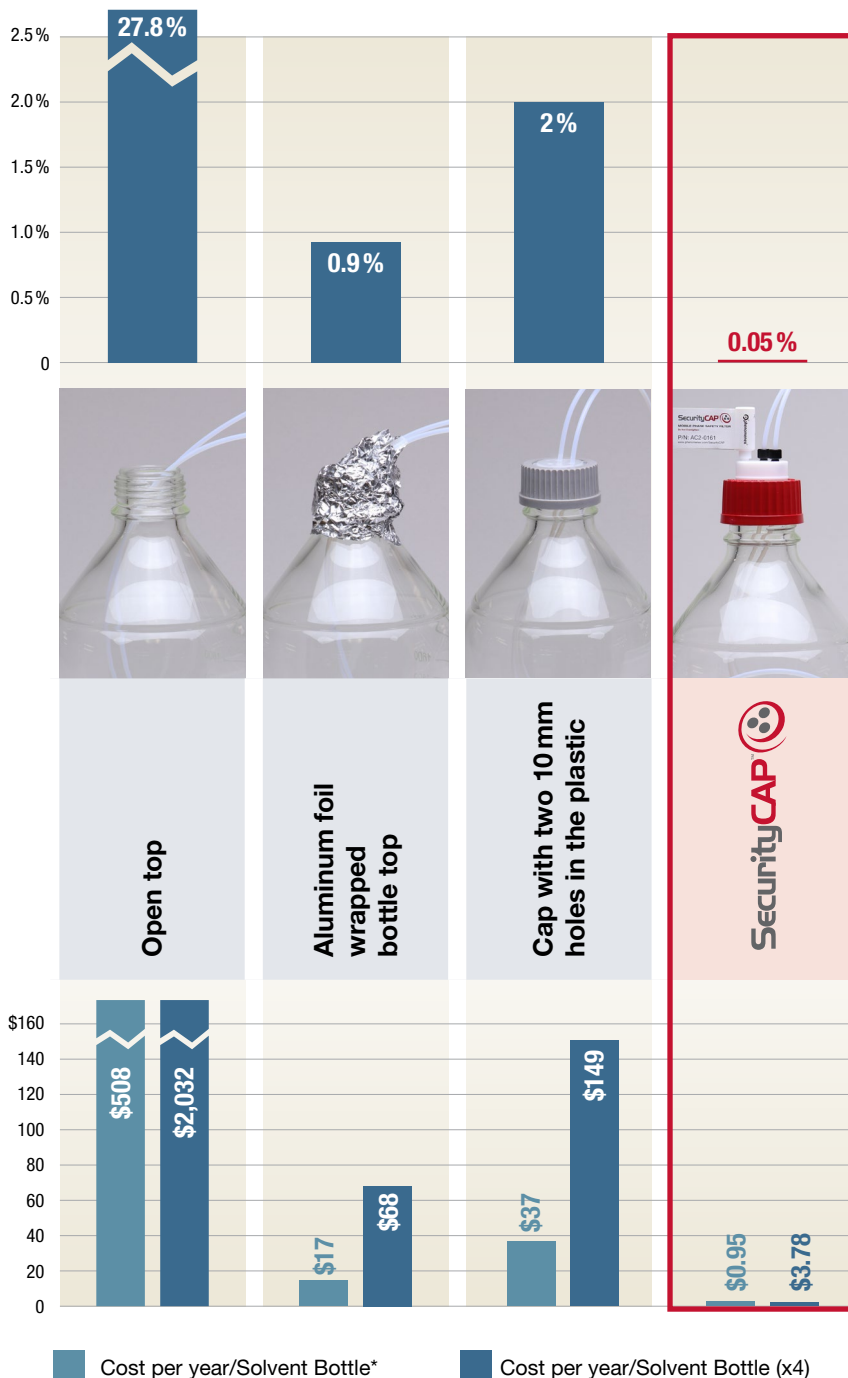
Reduce Costs

Avoid Solvent Evaporation

The annual usage of HPLC and UHPLC grade solvents are a large contributor to laboratory costs for chromatography analysis. Unsecured solvent bottle tops/caps can lead to evaporation and solvent loss. Besides the added cost implications of lost solvent, solvent evaporation also creates air quality health hazards for laboratory staff and visitors.

SecurityCAP saves expensive solvents by limiting evaporation and offers air quality protection from insufficient sealed tops/caps. Based on your labs total solvent usage, the potential financial gains and air quality improvement of incorporating SecurityCAP products can be significant.

Methanol Loss Over 10 Days by Weight



Cost of Lost/ Evaporated Solvent Per Year





*Cost calculations using \$50 (USD) for 1L of methanol

The Clear Choice

HPLC/UHPLC Solvent Top/Cap Comparison

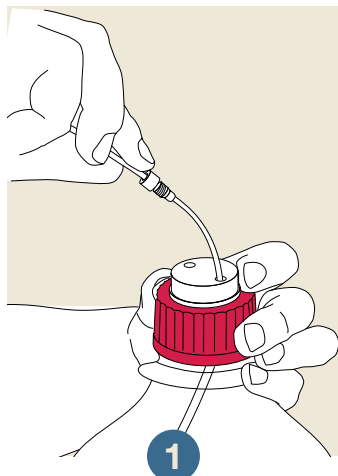
SecurityCAP offers several advantages over insufficient non-sealed tops/caps which can lead to both hazardous lab conditions and poor chromatography results. When it comes to preventing expensive solvent evaporation and ensuring solvent vapor containment, there is no comparison to SecurityCAP.



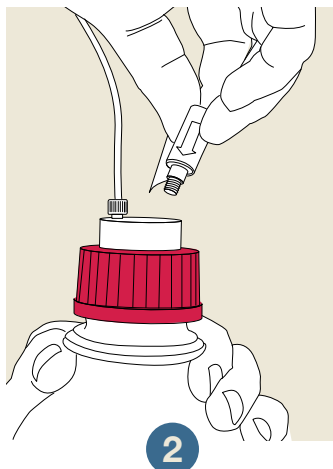
	Open top	Aluminum foil wrapped bottle top	Cap with two 10 mm holes in the plastic	SecurityCAP
				
Protects staff and visitors from volatile organic compounds released into lab	No	No	No	Yes
Ensures confidence during quality and safety audits	No	No	No	Yes
Protects solvents from both atmospheric particulates and contaminants	No	No	No	Yes
Saves money by preventing solvent evaporation	No	No	No	Yes
Prevents chemical spills/splashes	No	No	No	Yes
Time monitor device for protection	No	No	No	Yes
100% Sealable	No	No	No	Yes
Easy to use	Yes	No	Yes	Yes
Improves lab safety	No	No	No	Yes

Easy Installation

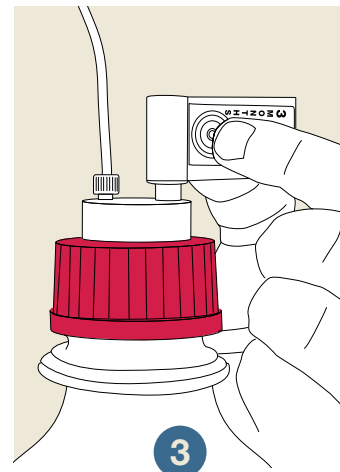
Mobile Phase Safety Cap and Filter



1
Insert the solvent tube through the fitting, and then through the SecurityCAP

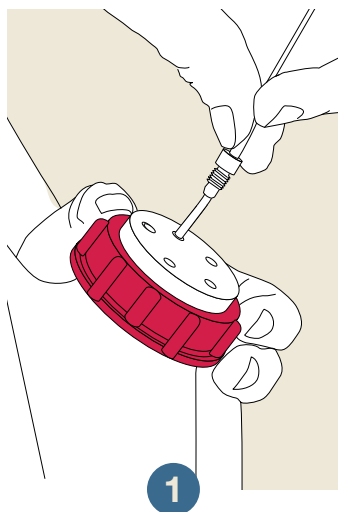


2
Screw the mobile phase safety filter into a free port of the SecurityCAP

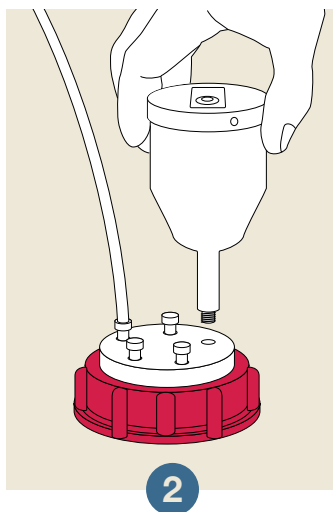


3
Affix the timestrip® to the mobile phase safety filter and press the activation button

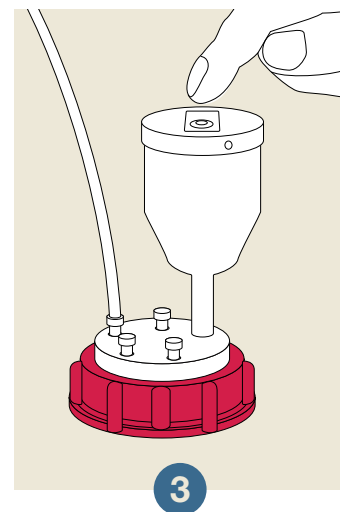
Waste Safety Cap and Filter



1
Insert the solvent tube through the fitting, and then through the SecurityCAP



2
Screw the exhaust filter into a free port of the SecurityCAP



3
Firmly press the activation button on the timestrip indicator

Need Help with Installation?

Chat Live with a Technical Expert Now!

www.phenomenex.com/chat

SecurityLINKTM

UHPLC Connections in a Click

To ensure that any HPLC or UHPLC system provides high efficiency and good peak shape it is essential to minimize dead-volume within the system. A common contributor to additional dead-volume are fitting connections routinely made to the column inlet and outlet which can lead to lower than expected efficiency, peak tailing or misshaped peaks. The impact of dead-volume is even more pronounced in columns with small internal volumes (narrow or short columns) and those packed with high efficiency sub-2 μm or core-shell particles. SecurityLINK HPLC/UHPLC Fingertight Fittings provide a convenient solution with its auto-adjusting frit accommodating the precise depth of virtually every manufacturer's column inlet to ensure a zero dead-volume connection. Additionally, the integrated torque limiting technology eliminates column over and under tightening that typically would result in column damage and poor analytical results.

- **Better HPLC/UHPLC Results with Zero Dead-Volume Connections**
- **Torque Limiting Technology Prevents Overtightening and Undertightening**
- **Pressure Rated to 19,000 psi (1,310 bar)**

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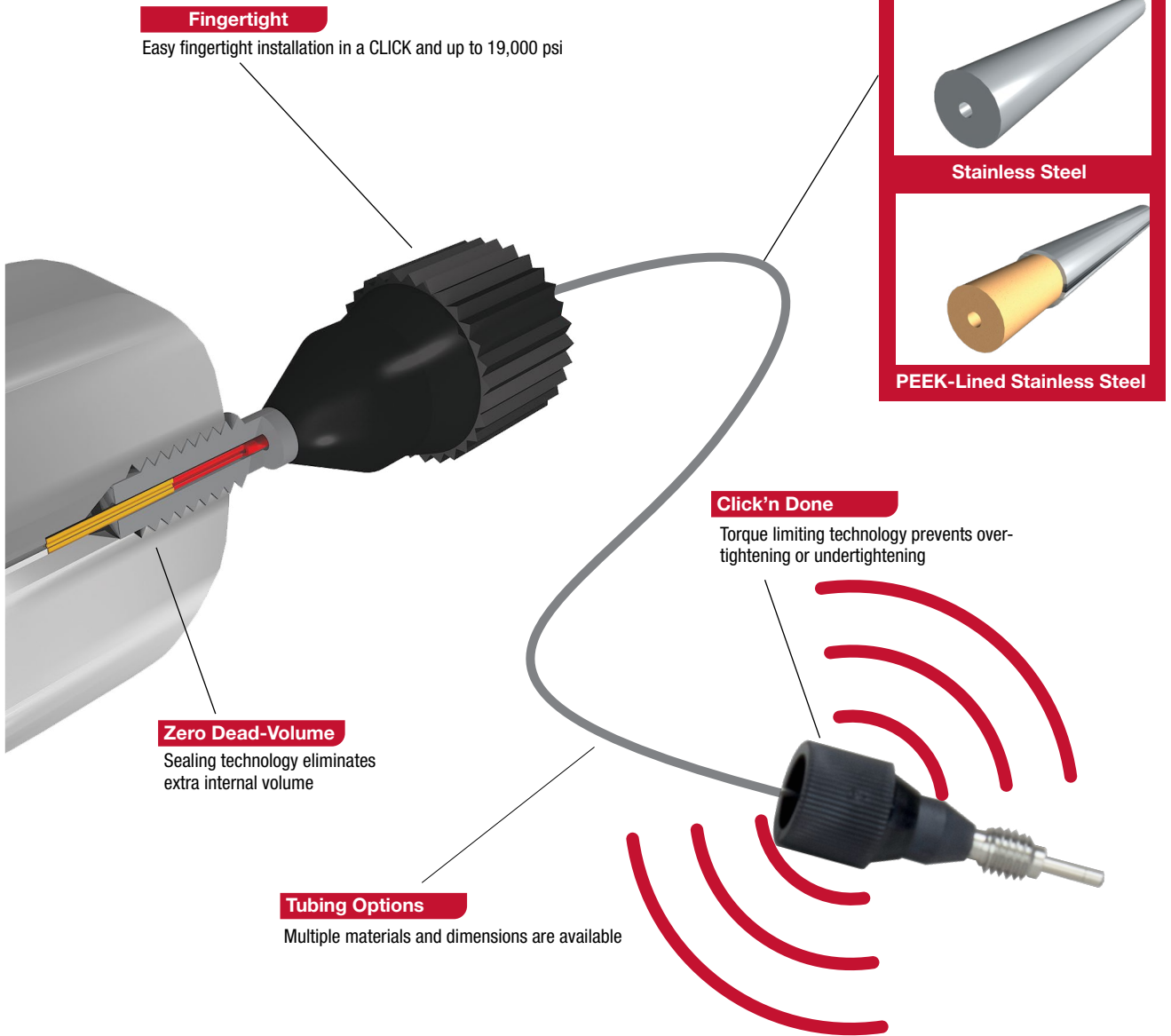
www.phenomenex.com/behappy



An Advanced HPLC/UHPLC Fitting

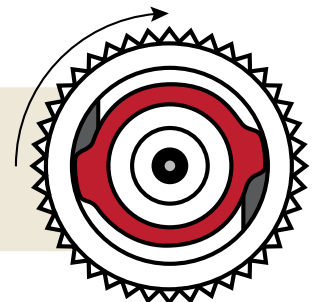
Inside SecurityLINK Fingertight Connections

The SecurityLINK LC fingertight fitting system simplifies your system and column connections while providing consistent performance through torque limiting technology that prevents column damaging overtightening.



What is Torque Limiting Technology?

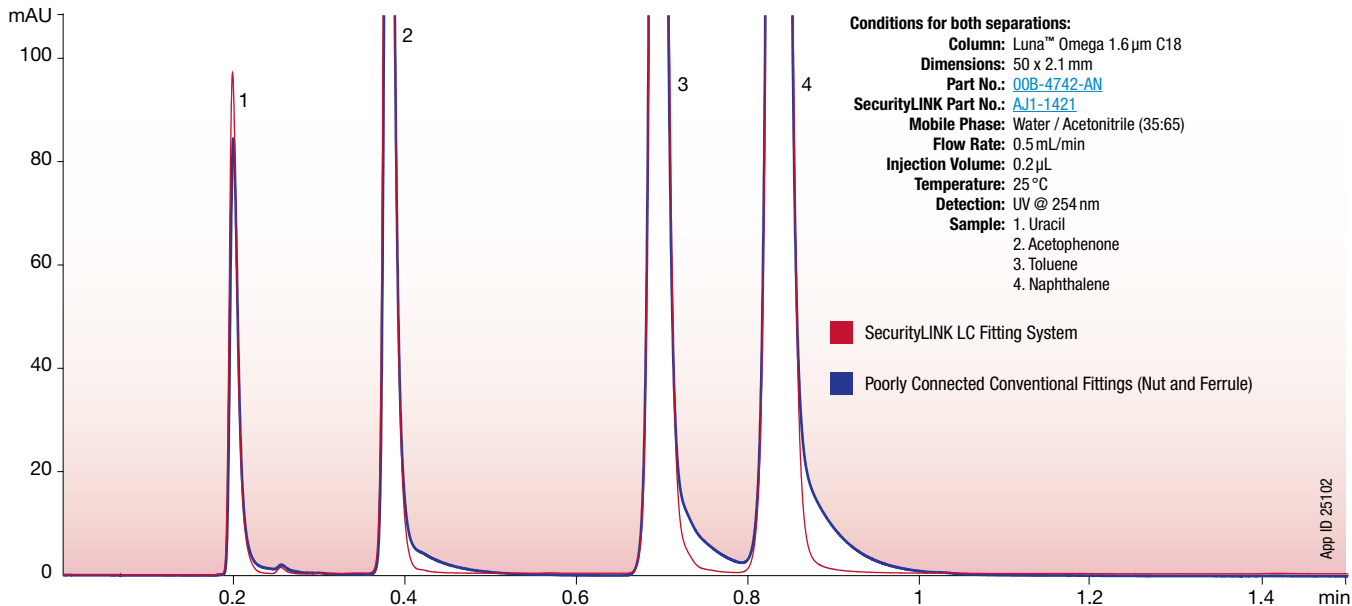
Once the perfect connection has been made through finger tightening, the SecurityLINK fitting offers a haptic “click” to confirm that optimum torque has been reached. This ensures a consistent connection each and every time and prevents over or under tightening that may cause column or performance issues.



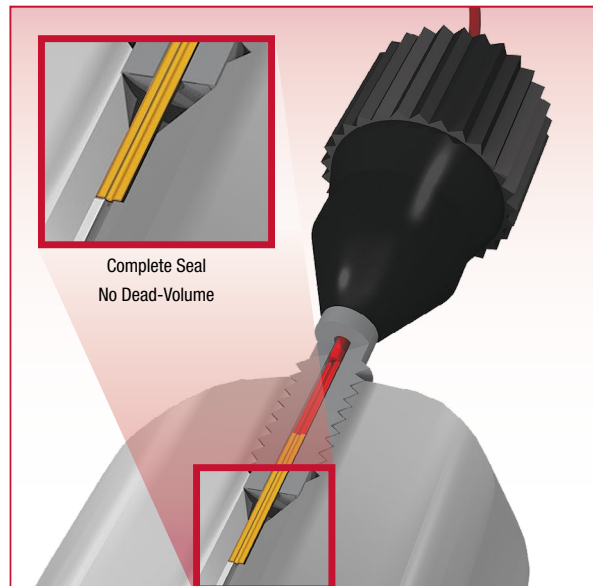
The Dead-Volume Difference

SecurityLINK LC Fittings vs Conventional Fittings

Poorly connected fittings are often the causes of carryover, band broadening, and peak tailing. SecurityLINK offers zero dead-volume connections every time.

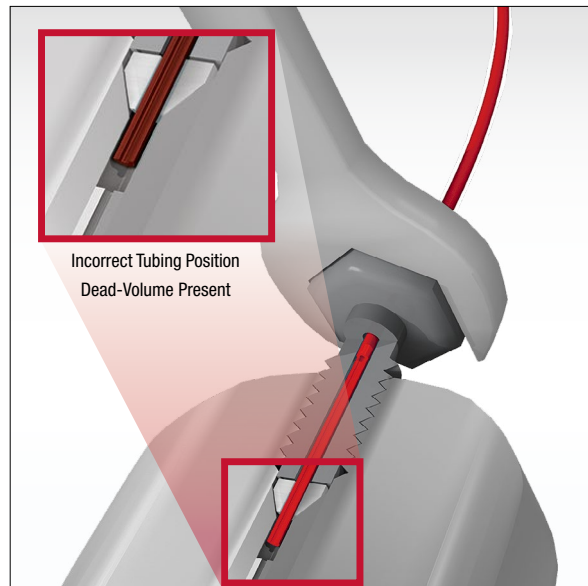


SecurityLINK LC Fitting System



VS.

Poorly Connected Conventional Fittings (Nut and Ferrule)



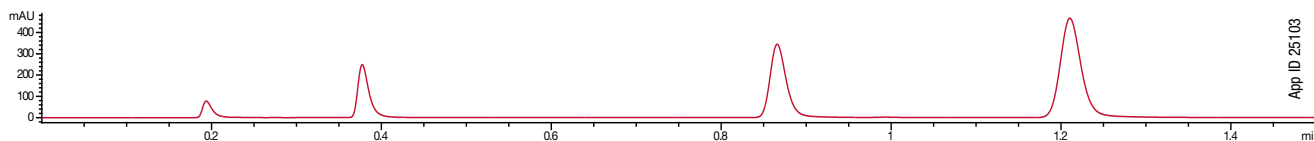
Superior Robustness and Reproducibility

SecurityLINK Lifetime

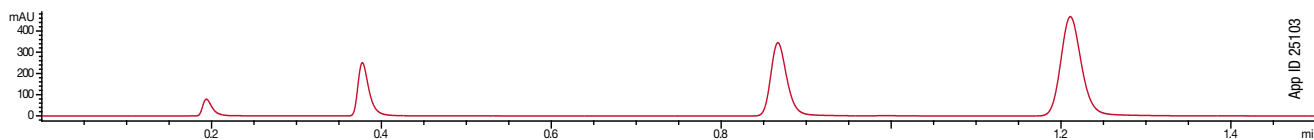
While typical fittings are not cross column compatible and prone to cause column damage with overtightening, SecurityLINK safely and easily allows you to continuously attach and detach columns. To illustrate the high robustness and durability of the SecurityLINK LC Fitting System, the fitting was disconnected and reconnected 100 times to a highly sensitive sub-2 μ m core-shell UHPLC column.

Column: Kinetex™ 1.3 μ m C18
Dimensions: 50 x 2.1 mm
Part No.: [Q0B-4515-AN](#)
SecurityLINK Part No.: [AJ1-1421](#)
Mobile Phase: Water/Acetonitrile (50:50)
Flow Rate: 0.5 mL/min
Injection Volume: 0.2 μ L
Temperature: 25 °C
Detector: UV
Sample: 1. Uracil
 2. Acetophenone
 3. Toluene
 4. Naphthalene

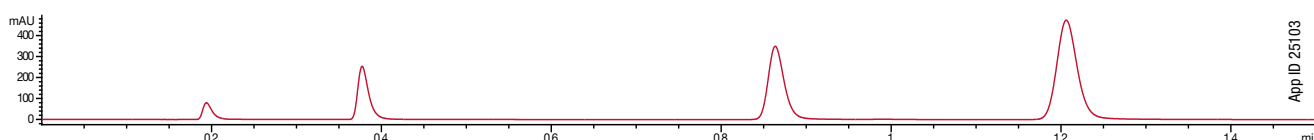
1 Connection



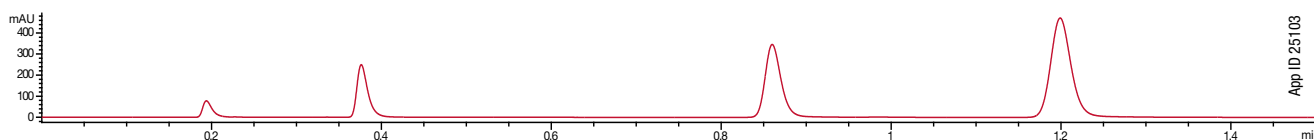
25 Connections



50 Connections



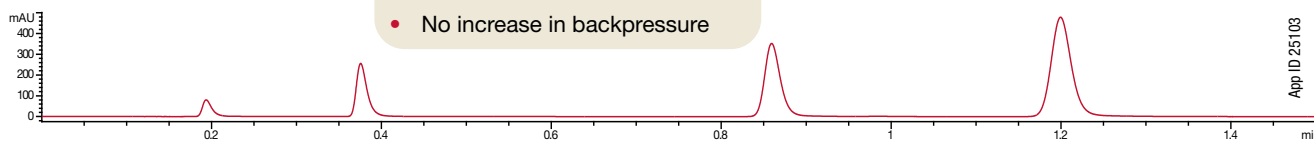
75 Connections



After 100 reconnections:

- No leaking
- No change in chromatography
- No increase in backpressure

100 Connections



Improved Column Performance

Increased Peak Efficiency and Reduction in Peak Asymmetry

PEEKsil™ tubing is manufactured with extremely high levels of precision in terms of internal diameter and is also machine cut to provide connections with minimal dwell volume. As such it has become the tubing of choice where connections close to zero dwell volume are required.

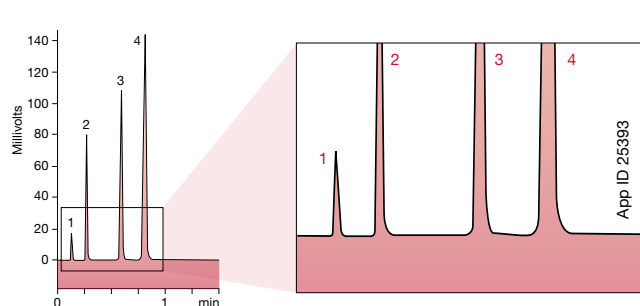
When moving from a conventional PEEKsil nut and ferrule fitting system to a SecurityLINK PEEKsil LC fingertight fitting system an increase in peak efficiency and a reduction in peak asymmetry was demonstrated. This would indicate a reduction in overall system dead-volume, thus reducing the level of diffusion within the chromatographic pathway and improving overall column performance.

SecurityLINK PEEKsil UHPLC Fingertight Fitting System Connections

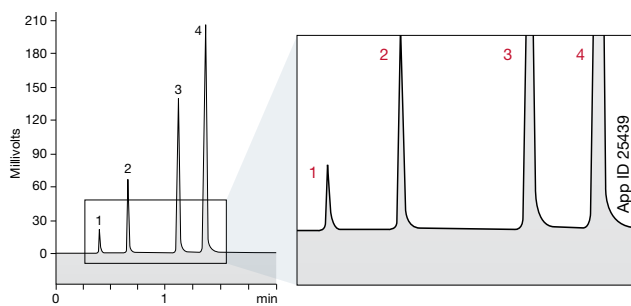


Conventional PEEKsil Nut and Ferrule Fitting System Connections

Kinetex™ 1.7 μm XB-C18 30 x 2.1 mm

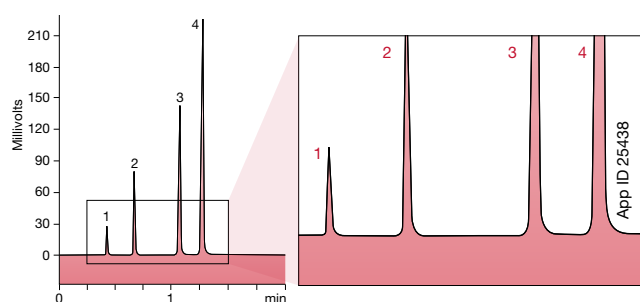


Peak	Analyte	Time	Area	k Factor	Width	Eff.	Asym.
1	Uracil	0.13	13	0.000	0.011	802	1.56
2	Acetophenone	0.26	64	1.085	0.012	2852	1.46
3	Toluene	0.59	136	3.620	0.019	5273	1.16
4	Naphthalene	0.80	243	5.326	0.026	5433	1.12

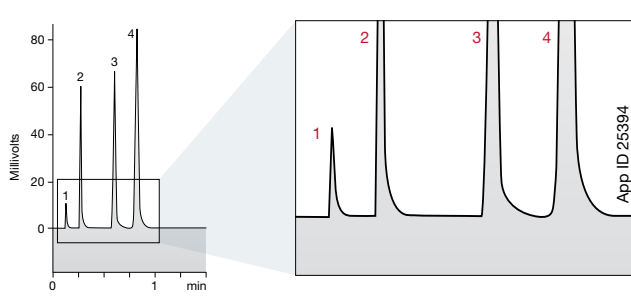


Peak	Analyte	Time	Area	k Factor	Width	Eff.	Asym.
1	Uracil	0.40	19	0.000	0.015	7380	1.82
2	Acetophenone	0.66	68	0.633	0.016	13850	1.68
3	Toluene	1.11	188	1.753	0.021	20153	1.44
4	Naphthalene	1.35	320	2.359	0.024	21896	1.31

Kinetex 1.7 μm XB-C18 100 x 2.1 mm



Peak	Analyte	Time	Area	k Factor	Width	Eff.	Asym.
1	Uracil	0.42	21	0.000	0.013	7931	1.40
2	Acetophenone	0.67	69	0.571	0.014	15665	1.29
3	Toluene	1.07	165	1.520	0.018	22326	1.21
4	Naphthalene	1.27	295	1.998	0.020	24351	1.14



Peak	Analyte	Time	Area	k Factor	Width	Eff.	Asym.
1	Uracil	0.13	9	0.000	0.013	788	2.00
2	Acetophenone	0.27	55	1.110	0.014	2847	1.86
3	Toluene	0.60	97	3.725	0.022	4909	1.42
4	Naphthalene	0.81	163	5.452	0.029	4995	1.31

Column: Kinetex 1.7 μm XB-C18
Dimensions: 30 x 2.1 mm
Part No.: [00A-4496-AN](#)
SecurityLINK Part No.: [AJ1-2441](#)
Mobile Phase: Acetonitrile/Water (50:50)
Flow Rate: 0.5 mL/min
Temperature: Ambient
System: Agilent 1260 Infinity

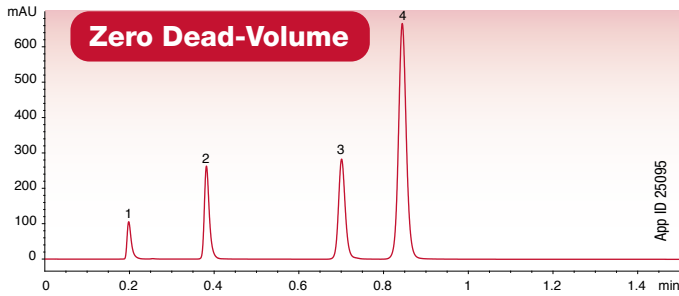
Column: Kinetex 1.7 μm XB-C18
Dimensions: 100 x 2.1 mm
Part No.: [00D-4496-AN](#)
PEEKsil Part No.: [ATO-8896](#) (Tubing)
[AQO-8503](#) (Fitting)
Mobile Phase: Acetonitrile/Water (65:35)
Flow Rate: 0.5 mL/min
Temperature: Ambient
System: Agilent 1260 Infinity

Compatibility with Column Vendors

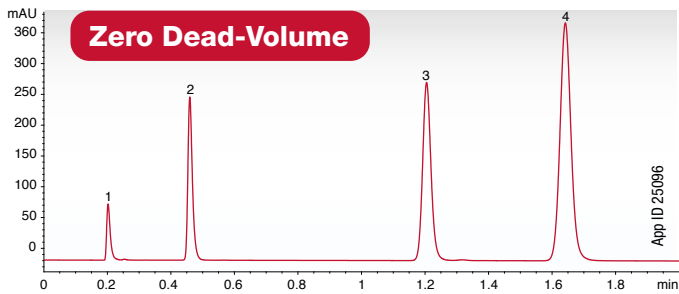
Consistent Results with SecurityLINK

SecurityLINK LC Fittings were designed to be compatible with the majority of LC columns and systems that are available on the market. That gives you the ability to utilize this easy to use fitting on each system and with multiple columns. To prove this, the SecurityLINK was evaluated below for compatibility with different column vendors: Phenomenex, Waters®, and Agilent®.

Phenomenex Luna™ Omega 1.6 μm C18 50 x 2.1 mm

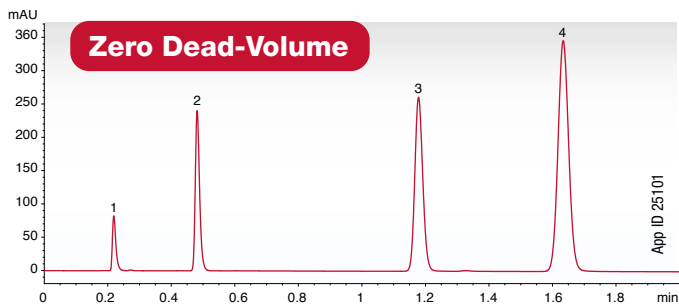


Agilent ZORBAX® Eclipse Plus C18 RRHD 1.8 μm 50 x 2.1 mm



Column: Luna Omega 1.6 μm C18
ACQUITY BEH 1.7 μm C18
Zorbax Eclipse Plus 1.8 μm C18 RRHD
Part No.: [00B-4742-AN](#) (Luna Omega)
Dimensions: 50 x 2.1 mm
SecurityLINK Part No.: [AJ1-1421](#)
Mobile Phase: Water/Acetonitrile (35:65)
Flow Rate: 0.5 mL/min
Injection Volume: 0.2 μL
Temperature: 25 °C
Sample: 1. Uracil
2. Acetophenone
3. Toluene
4. Naphthalene

Waters ACQUITY® UPLC® BEH C18 1.7 μm 50 x 2.1 mm



Compatible with Any System or Detector Manufacturer with 1/16 in. Ports



Thermo Fisher®



Agilent



Waters



SCIEX®

Comparative separations may not be representative of all applications.

Fingers Only Installation

Secure Connections in 2 Easy Steps

The SecurityLINK LC fingertight fitting system simplifies your system connection process and provides consistent performance with torque limiting technology that prevents column damaging overtightening. No tools required for installation again!

1 Insert SecurityLINK LC fitting into column port or LC system



2 Fingertighten until first "CLICK" feedback is received. Connection complete!



Tip

The "CLICK" feedback indicates the SecurityLINK connection is secure!
This prevents overtightening and saves your column.



Universal Column Protection

A common cause of high backpressure, split peaks, broad peaks, baseline noise, baseline drift and loss of resolution is contaminants. All mobile phases contain some chemical contaminants or microparticulates, from the sample, solvent, or wear on the polymeric seals of the pump or injector. These contaminants can clog frits, irreversibly bind to columns, degrade performance, and even damage the flow cell. An easy solution, SecurityGuard is a universal column protection system designed to effectively (and inexpensively), protect your valuable columns, from the damaging effects of chemical contaminants, without altering your chromatographic results.

- **Protects chromatographic results**
- **Extends UHPLC, HPLC and PREP column lifetime**
- **Virtually no change in chromatography**
- **Simple to use**
- **Saves time and money**
- **Compatible with virtually all vendors columns**

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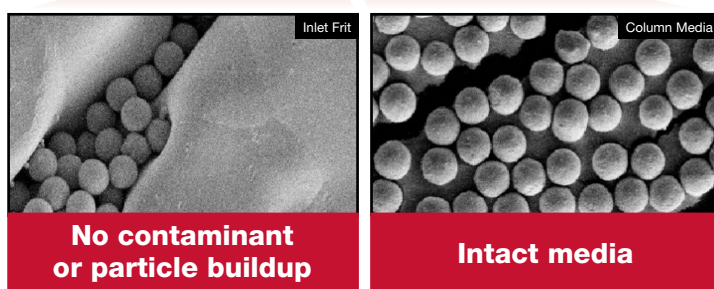
How SecurityGuard Works

Removes Harmful Contaminants and Particulates

It's a fact! Chemical contaminants and particulates are a natural part of any chromatographic analysis. The easiest way to extend column performance is to remove these contaminants and particulates with the SecurityGuard Cartridge System before they reach your column and degrade your chromatography.

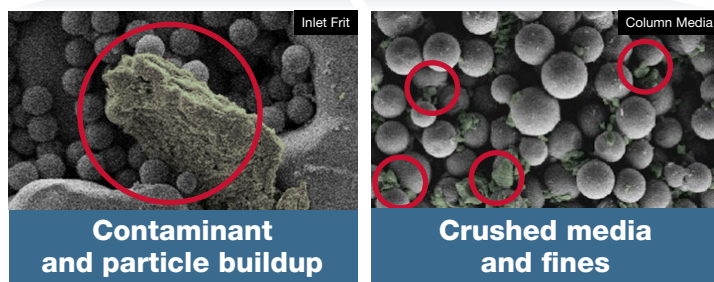


With SecurityGuard ULTRA



(24000 times magnification)

Without SecurityGuard ULTRA



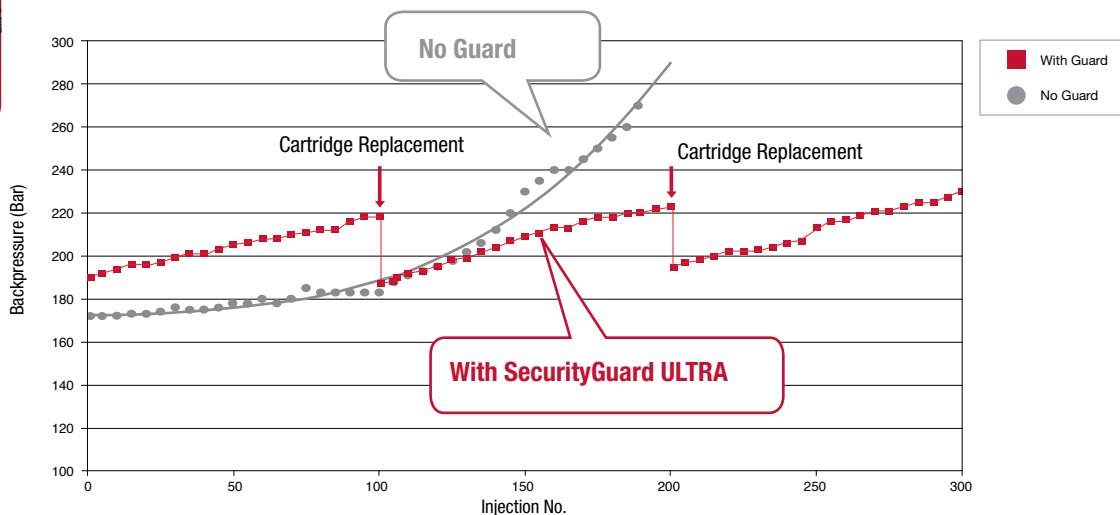
(24000 times magnification)

Longer Column Lifetimes

Keep Columns Performing Their Best

When contaminants and particulates build up at the head of the column or on the guard cartridges, system pressures dramatically increase. Simply replace the SecurityGuard cartridge instead of your column and you are able to regain normal operating conditions and reclaim original column performance.

Accelerated column lifetime test

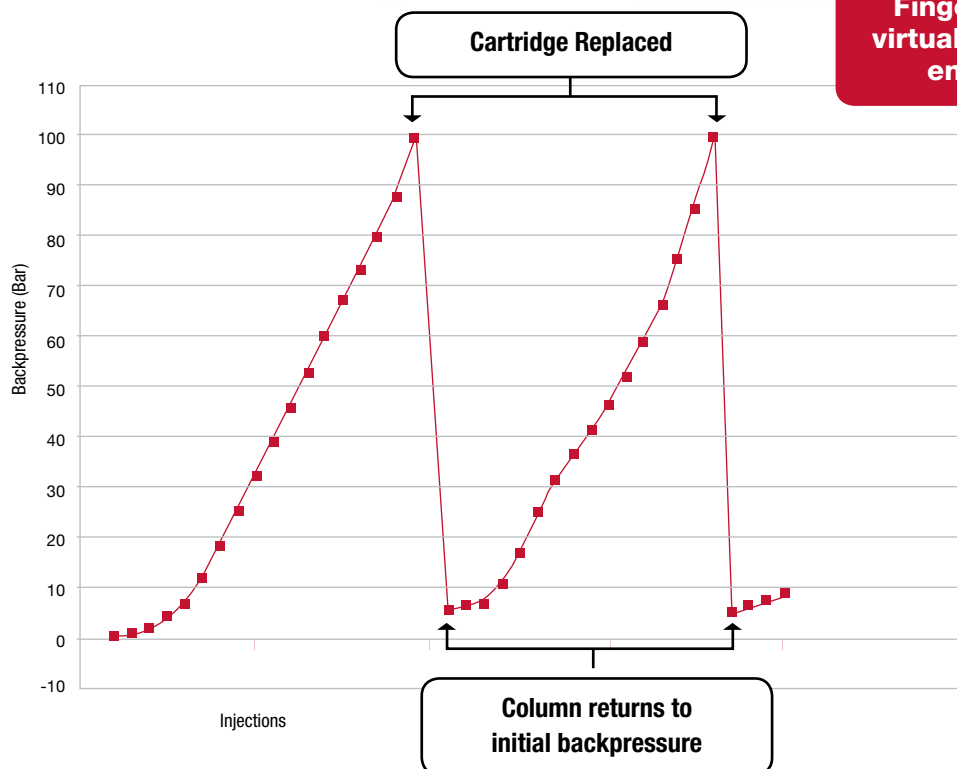


In this accelerated column lifetime test, the UHPLC column lasts substantially longer with SecurityGuard ULTRA guard cartridge system.

SecurityGuard Standard Performance



Fingertight connection to virtually any female inverted endfitting worldwide

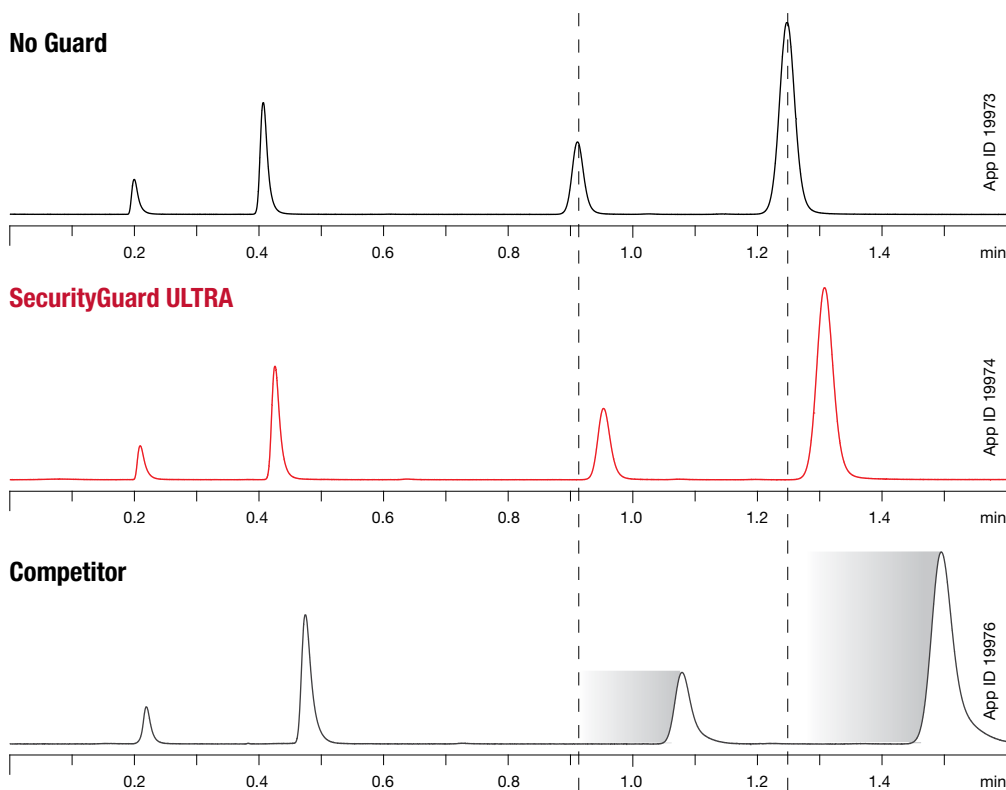


Accelerated lifetime test using endogenous biomolecule matrix on a reversed phase C18 column, 5 µm, 50 x 4.6 mm with SecurityGuard Standard C18 cartridges. Backpressure values represent additional backpressure contributed by SecurityGuard Standard.

Maintain Column Performance

Virtually No Change in Chromatography

SecurityGuard ULTRA maintains UHPLC column performance without altering chromatographic results. The extremely low dead-volume (<0.3 µL) of this unique guard design minimizes peak dispersion ensuring that ultra-high efficiency chromatography is maintained. Unlike competitors' UHPLC guard systems, SecurityGuard ULTRA has virtually no effect on efficiency, retention time, or backpressure. This leads to longer column lifetime with no loss in column performance.



	No Guard	SecurityGuard ULTRA	Competitor
Efficiency (p/m)	11,795	11,390	8,591
Symmetry	0.92	0.86	0.69
Selectivity	1.47	1.46	1.46
Backpressure (bar)	354	384	384

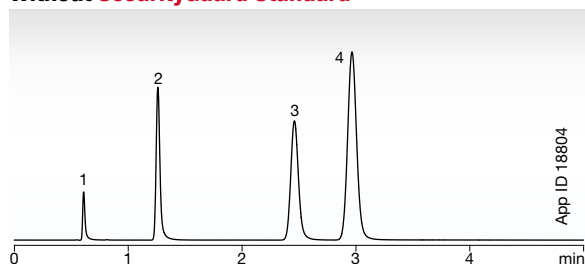
Values based on naphthalene peak.

Conditions same for all applications:

- Column: Kinetex™ 1.7 µm XB-C18
- Dimensions: 50 x 2.1 mm
- Part No.: [00B-4498-AN](#)
- SecurityGuard ULTRA Part No.: [AJ0-8782](#)
- Mobile Phase: Acetonitrile / Water (50:50)
- Flow Rate: 1 mL/min
- Injection Volume: 1 µL
- Temperature: 22 °C
- Detection: UV @ 270 nm
- Sample: 1. Acetophenone
2. Benzene
3. Toluene
4. Naphthalene

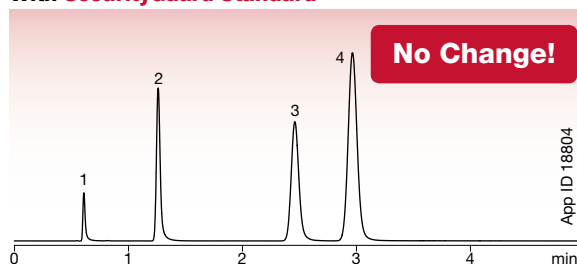
Protection without Altering Your Results!

Without SecurityGuard Standard



VS.

With SecurityGuard Standard



Conditions for both columns:

- Column: Luna™ 3 µm C18(2)
- Dimensions: 150 x 4.6 mm
- Part No.: [00F-4251-E0](#)
- Mobile Phase: Acetonitrile / Water (65:35)

- Flow Rate: 0.75 mL/min
- Injection Volume: 0.5 µL
- Temperature: 25 °C
- Detection: UV @ 254 nm

- Sample: 1. Uracil
2. Acetophenone
3. Toluene
4. Naphthalene

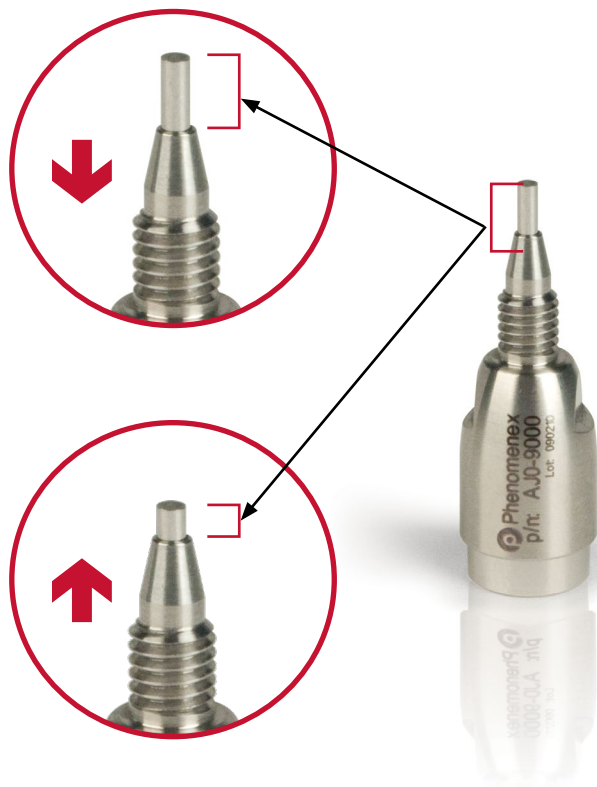
Comparative separations may not be representative of all applications.

Protect Any Column

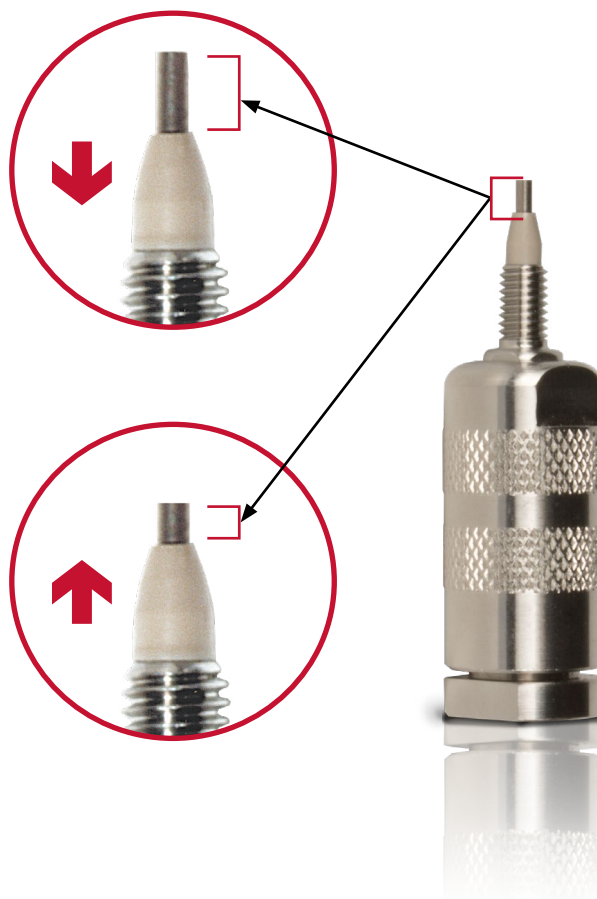
Fits Virtually All UHPLC/HPLC Vendor Columns

Installing the SecurityGuard protection system into your favorite column is easy. The floating outlet from the SecurityGuard holder automatically adjusts to the precise depth of virtually every manufacturer's column. This ensures a low dead-volume, leak-free connection, without the use of unions or adapters, no matter which manufacturer's column you are using.

Compatible UHPLC Fittings



Compatible HPLC Fittings

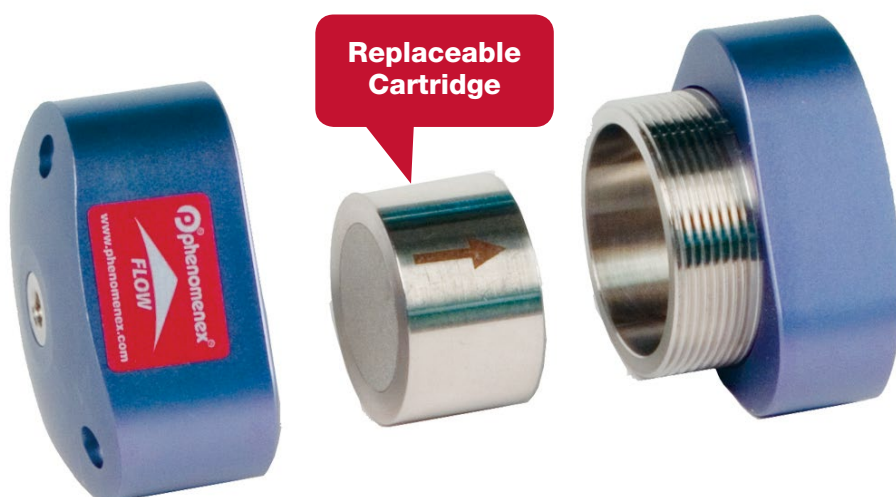


PREP HPLC Column Protection

Protect Your Purification Results

The SecurityGuard PREP system was designed to effectively and inexpensively protect your valuable prep columns from the damaging effects of mobile phase and sample chemical contaminants and particulates, without altering your chromatographic results.

- Extends preparative column lifetime by as much as 5 times
- Protects column from samples that precipitate out of solution
- Protects column from contaminants
- Stable and leak-free up to 60 mL/min within specified pressure ratings



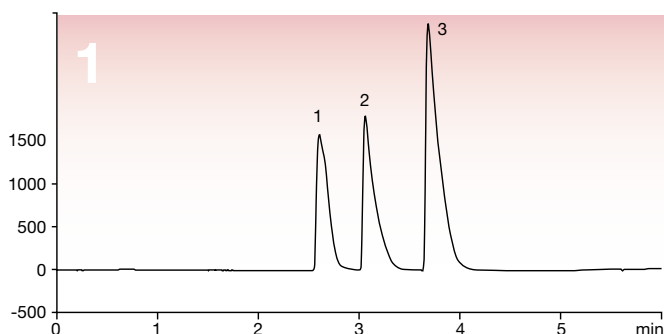
Lower Cost Per Injection

SecurityGuard PREP

SecurityGuard isn't only about column protection, it's about lowering your cost per injection! When you increase the number of injections from a single preparative column you're lowering your overall cost per injection. With SecurityGuard PREP, the inexpensive cartridge was ruined while the integrity of the prep column was maintained and its performance restored.

Forced Degradation Study

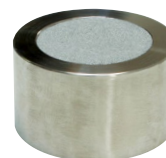
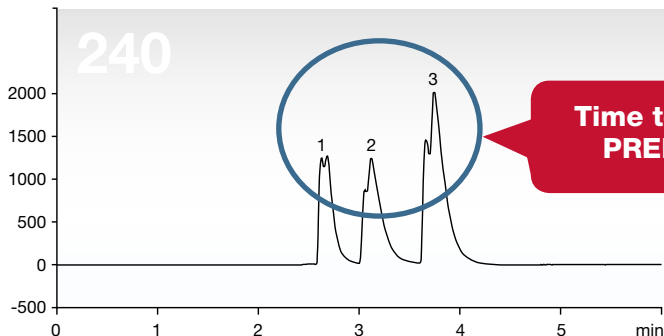
Injection 1: Axia™ Packed column with SecurityGuard PREP cartridge



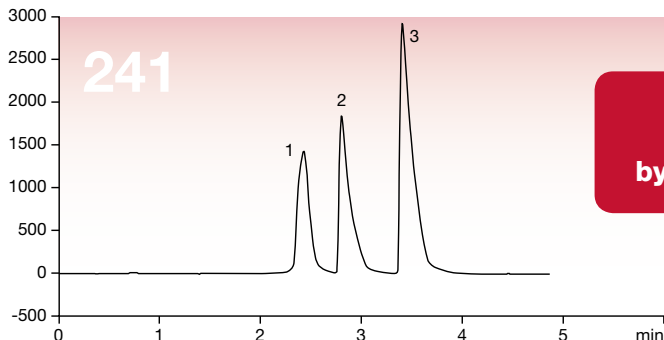
Column: Luna™ 10 µm C18(2) Axia Packed
Dimension: 50 x 21.2 mm
Part No.: [00B-4253-P0-AX](#)
Mobile Phase: A: 0.1 % TFA in Water
 B: 0.1 % TFA in Water / Acetonitrile (25:75)
Gradient: Linear 93:7 (A/B) to 100 % B over 5 minutes
Flow Rate: 60 mL/min
Injection Volume: 420 µL
Temperature: Ambient
Detection: UV @ 270 nm
Sample: 1. Nadolol
 2. Metoprolol
 3. Propranolol



Injection 240: Axia Packed column with SecurityGuard PREP cartridge



Injection 241: Axia Packed column after removing SecurityGuard column protection system



Large Molecule Analysis Solutions

Biozen Column Portfolio



4 Particle Platforms



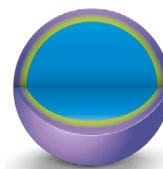
Pore Controlled Technology



Thermally Modified Fully Porous



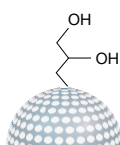
Core-Shell Technology



Monosized Polymeric Non-Porous

8 Particle Chemistries and Growing

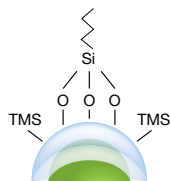
dSEC



Biozen dSEC-2
1.8 μm and 3 μm

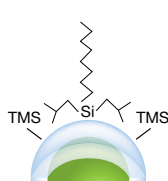
Inert, high-strength porous particle for the separation and quantitation of monoclonal antibody aggregate and fragments

Intact



Biozen WidePore C4
2.6 μm

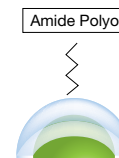
Core-shell particle with butyl stationary phase and optimal wide pore size distribution for better resolution of large biologics, including monoclonal antibodies and subunit analysis



Biozen Intact XB-C8
3.6 μm

Large pore core-shell particle for fast intact and subunit biologic entry. C8 provides highly useful moderate hydrophobic selectivity

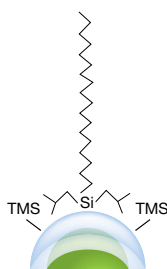
Glycan



Biozen Glycan
2.6 μm

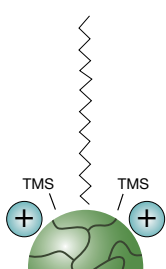
Provides optimal combination of high efficiency and selectivity for released glycans

Peptide



Biozen Peptide XB-C18
1.7 μm and 2.6 μm

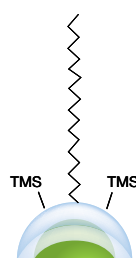
Overall retention of both acidic and basic peptides through C18 stationary phase with di-isobutyl side chains



Biozen Peptide PS-C18
1.6 μm and 3 μm

Excellent retention by combined positively charged surface ligand and C18 ligand

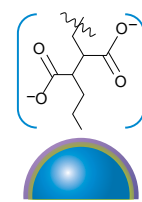
Oligonucleotides



Biozen Oligo
1.7 μm and 2.6 μm

Organo-silica core-shell particle bonded with a C18 stationary phase offers high selectivity for even minute oligo differences alongside high and low pH robustness

Ion-Exchange



Biozen WCX
6 μm

Monosized particles grafted with linear polycarboxylate chains to envelop and separate proteins from acidic/basic variants

Small Molecule Analysis Solutions

Kinetex and Luna Omega Column Portfolio



Expand Your LC Toolbox

Improve your small molecule analysis with the unique selectivities of **Kinetex and Luna Omega LC columns**.

General Purpose C18	Polar Acids	Polar Bases	Aromatic Compounds	HILIC
<p>Kinetex C18 1.3, 1.7, 2.6, 5 μm</p> <p>Balanced C18 phase that provides the highest degree of hydrophobic selectivity relative to other Kinetex phases</p>	<p>Kinetex Polar C18 2.6 μm</p> <p>Combined C18 and polar modified surface that provides polar and non-polar retention alongside 100% aqueous stability</p>	<p>Kinetex PS C18 2.6 μm</p> <p>A multi-modal C18 column with a unique positive surface modification that demonstrates unique selectivity and improved peak shape for basic compounds</p>	<p>Kinetex Biphenyl 1.6, 2.6, 5 μm</p> <p>100% aqueous stable reversed phase chemistry with hydrophobic, aromatic, and enhanced polar selectivity</p>	<p>Luna Omega SUGAR 3 μm</p> <p>Novel nitrogen containing stationary phase that greatly increases the retention of sugars and sugar alcohols under HILIC conditions</p>
<p>Luna Omega C18 1.6, 3, 5 μm</p> <p>Excellent degree of hydrophobic selectivity and extremely reproducible</p>	<p>Luna Omega Polar C18 1.6, 3, 5 μm</p> <p>Enhanced selectivity/retention for polar analytes without diminishing useful non-polar retention</p>	<p>Luna Omega PS C18 1.6, 3, 5 μm</p> <p>Unique surface chemistry with balanced hydrophobic and polar retention</p>	<p>Kinetex F5 1.7, 2.6, 5 μm</p> <p>Highly reproducible pentafluorophenylpropyl phase, exceptional for halogenated, conjugated, isomeric, or highly polar compounds</p>	<p>Kinetex HILIC 1.7, 2.6, 5 μm</p> <p>Used under HILIC running conditions, this phase provides the highest polar selectivity for retention and separation of hydrophilic compounds</p>

Material Characteristics

Packing Material	Particle Size (μm)	Pore Size (Å)	Effective Surface Area (m ² /g)	Effective Carbon Load (%)	pH Stability	Pressure Stability
Luna Omega Phases						
C18	1.6, 3, 5	100	260	11	1.5 - 8.5*	1,034/345** bar
Polar C18	1.6, 3, 5	100	260	9	1.5 - 8.5*	
PS C18	1.6, 3, 5	100	260	9	1.5 - 8.5*	
SUGAR	3	100	260	< 2	2.0 - 7.0*	
Kinetex Phases						
Polar C18	2.6	100	200	9	1.5 - 8.5*	1,000/600† bar
PS C18	2.6	100	200	11	1.0 - 12.0	
EVO C18	1.7, 2.6, 5	100	200	11	1.0 - 12.0	
C18	1.3, 1.7, 2.6, 5	100	200	12	1.5 - 8.5*	
XB-C18	1.7, 2.6, 3.5, 5	100	200	10	1.5 - 8.5*	
C8	1.7, 2.6, 5	100	200	8	1.5 - 8.5*	
F5	1.7, 2.6, 5	100	200	9	1.5 - 8.5	
Biphenyl	1.7, 2.6, 5	100	200	11	1.5 - 8.5*	
Phenyl-Hexyl	1.7, 2.6, 5	100	200	11	1.5 - 8.5*	
HILIC	1.7, 2.6, 5	100	200	0	2.0 - 7.5	

* pH stability under gradient conditions. pH stability is 1.5 - 10 under isocratic conditions.

** 1.6 μm Luna Omega columns are pressure stable up to 1,034 bar and 3 or 5 μm are stable up to 345 bar.

† 2.1 mm ID Kinetex columns are pressure stable up to 1000 bar.

When using Kinetex 1.3 μm or 1.7 μm, increased performance can be achieved, however high pressure-capable instrumentation is required.

Ordering Information

SecurityCAP



Mobile Phase (Eluent) Safety Starter Kits

SecurityCAP Mobile Phase Starter Kits		
Part No.	Description	Unit
AC2-1245	2-port GL45 Cap and 6-month Safety Filter	ea
AC2-4245	2-port GL45 Caps (x4) and 6-month Safety Filter (x4)	ea
AC2-4240	2-port Merck S40 Caps (x4) and 6-month Safety Filter (x4)	ea
AC2-1345	3-port GL45 Cap and 6-month Safety Filter	ea
AC2-4345	3-port GL45 Caps (x4) and 6-month Safety Filter (x4)	ea
AC2-1445	4-port GL45 Cap and 6-month Safety Filter	ea
AC2-4445	4-port GL45 Cap (x1) and 2-port Cap (3x) and 6-month Safety Filter (x4)	ea
AC2-1545	5-port GL45 Cap and 6-month Safety Filter	ea
AC2-1561	5-port S60/S61 Cap and 6-month Safety Filter	ea

Waste Safety Starter Kits

SecurityCAP Waste Starter Kits		
Part No.	Description	Unit
AC1-1245	2-port GL/DIN45 Cap and 6-month Exhaust Filter and Barbed connector	ea
AC1-1545	5-port GL/DIN45 Cap and 6-month Exhaust Filter	ea
AC1-1551	5-port DIN51 Cap and 6-month Exhaust Filter	ea
AC1-1553	5-port B53 Cap and 6-month Exhaust Filter	ea
AC1-1561	5-port S61 Cap and 6-month Exhaust Filter	ea



Replacement Filters

SecurityCAP Mobile Phase Safety Filter		
Part No.	Description	Unit
AC2-0161	6-month Capacity, 1/4 in.-28 Threads	ea
AC2-0961	6-month Capacity, 1/4 in.-28 Threads	10/pk
SecurityCAP Waste Safety Filters		
Part No.	Description	Unit
AC1-0161	6-month Exhaust Filter for SecurityCAP, 1/4 in.-28 Threads	ea
AC1-0361	6-month Exhaust Filter for SecurityCAP, 1/4 in.-28 Threads	3/pk
AC1-0162	6-month Exhaust Filter for Wide-port Caps, GL14 Threads	ea
AC1-0362	6-month Exhaust Filter for Wide-port Caps, GL14 Threads	3/pk

SecurityCAP Waste Safety Filter Compatibility Table

Supplier	Phenomenex SecurityCAP Filters	
	ea	3/pk
S.C.A.T.® SafetyWasteCaps	AC1-0162	AC1-0362
AIT® Smart Healthy Caps	AC1-0162	AC1-0362
Agilent® InfinityLab Stay Safe Caps	AC1-0162	AC1-0362
VICI Jour® Waste Caps	AC1-0161	AC1-0361
Canary-Safe™ Safety Caps	AC1-0162	AC1-0362
DURAN® DG Safety Caps	AC1-0162	AC1-0362
VapLock™ Safety Caps (with AC3-1111)	AC1-0161	AC1-0361



Fittings and Accessories

SecurityCAP Fittings		
Part No.	Description	Unit
AC3-1101	for 1/8 in. or 2.0 mm OD Tubing, 1/4 in.-28 Threads (POM), blue	ea
AC3-1201	for 2.3-2.6 mm OD Tubing, 1/4 in.-28 Threads (POM), white	ea
AC3-2101	for 1/8 in. OD Tubing, 1/4 in.-28 Threads (POM), black	ea
SecurityCAP Connectors		
Part No.	Description	Unit
AC3-1001	Barbed connector, for 5-8 mm ID Tubing (PTFE), white	ea
AC3-1301	Y-connector for 6-8 mm ID Tubing (POM), white	ea
SecurityCAP Adapter		
Part No.	Description	Unit
AC2-1138	Cap Thread Adapter, PTFE, GPI/GL 38 Female to GL45 Male	ea
AC3-1111	Waste Adapter for Male 1/4 in. NPT-port (PTFE)	ea
SecurityCAP Sealing Plug		
Part No.	Description	Unit
AC3-2001	1/4 in.-28 Threads (POM), white	ea

POM = polyoxymethylene
PTFE = polytetrafluoroethylene (Teflon®)

Disclaimer

The 6 month SecurityCAP filter lifetime is a general guideline based on running a single instrument for 8 hours a day at 1 mL/min.

SecurityCAP filters may need to be changed more or less frequently based on the system usage.

Ordering Information

SecurityLINK

SecurityLINK 

UHPLC Connections in a Click

PEEKsil™ Double-Sided 10-32 Fittings for 1/16 in. Ports



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-2111	25	100	1/16	1/16
AJ1-2121	25	150	1/16	1/16
AJ1-2141	25	250	1/16	1/16
AJ1-2151	25	300	1/16	1/16
AJ1-2171	25	500	1/16	1/16
AJ1-2191	25	750	1/16	1/16
AJ1-21A1	25	1000	1/16	1/16
AJ1-2211	50	100	1/16	1/16
AJ1-2221	50	150	1/16	1/16
AJ1-2231	50	200	1/16	1/16
AJ1-2241	50	250	1/16	1/16
AJ1-2251	50	300	1/16	1/16
AJ1-2271	50	500	1/16	1/16
AJ1-2291	50	750	1/16	1/16
AJ1-22A1	50	1000	1/16	1/16
AJ1-2321	75	150	1/16	1/16
AJ1-2341	75	250	1/16	1/16
AJ1-2371	75	500	1/16	1/16
AJ1-23A1	75	1000	1/16	1/16
AJ1-2411	100	100	1/16	1/16
AJ1-2421	100	150	1/16	1/16
AJ1-2441	100	250	1/16	1/16
AJ1-2461	100	350	1/16	1/16
AJ1-2471	100	500	1/16	1/16
AJ1-24A1	100	1000	1/16	1/16

PEEK-Lined Stainless Steel Double-Sided 10-32 Fittings for 1/16 in. Ports



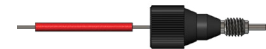
Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-3121	25	150	1/16	1/16
AJ1-3141	25	250	1/16	1/16
AJ1-3161	25	350	1/16	1/16
AJ1-3171	25	500	1/16	1/16
AJ1-3181	25	600	1/16	1/16
AJ1-3221	50	150	1/16	1/16
AJ1-3241	50	250	1/16	1/16
AJ1-3261	50	350	1/16	1/16
AJ1-3271	50	500	1/16	1/16
AJ1-3281	50	600	1/16	1/16
AJ1-3321	75	150	1/16	1/16
AJ1-3341	75	250	1/16	1/16
AJ1-3361	75	350	1/16	1/16
AJ1-3371	75	500	1/16	1/16
AJ1-3381	75	600	1/16	1/16
AJ1-3421	100	150	1/16	1/16
AJ1-3441	100	250	1/16	1/16
AJ1-3461	100	350	1/16	1/16
AJ1-3471	100	500	1/16	1/16
AJ1-3481	100	600	1/16	1/16

Stainless Steel Double-Sided 10-32 Fittings for 1/16 in. Ports



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-14A1	100	1000	1/16	1/16
AJ1-1411	100	100	1/16	1/16
AJ1-1414	100	100	1/16	1/16
AJ1-1421	100	150	1/16	1/16
AJ1-1441	100	250	1/16	1/16
AJ1-1461	100	350	1/16	1/16
AJ1-1471	100	500	1/16	1/16
AJ1-1481	100	600	1/16	1/16
AJ1-15A1	125	1000	1/16	1/16
AJ1-1521	125	150	1/16	1/16
AJ1-1541	125	250	1/16	1/16
AJ1-1561	125	350	1/16	1/16
AJ1-1571	125	500	1/16	1/16
AJ1-1581	125	600	1/16	1/16
AJ1-1611	254	100	1/16	1/16
AJ1-1621	254	150	1/16	1/16
AJ1-1641	254	250	1/16	1/16
AJ1-1661	254	350	1/16	1/16
AJ1-1671	254	500	1/16	1/16
AJ1-1681	254	600	1/16	1/16

PEEKsil Single-Sided Fittings 1/2 in. OD PEEKsil Tubing with one 10-32 fitting for 1/16 in. ports, and one side with no fitting



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-21B1	25	1500	1/16	None
AJ1-2124	25	150	1/16	None
AJ1-2174	25	500	1/16	None
AJ1-2194	25	750	1/16	None
AJ1-2224	50	150	1/16	None
AJ1-2274	50	500	1/16	None
AJ1-2294	50	750	1/16	None
AJ1-22A4	50	1000	1/16	None



Phenomenex Column / Tubing ID Recommendation Chart

	Nano	Microbore	Analytical				Semi-Prep	
Column ID	0.05 - 0.1 mm (50 µm - 100 µm)	0.3 - 0.5 mm (300 µm - 500 µm)	1 mm	2.1 mm	3 mm	4.6 mm	7.8 mm	9.0 - 16.0 mm
Tubing ID	25 µm	50 µm	50 µm - 75 µm	100 µm	100 µm	100 µm	120 µm	254 µm

Reorder Tip



SecurityLINK tubing material includes a sleeve that provides: part number and lot number information.

Ordering Information

SecurityGuard ULTRA Cartridges



Ordering Information



Material	Description	pH Stability	Column ID (mm)		
			2.1	3.0	4.6
Cartridges for General Purpose/ Pharmaceutical					
			/3pk	/3pk	/3pk
EVO C18	(ODS, Octadecyl)	1.0 – 12.0	AJ0-9298	AJ0-9297	AJ0-9296
C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-8782	AJ0-8775	AJ0-8768
C8	(MOS, Octyl)	1.5 – 8.5*	AJ0-8784	AJ0-8777	AJ0-8770
PFP	(Pentafluorophenyl)	1.5 – 8.5*	AJ0-8787	AJ0-8780	AJ0-8773
F5	(Pentafluorophenyl)	1.5 – 8.5*	AJ0-9322	AJ0-9321	AJ0-9320
Biphenyl	(Biphenyl)	1.5 – 8.5*	AJ0-9209	AJ0-9208	AJ0-9207
Phenyl	(Phenylhexyl)	1.5 – 8.5*	AJ0-8788	AJ0-8781	AJ0-8774
HILIC	(HILIC)	2.0 – 7.5	AJ0-8786	AJ0-8779	AJ0-8772
Polar C18	(Polar Functional C18)	1.5 – 8.5*	AJ0-9532	AJ0-9531	AJ0-9530
Cartridges for General Purpose/Pharmaceutical (Fully Porous Columns)					
<i>For fully porous columns like Luna™ Omega (Phenomenex)</i>					
C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-9502	AJ0-9501	AJ0-9500
Polar C18	(Polar Functional C18)	1.5 – 8.5*	AJ0-9505	—	—
PS C18	(Positive Functional C18)	1.5 – 8.5*	AJ0-9508	—	—
Cartridges for Protein and Peptide Reversed Phase					
<i>For use with columns like Aeris™ (Phenomenex)</i>					
Widopore C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-8783	—	AJ0-8769
Widopore C8	(MOS, Octyl)	1.5 – 8.5*	AJ0-8785	—	AJ0-8771
Widopore C4	(Butyl)	1.5 – 8.5*	AJ0-8899	—	AJ0-8901
Peptide C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-8948	—	AJ0-8946
<i>For use with columns like Biozen™ (Phenomenex)</i>					
Glycan	(Amide Polyol)	2.0 – 7.5	AJ0-9800	—	—
Peptide PS-C18 1.6µm	(Positive Functional C18)	1.5 – 8.5*	AJ0-9803	—	—
Peptide XB-C18	(ODS, Octadecyl)	1.5 – 9.0**	AJ0-9806	—	AJ0-9808
WidePore C4	(Butyl)	1.5 – 9.0**	AJ0-9816	—	AJ0-9818
Intact XB-C18	(MOS, Octyl)	1.5 – 9.0**	AJ0-9812	—	AJ0-9814
Oligo	(ODS, Octadecyl)	1.0 – 12.0	AJ0-9820	—	AJ0-9822
dSEC-2 1.8µm	(Diol)	2.5 – 7.5	—	—	AJ0-9851
dSEC-2 3µm	(Diol)	2.5 – 7.5	—	—	AJ0-9850
SEC-2	(Diol)	1.5 – 8.5	—	—	AJ0-9850
SEC-3	(Diol)	1.5 – 8.5	—	—	AJ0-9851
Cartridges for Synthetic DNA / RNA Analysis					
<i>For use with columns like Clarity™ (Phenomenex)</i>					
Oligo-MS C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-9068	—	—
Oligo-XT	(ODS, Octadecyl)	1.0 – 12.0	AJ0-9515	—	AJ0-9514
Cartridges for Silica GFC (Gel Filtration Chromatography)					
<i>(Aqueous SEC) For use with silica GFC columns such as Yarra™ (Phenomenex)</i>					
X150	—	1.5 – 8.5	—	—	AJ0-9512
X300	—	1.5 – 8.5	—	—	AJ0-9513



SecurityGuard ULTRA Cartridge Holder

Part No.	Description	Unit
AJ0-9000	SecurityGuard ULTRA Cartridge Holder	ea

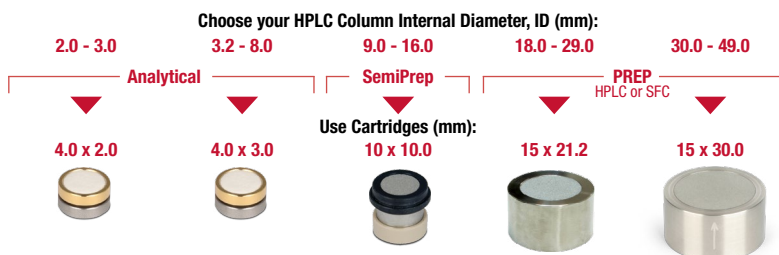
Ordering Information

Cartridges and Holders



Step 1: Choose column ID

Step 2: Match column phase



Material	Description	pH Stability	Use Cartridges (mm):				
Cartridges for General Purpose/Pharmaceutical			/10pk	/10pk	/3pk	ea	ea
C18	(ODS, Octadecyl)	1.5 - 10	AJ0-4286	AJ0-4287	AJ0-7221	AJ0-7839	AJ0-8301
C12	(Dodecyl)	1.5 - 10	AJ0-6073	AJ0-6074	AJ0-7275	AJ0-7842	AJ0-8304
C8	(MOS, Octyl)	1.5 - 10	AJ0-4289	AJ0-4290	AJ0-7222	AJ0-7840	AJ0-8302
C5	(Pentyl)	1.5 - 10	AJ0-4292	AJ0-4293	AJ0-7372	—	—
C1	(TMS)	2 - 9	—	AJ0-4299	—	—	—
Silica	—	—	AJ0-4347	AJ0-4348	AJ0-7223	AJ0-7229	AJ0-8312
HILIC	(HILIC)	1.5 - 8	AJ0-8328	AJ0-8329	AJ0-8902	—	—
NH ₂	(Amino, Aminopropyl)	1.5 - 11	AJ0-4301	AJ0-4302	AJ0-7364	AJ0-8162	AJ0-8309
CN	(Cyano, Cyanopropyl)	2 - 7.5	AJ0-4304	AJ0-4305	AJ0-7313	AJ0-8220	AJ0-8311
Phenyl	(Phenylhexyl)	1.5 - 10	AJ0-4350	AJ0-4351	AJ0-7314	AJ0-7841	AJ0-8303
PPF(2)	(Pentafluorophenyl)	1.5 - 8	AJ0-8326	AJ0-8327	AJ0-8376	AJ0-8377	AJ0-8378
SCX	(SA, Strong Cation Exchanger)	2.5 - 7.5	AJ0-4307	AJ0-4308	—	—	AJ0-8596
SAX	(SB, Strong Anion Exchanger)	2.5 - 7.5	—	AJ0-4311	—	—	—
RP-1	(Reversed Phase - Polymer)	0 - 14	—	AJ0-5809	AJ0-7368	AJ0-8358	—
Polar-RP	(Ether-linked Phenyl)	1.5 - 7	AJ0-6075	AJ0-6076	AJ0-7276	AJ0-7845	—
Fusion-RP	(C18 Polar Embedded)	1.5 - 10	AJ0-7556	AJ0-7557	AJ0-7558	AJ0-7844	—
AQ C18	(Polar Endcapped C18)	1.5 - 7.5	AJ0-7510	AJ0-7511	AJ0-7512	AJ0-7843	AJ0-8305
Gemini™ NX-C18	(C18 Twin-NX™ Technology)	1 - 12	AJ0-8367	AJ0-8368	AJ0-8369	AJ0-8370	AJ0-8371
Gemini C18	(C18 Twin™ Technology)	1 - 12	AJ0-7596	AJ0-7597	AJ0-7598	AJ0-7846	AJ0-8308
Gemini C6-Phenyl	(C6-Phenyl Twin Technology)	1 - 12	AJ0-7914	AJ0-7915	AJ0-9156	AJ0-9157	AJ0-9158
Luna™ Omega Polar C18	(Polar Functional C18)	1.5 - 10	AJ0-7600	AJ0-7601	AJ0-9519	AJ0-7603	AJ0-7604
Luna Omega PS C18	(Mixed-Mode C18)	1.5 - 10	AJ0-7605	AJ0-7606	AJ0-9520	AJ0-7608	AJ0-7609
Cartridges for Chiral			/10pk	/10pk	/3pk	ea	ea
<i>For use with chiral columns, such as Lux™ Cellulose-1, -2, -3, -4, i-Cellulose-5, i-Amylose-1, & Amylose-1, -2 (Phenomenex); CHIRALCEL® OD-H®, OJ-H® & CHIRALPAK® AD®-H, IA®, IG®, IC® (DAICEL Corporation)</i>							
Lux i-Amylose-1	Amylose tris (3, 5-dimethylphenylcarbamate)	2 - 9	—	AJ0-8641	AJ0-8642	AJ0-8643	AJ0-8644
Lux i-Amylose-3	Amylose tris (3-chloro-5-methylphenylcarbamate)	2 - 9	AJ0-8651	AJ0-8650	AJ0-8652	AJ0-8653	AJ0-8654
Lux i-Cellulose-5	Cellulose tris (3, 5-dichlorophenylcarbamate)	2 - 9	AJ0-8631	AJ0-8632	AJ0-8633	AJ0-8634	—
Lux Cellulose-1	Cellulose tris (3, 5-dimethylphenylcarbamate)	2 - 9	AJ0-8402	AJ0-8403	AJ0-8404	AJ0-8405	AJ0-8406
Lux Cellulose-2	Cellulose tris (3-chloro-4-methylphenylcarbamate)	2 - 9	AJ0-8398	AJ0-8366	AJ0-8399	AJ0-8400	—
Lux Cellulose-3	Cellulose tris (4-methylbenzoate)	2 - 9	AJ0-8621	AJ0-8622	AJ0-8623	AJ0-8624	AJ0-8625
Lux Cellulose-4	Cellulose tris (4-chloro-3-methylphenylcarbamate)	2 - 9	AJ0-8626	AJ0-8627	AJ0-8628	AJ0-8629	AJ0-8630
Lux Amylose-1	Amylose tris (3, 5-dimethylphenylcarbamate)	2 - 9	AJ0-9337	AJ0-9336	AJ0-9344	AJ0-9338	AJ0-9339
Lux Amylose-2	Amylose tris (5-chloro-2-methylphenylcarbamate)	2 - 9	AJ0-8471	AJ0-8470	AJ0-8472	AJ0-8473	—
Lux AMP	—	1 - 11.5	AJ0-8475	AJ0-8476	—	—	—
HPLC Guard Cartridge Holders (one-time purchase only)			/kit	/holder	/kit	/kit	
Reusable Holder			KJ0-4282	AJ0-9281	AJ0-8223	AJ0-8277	
SFC Guard Cartridge Holders			/kit	/holder	/kit	/kit	
Reusable Holder			KJ0-4282	AJ0-9281	AJ0-8617	AJ0-8618	

*For all core-shell and/or < 3µm particle columns use 2.1 to 4.6mm ID SecurityGuard ULTRA Holder and Cartridges, see page 307

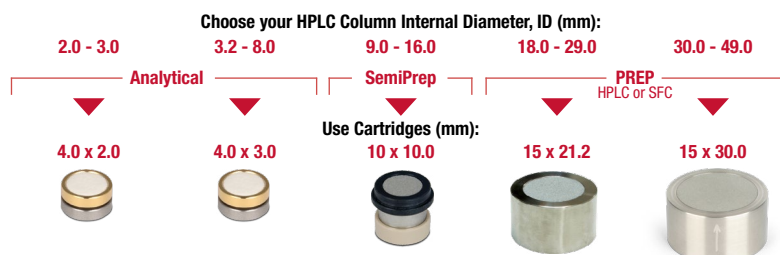
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Ordering Information

Cartridges and Holders (cont'd)

Step 1: Choose column ID

Step 2: Match column phase



Material	Description	pH Stability	2.0 - 3.0	3.2 - 8.0	9.0 - 16.0	18.0 - 29.0	30.0 - 49.0
Cartridges for Core-Shell Media			—	—	/3pk	ea	ea
<i>For core-shell media columns, such as Kinetex™ and Aeris™ (Phenomenex).</i>							
EVO C18	(ODS, Octadecyl)	1 - 12	*	*	AJ0-9306	AJ0-9304	AJ0-9305
C18	(ODS, Octadecyl)	1.5 - 8.5	*	*	AJ0-9278	AJ0-9145	AJ0-9204
C8	(MOS, Octyl)	1.5 - 8.5	*	*	—	AJ0-9205	—
PFP	(Pentafluorophenyl)	1.5 - 8.5	*	*	—	AJ0-9146	—
F5	(Pentafluorophenylpropyl)	1.5 - 8.5	*	*	AJ0-9323	AJ0-9324	—
Phenyl-Hexyl	(Phenylhexyl)	1.5 - 9	*	*	—	AJ0-9147	AJ0-9216
Biphenyl	(Biphenyl)	1.5 - 8.5	*	*	AJ0-9280	AJ0-9272	—
HILIC	(HILIC)	2 - 7.5	*	*	—	AJ0-9277	—
C18-Peptide	(ODS, Octadecyl)	1.5 - 9	*	*	AJ0-9317	AJ0-9318	—
Cartridges for Protein and Polypeptide Reversed Phase			/10pk	/10pk	/3pk	ea	ea
<i>For use with silica columns for separation of proteins & peptides, such as Jupiter™ (Phenomenex) and other widepore or 300Å brands.</i>							
Widepore C18	(ODS, Octadecyl)	1.5 - 10	AJ0-4320	AJ0-4321	AJ0-7224	AJ0-7230	AJ0-8313
Widepore C5	(Pentyl)	1.5 - 10	AJ0-4326	AJ0-4327	AJ0-7371	—	—
Widepore C4	(Butyl)	1.5 - 10	AJ0-4329	AJ0-4330	AJ0-7225	AJ0-7231	AJ0-8314
<i>For use with columns like Biozen™ (Phenomenex).</i>							
Peptide PS-C18 3 µm	(Positive Functional C18)	1.5 - 8.5*	AJ0-7605	AJ0-7606	—	—	—
Ion-Exchange	(Weak Cation Exchanger)	2 - 12	AJ0-9401	AJ0-9400	—	—	—
Cartridges for Synthetic DNA / RNA Analysis			/10pk	/10pk	/3pk	ea	ea
<i>For use with columns like Clarity™ (Phenomenex).</i>							
Oligo-RP™	(C18 Twin Technology)	1 - 12	AJ0-8134	AJ0-8135	AJ0-8136	AJ0-8210	—
Oligo-XT	(ODS, Octadecyl)	1 - 12	*	*	AJ0-9516	AJ0-9517	AJ0-9518
Cartridges for Silica GFC (Gel Filtration Chromatography)			—	/10pk	—	ea	—
<i>(Aqueous SEC) For use with silica GFC columns, such as Yarra™ and BioSep™ (Phenomenex); ZORBAX® GF-Series (Agilent); Bio-Sil® (Bio-Rad®).</i>							
GFC-2000	—	2 - 7.5	—	AJ0-4487	—	AJ0-8588	—
GFC-3000	—	2 - 7.5	—	AJ0-4488	—	AJ0-8589	—
GFC-4000	—	2 - 7.5	—	AJ0-4489	—	AJ0-8590	—
Cartridges for Polymer GPC (Gel Permeation Chromatography)			—	/3pk	—	—	—
<i>(Organic GPC) For use with polymer GPC columns, such as Phenogel™ (Phenomenex); PLgel™ (Agilent®); SDV® (PSS); Styragel® (Waters®); GPC Series (Shodex®); TSKgel® (Tosoh Bioscience®)</i>							
GPC***	—	0 - 14	—	AJ0-9292	—	—	—
Cartridges for Carbohydrate/Organic Acid			—	/10pk	—	—	—
<i>For organic acid and carbohydrate analysis, such as Rezex™ (Phenomenex); Aminex® (Bio-Rad); Sugar-Pak™ (Waters).</i>							
Carbo-H ⁺	—	1 - 8	—	AJ0-4490	—	—	—
Carbo-Ag ⁺⁺	—	Neutral	—	AJ0-4491	—	—	—
Carbo-Pb ⁺²	—	Neutral	—	AJ0-4492	—	—	—
Carbo-Ca ⁺²	—	Neutral	—	AJ0-4493	—	—	—
HPLC Guard Cartridge Holders (one-time purchase only)			—	/kit	/holder	/kit	/kit
Reusable Holder	—	—	KJ0-4282	—	AJ0-9281	AJ0-8223	AJ0-8277
SFC Guard Cartridge Holders			—	/kit	/holder	/kit	/kit
Reusable Holder	—	—	KJ0-4282	—	AJ0-9281	AJ0-8617	AJ0-8618

*For all core-shell and/or < 3 µm particle columns use 2.1 to 4.6 mm ID SecurityGuard ULTRA Holder and Cartridges, see page 307

**For use with saccharide and oligosaccharide columns in Ag+ form.

***Not compatible with HFIP solvent.

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SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362.

CAUTION: this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP, or ULTRA holders, or to any cartridges.

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