

SecurityGuardTM
ULTRA
UHPLC Column Protection

Save Money and Extend UHPLC Column Performance. Guaranteed.



phenomenex[®]
...breaking with traditionSM

Less frequent column replacement

Save Time and Money

It's a fact! Chemical contaminants and particulates are a natural part of chromatography analysis, especially under demanding UHPLC conditions.

The easiest way to extend core-shell and sub- $2\mu\text{m}$ column performance is to remove contaminants and particulates with the SecurityGuard™ ULTRA guard cartridge system before they reach your UHPLC column and degrade your ultra-high efficiency chromatography.

Contaminant and particle buildup

Scanning electron microscopy of column inlet frit

(24000 times magnification)

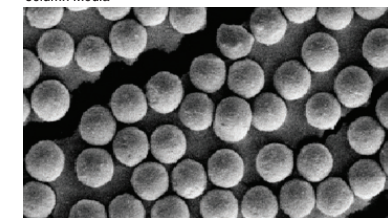
With SecurityGuard ULTRA



Inlet Frit



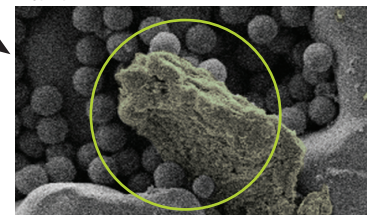
Column Media



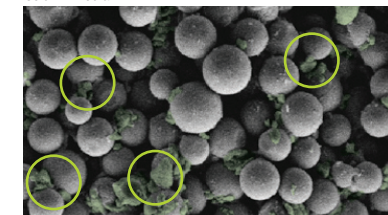
Without SecurityGuard ULTRA



Inlet Frit



Column Media



Removes harmful contaminants and particulates

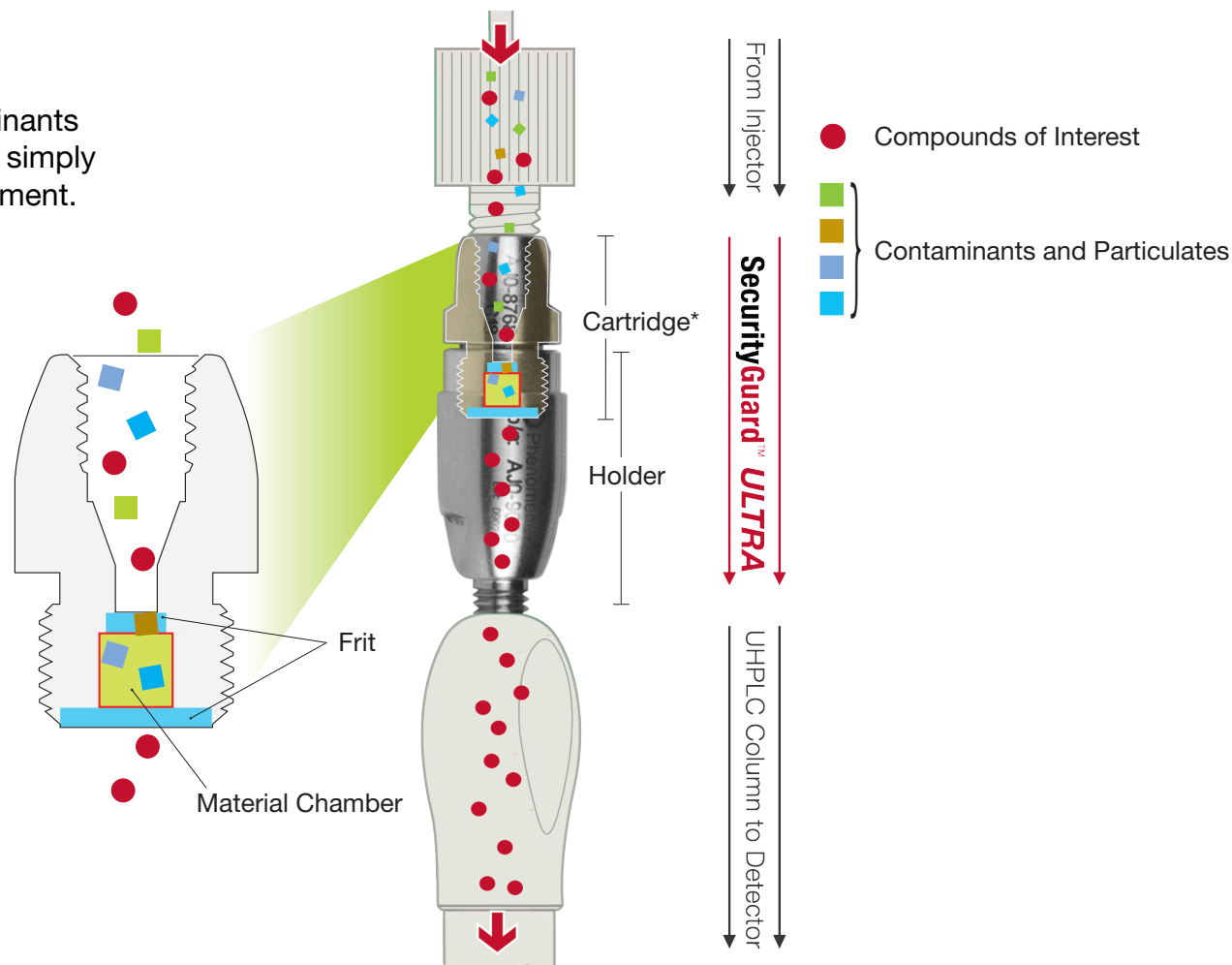
Longer Column Lifetime

The SecurityGuard ULTRA cartridge traps contaminants and particulates. Once the cartridge is exhausted, simply replace it instead of your expensive column investment.

The universal holder provides a leak-free connection to virtually any UHPLC column.

Final result:

- Increased column lifetime
- Higher column performance
- More reproducible chromatography
- Fewer wasted columns



* Cartridge schematic not drawn to scale

Specifically for UHPLC columns and methods

Easy to Use, Innovative Design

The SecurityGuard™ ULTRA column protection system is designed to extend the lifetime of sub-2 µm and core-shell columns, while maintaining the ultra-high performance results they generate.

- ① **Auto-adjusting Tip**
provides a leak-free connection to virtually any UHPLC column.
- ② **Re-usable Holder**
minimizes costs and waste.
- ③ **Disposable Cartridge**
for quick and easy removal and replacement.
- ④ **Packed with Media**
for maximum column protection.
- ⑤ **Conveniently Labeled**
to ensure guard-to-column phase compatibility.

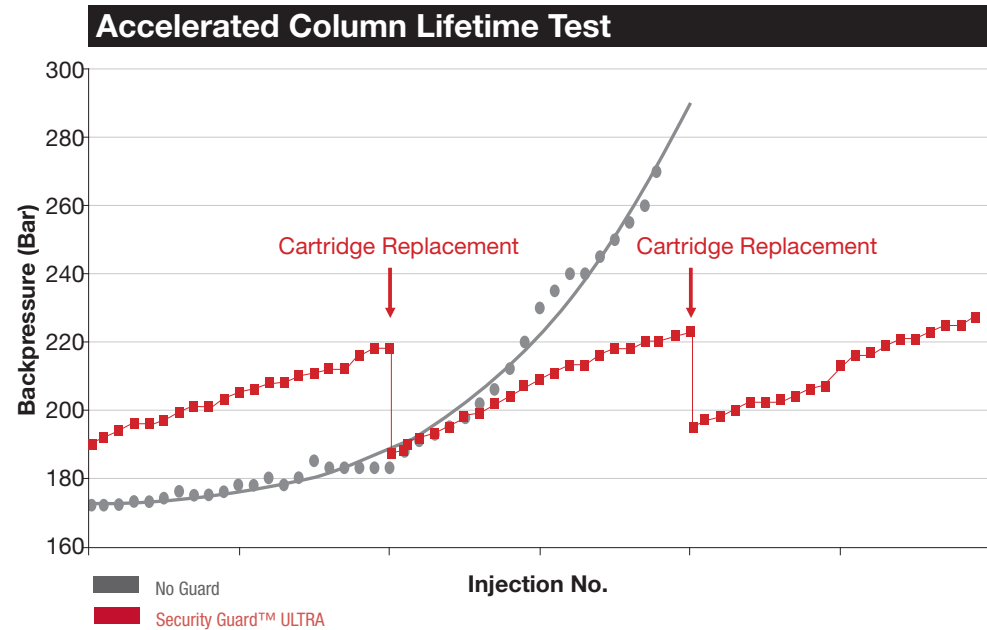


Keep columns performing their best

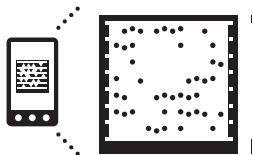
One Easy Step

When contaminants and particulates build up at the head of the column or on the guard cartridges, system pressures dramatically increase.

By simply replacing the SecurityGuard™ ULTRA cartridge instead of your sub-2µm or core-shell UHPLC column you are able to regain normal operating conditions and reclaim original column performance.



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



Get the free mobile app for your phone
<http://gettag.mobi>

Watch how easy it is to replace your cartridge

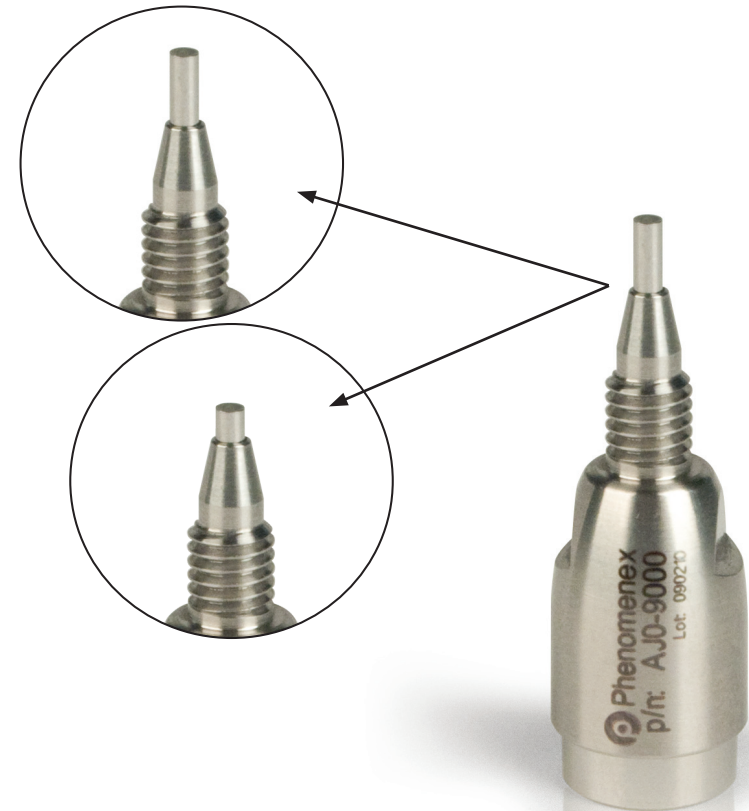
Universal connector

Protect Any UHPLC Column

Installing the SecurityGuard™ ULTRA protection system into your favorite UHPLC column is straightforward and easy.

The floating outlet from the SecurityGuard ULTRA universal holder automatically adjusts to the precise depth of virtually every manufacturer's analytical UHPLC column. This ensures a low dead-volume, leak-free connection, without the use of unions or adapters, no matter which manufacturer's UHPLC column you are using.

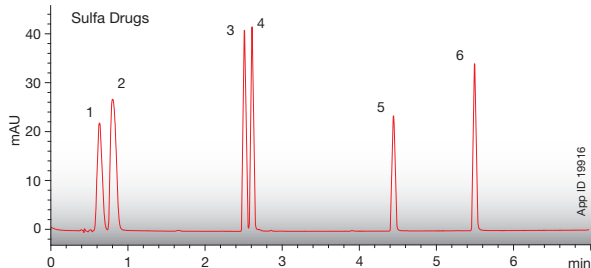
Tip adjusts to fit any UHPLC column



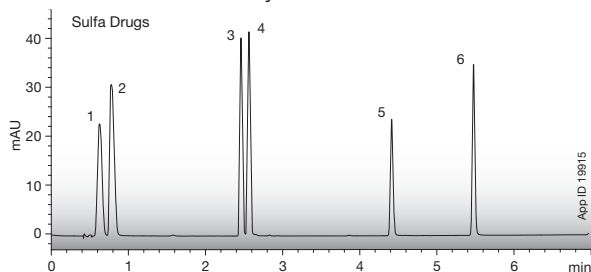
Compatible UHPLC Fittings

Virtually no effect on selectivity, efficiency, or backpressure.

Waters® ACQUITY® BEH™ C18
WITH SecurityGuard ULTRA



Waters® ACQUITY® BEH™ C18
WITHOUT SecurityGuard ULTRA

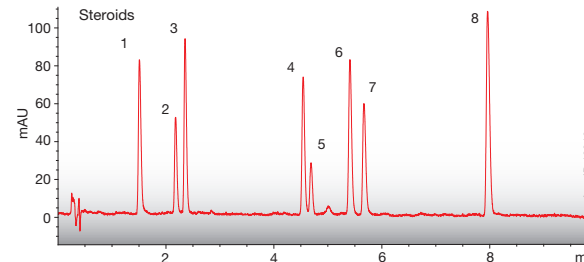


Conditions same for both applications:

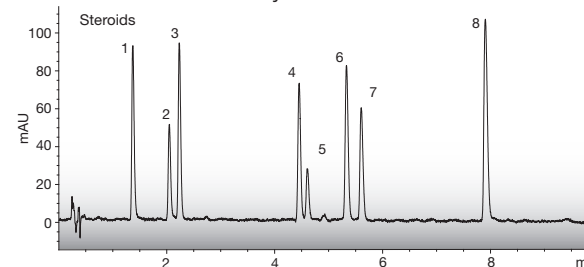
- Column: ACQUITY® BEH™ 1.7 µm C18
- Dimensions: 50 x 2.1 mm
- Mobile Phase: A: 0.1 % Formic acid in Water
B: 0.1 % Formic acid in Acetonitrile
- Gradient: A/B (97:3) to A/B (20:80) over 15 min
- Flow Rate: 0.3 mL/min
- Temperature: 22 °C
- Detection: UV @ 254 nm
- Sample: 1. Sulfaguandine
2. Sulfanilamide
3. Sulfathiazole
4. Sulfamerazine
5. Sulfamethoxazole
6. Sulfaquinoxaline

	SecurityGuard ULTRA	No Guard	Difference
Selectivity	1.09	1.06	2.1%
Efficiency	20.58	21.54	-4.5%
Backpressure	324	314	3.2%

Agilent® ZORBAX® SB-C18
WITH SecurityGuard ULTRA



Agilent® ZORBAX® SB-C18
WITHOUT SecurityGuard ULTRA



Conditions same for both applications:

- Column: ZORBAX® 1.8 µm SB-C18
- Dimensions: 50 x 2.1 mm
- Mobile Phase: A: Water
B: Acetonitrile
- Gradient: A/B (75:25) to A/B (40:60) over 8 min and hold for 2 min
- Flow Rate: 0.4 mL/min
- Temperature: 22 °C
- Detection: UV @ 220 nm
- Sample: 1. Estriol
2. Hydrocortisone
3. Cortisone
4. Estradiol
5. Cortisone-21-acetate
6. 21-Hydroxyprogesterone
7. Estrone
8. Deoxycorticosterone

	SecurityGuard ULTRA	No Guard	Difference
Selectivity	1.41	1.41	0%
Efficiency	0.068	0.063	-7.4%
Backpressure	311	322	3.5%

Protects hundreds of other UHPLC columns
Match your column at www.phenomenex.com/guardit

Comparative separations may not be representative of all applications.

Virtually no change in chromatography

Maintain UHPLC Performance!

SecurityGuard™ ULTRA maintains UHPLC column performance without altering your chromatography results. The extremely low dead-volume (<0.3 μm) of this unique guard design minimizes sample peak dispersion ensuring that ultra-high efficiency chromatography is maintained.

	No Guard	SecurityGuard ULTRA	Competitor
Efficiency	11795	11390	8591
Symmetry	0.92	0.86	0.69
Selectivity	1.47	1.46	1.46
Backpressure	354	384	384

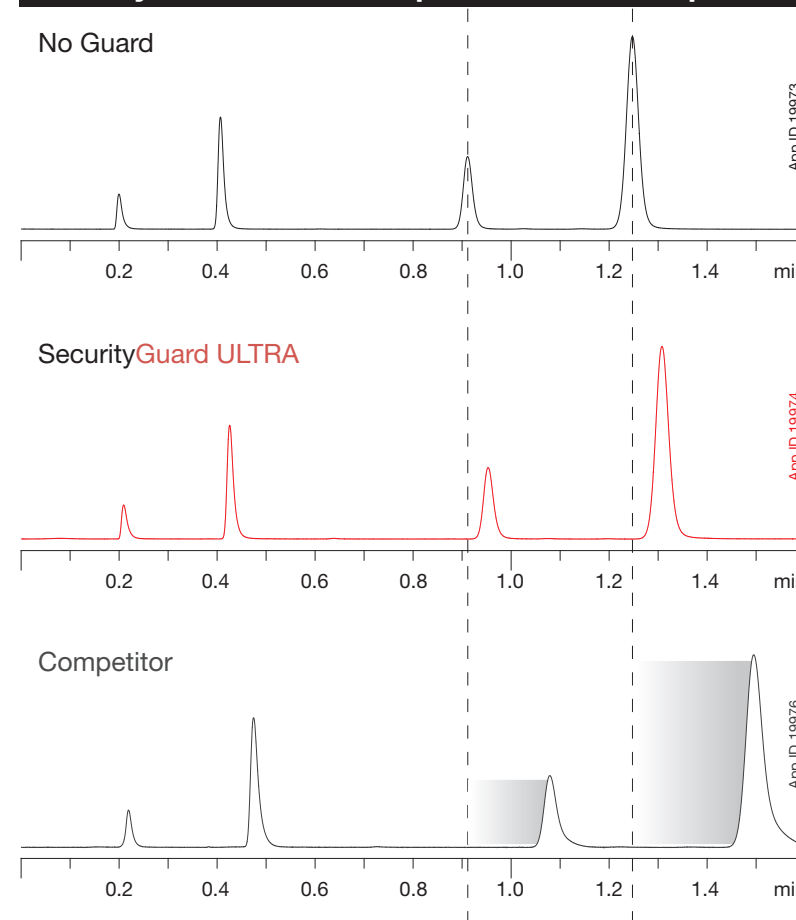
Conditions same for all applications:

Column: Kinetex™ 1.7 μm XB-C18
 Dimensions: 50 x 2.1 mm
 Mobile Phase: Acetonitrile/Water (50:50)
 Injection Volume: 1 μL
 Flow Rate: 1 mL/min
 Temperature: 22 °C

Detection: UV @ 270 nm
 Sample: 1. Acetophenone
 2. Benzene
 3. Toluene
 4. Naphthalene

Unlike competitor's 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.

SecurityGuard ULTRA outperforms the competition



Comparative separations may not be representative of all applications.

Ordering Information



Material	Description	pH Stability	Column ID (mm)		
			2.1	3.0	4.6
			/3pk	/3pk	/3pk
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
HILIC	HILIC	2.0 - 7.5	AJ0-8786	AJ0-8779	AJ0-8772
Phenyl	(Phenylhexyl)	1.5 – 8.5*	AJ0-8788	AJ0-8781	AJ0-8774

*pH stable 1.5 - 8.5 under gradient conditions. pH stable 1.5 - 10 under isocratic conditions.

guarantee

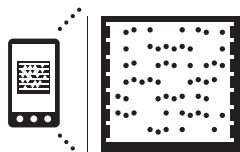
If SecurityGuard ULTRA cartridge protection system does not perform as well or better than your current guard cartridge system of similar phase and dimensions, send in your comparative data within 45 days and keep the SecurityGuard ULTRA for FREE.

SecurityGuard ULTRA Holder



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

AJ0-9000 is the universal holder designed for use with 2.1 mm, 3.0 mm and 4.6 mm ID cartridges.



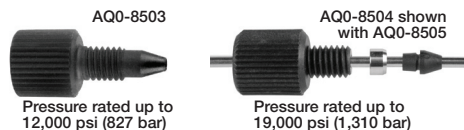
Get the free mobile app for your phone
<http://gettag.mobi>

See it in action:
www.phenomenex.com/SecurityGuardULTRA



UHPLC Fittings and Unions

PEEK™ Fittings



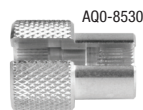
Ordering Information

Part No.	Description	Unit	Price
AQ0-8503	Sure-Lok High Pressure PEEK 1-Pc Nut, 10-32, for 1/16 in. Tubing, 12,000 psi (827 bar) **	10/pk	
AQ0-8504	Sure-Lok High Pressure PEEK Nut, 10-32, for 1/16 in. Tubing, 19,000 psi (1,310 bar) **,**	10/pk	
AQ0-8505	Sure-Lok PEEK Ferrule Assembly (2-pc), for High Pressure Nut (AQ0-8504)	10/pk	

* Ferrule assembly (AQ0-8505) must be ordered separately.

** Sure-Lok Fitting Tightening Tool (AQ0-8530) is recommended for AQ0-8503 and AQ0-8504

Sure-Lok™ Fitting Tightening Tool



Ordering Information

Part No.	Description	Unit	Price
AQ0-8530	Sure-Lok Fitting Tightening Tool, Aluminum	ea	

Stainless Steel Fittings



Ordering Information

Part No.	Description	Unit	Price
AQ0-8506	Nut and Ferrule Set, SS, 10-32, for 1/16 in. Tubing, 28,000 psi (1,930 bar)	10/pk	

Ultra-High Performance UHPLC/HPLC Stainless Steel Nut and Ferrule Set

For ultra-high pressure connections use this specially-designed 10-32 stainless steel nut and ferrule set. The metal ferrule cuts a ring near the end of the tube to swage the fitting to the tube, and will provide a maximum operational limit of 28,000 psi (1,930 bar). Seating (swaging) the fitting usually takes only about a 1/4 turn beyond the point where the ferrule first starts to grab the tubing.

Tubing Unions



Ordering Information

Part No.	Description	Unit	Price
AQ0-8507	Zero Dead-Volume Union, SS, with Fittings, 10-32, for 1/16 in. Tubing, 28,000 psi (1,930 bar)	ea	

Ultra-High Performance UHPLC/HPLC Stainless Steel Zero Dead-Volume Union

- Stainless steel construction
- Pressure rated to 28,000 psi (1,930 bar)
- For 1/16 in. OD tubing, with 10-32 threading
- 0.010 in. thru hole, 20 nL swept volume
- Includes 2 fittings (nuts and ferrules)

UHPLC Sample Filtration

Phenex™ Syringe Filters

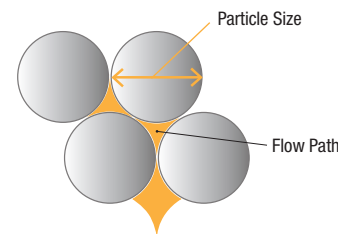
When using smaller particle UHPLC columns with low-volume connections, it is essential that microparticulates be removed first by pre-filtration.

Phenex syringe filters effectively remove unwanted sample particulates before they can enter the system flow path and cause blocked injectors, tubing, or clogged columns that degrade performance. For UHPLC columns packed with $\leq 2.6 \mu\text{m}$ chromatographic media, a syringe filter with $0.20 \mu\text{m}$ filter membrane is highly recommended.

Pre-filtering your sample will extend your column's lifetime, increase system uptime, and prevent unnecessary troubleshooting and rework.

Choose:

- Phenex-RC syringe filters for general purpose sample filtration of aqueous and mixed-organic solutions.
- Phenex-PTFE® syringe filters for clarification of non-aqueous based samples.



Column Particle Size (μm)	Flow Path (μm)	Recommended Syringe Filter Pore Size (μm)
5	0.72	0.45
3	0.43	0.20
2.6	0.38	0.20
1.7	0.25	0.20

Phenex™ Syringe Filters

Ordering Information

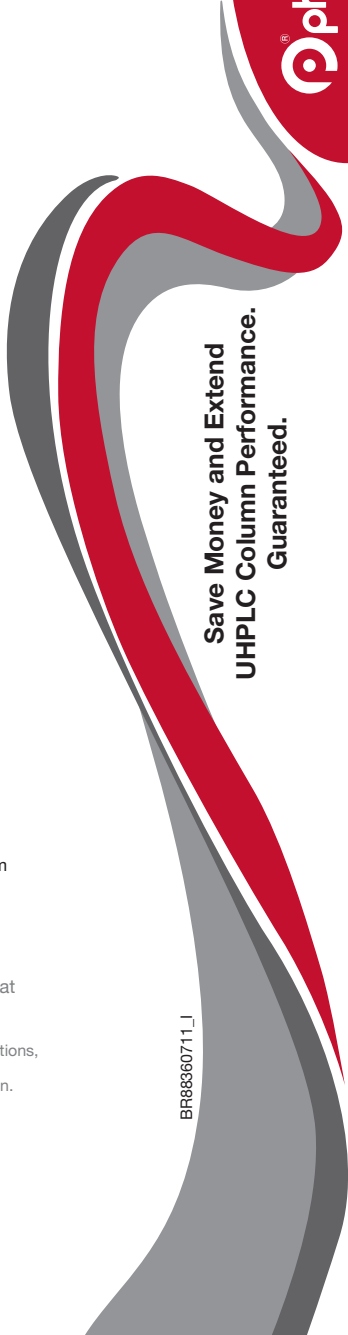
Membrane	4 mm Diameter for $\leq 2 \text{ mL}$ sample volumes			15 mm Diameter for 2 - 10 mL sample volumes			25 - 28 mm Diameter for 10 - 100 mL sample volumes			
	0.20 μm Pore Size	Part No.	Unit	Price	Part No.	Unit	Price	Part No.	Unit	Price
Phenex-RC (Regenerated Cellulose)		AF0-3203-12	100/pk		AF0-2203-12	100/pk		AF0-8203-12 ¹	100/pk	
		AF0-3203-52	500/pk		AF0-2203-52	500/pk		AF0-8203-52 ¹	500/pk	
Phenex-PTFE ² (Polytetrafluoro-ethylene)		AF0-3202-12	100/pk		AF0-2202-12	100/pk		AF0-1202-12	100/pk	
		AF0-3202-52	500/pk		AF0-2202-52	500/pk		AF0-1202-52	500/pk	

Above syringe filters are non-sterile. Housing is made of medical-grade polypropylene (PP) and offer luer lock inlet/slip outlet connections. Additional dimensions and membrane types are available. Larger quantity purchases at significant savings are available.

¹ 26 mm diameter

² Hydrophobic membrane. Can be made hydrophilic by pre-wetting with IPA.





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Guaranteed.

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