

2014

Laboratory  
EQUIPMENTReaders' Choice  
WINNER

# SecurityGuard<sup>TM</sup> Standard

HPLC and SFC Column Protection

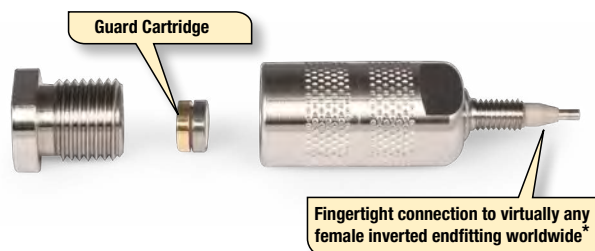
U.S. Patent No. 6, 162, 362

## Column Protection for UHPLC, HPLC, SFC to PREP

Your Results and Your Column are Too Important Not to Protect

- Protect HPLC and UHPLC columns and extend lifetime
- Virtually no change in chromatography
- Available in analytical, semi-prep, and preparative sizes
- Simple to use

Did you know a common cause of high backpressure, split peaks, broad peaks, baseline noise, baseline drift and loss of resolution is contaminants? The fact is 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.



See SecurityGuard Standard in action video:

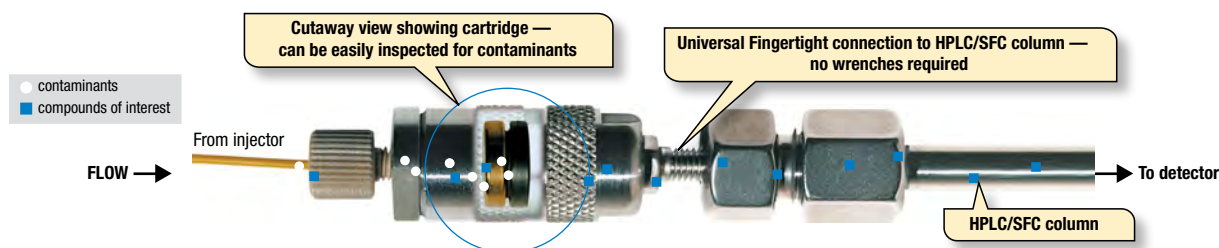
[www.phenomenex.com/SecurityGuardInstallation](http://www.phenomenex.com/SecurityGuardInstallation)

## A Universal Guard Cartridge System

### How SecurityGuard Standard Works\*

The SecurityGuard Standard analytical cartridge holder (patented) directly finger-tightens into virtually any manufacturer's non core-shell and  $\geq 3 \mu\text{m}$  particle columns. Contaminants are retained by

an inexpensive, 4 mm, disposable cartridge instead of fouling your expensive analytical column.



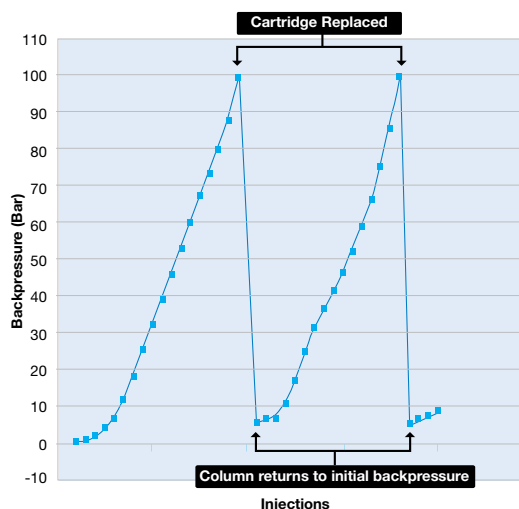
## Increases HPLC Column Lifetime, Guaranteed!

Simply replace SecurityGuard cartridges instead of your expensive HPLC/SFC columns. In this graph, once the expired SecurityGuard Standard cartridge was replaced, the pressure immediately dropped and the column performance was restored allowing for extended column use.



The SecurityGuard Standard holder and cartridges are pressure rated to 5000 psi (345 bar).

For all core-shell and / or  $< 3 \mu\text{m}$  particle columns, and all applications at higher pressures, use SecurityGuard ULTRA, see p.335. For available Semi-Preparative and PREP sizes, see pp. 332-334. For preparative SFC applications, use holder [AJ0-8617](#) for 15x21.2 mm cartridges or [AJ0-8618](#) for 15x30 mm cartridges. For Kinetex and Aeris Core-Shell SecurityGuard SemiPrep and PREP cartridges, see p. 334.



\*Feature applies to traditional analytical-sized guard system only, and does not apply to SemiPrep or PREP guard cartridges.

Accelerated lifetime test using endogenous biomolecule matrix on a reversed phase C18 column, 5  $\mu\text{m}$ , 50 x 4.6 mm with SecurityGuard Standard C18 cartridges. Backpressure values represent additional backpressure contributed by SecurityGuard.

# SecurityGuard<sup>TM</sup> Standard HPLC and SFC Column Protection

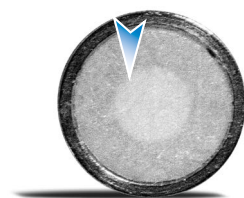
U.S. Patent No. 6, 162, 362

## “See Your Dirt” Feature

The “see your dirt” feature lets you know exactly when it’s time to replace your cartridge.

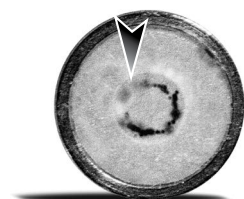
Visually inspect the surface of the cartridge’s packing material any time, without disturbing the packing bed. Now you can easily monitor visual contaminant build-up, and change your guard cartridge before it’s too late!

If your contaminants are colorless, replace the cartridge as often as needed to maintain chromatographic performance.



### CLEAN

If it looks clean, the cartridge may be reinserted for further use.



### DIRTY

If either discoloration or particle build-up is observed, it’s time to replace the cartridge.

*“The SecurityGuard is easy to use and cartridge replacement is simple.”*

*F. Shakir, Sheffield Pharmaceuticals*

*“We didn’t see any change in retention time or difference in the peaks. The SecurityGuard has increased the life of the column.”*

*B. Dietz, ADM*

The opinions stated herein are solely those of the individual and not necessarily those of any company or organization.

## Analytical HPLC/SFC Holder Kit and Replacement Accessories

For 2.0 and 3.0 mm ID cartridges, use with 2.0 to 8.0 mm ID columns

### Ordering Information

#### Analytical Kit

| Part No.                 | Description                                   |
|--------------------------|-----------------------------------------------|
| <a href="#">KJO-4282</a> | SecurityGuard Standard Kit* (includes holder) |

#### Replacement Parts and Accessories

| Part No.                 | Description               | Unit  |
|--------------------------|---------------------------|-------|
| <a href="#">AJ0-4283</a> | PEEK Ferrules             | 3/pk  |
| <a href="#">AJ0-4285</a> | Stacking Rings            | 2/pk  |
| <a href="#">AQ0-1389</a> | PEEK Fingertight Fittings | 10/pk |
| <a href="#">AJ0-4284</a> | SecurityGuard Wrenches    | 2/pk  |

## UHPLC / HPLC / SFC / PREP Guard Finder

Having a difficult time finding the best column protection device for your specific UHPLC, HPLC, SFC or Prep column?

- Guard Finder matches over 57,000 column part numbers
- Interactive selection tool finds the appropriate column guard in seconds
- Quickly find column protection for any column from any of the top column manufacturers
- Search by brand, part number, technique, or column phase

Try it today at:

[www.phenomenex.com/GuardIT](http://www.phenomenex.com/GuardIT)

### \*Kit KJO-4282 Includes:



## Semi-Preparative HPLC/SFC Holder

For 10.0 mm ID cartridges, use with 9 to 16 mm ID columns

### Ordering Information

#### SecurityGuard SemiPrep Guard Cartridge Holder

| Part No.                 | Description                      | Unit |
|--------------------------|----------------------------------|------|
| <a href="#">AJ0-9281</a> | Holder for 10.0 mm ID cartridges | ea   |

### Accessories

| Part No. | Description | Unit |
|----------|-------------|------|
|----------|-------------|------|

#### Nut and Ferrule

|                          |                                                                          |    |
|--------------------------|--------------------------------------------------------------------------|----|
| <a href="#">AQ0-3018</a> | 10-32 Threaded Male Nut and Ferrule Set for 1/16 in. OD capillary tubing | ea |
|--------------------------|--------------------------------------------------------------------------|----|

#### Sure-Lok™ Fingertight Fittings

|                          |                        |       |
|--------------------------|------------------------|-------|
| <a href="#">AQ0-1388</a> | PEEK Sure-Lok Male Nut | ea    |
| <a href="#">AQ0-1389</a> | PEEK Sure-Lok Male Nut | 10/pk |

#### Sure-Lok Couplers

|                          |                       |       |
|--------------------------|-----------------------|-------|
| <a href="#">AQ0-1392</a> | PEEK Sure-Lok Coupler | ea    |
| <a href="#">AQ0-1393</a> | PEEK Sure-Lok Coupler | 10/pk |

#### Column Sealing Plugs

|                          |                                        |       |
|--------------------------|----------------------------------------|-------|
| <a href="#">AQ0-0217</a> | Column Sealing Plug, 10-32 Thread size | 10/pk |
|--------------------------|----------------------------------------|-------|

#### SemiPrep Guard Holder Wrench

|                          |                                  |    |
|--------------------------|----------------------------------|----|
| <a href="#">AQ0-8904</a> | Wrench, Open End, 1/2 x 9/16 in. | ea |
|--------------------------|----------------------------------|----|



Holder



Cartridge  
(10 x 10 mm ID)



For Semi-Preparative and Preparative Cartridges, see pp. 333-334

## Preparative HPLC/SFC Holder (Two Sizes)

For 21.2 mm ID cartridges, use with 18 to 29 mm ID columns

### Ordering Information

#### SecurityGuard Prep Guard Cartridge Holders

| Part No. | Description | Unit |
|----------|-------------|------|
|----------|-------------|------|

|                          |                                                                    |    |
|--------------------------|--------------------------------------------------------------------|----|
| <a href="#">AJ0-8223</a> | HPLC Holder Kit for 21.2 mm ID cartridges, includes column coupler | ea |
|--------------------------|--------------------------------------------------------------------|----|

|                          |                                                                   |    |
|--------------------------|-------------------------------------------------------------------|----|
| <a href="#">AJ0-8617</a> | SFC Holder Kit for 21.2 mm ID cartridges, includes column coupler | ea |
|--------------------------|-------------------------------------------------------------------|----|

For 30.0 mm ID cartridges, use with 30 to 49 mm ID columns

### Ordering Information

#### SecurityGuard Prep Guard Cartridge Holder

| Part No. | Description | Unit |
|----------|-------------|------|
|----------|-------------|------|

|                          |                                                                    |    |
|--------------------------|--------------------------------------------------------------------|----|
| <a href="#">AJ0-8277</a> | HPLC Holder Kit for 30.0 mm ID cartridges, includes column coupler | ea |
|--------------------------|--------------------------------------------------------------------|----|

|                          |                                                                   |    |
|--------------------------|-------------------------------------------------------------------|----|
| <a href="#">AJ0-8618</a> | SFC Holder Kit for 30.0 mm ID cartridges, includes column coupler | ea |
|--------------------------|-------------------------------------------------------------------|----|

### Replacement Parts and Accessories

| Part No. | Description | Unit |
|----------|-------------|------|
|----------|-------------|------|

|                          |                                                                                      |    |
|--------------------------|--------------------------------------------------------------------------------------|----|
| <a href="#">AQ0-8376</a> | PREP Coupler, SS Tube, Nuts, and Ferrules, 10-32 Threads, 1/16 in. OD x 0.030 in. ID | ea |
|--------------------------|--------------------------------------------------------------------------------------|----|

|                          |                                                                               |      |
|--------------------------|-------------------------------------------------------------------------------|------|
| <a href="#">AQ0-8222</a> | PREP Replacement O-Rings, Kalrez® For 15 x 21.2 mm SG HPLC Holder, Size 2-021 | 2/pk |
|--------------------------|-------------------------------------------------------------------------------|------|

|                          |                                                                             |      |
|--------------------------|-----------------------------------------------------------------------------|------|
| <a href="#">AQ0-8318</a> | PREP Replacement O-Rings, Kalrez® For 15 x 30 mm SG HPLC Holder, Size 2-025 | 2/pk |
|--------------------------|-----------------------------------------------------------------------------|------|

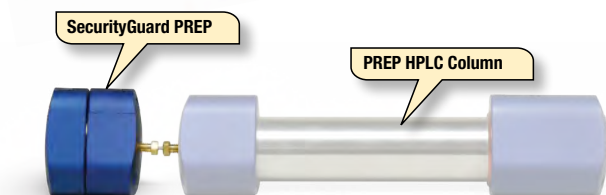
|                          |                                                                              |      |
|--------------------------|------------------------------------------------------------------------------|------|
| <a href="#">AQ0-8500</a> | PREP Replacement O-Rings, Teflon® For 15 x 21.2 mm SG SFC Holder, Size 2-021 | 2/pk |
|--------------------------|------------------------------------------------------------------------------|------|

|                          |                                                                            |      |
|--------------------------|----------------------------------------------------------------------------|------|
| <a href="#">AQ0-8501</a> | PREP Replacement O-Rings, Teflon® For 15 x 30 mm SG SFC Holder, Size 2-025 | 2/pk |
|--------------------------|----------------------------------------------------------------------------|------|

|                          |                                                                              |      |
|--------------------------|------------------------------------------------------------------------------|------|
| <a href="#">AT0-0465</a> | Capillary S.S. Tubing, 0.020 in. ID x 0.062 in. (1/16 in.) OD x 10 cm length | 5/pk |
|--------------------------|------------------------------------------------------------------------------|------|

|                          |                                                                              |      |
|--------------------------|------------------------------------------------------------------------------|------|
| <a href="#">AT0-0466</a> | Capillary S.S. Tubing, 0.020 in. ID x 0.062 in. (1/16 in.) OD x 20 cm length | 5/pk |
|--------------------------|------------------------------------------------------------------------------|------|

|                          |                                  |    |
|--------------------------|----------------------------------|----|
| <a href="#">AQ0-8903</a> | Wrench, Open End, 1/4 x 5/16 in. | ea |
|--------------------------|----------------------------------|----|



| Holders | Cartridges |
|---------|------------|
| PREP    | SFC        |



21.2 mm ID  
HPLC Holder



21.2 mm ID  
SFC Holder



Cartridge  
(15 x 21.2 mm ID)



30 mm ID  
HPLC Holder



30 mm ID  
SFC Holder



Cartridge  
(15 x 30.0 mm ID)

| O-Rings | Coupler |
|---------|---------|
|---------|---------|



Kalrez  
O-Rings



Teflon  
O-Rings

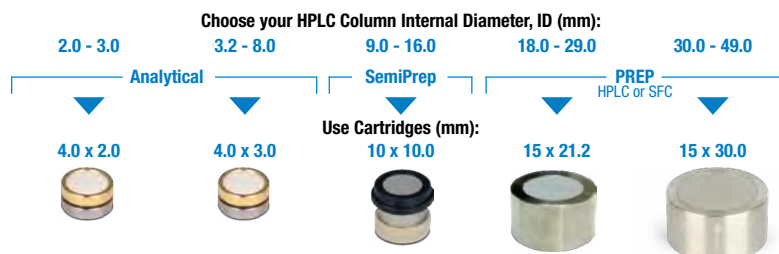


PREP Coupler

## Cartridges and Holders

Step 1: Choose column ID

Step 2: Match column phase



### Ordering Information

| Material                                                     | Description                                       | pH Stability | /10pk                    |                          | /3pk                     | ea                       | ea                       |
|--------------------------------------------------------------|---------------------------------------------------|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Cartridges for General Purpose/Pharmaceutical</b>         |                                                   |              |                          |                          |                          |                          |                          |
| C18                                                          | (ODS, Octadecyl)                                  | 1.5 - 10     | <a href="#">AJ0-4286</a> | <a href="#">AJ0-4287</a> | <a href="#">AJ0-7221</a> | <a href="#">AJ0-7839</a> | <a href="#">AJ0-8301</a> |
| C12                                                          | (Dodecyl)                                         | 1.5 - 10     | <a href="#">AJ0-6073</a> | <a href="#">AJ0-6074</a> | <a href="#">AJ0-7275</a> | <a href="#">AJ0-7842</a> | <a href="#">AJ0-8304</a> |
| C8                                                           | (MOS, Octyl)                                      | 1.5 - 10     | <a href="#">AJ0-4289</a> | <a href="#">AJ0-4290</a> | <a href="#">AJ0-7222</a> | <a href="#">AJ0-7840</a> | <a href="#">AJ0-8302</a> |
| C5                                                           | (Pentyl)                                          | 1.5 - 10     | <a href="#">AJ0-4292</a> | <a href="#">AJ0-4293</a> | <a href="#">AJ0-7372</a> | —                        | —                        |
| C1                                                           | (TMS)                                             | 2 - 9        | —                        | <a href="#">AJ0-4299</a> | —                        | —                        | —                        |
| Silica                                                       | —                                                 | —            | <a href="#">AJ0-4347</a> | <a href="#">AJ0-4348</a> | <a href="#">AJ0-7223</a> | <a href="#">AJ0-7229</a> | <a href="#">AJ0-8312</a> |
| HILIC                                                        | (HILIC)                                           | 1.5 - 8      | <a href="#">AJ0-8328</a> | <a href="#">AJ0-8329</a> | <a href="#">AJ0-8902</a> | —                        | —                        |
| NH <sub>2</sub>                                              | (Amino, Aminopropyl)                              | 1.5 - 11     | <a href="#">AJ0-4301</a> | <a href="#">AJ0-4302</a> | <a href="#">AJ0-7364</a> | <a href="#">AJ0-8162</a> | <a href="#">AJ0-8309</a> |
| CN                                                           | (Cyano, Cyanopropyl)                              | 2 - 7.5      | <a href="#">AJ0-4304</a> | <a href="#">AJ0-4305</a> | <a href="#">AJ0-7313</a> | <a href="#">AJ0-8220</a> | <a href="#">AJ0-8311</a> |
| Phenyl                                                       | (Phenylhexyl)                                     | 1.5 - 10     | <a href="#">AJ0-4350</a> | <a href="#">AJ0-4351</a> | <a href="#">AJ0-7314</a> | <a href="#">AJ0-7841</a> | <a href="#">AJ0-8303</a> |
| PFP(2)                                                       | (Pentafluorophenyl)                               | 1.5 - 8      | <a href="#">AJ0-8326</a> | <a href="#">AJ0-8327</a> | <a href="#">AJ0-8376</a> | <a href="#">AJ0-8377</a> | <a href="#">AJ0-8378</a> |
| SCX                                                          | (SA, Strong Cation Exchanger)                     | 2.5 - 7.5    | <a href="#">AJ0-4307</a> | <a href="#">AJ0-4308</a> | —                        | <a href="#">AJ0-8595</a> | <a href="#">AJ0-8596</a> |
| SAX                                                          | (SB, Strong Anion Exchanger)                      | 2.5 - 7.5    | —                        | <a href="#">AJ0-4311</a> | —                        | —                        | —                        |
| RP-1                                                         | (Reversed Phase - Polymer)                        | 0 - 14       | —                        | <a href="#">AJ0-5809</a> | <a href="#">AJ0-7368</a> | <a href="#">AJ0-8358</a> | —                        |
| Polar-RP                                                     | (Ether-linked Phenyl)                             | 1.5 - 7      | <a href="#">AJ0-6075</a> | <a href="#">AJ0-6076</a> | <a href="#">AJ0-7276</a> | <a href="#">AJ0-7845</a> | —                        |
| Fusion-RP                                                    | (C18 Polar Embedded)                              | 1.5 - 10     | <a href="#">AJ0-7556</a> | <a href="#">AJ0-7557</a> | <a href="#">AJ0-7558</a> | <a href="#">AJ0-7844</a> | —                        |
| AQ C18                                                       | (Polar Endcapped C18)                             | 1.5 - 7.5    | <a href="#">AJ0-7510</a> | <a href="#">AJ0-7511</a> | <a href="#">AJ0-7512</a> | <a href="#">AJ0-7843</a> | <a href="#">AJ0-8305</a> |
| Gemini™ NX-C18                                               | (C18 Twin-NX™ Technology)                         | 1 - 12       | <a href="#">AJ0-8367</a> | <a href="#">AJ0-8368</a> | <a href="#">AJ0-8369</a> | <a href="#">AJ0-8370</a> | <a href="#">AJ0-8371</a> |
| Gemini C18                                                   | (C18 Twin™ Technology)                            | 1 - 12       | <a href="#">AJ0-7596</a> | <a href="#">AJ0-7597</a> | <a href="#">AJ0-7598</a> | <a href="#">AJ0-7846</a> | <a href="#">AJ0-8308</a> |
| Gemini C6-Phenyl                                             | (C6-Phenyl Twin Technology)                       | 1 - 12       | <a href="#">AJ0-7914</a> | <a href="#">AJ0-7915</a> | <a href="#">AJ0-9156</a> | <a href="#">AJ0-9157</a> | <a href="#">AJ0-9158</a> |
| Luna™ Omega Polar C18                                        | (Polar Functional C18)                            | 1.5 - 10     | <a href="#">AJ0-7600</a> | <a href="#">AJ0-7601</a> | <a href="#">AJ0-9519</a> | <a href="#">AJ0-7603</a> | <a href="#">AJ0-7604</a> |
| Luna Omega PS C18                                            | (Mixed-Mode C18)                                  | 1.5 - 10     | <a href="#">AJ0-7605</a> | <a href="#">AJ0-7606</a> | <a href="#">AJ0-9520</a> | <a href="#">AJ0-7608</a> | <a href="#">AJ0-7609</a> |
| <b>Cartridges for Chiral</b>                                 |                                                   |              |                          |                          |                          |                          |                          |
| Lux i-Amylose-1                                              | Amylose tris (3, 5-dimethyl-phenylcarbamate)      | 2 - 9        | —                        | <a href="#">AJ0-8641</a> | <a href="#">AJ0-8642</a> | <a href="#">AJ0-8643</a> | <a href="#">AJ0-8644</a> |
| Lux i-Amylose-3                                              | Amylose tris (3-chloro-5-methylphenylcarbamate)   | 2 - 9        | <a href="#">AJ0-8651</a> | <a href="#">AJ0-8650</a> | <a href="#">AJ0-8652</a> | <a href="#">AJ0-8653</a> | <a href="#">AJ0-8654</a> |
| Lux i-Cellulose-5                                            | Cellulose tris (3, 5-dichloro-phenylcarbamate)    | 2 - 9        | <a href="#">AJ0-8631</a> | <a href="#">AJ0-8632</a> | <a href="#">AJ0-8633</a> | <a href="#">AJ0-8634</a> | —                        |
| Lux Cellulose-1                                              | Cellulose tris (3, 5-dimethyl-phenylcarbamate)    | 2 - 9        | <a href="#">AJ0-8402</a> | <a href="#">AJ0-8403</a> | <a href="#">AJ0-8404</a> | <a href="#">AJ0-8405</a> | <a href="#">AJ0-8406</a> |
| Lux Cellulose-2                                              | Cellulose tris (3-chloro-4-methylphenylcarbamate) | 2 - 9        | <a href="#">AJ0-8398</a> | <a href="#">AJ0-8366</a> | <a href="#">AJ0-8399</a> | <a href="#">AJ0-8400</a> | —                        |
| Lux Cellulose-3                                              | Cellulose tris (4-methylbenzoate)                 | 2 - 9        | <a href="#">AJ0-8621</a> | <a href="#">AJ0-8622</a> | <a href="#">AJ0-8623</a> | <a href="#">AJ0-8624</a> | <a href="#">AJ0-8625</a> |
| Lux Cellulose-4                                              | Cellulose tris (4-chloro-3-methylphenylcarbamate) | 2 - 9        | <a href="#">AJ0-8626</a> | <a href="#">AJ0-8627</a> | <a href="#">AJ0-8628</a> | <a href="#">AJ0-8629</a> | <a href="#">AJ0-8630</a> |
| Lux Amylose-1                                                | Amylose tris (3, 5-dimethyl-phenylcarbamate)      | 2 - 9        | <a href="#">AJ0-9337</a> | <a href="#">AJ0-9336</a> | <a href="#">AJ0-9344</a> | <a href="#">AJ0-9338</a> | <a href="#">AJ0-9339</a> |
| Lux AMP                                                      | —                                                 | 1 - 11.5     | <a href="#">AJ0-8475</a> | <a href="#">AJ0-8476</a> | —                        | —                        | —                        |
| <b>HPLC Guard Cartridge Holders (one-time purchase only)</b> |                                                   |              | /kit                     |                          | /holder                  | /kit                     | /kit                     |
| Reusable Holder                                              |                                                   |              | <a href="#">KJ0-4282</a> |                          | <a href="#">AJ0-9281</a> | <a href="#">AJ0-8223</a> | <a href="#">AJ0-8277</a> |
|                                                              |                                                   |              |                          |                          |                          |                          |                          |
| <b>SFC Guard Cartridge Holders</b>                           |                                                   |              | /kit                     |                          | /holder                  | /kit                     | /kit                     |
| Reusable Holder                                              |                                                   |              | <a href="#">KJ0-4282</a> |                          | <a href="#">AJ0-9281</a> | <a href="#">AJ0-8617</a> | <a href="#">AJ0-8618</a> |

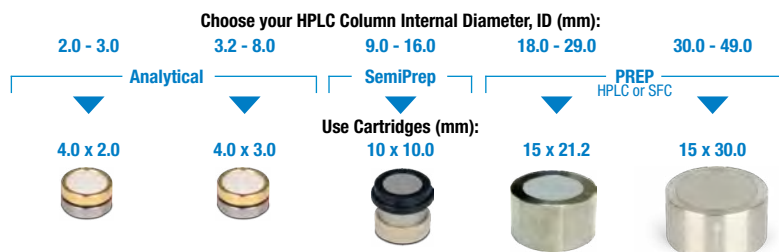
\*For all core-shell and/or < 3µm particle columns use 2.1 to 4.6mm ID SecurityGuard ULTRA Holder and Cartridges, see page 335

Continued on next page

## Cartridges and Holders (cont'd)

Step 1: Choose column ID

Step 2: Match column phase



### Ordering Information (continued)

| Material                                                                                                                                                                                    | Description               | pH Stability |                                                                                     |                                                                                       |                                                                                       |                                                                                       |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|
| <b>Cartridges for Core-Shell Media</b>                                                                                                                                                      |                           |              | —                                                                                   | —                                                                                     | /3pk                                                                                  | ea                                                                                    | ea       |
| <i>For core-shell media columns, such as Kinetex™ and Aeris™ (Phenomenex).</i>                                                                                                              |                           |              |                                                                                     |                                                                                       |                                                                                       |                                                                                       |          |
| EV0 C18                                                                                                                                                                                     | (ODS, Octadecyl)          | 1 - 12       | *                                                                                   | *                                                                                     | AJO-9306                                                                              | AJO-9304                                                                              | AJO-9305 |
| C18                                                                                                                                                                                         | (ODS, Octadecyl)          | 1.5 - 8.5    | *                                                                                   | *                                                                                     | AJO-9278                                                                              | AJO-9145                                                                              | AJO-9204 |
| C8                                                                                                                                                                                          | (MOS, Octyl)              | 1.5 - 8.5    | *                                                                                   | *                                                                                     | —                                                                                     | AJO-9205                                                                              | —        |
| PFP                                                                                                                                                                                         | (Pentafluorophenyl)       | 1.5 - 8.5    | *                                                                                   | *                                                                                     | —                                                                                     | AJO-9146                                                                              | —        |
| F5                                                                                                                                                                                          | (Pentafluorophenylpropyl) | 1.5 - 8.5    | *                                                                                   | *                                                                                     | AJO-9323                                                                              | AJO-9324                                                                              | —        |
| Phenyl-Hexyl                                                                                                                                                                                | (Phenylhexyl)             | 1.5 - 9      | *                                                                                   | *                                                                                     | —                                                                                     | AJO-9147                                                                              | AJO-9216 |
| Biphenyl                                                                                                                                                                                    | (Biphenyl)                | 1.5 - 8.5    | *                                                                                   | *                                                                                     | AJO-9280                                                                              | AJO-9272                                                                              | —        |
| HILIC                                                                                                                                                                                       | (HILIC)                   | 2 - 7.5      | *                                                                                   | *                                                                                     | —                                                                                     | AJO-9277                                                                              | —        |
| C18-Peptide                                                                                                                                                                                 | (ODS, Octadecyl)          | 1.5 - 9      | *                                                                                   | *                                                                                     | AJO-9317                                                                              | AJO-9318                                                                              | —        |
| <b>Cartridges for Protein and Polypeptide Reversed Phase</b>                                                                                                                                |                           |              | /10pk                                                                               | /10pk                                                                                 | /3pk                                                                                  | ea                                                                                    | ea       |
| <i>For use with silica columns for separation of proteins &amp; peptides, such as Jupiter™ (Phenomenex) and other widepore or 300 Å brands.</i>                                             |                           |              |                                                                                     |                                                                                       |                                                                                       |                                                                                       |          |
| Widepore C18                                                                                                                                                                                | (ODS, Octadecyl)          | 1.5 - 10     | AJO-4320                                                                            | AJO-4321                                                                              | AJO-7224                                                                              | AJO-7230                                                                              | AJO-8313 |
| Widepore C5                                                                                                                                                                                 | (Pentyl)                  | 1.5 - 10     | AJO-4326                                                                            | AJO-4327                                                                              | AJO-7371                                                                              | —                                                                                     | —        |
| Widepore C4                                                                                                                                                                                 | (Butyl)                   | 1.5 - 10     | AJO-4329                                                                            | AJO-4330                                                                              | AJO-7225                                                                              | AJO-7231                                                                              | AJO-8314 |
| <i>For use with columns like Biozen™ (Phenomenex).</i>                                                                                                                                      |                           |              |                                                                                     |                                                                                       |                                                                                       |                                                                                       |          |
| Peptide PS-C18 3 µm                                                                                                                                                                         | (Positive Functional C18) | 1.5 - 8.5    | AJO-7605                                                                            | AJO-7606                                                                              | —                                                                                     | —                                                                                     | —        |
| Ion-Exchange                                                                                                                                                                                | (Weak Cation Exchanger)   | 2 - 12       | AJO-9401                                                                            | AJO-9400                                                                              | —                                                                                     | —                                                                                     | —        |
| <b>Cartridges for Synthetic DNA / RNA Analysis</b>                                                                                                                                          |                           |              | /10pk                                                                               | /10pk                                                                                 | /3pk                                                                                  | ea                                                                                    | ea       |
| <i>For use with columns like Clarity™ (Phenomenex).</i>                                                                                                                                     |                           |              |                                                                                     |                                                                                       |                                                                                       |                                                                                       |          |
| Oligo-RP™                                                                                                                                                                                   | (C18 Twin Technology)     | 1 - 12       | AJO-8134                                                                            | AJO-8135                                                                              | AJO-8136                                                                              | AJO-8210                                                                              | —        |
| Oligo-XT                                                                                                                                                                                    | (ODS, Octadecyl)          | 1 - 12       | *                                                                                   | *                                                                                     | AJO-9516                                                                              | AJO-9517                                                                              | AJO-9518 |
| <b>Cartridges for Silica GFC (Gel Filtration Chromatography)</b>                                                                                                                            |                           |              | —                                                                                   | /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      | —                                                                                   | AJO-4487                                                                              | —                                                                                     | AJO-8588                                                                              | —        |
| GFC-3000                                                                                                                                                                                    | —                         | 2 - 7.5      | —                                                                                   | AJO-4488                                                                              | —                                                                                     | AJO-8589                                                                              | —        |
| GFC-4000                                                                                                                                                                                    | —                         | 2 - 7.5      | —                                                                                   | AJO-4489                                                                              | —                                                                                     | AJO-8590                                                                              | —        |
| <b>Cartridges for Polymer GPC (Gel Permeation Chromatography)</b>                                                                                                                           |                           |              | —                                                                                   | /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       | —                                                                                   | AJO-9292                                                                              | —                                                                                     | —                                                                                     | —        |
| <b>Cartridges for Carbohydrate/Organic Acid</b>                                                                                                                                             |                           |              | —                                                                                   | /10pk                                                                                 | —                                                                                     | —                                                                                     | —        |
| <i>For organic acid and carbohydrate analysis, such as Rezex™ (Phenomenex); Aminex® (Bio-Rad); Sugar-Pak™ (Waters).</i>                                                                     |                           |              |                                                                                     |                                                                                       |                                                                                       |                                                                                       |          |
| Carbo-H+                                                                                                                                                                                    | —                         | 1 - 8        | —                                                                                   | AJO-4490                                                                              | —                                                                                     | —                                                                                     | —        |
| Carbo-Ag <sup>+</sup>                                                                                                                                                                       | —                         | Neutral      | —                                                                                   | AJO-4491                                                                              | —                                                                                     | —                                                                                     | —        |
| Carbo-Pb <sup>2+</sup>                                                                                                                                                                      | —                         | Neutral      | —                                                                                   | AJO-4492                                                                              | —                                                                                     | —                                                                                     | —        |
| Carbo-Ca <sup>2+</sup>                                                                                                                                                                      | —                         | Neutral      | —                                                                                   | AJO-4493                                                                              | —                                                                                     | —                                                                                     | —        |
| <b>HPLC Guard Cartridge Holders (one-time purchase only)</b>                                                                                                                                |                           |              | /kit                                                                                | /holder                                                                               | /kit                                                                                  | /kit                                                                                  | /kit     |
| Reusable Holder                                                                                                                                                                             | —                         | —            | KJO-4282                                                                            | AJO-9281                                                                              | AJO-8223                                                                              | AJO-8277                                                                              | —        |
|                                                                                                                                                                                             |                           |              |  |  |  |  | —        |
| <b>SFC Guard Cartridge Holders</b>                                                                                                                                                          |                           |              | /kit                                                                                | /holder                                                                               | /kit                                                                                  | /kit                                                                                  | /kit     |
| Reusable Holder                                                                                                                                                                             | —                         | —            | KJO-4282                                                                            | AJO-9281                                                                              | AJO-8617                                                                              | AJO-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 335

\*\*For use with saccharide and oligosaccharide columns in Ag<sup>+</sup> form.

\*\*\*Not compatible with HFIP solvent.

## UHPLC Column Protection

- Extends HPLC, core-shell, and < 3 µm particle column lifetime
- Virtually no change in chromatography
- Pressure rated to 20000 psi (1378 bar)
- Simple to use

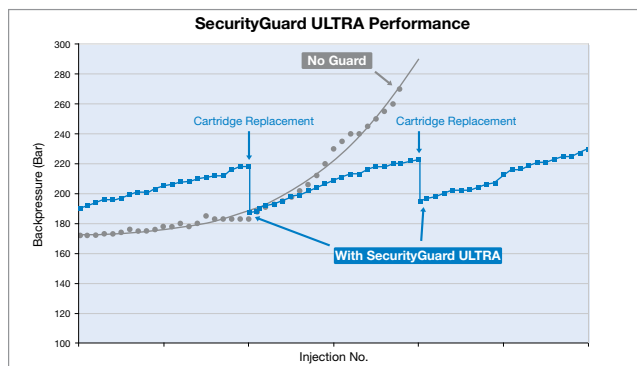
### Universal Fit

Use SecurityGuard ULTRA with virtually all UHPLC columns 2.1 to 4.6mm ID. The extremely low dead volume of this unique product minimizes sample peak dispersion. It will efficiently remove microparticulates and chemical contaminants from the flow stream without contributing to system backpressure or dead volume (<0.3 µL).

### Increases Column Lifetime, Guaranteed!

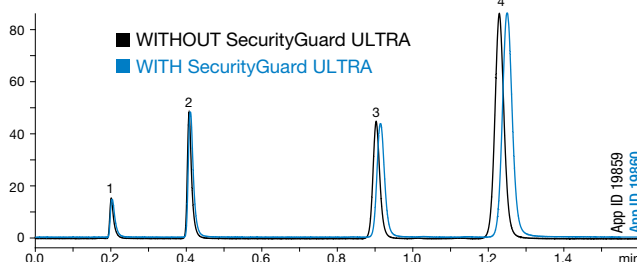
When contaminants and particulates build up at the head of your column or on the guard cartridge, system backpressures can increase dramatically. By simply replacing the SecurityGuard ULTRA cartridge, instead of your column, you are able to regain normal operating conditions and reclaim original column performance.

### Accelerated lifetime test using endogenous biological matrix on Kinetex 2.6 µm C18 50 x 4.6 mm ID column



### Protects with No Loss of Column Performance!

SecurityGuard ULTRA's unique design minimizes sample peak dispersion to maintain column performance without altering your chromatography results.



Conditions for both columns:

Column: Kinetex 1.7 µm XB-C18

Dimensions: 50 x 2.1 mm

Guard Cartridge: SecurityGuard ULTRA C18 (ODS) 2.1 mm ID

Part No.: [AJ0-8768](#)

Mobile Phase: Acetonitrile / Water (50:50)

Flow Rate: 0.5 mL/min

Detection: UV @ 254 nm

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



See SecurityGuard ULTRA in action:

[www.phenomenex.com/SecurityGuardULTRA](http://www.phenomenex.com/SecurityGuardULTRA)



## SecurityGuard ULTRA Cartridges

### Ordering Information

| Ordering information                           |                        |              | Column ID (mm)           |                          |                          |
|------------------------------------------------|------------------------|--------------|--------------------------|--------------------------|--------------------------|
| Material                                       | Description            | pH Stability | 2.1                      | 3.0                      | 4.6                      |
| Cartridges for General Purpose/ Pharmaceutical |                        |              |                          |                          |                          |
| EVO C18                                        | (ODS, Octadecyl)       | 1.0 – 12.0   | <a href="#">AJ0-9298</a> | <a href="#">AJ0-9297</a> | <a href="#">AJ0-9296</a> |
| C18                                            | (ODS, Octadecyl)       | 1.5 – 8.5*   | <a href="#">AJ0-8782</a> | <a href="#">AJ0-8775</a> | <a href="#">AJ0-8768</a> |
| C8                                             | (MOS, Octyl)           | 1.5 – 8.5*   | <a href="#">AJ0-8784</a> | <a href="#">AJ0-8777</a> | <a href="#">AJ0-8770</a> |
| PFP                                            | (Pentafluorophenyl)    | 1.5 – 8.5*   | <a href="#">AJ0-8787</a> | <a href="#">AJ0-8780</a> | <a href="#">AJ0-8773</a> |
| F5                                             | (Pentafluorophenyl)    | 1.5 – 8.5*   | <a href="#">AJ0-9322</a> | <a href="#">AJ0-9321</a> | <a href="#">AJ0-9320</a> |
| Biphenyl                                       | (Biphenyl)             | 1.5 – 8.5*   | <a href="#">AJ0-9209</a> | <a href="#">AJ0-9208</a> | <a href="#">AJ0-9207</a> |
| Phenyl                                         | (Phenylhexyl)          | 1.5 – 8.5*   | <a href="#">AJ0-8788</a> | <a href="#">AJ0-8781</a> | <a href="#">AJ0-8774</a> |
| HILIC                                          | (HILIC)                | 2.0 – 7.5    | <a href="#">AJ0-8786</a> | <a href="#">AJ0-8779</a> | <a href="#">AJ0-8772</a> |
| Polar C18                                      | (Polar Functional C18) | 1.5 – 8.5*   | <a href="#">AJ0-9532</a> | <a href="#">AJ0-9531</a> | <a href="#">AJ0-9530</a> |

### Cartridges for General Purpose/Pharmaceutical (Fully Porous Columns)

For fully porous columns like Luna™ Omega (Phenomenex)

|           |                           |            |                          |                          |                          |
|-----------|---------------------------|------------|--------------------------|--------------------------|--------------------------|
| C18       | (ODS, Octadecyl)          | 1.5 – 8.5* | <a href="#">AJ0-9502</a> | <a href="#">AJ0-9501</a> | <a href="#">AJ0-9500</a> |
| Polar C18 | (Polar Functional C18)    | 1.5 – 8.5* | <a href="#">AJ0-9505</a> | —                        | —                        |
| PS C18    | (Positive Functional C18) | 1.5 – 8.5* | <a href="#">AJ0-9508</a> | —                        | —                        |

### Cartridges for Protein and Peptide Reversed Phase

For use with columns like Aeria™ (Phenomenex)

|              |                  |            |                          |   |                          |
|--------------|------------------|------------|--------------------------|---|--------------------------|
| Widepore C18 | (ODS, Octadecyl) | 1.5 – 8.5* | <a href="#">AJ0-8783</a> | — | <a href="#">AJ0-8769</a> |
| Widepore C8  | (MOS, Octyl)     | 1.5 – 8.5* | <a href="#">AJ0-8785</a> | — | <a href="#">AJ0-8771</a> |
| Widepore C4  | (Butyl)          | 1.5 – 8.5* | <a href="#">AJ0-8899</a> | — | <a href="#">AJ0-8901</a> |
| Peptide C18  | (ODS, Octadecyl) | 1.5 – 8.5* | <a href="#">AJ0-8948</a> | — | <a href="#">AJ0-8946</a> |

For use with columns like Biozen™ (Phenomenex)

|                                                 |                  |             |                          |   |                          |
|-------------------------------------------------|------------------|-------------|--------------------------|---|--------------------------|
| Glycan                                          | (Amide Polyol)   | 2.0 – 7.5   | <a href="#">AJ0-9800</a> | — | —                        |
| Peptide PS-C18 1.6 µm (Positive Functional C18) |                  | 1.5 – 8.5*  | <a href="#">AJ0-9803</a> | — | —                        |
| Peptide XB-C18                                  | (ODS, Octadecyl) | 1.5 – 9.0** | <a href="#">AJ0-9806</a> | — | <a href="#">AJ0-9808</a> |
| WidePore C4                                     | (Butyl)          | 1.5 – 9.0** | <a href="#">AJ0-9816</a> | — | <a href="#">AJ0-9818</a> |
| Intact XB-C18                                   | (MOS, Octyl)     | 1.5 – 9.0** | <a href="#">AJ0-9812</a> | — | <a href="#">AJ0-9814</a> |
| Oligo                                           | (ODS, Octadecyl) | 1.0 – 12.0  | <a href="#">AJ0-9820</a> | — | <a href="#">AJ0-9822</a> |
| dSEC-2                                          | (Diol)           | 2.5 – 7.5   | <a href="#">AJ0-9852</a> | — | <a href="#">AJ0-9853</a> |
| SEC-2                                           | (Diol)           | 1.5 – 8.5   | —                        | — | <a href="#">AJ0-9850</a> |
| SEC-3                                           | (Diol)           | 1.5 – 8.5   | —                        | — | <a href="#">AJ0-9851</a> |

### Cartridges for Synthetic DNA / RNA Analysis

For use with columns like Clarity™ (Phenomenex)

|              |                  |            |                          |   |                          |
|--------------|------------------|------------|--------------------------|---|--------------------------|
| Oligo-MS C18 | (ODS, Octadecyl) | 1.5 – 8.5* | <a href="#">AJ0-9068</a> | — | —                        |
| Oligo-XT     | (ODS, Octadecyl) | 1.0 – 12.0 | <a href="#">AJ0-9515</a> | — | <a href="#">AJ0-9514</a> |

### Cartridges for Silica GFC (Gel Filtration Chromatography)

(Aqueous SEC) For use with silica GFC columns such as Yarra™ (Phenomenex)

|      |   |           |   |   |                          |
|------|---|-----------|---|---|--------------------------|
| X150 | — | 1.5 – 8.5 | — | — | <a href="#">AJ0-9512</a> |
| X300 | — | 1.5 – 8.5 | — | — | <a href="#">AJ0-9513</a> |

\*pH stable 1.5–8.5 under gradient conditions. pH stable 1.5–10 under isocratic conditions.  
\*\*pH range is 1.5–9 under gradient conditions. pH range is 1.5–10 under isocratic conditions.  
[AJ0-9000](#) is the universal holder designed for use with 2.1 mm, 3.0 mm and 4.6 mm ID cartridges.



## SecurityGuard ULTRA Cartridge Holder

### Ordering Information

| Part No.                 | Description                          | Unit |
|--------------------------|--------------------------------------|------|
| <a href="#">AJ0-9000</a> | SecurityGuard ULTRA Cartridge Holder | ea   |

Initial SecurityGuard ULTRA installation and cartridge replacement, requires 3 wrenches, which must be purchased separately: one 3/8 in. wrench ([AQ0-8959](#); fits Kinetex, Aeria, and Oligo-MS column end-fittings), and two 5/16 in. wrenches ([AQ0-8903](#); fits ULTRA cartridge and holder). See p. 427

