

Stationary Phase: **ARC-18**

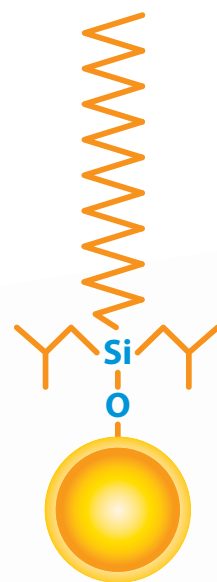
# Raptor

LC Columns

*Selectivity Accelerated*

## Ahead of the Curve for Large, Multiclass Lists by Mass Spec

Designed and intended specifically for use on LC-MS/MS systems, the Raptor ARC-18 SPP LC column offers a well-balanced retention profile without the drawbacks of using an ordinary C18 in the harsh, acidic mobile phases needed for mass spectrometry (MS).



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Pure Chromatography

[www.restek.com/raptor](http://www.restek.com/raptor)

# Raptor ARC-18 Columns

- Ideal for high-throughput LC-MS/MS applications with minimal sample preparation.
- Well-balanced retention profile for better detection and integration of large, multiclass analyte lists.
- Sterically protected to endure low-pH mobile phases without sacrificing retention or peak quality.

Even after extended use in low-pH ( $\leq 2.0$ ) conditions, the sterically protected ARC-18 offers consistent retention, peak shape, and response for charged bases, neutral acids, small polar compounds, and more. For the rapid analysis of large, multiclass assays by LC-MS/MS, the Raptor ARC-18 truly is *ahead of the curve*.

**Part of Restek's Raptor LC column line featuring 1.8, 2.7, and 5  $\mu\text{m}$  SPP core-shell silica:**

- Higher efficiencies and resolution for drastically faster analysis times, especially for traditional HPLC instruments.
- Faster analyses mean increased sample throughput.
- Long-lasting ruggedness for dependable reproducibility.

Put the Raptor ARC-18 to the test with your MS at [www.restek.com/raptor](http://www.restek.com/raptor)

## Column Description:



### Stationary Phase Category:

C18, octadecylsilane (L1)

### Ligand Type:

Sterically protected C18

### Particle:

1.8  $\mu\text{m}$ , 2.7  $\mu\text{m}$ , or 5  $\mu\text{m}$  superficially porous particle (SPP or "core-shell" particle) silica

### Pore Size:

90 Å

### Surface Area:

125  $\text{m}^2/\text{g}$  (1.8  $\mu\text{m}$ ), 130  $\text{m}^2/\text{g}$  (2.7  $\mu\text{m}$ ), or 100  $\text{m}^2/\text{g}$  (5  $\mu\text{m}$ )

### Recommended Usage:

pH Range: 1.0–8.0

Maximum Temperature: 80 °C

Maximum Pressure: 1034 bar/15,000 psi\* (1.8  $\mu\text{m}$ ), 600 bar/8700 psi (2.7  $\mu\text{m}$ ); 400 bar/5800 psi (5  $\mu\text{m}$ )

\*For maximum lifetime, recommended maximum pressure for 1.8  $\mu\text{m}$  particles is 830 bar/12,000 psi.

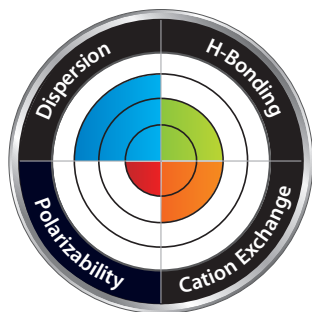
### Properties:

- Well-balanced retention profile.
- Sterically protected to resist harsh, low-pH mobile phases.
- Ideal for use with sensitive detectors like mass spec.

### Switch to an ARC-18 when:

- You are analyzing large, multiclass lists by LC-MS/MS.
- You require strongly acidic (pH 1–3) mobile phases.

## Column Interaction Profile:



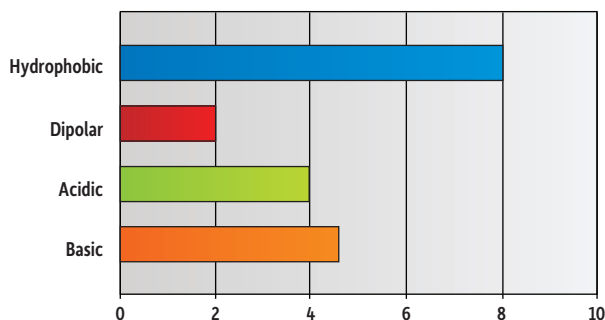
### Defining Solute Interaction:

- Dispersion

### Complementary Solute Interactions:

- Hydrogen bonding
- Cation exchange

## Solute Retention Profile:



### Target Analyte Structure:

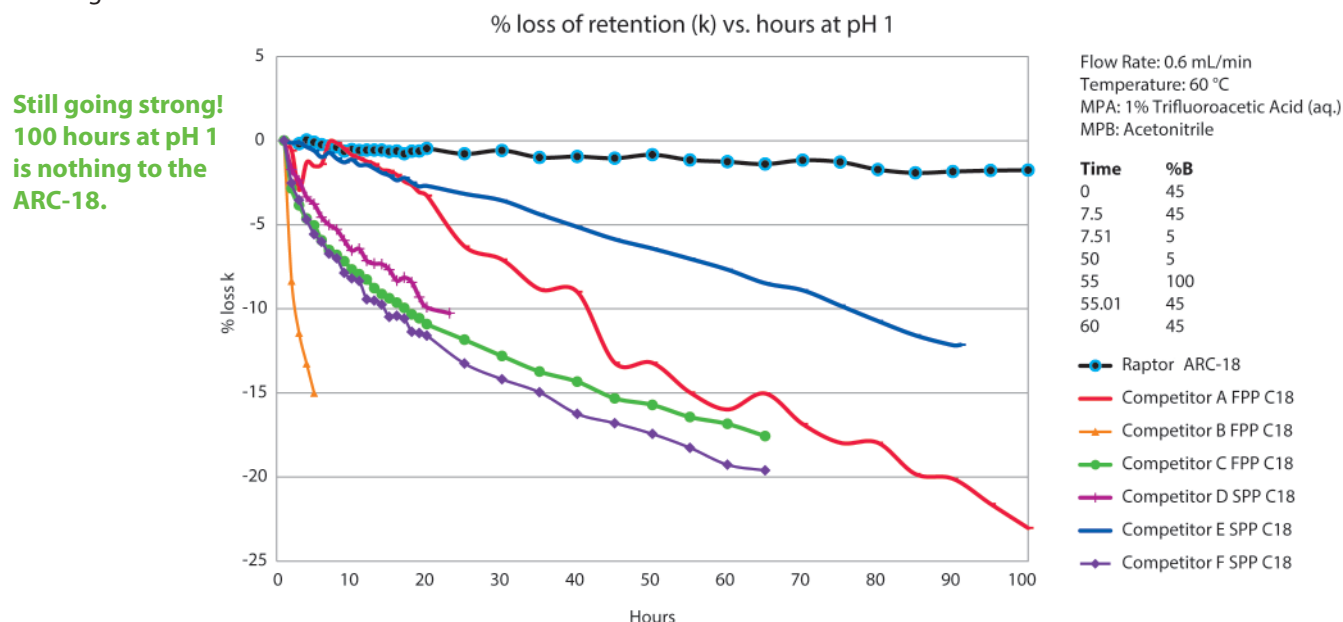
- Hydrocarbons

### Target Analyte Functionalities:

- Hydrophobic compounds
- Protonated bases

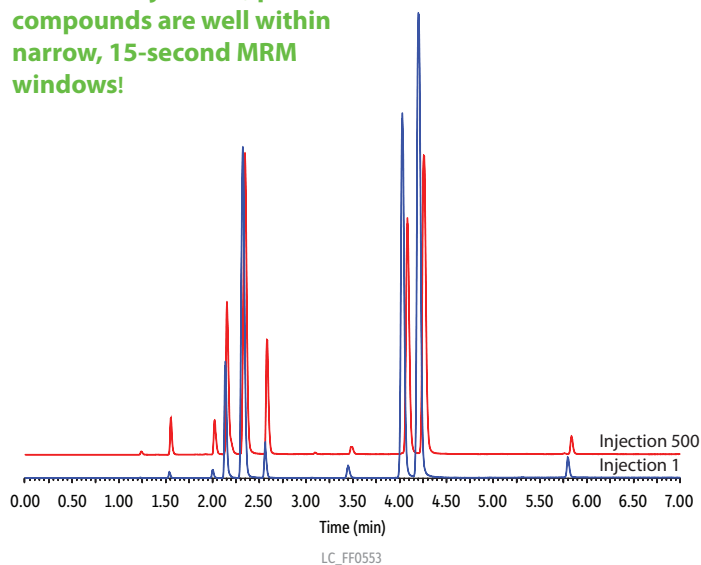
# Raptor ARC-18: Born for Reproducibility in Harsh LC-MS/MS Mobile Phases

**Figure 1:** Steric protection helps the Raptor ARC-18 column endure low-pH MS mobile phases without sacrificing retention.



**Figure 2:** Even after hundreds of injections with a highly acidic mobile phase like 0.2% formic acid, a Raptor ARC-18 column will provide consistent, reliable data.

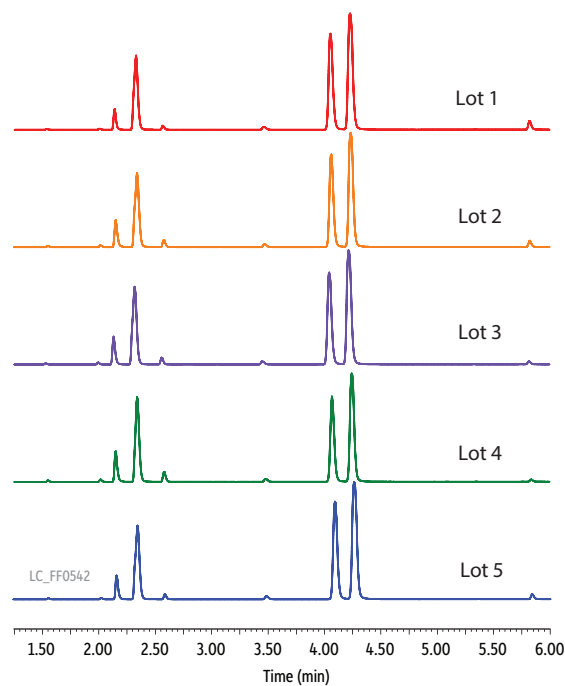
After 500 injections, pesticide compounds are well within narrow, 15-second MRM windows!



**Column:** Raptor ARC-18 (cat.# 9314A12); Dimensions: 100 mm x 2.1 mm ID; Particle Size: 2.7 µm; Temp.: 50 °C;  
**Sample:** LC multiresidue pesticide standard #1 (cat.# 31972); Diluent: Water; Conc.: 20 ng/mL; Inj. Vol.: 5 µL;  
**Mobile Phase:** A: Water + 2 mM ammonium formate + 0.2% formic acid, B: Methanol + 2 mM ammonium formate + 0.2% formic acid; **Gradient (%B):** 0.00 min (5%), 2.00 min (60%), 4.00 min (75%), 6.00 min (100%), 7.00 (100%), 7.01 min (5%), 9.50 (5%); **Flow:** 0.4 mL/min; **Detector:** Waters Xevo TQ-S; Ion Source: Waters Zspray ESI; Ion Mode: ESI+; Mode: MRM; **Instrument:** Waters ACQUITY UPLC I-Class.

**Figure 3:** From one lot to the next, every Raptor ARC-18 column you purchase will perform the same.

Excellent lot-to-lot reproducibility helps ensure longevity for critical workflows.



See Figure 2 for compound list and conditions.

Experience *Selectivity Accelerated*. Order the Raptor ARC-18 today at [www.restek.com/raptor](http://www.restek.com/raptor)

# For Consistent Retention, Peak Shape, and Response with Mass Spec, Grab the Column that Thrives in Low pH Conditions



## Raptor ARC-18 HPLC Columns

ID	Length	Particle Size	Units	Cat.#
2.1 mm	30 mm	1.8 $\mu$ m	ea.	9314232
2.1 mm	50 mm	1.8 $\mu$ m	ea.	9314252
2.1 mm	100 mm	1.8 $\mu$ m	ea.	9314212
2.1 mm	150 mm	1.8 $\mu$ m	ea.	9314262
3.0 mm	50 mm	1.8 $\mu$ m	ea.	931425E
3.0 mm	100 mm	1.8 $\mu$ m	ea.	931421E
2.1 mm	30 mm	2.7 $\mu$ m	ea.	9314A32
2.1 mm	50 mm	2.7 $\mu$ m	ea.	9314A52
2.1 mm	100 mm	2.7 $\mu$ m	ea.	9314A12
2.1 mm	150 mm	2.7 $\mu$ m	ea.	9314A62
3.0 mm	30 mm	2.7 $\mu$ m	ea.	9314A3E
3.0 mm	50 mm	2.7 $\mu$ m	ea.	9314A5E
3.0 mm	100 mm	2.7 $\mu$ m	ea.	9314A1E
3.0 mm	150 mm	2.7 $\mu$ m	ea.	9314A6E
4.6 mm	30 mm	2.7 $\mu$ m	ea.	9314A35
4.6 mm	50 mm	2.7 $\mu$ m	ea.	9314A55
4.6 mm	100 mm	2.7 $\mu$ m	ea.	9314A15
4.6 mm	150 mm	2.7 $\mu$ m	ea.	9314A65
2.1 mm	50 mm	5 $\mu$ m	ea.	9314552
2.1 mm	100 mm	5 $\mu$ m	ea.	9314512
2.1 mm	150 mm	5 $\mu$ m	ea.	9314562
3.0 mm	30 mm	5 $\mu$ m	ea.	931453E
3.0 mm	50 mm	5 $\mu$ m	ea.	931455E
3.0 mm	100 mm	5 $\mu$ m	ea.	931451E
3.0 mm	150 mm	5 $\mu$ m	ea.	931456E
4.6 mm	50 mm	5 $\mu$ m	ea.	9314555
4.6 mm	100 mm	5 $\mu$ m	ea.	9314515
4.6 mm	150 mm	5 $\mu$ m	ea.	9314565
4.6 mm	250 mm	5 $\mu$ m	ea.	9314575

## Raptor Inert ARC-18 HPLC Columns

- Inert LC column technology reduces nonspecific binding of chelating analytes, enabling sensitive analysis and smooth integration of peaks.
- Ideal for the analysis of metal-sensitive compounds, such as organophosphorus pesticides.
- Increased response and analyte recovery, allowing lower detection limits.
- Improved peak shape without additional passivation or mobile phase additives.
- Part of Restek's Raptor ARC-18 column line featuring 2.7  $\mu\text{m}$  SPP core-shell silica.



ID	Length	Particle Size	Units	Cat.#
2.1 mm	100	2.7 $\mu\text{m}$	ea.	9314A12-T
3.0 mm	100	2.7 $\mu\text{m}$	ea.	9314A1E-T
2.1 mm	50	2.7 $\mu\text{m}$	ea.	9314A52-T
3.0 mm	50	2.7 $\mu\text{m}$	ea.	9314A5E-T

## Boost Sensitivity of Metal-Sensitive Compounds with Restek's Extended Offering of Inert LC Columns and Guards

- **Improve peak shape** without passivation or mobile phase additives.
- **Increase analyte response** to achieve lower detection limits.
- **Improve accuracy and throughput** while reducing variability.
- **Spend less time** on conditioning and passivation.

Visit [www.restek.com/inert](http://www.restek.com/inert) to learn more!



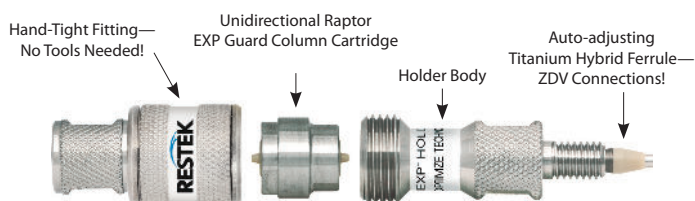
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## Raptor EXP Guard Cartridges—for All Raptor Columns



Protect your investment, extend the life of our already-rugged LC columns, and change guard column cartridges by hand without breaking fluid connections—no tools needed! Great with any Raptor column to get ultimate protection from particulates and matrix contamination, especially when using dilute-and-shoot or other minimal sample preparation techniques.

### Raptor ARC-18 EXP Guard Column Cartridges



Particle Size	Size	qty.	cat.#
UHPLC	5 x 2.1 mm	3-pk.	9314U0252
UHPLC	5 x 3.0 mm	3-pk.	9314U0253
2.7 µm	5 x 2.1 mm	3-pk.	9314A0252
2.7 µm	5 x 3.0 mm	3-pk.	9314A0253
2.7 µm	5 x 4.6 mm	3-pk.	9314A0250
5 µm	5 x 2.1 mm	3-pk.	9314S0252
5 µm	5 x 3.0 mm	3-pk.	9314S0253
5 µm	5 x 4.6 mm	3-pk.	9314S0250

Maximum cartridge pressure: 1034 bar/15,000 psi\* (UHPLC), 600 bar/8700 psi (2.7 µm); 400 bar/5800 psi (5 µm)

\* For maximum lifetime, recommended maximum pressure for UHPLC particles is 830 bar/12,000 psi.



### Inert Guard Column Cartridges

- Premium inert coating reduces nonspecific binding of chelating analytes.
- Free-Turn architecture lets you change cartridges by hand without breaking inlet/outlet fluid connections—no tools needed.
- Patented titanium hybrid ferrules can be installed repeatedly without compromising high-pressure seal.
- Auto-adjusting design provides ZDV (zero dead volume) connection to any 10-32 female port.
- Guard column cartridges require EXP direct connect holder (cat.# 25808).
- Pair with EXP hand-tight fitting (cat.# 25937–25938) for tool-free installation.

Product Name	Cat.#
Raptor Inert ARC-18 2.7 µm EXP Guard Column Cartridge 5 x 2.1 mm, 3-pk.	9314A0252-T
Raptor Inert ARC-18 2.7 µm EXP Guard Column Cartridge 5 x 3.0 mm, 3-pk.	9314A0253-T



25808

### EXP Direct Connect Holder

Description	qty.	cat.#
EXP Direct Connect Holder for EXP Guard Cartridges (includes fittings & ferrules)	ea.	25808

Maximum holder pressure: 20,000 psi (1400 bar)

## EXP In-Line Holder

Description	qty.	cat.#
EXP In-Line Holder for EXP Guard Cartridges (includes fittings & ferrules)	ea.	25751

Intellectual Property: [optimizetech.com/patents](https://www.optimizetech.com/patents)



25751

## UltraShield UHPLC PreColumn Filter—for 1.8 µm Raptor Columns

Pair 1.8 µm Raptor columns with an UltraShield filter instead of a guard cartridge to protect against particulates, minimize extra column volume, and maximize UHPLC sample throughput when using SPE, SLE, or other extensive sample preparations.

Porosity	qty.	cat.#
0.5 µm frit	ea.	24995
0.5 µm frit	5-pk.	24996
0.5 µm frit	10-pk.	24997
0.2 µm frit	ea.	25809
0.2 µm frit	5-pk.	25810
0.2 µm frit	10-pk.	25811



24995

## EXP Reusable Fittings for HPLC & UHPLC

for 10-32 fittings and 1/16" tubing

Effortlessly achieve 8700+ psi HPLC seals by hand! (Wrench tighten to 20,000+ psi.) Hybrid titanium/PEEK seal can be installed repeatedly without compromising your seal.

Description	qty.	cat.#
EXP Hand-Tight Fitting (nut w/ferrule)	ea.	25937
	10-pk.	25938

Intellectual Property: [optimizetech.com/patents](https://www.optimizetech.com/patents)



25937

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[www.restek.com/raptor](http://www.restek.com/raptor)

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