

**Pinnacle® II Columns: 3µm or 5µm particles; 110Å pore size**

Silica manufactured at Restek, for total control of quality and reproducibility. Excellent replacement for the original Hypersil® material. Physical and chromatographic properties similar to our original Pinnacle® materials, but with greater lot-to-lot uniformity.

**Pinnacle® II C18 Columns (USP L1)**

**Chromatographic Properties:**

Excellent choice as a general purpose C18 column. Intermediate carbon loading and surface area, suitable for a wide range of acidic to neutral hydrophobic compounds. Replaces Hypersil® ODS and Pinnacle® C18.

	1.0mm ID	2.1mm ID	3.2mm ID	4.0mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#	cat.#
<b>3µm Columns</b>					
30mm	9214331	9214332	9214333		9214335
50mm	9214351	9214352	9214353		9214355
100mm	9214311	9214312	9214313		9214315
<b>5µm Columns</b>					
30mm	9214531	9214532	9214533		9214535
50mm	9214551	9214552	9214553		9214555
100mm	9214511	9214512	9214513	9214514	9214515
150mm	9214561	9214562	9214563	9214564	9214565
200mm	9214521	9214522	9214523		9214525
250mm	9214571	9214572	9214573		9214575

3.0mm ID available on request for 3µm particle applications above 4,000 psi (275 Bar).

**Pinnacle® II C18 Guard Cartridges**

Guard Cartridges	3-pk. (10 x 2.1mm)	3-pk. (10 x 4.0mm)	2-pk. (20 x 2.1mm)	2-pk. (20 x 4.0mm)
Pinnacle II C18 Guard Cartridge	921450212	921450210	921450222	921450220

**Pinnacle® II C18 HPLC Prep Columns**

	10mm ID	21.2mm ID	30mm ID	50mm ID
Length	cat.#	cat.#	cat.#	cat.#
<b>5µm Columns</b>				
50mm	9214557	9214558	9214559	9214550
100mm	9214517	9214518	9214519	9214510
150mm	9214567	9214568	9214569	9214560
250mm	9214577	9214578	9214579	9214570



**Physical Characteristics:**

particle size: 3µm or 5µm, spherical  
pore size: 110Å  
carbon load: 13%  
endcap: fully endcapped  
pH range: 2.5 to 8  
temperature limit: 80°C



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allicin .....	730
capsaicinoids .....	728
morphine sulfate .....	738
phenolic antioxidants .....	727, 730

**Chromatogram Search Tool**

Search by compound name, synonym, CAS # or keyword

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





**Physical Characteristics:**

particle size: 4µm, spherical  
pore size: 110Å  
endcap: fully endcapped  
pH range: 2.5 to 8  
temperature limit: 80°C



polycyclic aromatic hydrocarbons . . . . .Page #

polycyclic aromatic hydrocarbons . . . . .717



**Physical Characteristics:**

particle size: 3µm or 5µm, spherical  
pore size: 110Å  
carbon load: 7%  
endcap: fully endcapped  
pH range: 2.5 to 8  
temperature limit: 80°C

**Pinnacle® II PAH Columns**

**Chromatographic Properties:**

Developed specifically for challenging analyses of polycyclic aromatic hydrocarbons. The Pinnacle® II PAH stationary phase incorporates a proprietary C18 bonding that enables unique shape selectivity to resolve to baseline all 16 PAHs listed in US EPA Method 610. Every lot of Pinnacle® II PAH bonded phase material is tested to ensure baseline resolution of the Method 610 PAHs, using a simple water/acetonitrile mobile phase gradient. Further, because we make Pinnacle® II PAH columns using our own silica, we have greater control over quality and reproducibility. Replaces Pinnacle® PAH columns. If you are analyzing PAHs, Pinnacle® II PAH columns are a reliable, cost-effective choice.

Length	2.1mm ID		3.2mm ID		4.6mm ID	
	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#
<b>4µm Columns</b>						
50mm	9219452		9219453		9219455	
100mm	9219412		9219413		9219415	
150mm	9219462		9219463		9219465	
200mm	9219422		9219423		9219425	
250mm	9219472		9219473		9219475	

**Pinnacle® II PAH Guard Cartridges**

Guard Cartridges	3-pk. (10 x 2.1mm)		2-pk. (20 x 2.1mm)	
	cat.#	cat.#	cat.#	cat.#
Pinnacle II PAH Guard Cartridge	921950212	921950210	921950222	921950220

**Pinnacle® II C8 Columns (USP L7)**

**Chromatographic Properties:**

Reliable performance and symmetric peaks for neutral to acidic compounds. Provides shorter retention times for hydrophobic compounds, compared to C18 phases. Replaces Hypersil® C8 and Pinnacle® C8.

Length	1.0mm ID		2.1mm ID		3.2mm ID		4.0mm ID		4.6mm ID	
	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#
<b>3µm Columns</b>										
30mm	9213331		9213332		9213333				9213335	
50mm	9213351		9213352		9213353				9213355	
100mm	9213311		9213312		9213313				9213315	
<b>5µm Columns</b>										
30mm	9213531		9213532		9213533				9213535	
50mm	9213551		9213552		9213553				9213555	
100mm	9213511		9213512		9213513		9213514		9213515	
150mm	9213561		9213562		9213563		9213564		9213565	
200mm	9213521		9213522		9213523				9213525	
250mm	9213571		9213572		9213573				9213575	

3.0mm ID available on request for 3µm particle applications above 4,000 psi (275 Bar).

**Pinnacle® II C8 Guard Cartridges**

Guard Cartridges	3-pk. (10 x 2.1mm)		2-pk. (20 x 2.1mm)	
	cat.#	cat.#	cat.#	cat.#
Pinnacle II C8 Guard Cartridge	921350212	921350210	921350222	921350220

**Pinnacle® II C8 HPLC Prep Columns**

Length	10mm ID		21.2mm ID		30mm ID		50mm ID	
	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#
<b>5µm Columns</b>								
50mm	9213557		9213558		9213559		9213550	
100mm	9213517		9213518		9213519		9213510	
150mm	9213567		9213568		9213569		9213560	
250mm	9213577		9213578		9213579		9213570	



## Pinnacle® II Cyano Columns (USP L10)

### Chromatographic Properties:

Can be used in either reversed phase or normal phase mode. More rugged than bare silica for normal phase applications. Replaces Hypersil® Cyano and Pinnacle® CN.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
<b>3µm Columns</b>				
30mm	9216331	9216332	9216333	9216335
50mm	9216351	9216352	9216353	9216355
100mm	9216311	9216312	9216313	9216315
<b>5µm Columns</b>				
30mm	9216531	9216532	9216533	9216535
50mm	9216551	9216552	9216553	9216555
100mm	9216511	9216512	9216513	9216515
150mm	9216561	9216562	9216563	9216565
200mm	9216521	9216522	9216523	9216525
250mm	9216571	9216572	9216573	9216575

3.0mm ID available on request for 3µm particle applications above 4,000 psi (275 Bar).

## Pinnacle® II Cyano Guard Cartridges

Guard Cartridges	3-pk. (10 x 2.1mm)	3-pk. (10 x 4.0mm)	2-pk. (20 x 2.1mm)	2-pk. (20 x 4.0mm)
Pinnacle II Cyano Guard Cartridge	921650212	921650210	921650222	921650220

## Pinnacle® II Cyano HPLC Prep Columns

	10mm ID	21.2mm ID	30mm ID	50mm ID
Length	cat.#	cat.#	cat.#	cat.#
<b>5µm Columns</b>				
50mm	9216557	9216558	9216559	9216550
100mm	9216517	9216518	9216519	9216510
150mm	9216567	9216568	9216569	9216560
250mm	9216577	9216578	9216579	9216570

## Pinnacle® II Phenyl Columns (USP L11)

### Chromatographic Properties:

The Pinnacle® II Phenyl phase offers unique selectivity versus traditional alkyl chain phases, especially for aromatic compounds. Replaces Hypersil® Phenyl and Pinnacle® Phenyl.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
<b>3µm Columns</b>				
30mm	9215331	9215332	9215333	9215335
50mm	9215351	9215352	9215353	9215355
100mm	9215311	9215312	9215313	9215315
<b>5µm Columns</b>				
30mm	9215531	9215532	9215533	9215535
50mm	9215551	9215552	9215553	9215555
100mm	9215511	9215512	9215513	9215515
150mm	9215561	9215562	9215563	9215565
200mm	9215521	9215522	9215523	9215525
250mm	9215571	9215572	9215573	9215575

3.0mm ID available on request for 3µm particle applications above 4,000 psi (275 Bar).

## Pinnacle® II Phenyl Guard Cartridges

Guard Cartridges	3-pk. (10 x 2.1mm)	3-pk. (10 x 4.0mm)	2-pk. (20 x 2.1mm)	2-pk. (20 x 4.0mm)
Pinnacle II Phenyl Guard Cartridge	921550212	921550210	921550222	921550220



### Physical Characteristics:

particle size: 3µm or 5µm, spherical  
pore size: 110Å  
carbon load: 4%  
endcap: fully endcapped  
pH range: 2.5 to 8  
temperature limit: 80°C



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piperine	728



also  
available

**Bulk Packing  
Materials**  
See page 194.



### Physical Characteristics:

particle size: 3µm or 5µm, spherical  
pore size: 110Å  
carbon load: 6%  
endcap: fully endcapped  
pH range: 2.5 to 8  
temperature limit: 80°C



**Physical Characteristics:**

particle size: 3µm or 5µm, spherical  
pore size: 110Å  
carbon load: 2%  
endcap: no  
pH range: 2.5 to 8  
temperature limit: 80°C



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lactulose concentrate	.743
sugars	.727

**Pinnacle® II Amino Columns (USP L8)**

**Chromatographic Properties:**

HPLC analysis using an amino-based stationary phase is the most popular technique for routine analyses of simple sugars, using isocratic elution (e.g., acetonitrile:water, 75:25) and a refractive index detector (RID) or an evaporative light scattering detector (ELSD). The Pinnacle® II Amino column is ideal for mono- and disaccharide analyses. Replaces Hypersil® Amino and Pinnacle® Amino.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
<b>3µm Columns</b>				
30mm	9217331	9217332	9217333	9217335
50mm	9217351	9217352	9217353	9217355
100mm	9217311	9217312	9217313	9217315
<b>5µm Columns</b>				
30mm	9217531	9217532	9217533	9217535
50mm	9217551	9217552	9217553	9217555
100mm	9217511	9217512	9217513	9217515
150mm	9217561	9217562	9217563	9217565
200mm	9217521	9217522	9217523	9217525
250mm	9217571	9217572	9217573	9217575

3.0mm ID available on request for 3µm particle applications above 4,000 psi (275 Bar).

**Pinnacle® II Amino Guard Cartridges**

Guard Cartridges	3-pk. (10 x 2.1mm)	3-pk. (10 x 4.0mm)	2-pk. (20 x 2.1mm)	2-pk. (20 x 4.0mm)
Pinnacle II Amino Guard Cartridge	921750212	921750210	921750222	921750220

**Pinnacle® II Biphenyl Columns (USP L11)**

**Chromatographic Properties:**

The Pinnacle® II Biphenyl phase offers alternate selectivity to straight-chain hydrocarbon phases, and enhanced selectivity and retention for unsaturated compounds, compared to traditional phenyl phases. An excellent confirmation column for explosive compounds, as in EPA method 8330.

Length	4.6mm ID cat.#
<b>5µm Column</b>	
150mm	9209565
250mm	9209575

**Pinnacle® II Biphenyl Guard Cartridges**

Guard Cartridges	3-pk. (10 x 4.0mm)	2-pk. (20 x 4.0mm)
Pinnacle II Biphenyl Guard Cartridge	920950210	920950220



**Physical Characteristics:**

particle size: 5µm, spherical  
pore size: 110Å  
endcap: yes  
pH range: 2.5 to 8  
temperature limit: 80°C

**ChromaBLOGraphy**

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**Pinnacle® II Silica Columns (USP L3)**

**Chromatographic Properties:**

Good general purpose packing for normal phase separations. Moderate surface area. Replaces Hypersil® and Pinnacle® Silica.

Length	1.0mm ID		2.1mm ID		3.2mm ID		4.6mm ID	
	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#
<b>3µm Columns</b>								
30mm	9210331		9210332		9210333		9210335	
50mm	9210351		9210352		9210353		9210355	
100mm	9210311		9210312		9210313		9210315	
<b>5µm Columns</b>								
30mm	9210531		9210532		9210533		9210535	
50mm	9210551		9210552		9210553		9210555	
100mm	9210511		9210512		9210513		9210515	
150mm	9210561		9210562		9210563		9210565	
200mm	9210521		9210522		9210523		9210525	
250mm	9210571		9210572		9210573		9210575	

3.0mm ID available on request for 3µm particle applications above 4,000 psi (275 Bar).



**Physical Characteristics:**

particle size: 3µm or 5µm, spherical  
pore size: 110Å  
endcap: no  
pH range: 2.5 to 8  
temperature limit: 80°C



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hydrocodone bitartrate	738
tocopherols	730

**Pinnacle® II Silica Guard Cartridges**

Guard Cartridges	3-pk. (10 x 2.1mm)	3-pk. (10 x 4.0mm)	2-pk. (20 x 2.1mm)	2-pk. (20 x 4.0mm)
Pinnacle II Silica Guard Cartridge	921050212	921050210	921050222	921050220

**Pinnacle® II Silica HPLC Prep Columns**

Length	10mm ID		21.2mm ID		30mm ID		50mm ID	
	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#	cat.#
<b>5µm Columns</b>								
50mm	9210557		9210558		9210559		9210550	
100mm	9210517		9210518		9210519		9210510	
150mm	9210567		9210568		9210569		9210560	
250mm	9210577		9210578		9210579		9210570	

**ordering note**

To order a 2.1mm, 3.2mm, or 4.6mm ID column with a Trident Integral Inlet Fitting, add "-700" to the catalog number for the column.

Nominal additional charge

Example: 100mm x 4.6mm ID Ultra C18 column with Trident Integral Inlet Fitting: 9174315-700

Also order an XG-XF fitting (10mm: cat.#25026 or 20mm: 25062), see page 196.



**also available**

**HPLC Syringes**

See pages 346-349.

