



Agilent Captiva Sample Preparation Filtration Portfolio

# GAUGE THE DIFFERENCE FILTRATION CAN MAKE

The Measure of Confidence



**Agilent Technologies**

Your time is precious...  
*and so are  
your samples*

## Longer column life Less system downtime Greater sample cleanliness Optimal instrument performance

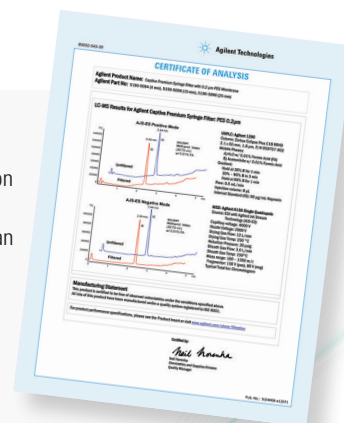
Filtering samples prior to HPLC and LC/MS analysis can help your lab achieve *all* of these goals. And now ... Agilent has made it easier than ever.

**Agilent Captiva filtration products are a time-saving, cost-effective way to stay in command of your analyses**

Our depth and breadth of experience is reflected in the way **Captiva filtration products** improve your chromatography *without* adding time to the process. So you can meet your unrelenting analytical demands and uncompromising expectations for quality, speed, and accuracy.

### CERTIFIED PERFORMANCE:

Agilent Captiva Premium filtration products are packaged with a Certificate of Analysis, so you can be confident that extractables or other contaminants will not damage the integrity of your samples. This unique guarantee assures you of optimal performance every time.



## Designed *by chromatographers for chromatographers*

The Agilent Captiva filtration portfolio was designed by chromatography experts who appreciate the challenges you face. Here are just a few of the ways we have set a new standard in filtration:

- **No compromise.** Our filtration products are constructed with the highest-grade materials to ensure optimal performance.
- **Greater productivity.** Captiva products are designed to be fast, efficient, and accurate.
- **Utmost confidence.** You can be sure our filtration products will be clean and contaminant-free.
- **Unbeatable quality.** We stand behind every product with the world-renowned Agilent commitment to quality.
- **The most choices.** Captiva filtration products are available in a wide range of sizes, formats, and membranes, so you can select the most suitable product for every workflow.

For optimal performance, column lifetime, and sample integrity, you can count on Agilent — the world chromatography leader.

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## Gauge *your* filtration requirements

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### Captiva Premium Syringe Filters

*Trying to remove particulates?  
Save time on maintenance  
with syringe filters.....* **Page 4**



### Captiva ND Non-Drip Filter Plates and Cartridges

*Deliver particulate-free, protein-precipitated samples five times faster than centrifugation.....* **Page 6**



### Captiva ND Lipids Non-Drip Filter Plates and Cartridges

*Non-drip protein precipitation plates that also remove ion-suppressing lipids.....* **Page 8**

Learn how to optimize the benefits of filtration at [agilent.com/chem/filtration](https://www.agilent.com/chem/filtration)





## Captiva Premium Syringe Filters



# Protect the quality of your samples – and your results

Even small amounts of particulate can clog your column inlet, causing high column back pressure, retention-time shift, resolution loss, and shorter column life.

You can remove damaging particulates with Agilent Captiva Premium Syringe filters – a great choice for simple mechanical filtration.

Captiva Premium Syringe filters are designed to give you:

- **Greater productivity:** The unique design produces the industry's fastest flow rates
- **High loading capacity:** Handle more particulates and greater volumes than other manufacturers' products
- **The industry's lowest protein binding:** Our premium PES Syringe filter is ideal for tricky biological applications where proteins must be analyzed
- **Lowest extractable levels:** Virtually free of extractables under conditions specified by the certificate

All Premium Syringe filters are certified by LC. What's more, the PES and GF are certified using LC/MS.



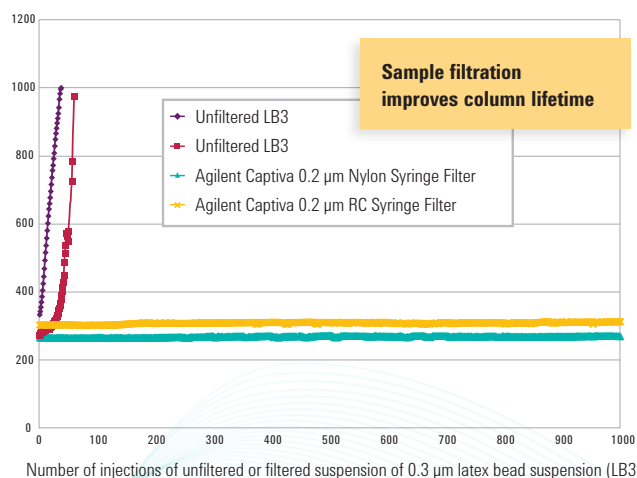


## Still not filtering your samples? This is why you *should* be

For this column life test, we used a surfactant solution, 0.002% Triton X-100, to prepare a 0.05% latex bead suspension. We then performed HPLC analysis on both filtered and unfiltered samples of the 0.3- $\mu\text{m}$  suspension.

Without filtering, the small-sized beads were excluded or caught in the column frit – increasing backpressure and reducing column life.

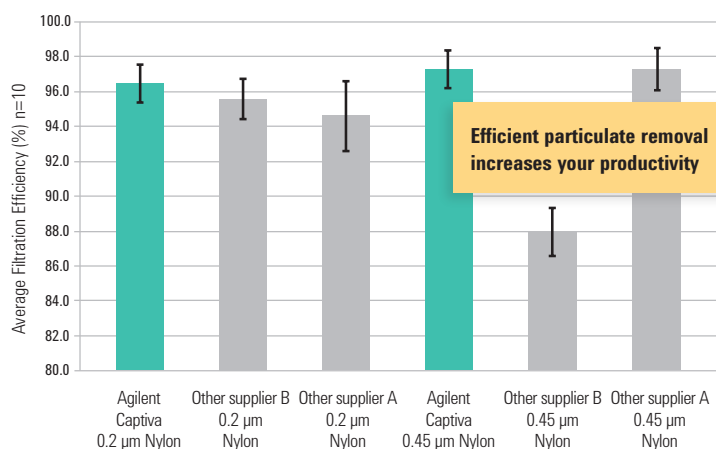
**Filtration impact on sub-2  $\mu\text{m}$  column A by latex bead  
0.3  $\mu\text{m}$  suspension:** Effects on filtration on sub-2  $\mu\text{m}$  column Life



**No increase in back pressure:** a 0.05% latex-sphere suspension was filtered through a Agilent Captiva Syringe filter. Note that the column backpressure did not increase – *even after 1000 injections*. In addition, the clear effluents from the filters suggest a successful retention of latex spheres.

Filtration efficiency – Agilent versus other suppliers: a surfactant solution, 0.1% Triton X-100, was used to prepare a 0.01% latex bead (0.3  $\mu\text{m}$ ) suspension. This challenging suspension was passed through each individual syringe filter, and a 1-mL filtrate was collected in a 2-mL vial for an HPLC run.

**Average filtration efficiency of Agilent Captiva Syringe filters  
versus other suppliers**



For more information on how this was performed and more competitive analysis, visit [agilent.com/chem/filtercomparison](http://agilent.com/chem/filtercomparison)

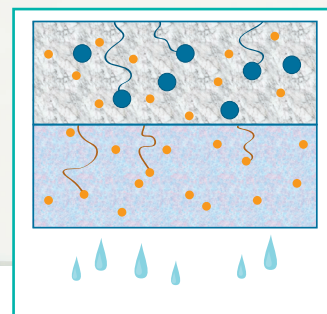
Our online selection tool makes it easy to choose the right filter for your application

Go to: [agilent.com/chem/SelectFilter](http://agilent.com/chem/SelectFilter)





## Captiva ND Non-Drip Filter Plates and Cartridges



## Save time and simplify your sample prep workflow

The high performance of today's MS instruments allows you to increase productivity. There is one drawback, however: time-consuming, multi-step sample prep for protein precipitation.

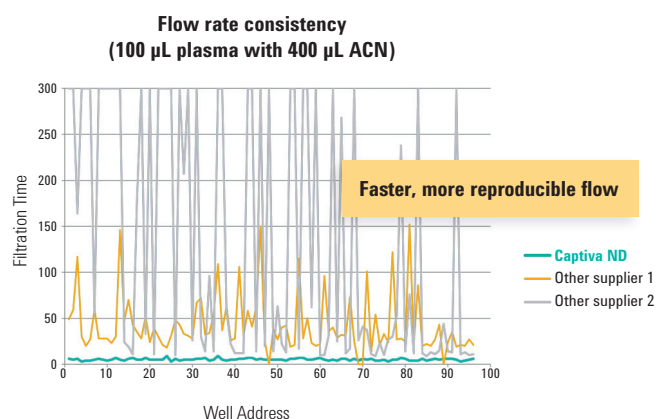
**Agilent Captiva ND filter plates** reduce the number of steps in your sample prep workflow, making particulate removal and protein precipitation easy and completed within the well. Their unique non-drip design gives you these advantages:

- It eliminates the need to use messy tip or well seals, and reduces the number of liquid transfer steps required to process samples
- It allows you to mix organic solvent and sample within the well – without sample dripping through the membrane until vacuum or positive pressure is applied
- It is more efficient than centrifugation at removing particulates formed from protein precipitation

Captiva's two filter layers (enlarged above) each have different porosities, capturing large particulates first, followed by small particulates. Clogging is eliminated, because the particulates must follow a non-linear path.

## Competitive analysis – flow rate consistency

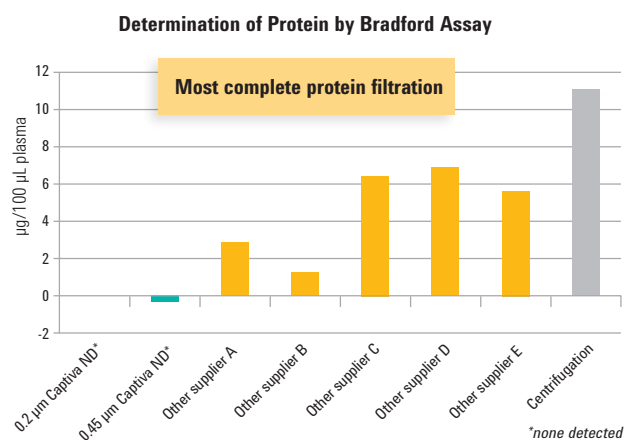
The dual-depth filter construction of Captiva ND delivers a fast, reproducible flow. So you get uniform sample treatment and reliable filtrate recovery in a fraction of the time of other protein precipitation plates.



Agilent Captiva ND plates process samples quickly and uniformly across all wells of the 96-well plate.

## Comparison of Captiva plates

Confidently remove proteins with Captiva ND plates as determined by the Bradford Assay post precipitation as compared to other suppliers.



Average protein content post precipitation of a 100  $\mu$ L human plasma sample (n=24, 4:1 ACN Precipitation) among plate manufacturers and techniques.



Learn how to optimize the benefits of filtration at [agilent.com/chem/filtration](https://www.agilent.com/chem/filtration)





## Captiva ND Lipids Filter Plates and Cartridges



### Remove ion-suppressing lipids quickly

Failing to remove lipids during protein precipitation can cause lipid build-up on your column and deposition within your MS, causing matrix effects that compromise your data.

You can efficiently remove ion-suppressing phospholipids — and increase instrument uptime — with Captiva ND Lipids filter plates and cartridges. These are specifically designed for filtration with LC/MS systems, and deliver these advantages:

- Five times faster sample preparation than centrifugation protein precipitation while simultaneously removing lipids
- A reproducible flow, so you get uniform sample treatment and reliable filtrate recovery
- Greater trace-level sensitivity and precision



## Prepare samples more than five times faster

Captiva ND Lipids allows you to prepare samples more than five times faster than centrifugation protein precipitation (PPT). It also is specifically designed for the efficient removal of phospholipids, so you remove more from your matrix in less time.

### Sample preparation time comparison

PPT (centrifugation) vs. Captiva ND Lipids

Centrifugation Protein Precipitation (PPT)	Time (min)	Captiva ND Lipids	Time (min)
Add 0.6 mL of ACN and 0.2 mL of plasma sample to centrifugation tubes.	5	Add 0.6 mL of ACN and 0.2 mL of plasma sample to Captiva ND 96-well plate.	5
Centrifuge at 10,000 rpm for 10 min.	11	Mix each well with a pipette five times and apply vacuum for filtration.	
Transfer supernatant to 2 mL injection vials (if tubes were used) or a new empty 96-well plate for analysis (if plate format was used).	10	Directly transfer injection plate for analysis.	0
<b>Total time required for sample preparation</b>	<b>26</b>	<b>Total time required for sample preparation</b>	<b>5</b>
Lipids WILL build up during your sequence since they are not removed.		Proteins AND lipids will be removed during your sample preparation.	

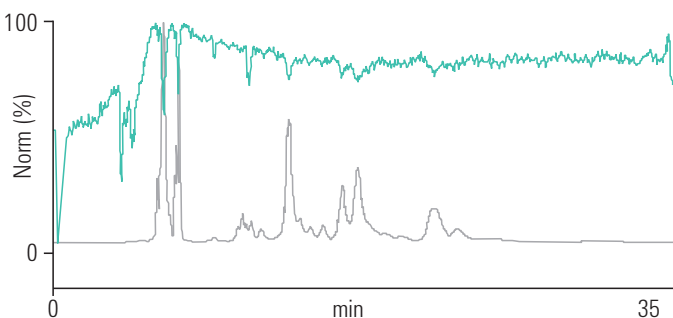
This time comparison is based on the preparation of 96 samples.

## Reduce ion suppression for improved recovery and reproducible retention times

Below, the first plasma sample was analyzed without first undergoing filtration. Ion suppression events correspond to the elution of phospholipids (bottom trace).

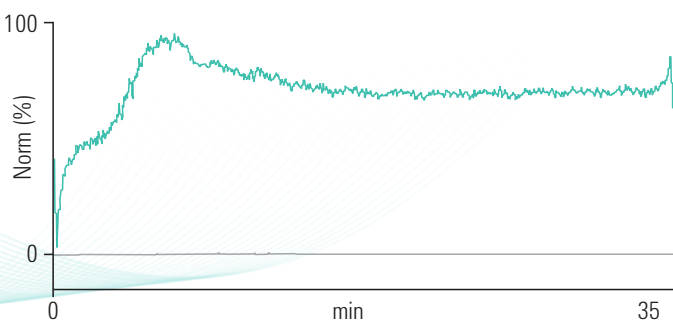
The second sample was prepared with Captiva ND Lipids to remove proteins, lipids, and particulates (bottom trace). Ion suppression events were virtually nonexistent.

### Post-column infusion (PCI) of albuterol *before* treatment with Captiva ND Lipids plates



Note that the ion-suppression features (top trace) correlate with the elution of phospholipids (bottom trace).

### Same experiment *after* protein and lipid depletion with Captiva ND Lipids



Ion suppression is dramatically reduced and the lipids are almost non-detectable.

Learn how to optimize the benefits of filtration at [agilent.com/chem/filtration](https://www.agilent.com/chem/filtration)



# Ordering Information

## Captiva 96-well Filter Plates

Pore Size (µm)	Filter Material	Unit	Part No.
0.2	Polypropylene	5/pk	A5960002
	Polypropylene	100/pk	A5960002B
0.45	Polyvinylidene fluoride and polypropylene	5/pk	A5967045
	Polypropylene	5/pk	A5960045
	Polypropylene	100/pk	A5960045B
10	Glass fiber	5/pk	A596401000
20	Polypropylene	5/pk	A596002000
	Polypropylene Bulk Pack	100/pk	A596002000B

## Captiva ND 96-well Filter Plates

Description	Unit	Part No.
Captiva ND plate, 0.2 µm, polypropylene Recommended for both methanol and acetonitrile	5/pk	A596002
Captiva ND plate, 0.45 µm, polypropylene Suitable for acetonitrile only	5/pk Bulk Pack	A5969045

## Captiva ND Lipids 96-well Filter Plates

Description	Unit	Part No.
Captiva ND Lipids 96-well filtration plate	100/pk	A59640002B
Captiva ND Lipids 96-well filtration plate, 1-mL well	1/pk	A59640002I
Captiva ND Lipids 96-well filtration plate, 1-mL well	5/pk	A59640002V
DuoSeal 96 96-well plate seals	10/pk	A8961008

## Captiva Filter Cartridges

Pore Size (µm)	Filter Material	Volume (mL)	Unit	Part No.
0.2	Polyvinylidene fluoride and polypropylene	3	100/pk	A5300002
0.45	Polyvinylidene fluoride and polypropylene	3	100/pk	A5307045
		6	100/pk	A5060045
10	Glass fiber	10	100/pk	A500401000

## Captiva ND Filter Cartridges

Description	Pore Size (µm)	Filter Material	Volume (mL)	Unit	Part No.
Non-Drip	0.22	Polypropylene	3	100/pk	A5300063
Non-Drip Lipids	0.22	Polypropylene	3	100/pk	A5300635





## Premium Filters 100/pk

Description	Diameter (mm)	Pore Size (µm)	Certificaion	Housing	Part No.
PTFE	4	0.2	LC	Polypropylene	5190-5082
	4	0.45	LC	Polypropylene	5190-5083
	15	0.2	LC	Polypropylene	5190-5084
	15	0.45	LC	Polypropylene	5190-5085
	25	0.2	LC	Polypropylene	5190-5086
	25	0.45	LC	Polypropylene	5190-5087
Nylon	15	0.2	LC	Polypropylene	5190-5088
	15	0.45	LC	Polypropylene	5190-5091
	25	0.2	LC	Polypropylene	5190-5092
	25	0.45	LC	Polypropylene	5190-5093
PES	4	0.45	LC/MS	Polypropylene	5190-5095
	4	0.2	LC/MS	Polypropylene	5190-5094
	15	0.2	LC/MS	Polypropylene	5190-5096
	15	0.45	LC	Polypropylene	5190-5097
	25	0.2	LC/MS	Polypropylene	5190-5098
	25	0.45	LC	Polypropylene	5190-5099
Regenerated cellulose	4	0.2	LC	Polypropylene	5190-5106
	4	0.45	LC	Polypropylene	5190-5107
	15	0.2	LC	Polypropylene	5190-5108
	15	0.45	LC	Polypropylene	5190-5109
	25	0.2	LC	Polypropylene	5190-5110
	25	0.45	LC	Polypropylene	5190-5111
Cellulose acetate	28	0.2	LC	MBS	5190-5116
	28	0.45	LC	MBS	5190-5117
Glass microfiber	15		LC/MS	Polypropylene	5190-5120
	28		LC	MBS	5190-5122

## Econofilters, 1,000/pk

Description	Diameter (mm)	Pore Size (µm)	Housing	Part No.
PVDF	13	0.2	Polypropylene	5190-5261
	13	0.45	Polypropylene	5190-5262
	25	0.2	Polypropylene	5190-5263
	25	0.45	Polypropylene	5190-5264
PTFE	13	0.2	Polypropylene	5190-5265
	13	0.45	Polypropylene	5190-5266
	25	0.2	Polypropylene	5190-5267
	25	0.45	Polypropylene	5190-5268
Nylon	13	0.2	Polypropylene	5190-5269
	13	0.45	Polypropylene	5190-5270
	25	0.2	Polypropylene	5190-5271
	25	0.45	Polypropylene	5190-5272
PES	13	0.2	Polypropylene	5190-5273
	13	0.45	Polypropylene	5190-5274
	25	0.2	Polypropylene	5190-5275
	25	0.45	Polypropylene	5190-5276
Polypropylene	13	0.2	Polypropylene	5190-5277
	13	0.45	Polypropylene	5190-5278
	25	0.2	Polypropylene	5190-5279
	25	0.45	Polypropylene	5190-5280
Regenerated cellulose*	15	0.2	Polypropylene	5109-5310
	15	0.45	Polypropylene	5190-5308
	25	0.2	Polypropylene	5190-5309
	25	0.45	Polypropylene	5190-5307

\*Premium Syringe filter in 1,000 packs

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