

# Filtration Makes All the Difference

Agilent Captiva sample preparation filtration portfolio





## Did You Know... The First Part of Your Workflow Can Cause Unexpected Downtime and Sample Rerun?

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

Filtering samples before analysis can help you achieve longer column life, maximize uptime, improve sample integrity, and maximize instrument performance.

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

Captiva filtration products improve your chromatography without adding time to the process. So you can meet your unrelenting analytical demands and expectations for quality, speed, and accuracy.

## Did You Know... Even Small Amounts of Particulates Can Ruin Your Column—and Your Results?

Particulates can cause high backpressure, retention-time shift, resolution loss, and shorter column life. Agilent Captiva syringe filters and filter vials remove particulates and are ideal for simple mechanical filtration.

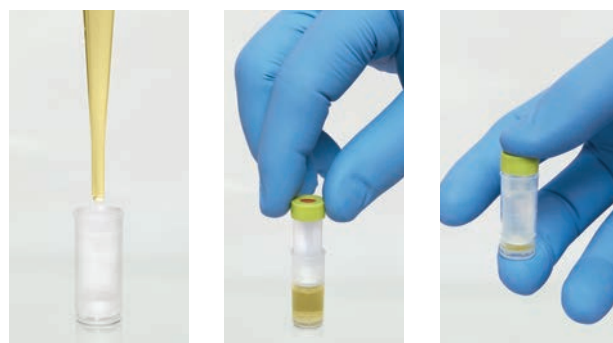
**Syringe filters use a traditional technique to maximize the advantages of filtration.**



Captiva syringe filters give you:

- **Greater productivity**  
The unique design produces the industry's fastest flow rates.
- **High loading capacity**  
They handle more particulates and greater volumes than other manufacturers' products.
- **The industry's lowest protein binding**  
Our premium polyethersulfone (PES) syringe filter is ideal for tricky biological applications where proteins must be analyzed.
- **The lowest extractable levels**  
They're virtually free of extractables under conditions specified by the certificate.
- **Budget-friendly options**  
Econofilters are available in money-saving packs of 1,000.

**Filter vials give you a new, more convenient option. Just fill, cover, and plunge.**



Captiva filter vials replace the combination of syringe filter, syringe, vial, cap, and septa with a single disposable unit. They deliver:

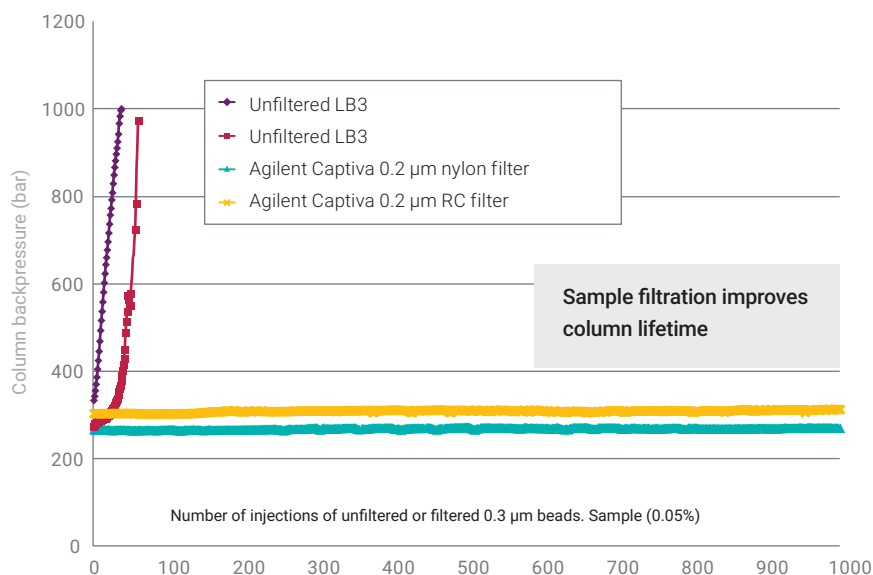
- **Convenience**  
Use your autosampler vial to filter your sample.
- **Less chance of contamination**  
Minimizing touchpoints in the sample journey leads to cleaner samples.

Request your solvent compatibility chart for tips on choosing both syringe vials and filter vials:  
[www.agilent.com/chem/filterposter](http://www.agilent.com/chem/filterposter).

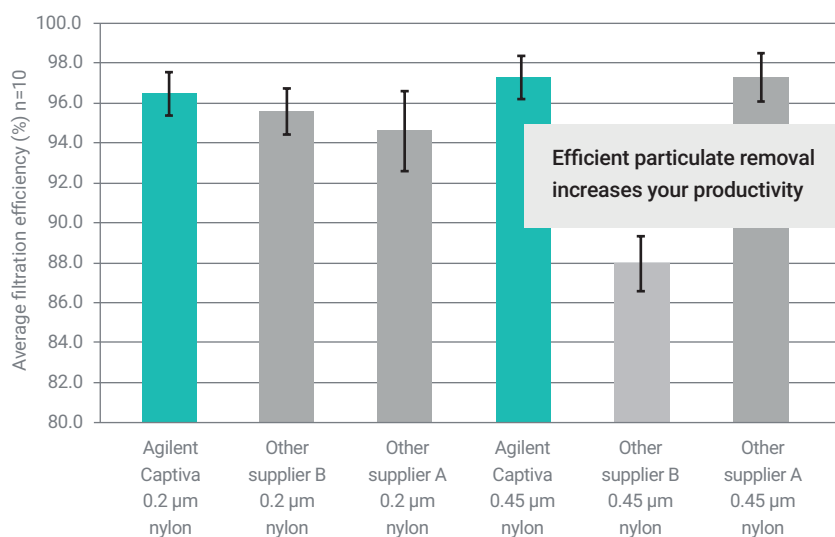
### Convenient two-part Captiva disposable syringes

Made from high-quality polyethylene and polypropylene, these syringes—together with the syringe filter—allow you to accurately dispense liquid volumes and filter samples before analysis. See page 9 to pair our syringe filters with the appropriate Captiva disposable syringe.

# Still Not Filtering Your Samples? This Is Why You Should Be.



Impact of filtering a 0.3 µm latex-bead suspension on lifetime of a sub-2 µm column.



Average filtration efficiency of Agilent Captiva syringe filters compared to other suppliers.  
Note: Different latex-bead solutions were used for different membrane qualification tests.

## LC column lifetime test

We used a 0.002% Triton X-100 surfactant solution to prepare a 0.05% latex-bead suspension (0.3 µm). Then, we performed HPLC analysis on filtered and unfiltered samples of the 0.3 µm suspension. Without filtering, the small-sized beads were not excluded, and were caught in the column frit—increasing backpressure and reducing column life.

## Filtration efficiency: Agilent compared to other suppliers

Here, we used a 0.1% Triton X-100 surfactant solution to prepare a 0.01% latex-bead suspension (0.3 µm). This challenging suspension was passed through each individual syringe filter, and a 1 mL filtrate was collected in a 2 mL vial for HPLC analysis.

## Need help with finding the right syringe filter?

Try our Captiva Syringe Filter Selector Tool. [www.agilent.com/search/gn/syringe-filter-selector](http://www.agilent.com/search/gn/syringe-filter-selector)

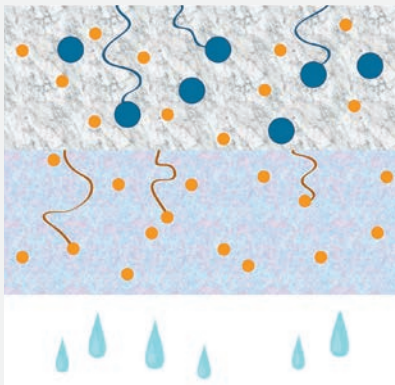
## Did You Know... You Can Save Time in Your Protein Precipitation Workflow?

Today's high-performing MS instruments help you increase productivity. But, there is one drawback: time-consuming sample preparation for protein precipitation.



Agilent Captiva Non-Drip (ND) filter plates reduce the steps in your sample preparation workflow, allowing you to complete particulate removal and protein precipitation within the well. Their unique nondrip 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's more efficient than centrifugation at removing particulates formed from protein precipitation.

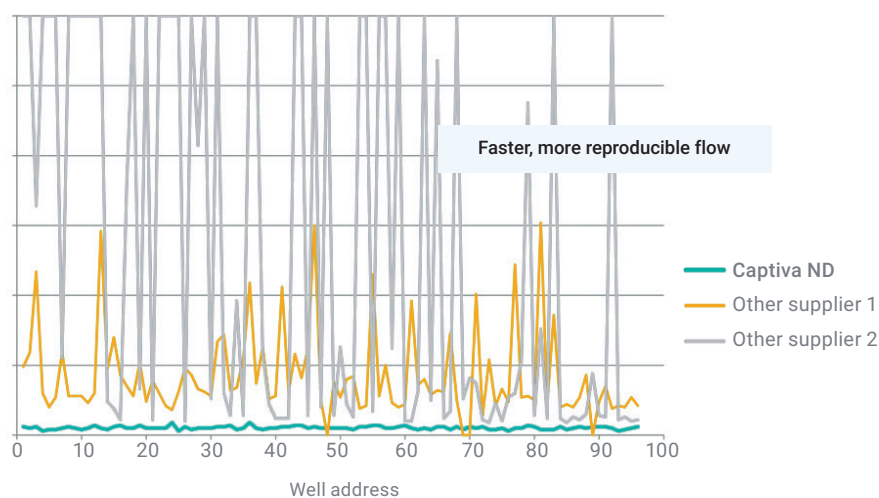


### Innovative filter layer technology

Captiva's two filter layers each have different porosities, capturing large particulates first, followed by small particulates. Clogging is eliminated because the particulates must follow a nonlinear path.



Flow rate consistency (100  $\mu$ L plasma with 400  $\mu$ L ACN)

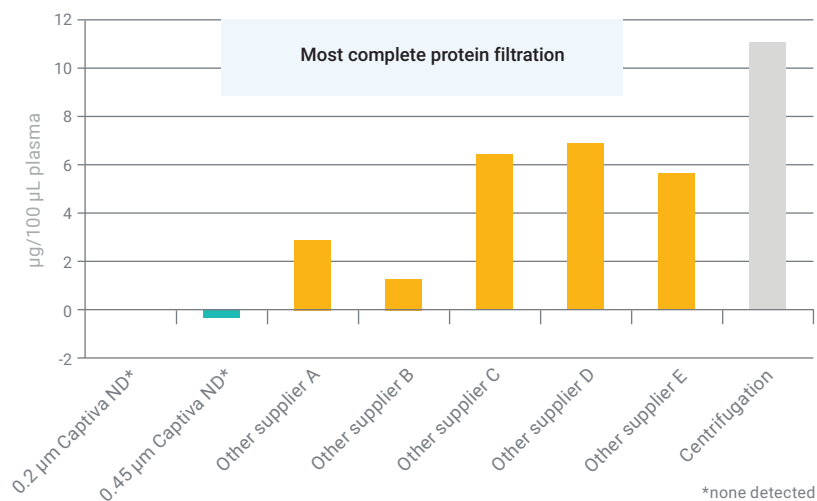


Agilent Captiva ND plates process samples quickly and uniformly across all wells of the 96-well plate.

### 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.

Determination of protein by Bradford Assay



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

### Comparison of Captiva plates

Confidently remove proteins with Captiva ND plates as determined by the Bradford Assay post-precipitation.

# Did You Know... Lipid Removal Is Possible, and Doesn't Have to Add Time?

Agilent Captiva sample preparation products for protein precipitation (PPT) reduce the steps required for traditional centrifugation protein precipitation—saving you time. You can now remove lipids and proteins in the same workflow in less time than standard PPT.

	Standard PPT on 96-Well Collection Plate	Duration (Minutes)	PPT on Agilent Captiva ND 96-Well Plate	Duration (Minutes)	PPT on Agilent Captiva EMR—Lipid 96-Well Plate	Duration (Minutes)
Protocol	Centrifugation based PPT protocol		Precipitate removal based PPT protocol		Functional filtration based PPT protocol	
Steps and duration	Biological sample addition	30	Crash solvent addition	5	Biological sample addition	30
	Crash solvent addition	5	Sample addition	30	Crash solvent addition	5
	Sample mixing	5	Sample mixing	5	Sample mixing	5
	Centrifugation	10	Elution and sample collection	15	Elution and sample collection	10
	Supernatant transfer	30				
	Total time before post-treatment	80		55		50
Post-treatment	Same with different protocols					
Matrix removal	Proteins		Proteins		Proteins and phospholipids	
			<i>Streamline your workflow</i>		<i>Streamline PLUS lipid removal</i>	

Comparison is based on processing 96 biological samples on 96-well plate.



Agilent Captiva EMR—Lipid. Winner of an Analytical Scientist Innovation Award (TASIA).

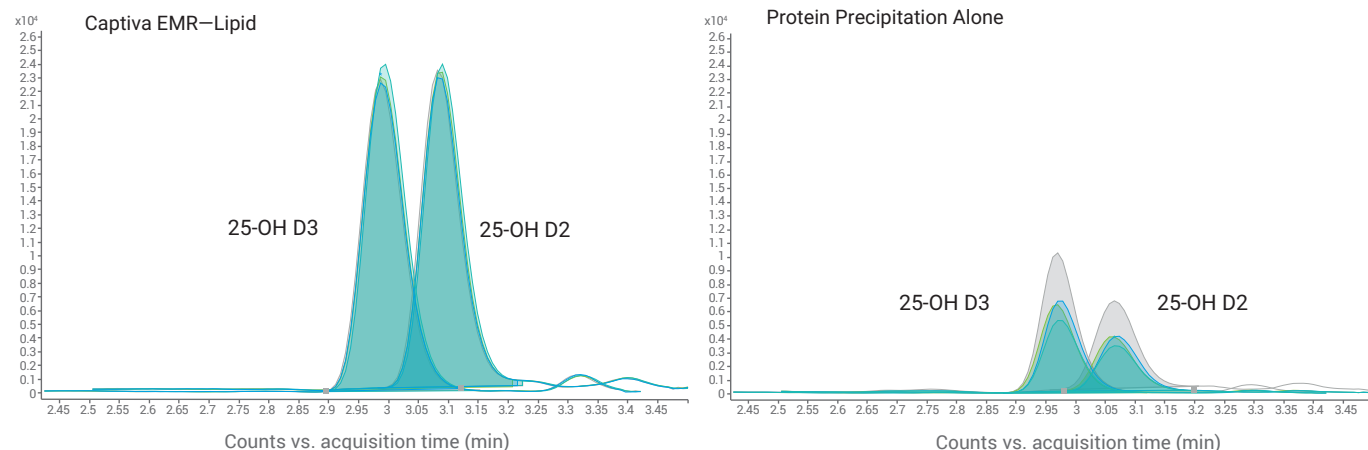
- Enhanced Matrix Removal—Lipid (EMR—Lipid), unlike other types of sample prep, is a unique sorbent that selectively removes lipids in complex matrices, so you can remove lipids without losing your analytes
- Captiva EMR—Lipid removes phospholipids without adding extra time to your workflow.
- Captiva ND Lipids is an alternate option for lipid removal. However, Captiva EMR—Lipid is your most efficient choice.

## Enhanced matrix removal boosts your productivity by preventing rerun

Reducing matrix interference is a must for maintaining analytical sensitivity standards. This is especially true for biological matrices, such as plasma, and high-fat food matrices of animal or plant origin.

The innovative sorbent in Captiva EMR—Lipid cartridges and plates captures ion-suppressing lipids, while allowing analytes of interest to pass through. Captiva EMR—Lipid provides excellent cleanup for fat-containing samples, improving data quality and decreasing RSD.

Improve precision and accuracy and reduce RSD



Captiva EMR—Lipid is an innovative material that efficiently removes major lipid classes from sample matrices without analyte loss. It works through a unique combination of size exclusion and hydrophobic interaction.



## Certified performance

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



# Ordering Information

## Premium filters 100/pack

Membrane	Diameter (mm)	Pore Size (µm)	Part No.
PTFE	4	0.2	<a href="#">5190-5082</a>
	4	0.45	<a href="#">5190-5083</a>
	15	0.2	<a href="#">5190-5084</a>
	15	0.45	<a href="#">5190-5085</a>
	25	0.2	<a href="#">5190-5086</a>
	25	0.45	<a href="#">5190-5087</a>
Nylon	15	0.2	<a href="#">5190-5088</a>
	15	0.45	<a href="#">5190-5091</a>
	25	0.2	<a href="#">5190-5092</a>
	25	0.45	<a href="#">5190-5093</a>
PES	4	0.45	<a href="#">5190-5095</a>
	4	0.2	<a href="#">5190-5094</a>
	15	0.2	<a href="#">5190-5096</a>
	15	0.45	<a href="#">5190-5097</a>
	25	0.2	<a href="#">5190-5098</a>
	25	0.45	<a href="#">5190-5099</a>
Regenerated cellulose	4	0.2	<a href="#">5190-5106</a>
	4	0.45	<a href="#">5190-5107</a>
	15	0.2	<a href="#">5190-5108</a>
	15	0.45	<a href="#">5190-5109</a>
	25	0.2	<a href="#">5190-5110</a>
	25	0.45	<a href="#">5190-5111</a>
Cellulose acetate	28	0.2	<a href="#">5190-5116</a>
	28	0.45	<a href="#">5190-5117</a>
Glass microfiber	15		<a href="#">5190-5120</a>
	28		<a href="#">5190-5122</a>

## Econofilters 1,000/pack

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

## Captiva disposable syringes

Product Description	Syringes Per Package	Sterile	Blister Pack	Luer Lock	Luer Slip	Part No.
1 mL sterile Luer slip	100	•	•		•	<a href="#">5610-2107</a>
ValueLab 1 mL non-sterile bulk Luer slip	7,000				•	<a href="#">5610-2108</a>
2 mL (3 mL) Luer Lock Sterile	100	•	•	•		<a href="#">5610-2109</a>
2 mL (3 mL) Luer lock bulk	6,300			•		<a href="#">5610-2110</a>
ValueLab 2 mL non-sterile bulk Luer slip	6,300				•	<a href="#">5610-2111</a>
5 mL (6 mL) Luer Lock Sterile	100	•	•	•		<a href="#">9301-6476</a>
5 mL (6 mL) Luer Lock bulk	3,600			•		<a href="#">5610-2112</a>
ValueLab 5 mL non-sterile bulk Luer slip	3,600				•	<a href="#">5610-2113</a>
10 mL (12 mL) Luer Lock Sterile	100	•	•	•		<a href="#">9301-6474</a>
10 mL (12 mL) Luer lock bulk	2,000			•		<a href="#">5610-2114</a>
ValueLab 10 mL non-sterile bulk Luer slip	2,000				•	<a href="#">5610-2115</a>
20 mL (24 mL) Luer Lock Sterile	100	•	•	•		<a href="#">5190-5103</a>
20 mL (24 mL) Luer lock bulk	1,000			•		<a href="#">5610-2116</a>
ValueLab 20 mL non-sterile bulk Luer slip	1,000				•	<a href="#">5610-2117</a>

#### Layered filters, 100/pack

Description	Diameter (mm)	Pore Size (µm)	Certification	Housing	Part No.
Glass microfiber/PTFE	15	0.2	LC	Polypropylene	<a href="#">5190-5126</a>
	15	0.45	LC	Polypropylene	<a href="#">5190-5127</a>
	25	0.2	LC	Polypropylene	<a href="#">5190-5128</a>
	25	0.45	LC	Polypropylene	<a href="#">5190-5129</a>
Glass microfiber/Nylon	15	0.2	LC	Polypropylene	<a href="#">5190-5132</a>
	15	0.45	LC	Polypropylene	<a href="#">5190-5133</a>
	25	0.2	LC	Polypropylene	<a href="#">5190-5134</a>
	25	0.45	LC	Polypropylene	<a href="#">5190-5135</a>

#### Captiva filter vials

Description	Part No. (Nonslit Septa)	Part No. (New Preslit Septa)
0.45 µm PTFE filter vial, 100/pack	<a href="#">5191-5933</a>	<a href="#">5610-2122</a>
0.20 µm PTFE filter vial, 100/pack	<a href="#">5191-5934</a>	<a href="#">5610-2123</a>
0.45 µm Nylon filter vial, 100/pack	<a href="#">5191-5935</a>	<a href="#">5610-2118</a>
0.20 µm Nylon filter vial, 100/pack	<a href="#">5191-5936</a>	<a href="#">5610-2119</a>
0.45 µm RC filter vial, 100/pack	<a href="#">5191-5939</a>	<a href="#">5610-2124</a>
0.20 µm RC filter vial, 100/pack	<a href="#">5191-5940</a>	<a href="#">5610-2125</a>
0.45 µm PES filter vial, 100/pack	<a href="#">5191-5941</a>	<a href="#">5610-2120</a>
0.20 µm PES filter vial, 100/pack	<a href="#">5191-5942</a>	<a href="#">5610-2121</a>
Vial closure tool	<a href="#">5191-5943</a>	

#### Captiva 96-well filter plates

Pore Size (µm)	Filter Material	Unit	Part No.
0.2	Polypropylene	5/pk	<a href="#">A5960002</a>
	Polypropylene	100/pk	<a href="#">A5960002B</a>
0.45	Polyvinylidene fluoride and polypropylene	5/pk	<a href="#">A5967045</a>
	Polypropylene	5/pk	<a href="#">A5960045</a>
	Polypropylene	100/pk	<a href="#">A5960045B</a>
10	Glass fiber	5/pk	<a href="#">A596401000</a>
20	Polypropylene	5/pk	<a href="#">A596002000</a>
	Polypropylene bulk pack	100/pk	<a href="#">A596002000B</a>

#### Captiva ND filter cartridges

Description	Pore Size (µm)	Filter Material	Volume (mL)	Unit	Part No.
Non-Drip	0.22	Polypropylene	3	100/pk	<a href="#">A5300063</a>
Non-Drip Lipids	0.22	Polypropylene	3	100/pk	<a href="#">A5300635</a>

### Captiva filter cartridges

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

### 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	<a href="#">A596002</a>
Captiva ND plate, 0.45 µm, polypropylene Suitable for acetonitrile only	5/pk bulk pack	<a href="#">A5969045</a>

### Captiva EMR—Lipid

Description	Unit	Part No.
Captiva EMR—Lipid 96-well plate, 40 mg*	1/pk	<a href="#">5190-1000</a>
Captiva EMR—Lipid 96-well plate, 40 mg*	5/pk	<a href="#">5190-1001</a>
Captiva EMR—Lipid, 1 mL, 40 mg*	100/pk	<a href="#">5190-1002</a>
Captiva EMR—Lipid, 3 mL, 300 mg	100/pk	<a href="#">5190-1003</a>
Captiva EMR—Lipid, 6 mL, 600 mg	50/pk	<a href="#">5190-1004</a>

\*96-well plate and 1 mL cartridge formats incorporate a solvent retention frit to allow in-well protein precipitation.

### Captiva ND Lipids 96-well filter plates

Description	Unit	Part No.
Captiva ND Lipids 96-well filtration plate	100/pk	<a href="#">A59640002B</a>
Captiva ND Lipids 96-well filtration plate, 1-mL well	1/pk	<a href="#">A59640002I</a>
Captiva ND Lipids 96-well filtration plate, 1-mL well	5/pk	<a href="#">A59640002V</a>
DuoSeal 96 96-well plate seals	10/pk	<a href="#">A8961008</a>



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U.S. and Canada

**1-800-227-9770**

[agilent\\_inquiries@agilent.com](mailto:agilent_inquiries@agilent.com)

Europe

[info\\_agilent@agilent.com](mailto:info_agilent@agilent.com)

Asia Pacific

[inquiry\\_lsca@agilent.com](mailto:inquiry_lsca@agilent.com)

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