Agilent Captiva Syringe Filter Selection Guide

STEP 1

Sample Composition

Aqueous

All aqueous solutions

tissue culture/ protein applications/ large molecules

small molecules applications/ general aqueous

Solvents

Hydrophilic aqueous/ solvent mixtures/ solvents

Hydrophilic solvent-mixtures/ solvents

Hydrophobic solvents/gases/ acids/bases

PES Polyethersulfone
pH Range 3-12

CA Cellulose Acetate
pH Range 4-8

RC Regenerated Cellulose
pH Range 3-12

NY Nylon
pH Range 3-14

PTFE Polytetrafluorethylene
pH Range 1-14

STEP 2

Sample Volume

4 mm for up to 1 mL



0.1-1 mL

15 mm for up to 15 mL



15 mL

25-28 mm for up to 150 mL



10-150 mL

STEP 3

What is the Particle Size of Your LC Column?

Columns packed < 2 µm particles	Columns packed > 2 µm particles
0.2 µm UHPLC	**0.2 µm** or 0.45 µm HPLC

Applications

Type of Filtration	Recommended	Alternatives
HPLC • UHPLC • LC/MS • GC	RC	PTFE or Nylon
ICP-MS	PTFE	Glass Fiber/PTFE (High Particle Samples)
CE	RC	Nylon
Undiluted Organic Solvents	PTFE	Nylon
Protein Analysis • Samples with Biomolecules – Buffers	PES	RC or CA
Tissue Culture Media	PES	RC or CA
High Particle-Load Samples – Organic Solvents	Glass Fiber/PTFE	
High Particle-Load Samples – Aqueous Solutions	Glass Fiber/Nylon	

Premium Syringe Filter Chemical Compatibility

Legend		Polypropylene membrane	Polyethersulfone membrane	Cellulose Acetate membrane*	Polytetrafluorethylene membrane	Regenerated Cellulouse membrane	Nylon membrane	Glass Fiber membrane*	Housing Methyacrylate Butadiene Styrene	Housing Polypropylene
Compatible	••									
Limited compatibility	•									
Not compatible	–									
Not analyzed	N/A									
Filter		**PP**	**PES**	**CA**	**PTFE**	**RC**	**Nylon**	**GF**		
Housing									**MBS**	**PP**
Solvents										
Acetone		••	–	–	••	••	••	••	–	••
Acetonitrile		•	–	–	••	••	N/A	••	–	••
Benzene		–	–	•	••	••	••	••	–	••
Benzyl alcohol		••	–	–	••	••	••	••	–	•
n-Butyl acetate		N/A	–	–	••	••	••	••	–	••
n-Butanol		••	•	•	••	••	••	••	••	••
Carbon tetrachloride		•	–	–	••	••	••	••	–	–
Chloroform		•	–	–	••	••	••	••	–	••
Cyclohexane		••	–	•	••	••	••	••	•	•
Diethylacetamide		••	–	–	••	••	••	••	–	••
Diethyl ether		•	–	•	••	••	••	••	–	••
Dimethyl formamide		••	–	–	••	•	•	••	–	•
Dimethylsulfoxide		••	–	–	••	••	••	••	–	••
Dioxane		•	–	–	••	••	••	••	–	••
Ethanol, 98%		••	••	•	••	••	••	••	–	•
Ethyl acetate		•	–	–	••	••	••	••	–	•
Ethylene glycol		••	••	•	••	••	••	••	••	••
Formamide		N/A	••	–	••	•	••	••	••	••
Gasoline		•	•	•	••	••	••	••	••	••
Glycerin		••	••	•	••	••	••	••	•	•
n-Heptane		–	••	•	••	••	••	••	•	••
n-Hexane		–	••	•	••	••	••	••	•	•
Isopropanol		••	••	•	••	••	••	••	–	••
Isopropyl acetate		N/A	–	–	••	••	••	••	–	••
Methanol, 30%		••	••	N/A	••	••	••	••	••	••
Methanol, 98%		••	•	–	••	••	••	••	••	•
Methyl acetate		•	–	–	••	••	••	••	–	•
Methylene chloride		•	–	–	••	••	••	••	–	••

*CA and GF membranes in MBS housing for 28 mm size

Contact time:24 hours at 20 °C
Chemical compatibilities can be influenced by various factors. Therefore, we recommend that you confirm compatibility with the liquid you want to filter by performing a trial filtration run before you start your actual filtration.

(Continued)

Learn more about Agilent Captiva filtration products at **www.agilent.com/chem/filtration**

Premium Syringe Filter Chemical Compatibility Continued

Legend		Polypropylene membrane	Polyethersulfone membrane	Cellulose Acetate membrane*	Polytetrafluorethylene membrane	Regnerated Cellulouse membrane	Nylon membrane	Glass Fiber membrane*	Housing Methyacrylate Butadiene Styrene	Housing Polypropylene
Compatible	••									
Limited compatibility	•									
Not compatible	–									
Not analyzed	N/A									
Filter		**PP**	**PES**	**CA**	**PTFE**	**RC**	**Nylon**	**GF**		
Housing									**MBS**	**PP**
Solvents										
Methyl ethyl ketone		•	–	–	••	••	••	••	–	•
Methyl isobutyl ketone		•	–	–	••	••	••	••	–	•
Monochlorobenzene		••	–	–	••	••	••	••	•	••
Pyridine		•	–	–	••	••	••	••	–	••
Tetrahydrofuran		•	–	–	••	••	••	••	–	••
Toluene		–	–	•	••	••	••	••	–	••
Trichloroethane		N/A	–	–	••	••	••	••	–	N/A
Xylene		–	–	•	••	••	••	••	–	•
Acids										
Acetic acid, 25%		••	•	•	••	••	–	••	–	•
Acetic acid, 80%		••	N/A	–	••	••	–	••	–	•
Hydrochloric acid, 20%		••	••	–	••	–	–	••	•	•
Hydrofluoric acid, 25%		••	•	–	••	•	–	••	•	•
Nitric acid, 25%		••	•	–	••	–	–	••	•	•
Phosphoric acid, 1%		••	••	•	••	–	–	••	•	•
Sulfuric acid, 25%		••	•	–	••	•	–	••	•	••
Trichloroacetic acid, 10%		••	N/A	–	••	••	–	••	–	•
Bases										
Ammonium hydroxide, 25%		••	•	•	••	•	•	•	–	•
Sodium hydroxide, 1N		••	••	–	••	•	•	•	–	••
Aqueous solutions										
Formalin, 30%		••	•	••	••	•	••	••	•	•
Hydrogen peroxide, 30%		••	••	–	••	–	–	••	•	••
Sodium hypochlorite, 5%		N/A	••	–	••	–	–	••	•	•
pH range										
pH 1-14		••	–	–	••	–	–	••	–	••
pH 1-13		••	••	–	••	–	–	••	–	••
pH 3-14		••	•	–	••	•	••	••	–	••
pH 3-12		••	••	–	••	••	••	••	•	••
pH 4-8		••	••	••	••	••	••	••	••	••

*CA and GF membranes in MBS housing for 28 mm size

Contact time:24 hours at 20 °C
Chemical compatibilities can be influenced by various factors. Therefore, we recommend that you confirm compatibility with the liquid you want to filter by performing a trial filtration run before you start your actual filtration.

Econofilters Chemical Compatibility

Filter	Nylon membrane	Polyvinylidene Difluoride membrane	Polytetrafluorethylene membrane	Polyethersulfone membrane	Polypropylene membrane	Regenerated Cellulose membrane
	Nylon	PVDF	PTFE	PES	PP	RC
Solvents						
Acetic Glacial	LC	R	R	NR	R	R
Acetone	R	LC	R	NR	R	R
Acetonitrile	LC	R	R	R	LC	R
Ammonium Hydroxide, 1N	R	LC	R	R	R	
Ammonium Hydroxide, 3N	R	NR	R	R	R	
Amyl Acetate	LC	LC	R		R	R
Amyl Alcohol	R	R	R	R	R	R
Aniline	LC	R	R	NR	LC	R
Benzene	LC	LC	R	LC	NR	R
Benzyl Alcohol, 100%	R	R	R	R	R	R
Butanone	LC	LC	R		R	R
Butyl Acetate	LC	R	R		LC	R
Butyl Alcohol	R	R	R	R	R	R
Carbon Tetrachloride	LC	NR	R	LC	LC	R
Chloroform	LC	LC	R	NR	LC	R
Cyclohexanone		LC	R	NR	R	R
Dichlorodifluoromethane, TF	R	R	R	R	LC	R
Dichlorodifluoromethane, TMC	LC	LC	R	NR	LC	R
Dimethyl Formamide, DMF	R	NR	R	NR	R	LC
Dioxane	R	LC	R		R	LC
Ethyl Acetate	LC	R	R	LC	LC	R
Ethyl Ether	LC	R	R	R	LC	R
Ethylene Dichloride	LR	LR	R	NR	LR	
Ethylene Glycol	R	R	R	LC	R	R
Formaldehyde Solution, 30%	R	R	R	R	R	LC

(Continued)

Legend*	
Recommended use	R
Not recommended use	NR
Limited Compatibility	LC
No instructions	

*This guide is only for reference.

Econofilters Chemical Compatibility
Continued

Filter	Nylon membrane	Polyvinylidene Difluoride membrane	Polytetrafluorethylene membrane	Polyethersulfone membrane	Polypropylene membrane	Regenerated Cellulose membrane
	Nylon	PVDF	PTFE	PES	PP	RC
Solvents						
Gasoline	LC	LC	LC	R	LC	R
Glycerol	R	R	R	LC	R	R
Hydrochloric Concentrated	NR	R	NR	R	R	R
Hydrochloric, 25%	LC	R	R	R	R	R
Isopropanol	R	R	R	R	R	R
Isopropyl Ether		R	R		R	
Kerosene		R	R	R	R	
Methanol, 98%	LC	R	R	R	R	R
Methyl Acetate	LC	LC	R	NR	R	R
Methylene Chloride	NR	LC	R	NR	LC	R
Nitric, 25%	NR	LC	R		R	R
Nitric, Concentrated	NR	LC	R		R	NR
Phenol Aqueous, 10%	NR	LC	R	NR	R	R
Phosphoric, 25%	NR	R	R		R	R
Potassium hydroxide 3N	R	LC	R	R	R	
Propylene Glycol	R	R	R	LR	R	R
Pyridine	LC	LC	NR	NR	LC	R
Sodium Hydroxide, 3N	R	LC	R	R	R	
Sodium Hydroxide, 6N	R	NR	R	R	R	
Sulfuric, Concentrated	NR	LC	R	NR	R	LC
Tetrahydrofuran, THF	R	LC	R	NR	LC	LC
Toluene	NR	LC	R	NR	NR	R
Trichloroethylene	LC	NR	R	LC	LC	R
Water	R	R	R	R	R	R

Legend*	
Recommended use	R
Not recommended use	NR
Limited Compatibility	LC
No instructions	

*This guide is only for reference.

Learn more about Agilent Captiva filtration products at **www.agilent.com/chem/filtration**