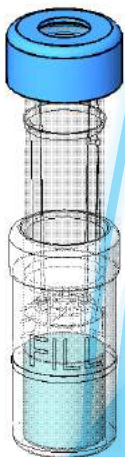


## SYRINGE FILTERS



## SYRINGELESS FILTERS



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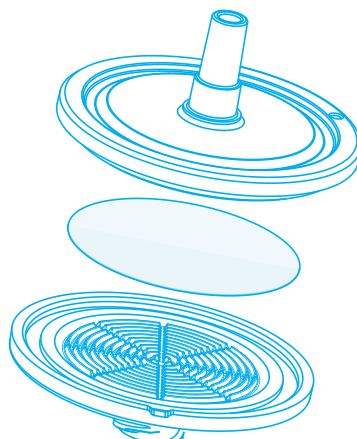
# The GVS Life Sciences Syringe Filters Family



GVS Life Sciences offers a range of disposable syringe filter devices designed to provide fast and efficient filtration of aqueous and organic solutions. They are available in a wide variety of sizes and membranes, with a polypropylene or acrylic housing, for both sterile and non sterile laboratory applications.

## Features and Benefits

- ◆ **Lower hold-up volume** - due to an improved flow channel design and reduced spacing between the supports within the housing, for better handling of small sample volumes or costly samples
- ◆ **Increased operating pressure** - up to 130 psi due to the over-mold that prevents sample leaking at the seam and keeps the filter unit from bursting in half
- ◆ **Strict quality control** - syringe filters are integrity tested to ensure a proper fit and weld to eliminate any potential filter by-pass
- ◆ **Accurate labeling** - each filter is labeled with the specific filter material and pore size for easy identification even if the syringe filter is not in its original packaging
- ◆ **Multifunctional connectors** - equipped with male luer-lock or male slip and female luer-lock connections
- ◆ **Polypropylene or Acrylic** housing
- ◆ **Modified Acrylic housing** to bidirectionally support the membrane allowing sample injection or aspiration
- ◆ **Sterile or Non-Sterile** options
- ◆ **Bulk-packages** or **individual blisters**
- ◆ **Customized product and packaging** on request
- ◆ **Manufactured in the USA** - GVS Life Sciences devices are manufactured in our ISO9001 certified plant in Sanford, Maine, USA, using proprietary microporous membranes from our plant in Westborough, Massachusetts, USA.



# 13 mm - ABLUO®

## Characteristics

**Membrane Materials:** Cellulose Acetate, Nitrocellulose, Nylon, PE, PES, PTFE, PVDF, Regenerated Cellulose

**Membrane Diameter:** 13 mm

**Effective Filtration Area:** 0.76 cm<sup>2</sup>

**Housing Diameter:** 18 mm

**Housing Materials:** Acrylic, Polypropylene

**Inlet / Outlet:** FLL / MLL-MLS

**Holdup Volume:** <50 microliter

**Maximum Operating Temperature:** PP Abluo - 90°C/194°F, Acrylic Abluo 50°C /122°F

**Maximum Operating Pressure:** 80 psi

**Sterile:** No



## Applications

- ◆ Filtration of Aqueous, Organic and Alcohol Solutions
- ◆ Analytical Sample Preparation
- ◆ IC Chromatography
- ◆ Fuel Hydraulic Fluids and Machined Parts
- ◆ Clarification
- ◆ Protein Chemistry
- ◆ Cell Culture

## Ordering information

Membrane Material	Pore Size (µm)	End Fitting	Housing Material	Color	Product Code
					Packaging 500/pk
Cellulose Acetate (CA)	0.22	FLL/MLL	Acrylic	Blue	FJ13ANCCA002DD01
Cellulose Acetate (CA)	0.45	FLL/MLL	Acrylic	Yellow	FJ13ANCCA004FD01
Cellulose Acetate (CA)	0.80	FLL/MLL	Acrylic	Green	FJ13ANCCA008ED01
Cellulose Acetate (CA)	1.20	FLL/MLL	Acrylic	Red	FJ13ANCCA012CD01
Cellulose Acetate (CA)	5.00	FLL/MLL	Acrylic	Brown	FJ13ANCCA050PD01
Nylon (NY)	0.20	FLL/MLS	Polypropylene	Transparent	FJ13BNPNY002AD01
Nylon (NY)	0.45	FLL/MLS	Polypropylene	Transparent	FJ13BNPNY004AD01
Polyethersulfone (PES)	0.22	FLL/MLS	Polypropylene	Transparent	FJ13BNPPS002AD01
Polyethersulfone (PES)	0.45	FLL/MLS	Polypropylene	Transparent	FJ13BNPPS004AD01
Nitrocellulose Mixed Esters (MCE)	0.22	FLL/MLS	Acrylic	Transparent	FJ13BNCNC002AD01
Nitrocellulose Mixed Esters (MCE)	0.45	FLL/MLS	Acrylic	Transparent	FJ13BNCNC004AD01
Regenerated Cellulose (RC)	0.20	FLL/MLS	Polypropylene	Transparent	FJ13BNPRC002AD01
Regenerated Cellulose (RC)	0.45	FLL/MLS	Polypropylene	Transparent	FJ13BNPRC004AD01
Polyvinylidene Fluoride (PVDF)	0.22	FLL/MLS	Polypropylene	Transparent	FJ13BNPPV002AD01
Polyvinylidene Fluoride (PVDF)	0.45	FLL/MLS	Polypropylene	Transparent	FJ13BNPPV004AD01
Polytetrafluoroethylene (PTFE)	0.20	FLL/MLS	Polypropylene	Transparent	FJ13BNPPT002AD01
Polytetrafluoroethylene (PTFE)	0.45	FLL/MLS	Polypropylene	Transparent	FJ13BNPPT004AD01
Polytetrafluoroethylene Hydrophilic (PTFE HP)	0.22	FLL/MLS	Polypropylene	Transparent	FJ13BNPPH002AD01
Polyethylene (PE)	0.20	FLL/MLS	Polypropylene	Transparent	FJ13BNPPE002AD01
Polyethylene (PE)	0.50	FLL/MLS	Polypropylene	Transparent	FJ13BNPPE005AD01

# 17 mm - CAMEO™

## Characteristics

**Membrane Materials:** Cellulose Acetate, Nylon, Glass Fiber, PES, Polypropylene, PTFE, PVDF

**Membrane Diameter:** 17 mm

**Effective Filtration Area:** 1.4 cm<sup>2</sup>

**Housing Diameter:** 22 mm

**Housing Material:** Heat-sealed pure polypropylene without the use of glues or sealants

**Inlet / Outlet:** FLL-MLS

**Prefilter:** 1.0 µ binderless glass-fiber, in some configurations

**Holdup Volume:** <15 microliter

**Maximum Operating Temperature:** 82°C/180°F

**Maximum Operating Pressure:** 130 psi

**Sterile:** No



## Applications

- Analytical Sample Preparation
- Dissolution testing
- Content uniformity
- Environmental samples
- Composite assays
- Food analysis
- Biofuel analysis

## Ordering information

Membrane Material	Pore Size (µm)	Color	Product Code				
			Packaging 50/pk	Packaging 200/pk	Packaging 500/pk	Packaging 1000/pk	Packaging 5000/pk
Cellulose Acetate (CA)	0.22	Transparent	1225617	1225618	1225619	1233871	
Cellulose Acetate (CA)	0.45	Transparent	1225620	1225622	1225623	1233882	
Nylon (NY)	0.22	Transparent	1224746	1224747	1224748	1229460	1224749
Nylon (NY)	0.45	Transparent	1224753	1224754	1224755	1229462	1224756
Nylon (NY)	1.20	Transparent	1224760	1224761			
Nylon (NY)	5.00	Transparent	1224763	1224764	1224765	1229464	
Polyethersulfone (PES)	0.22	Transparent	1233547			1233544	3049950
Polyethersulfone (PES)	0.45	Transparent	1233548			1233545	3019423
Polypropylene (PP)	0.22	Transparent	1224808	1224809	1224810	1229452	1225602
Polypropylene (PP)	0.45	Transparent	1224811	1224812	1224813	1229454	1225607
Polytetrafluoroethylene (PTFE)	0.22	Transparent	1224780	1224781	1224782	1229447	1224783
Polytetrafluoroethylene (PTFE)	0.45	Transparent	1224787	1224788	1224789	1229449	1224790
Polyvinylidene Fluoride (PVDF)	0.22	Transparent				3049952	
Polyvinylidene Fluoride (PVDF)	0.45	Transparent	3023135		3023188	3023187	
Glass Fiber/Nylon (GF/NY)	0.22	Transparent	1224766	1224767	1224768	1229477	1224769
Glass Fiber/Nylon (GF/NY)	0.45	Transparent	1224773	1224774	1224775	1229479	1224776
Glass Fiber/Polypropylene (GF/PP)	0.22	Transparent	1224814	1224815		1229473	
Glass Fiber/Polypropylene (GF/PP)	0.45	Transparent	1224817	1224818	1229481	1229475	
Glass Fiber/PTFE	0.22	Transparent	1224794	1224795	1224796	1229469	1224797
Glass Fiber/PTFE	0.45	Transparent	1224801	1224802	1224803	1229471	1224804

# 25 mm - ABLUO®

## Characteristics

**Membrane Materials:** Cellulose Acetate, Glass Fiber, Nitrocellulose, Nylon, PES, Polyethylene, PTFE, PVDF, Regenerated Cellulose

**Membrane Diameter:** 25 mm

**Effective Filtration Area:** 4.6 cm<sup>2</sup>

**Housing Diameter:** 33 mm

**Housing Materials:** Acrylic, Polypropylene

**Inlet / Outlet:** FLL / MLL-MLS

**Holdup Volume:** <100 microliter

**Maximum Operating Temperature:** PP Abluo - 90°C/194°F, Acrylic Abluo 50°C /122°F

**Maximum Operating Pressure:** 80 psi

**Sterile:** No



## Applications

- ◆ Analytical sample preparation
- ◆ Biological fluids
- ◆ Buffer solutions
- ◆ Sterile filtering of tissue culture media
- ◆ Protein aqueous solutions

## Ordering information

Membrane Material	Pore Size (µm)	End Fitting	Housing Material	Color	Product Code
					Packaging 500/pk
Cellulose Acetate (CA)	0.22	FLL/MLL	Acrylic	Blue	FJ25ANCCA002D D01
Cellulose Acetate (CA)	0.45	FLL/MLL	Acrylic	Yellow	FJ25ANCCA004FD01
Cellulose Acetate (CA)	0.80	FLL/MLL	Acrylic	Green	FJ25ANCCA008ED01
Cellulose Acetate (CA)	1.20	FLL/MLL	Acrylic	Red	FJ25ANCCA012CD01
Cellulose Acetate (CA)	5.00	FLL/MLL	Acrylic	Brown	FJ25ANCCA050PD01
Nylon (NY)	0.20	FLL/MLS	Polypropylene	Transparent	FJ25BNPNY002AD01
Nylon (NY)	0.45	FLL/MLS	Polypropylene	Transparent	FJ25BNPNY004AD01
Polyethersulfone (PES)	0.22	FLL/MLS	Polypropylene	Transparent	FJ25BNPPS002AD01
Polyethersulfone (PES)	0.45	FLL/MLS	Polypropylene	Transparent	FJ25BNPPS004AD01
Polyethersulfone Asymmetric (PES)	0.22	FLL/MLS	Polypropylene	Transparent	FJ25BNPPX002AD01
Nitrocellulose Mixed Esters (MCE)	0.22	FLL/MLS	Acrylic	Transparent	FJ25BNCNC002AD01
Nitrocellulose Mixed Esters (MCE)	0.45	FLL/MLS	Acrylic	Transparent	FJ25BNCNC004AD01
Regenerated Cellulose (RC)	0.20	FLL/MLS	Polypropylene	Transparent	FJ25BNPRC002AD01
Regenerated Cellulose (RC)	0.45	FLL/MLS	Polypropylene	Transparent	FJ25BNPRC004AD01
Polyvinylidene Fluoride (PVDF)	0.22	FLL/MLS	Polypropylene	Transparent	FJ25BNPPV002AD01
Polyvinylidene Fluoride (PVDF)	0.45	FLL/MLS	Polypropylene	Transparent	FJ25BNPPV004AD01
Polytetrafluoroethylene (PTFE)	0.20	FLL/MLS	Polypropylene	Transparent	FJ25BNPPT002AD01
Polytetrafluoroethylene (PTFE)	0.45	FLL/MLS	Polypropylene	Transparent	FJ25BNPPT004AD01
Polytetrafluoroethylene Hydrophilic (PTFE HP)	0.22	FLL/MLS	Polypropylene	Transparent	FJ25BNPPH002AD01
Polyethylene (PE)	0.20	FLL/MLS	Polypropylene	Transparent	FJ25BNPPE002AD01
Polyethylene (PE)	0.50	FLL/MLS	Polypropylene	Transparent	FJ25BNPPE005AD01
Glass Fiber (GF)	1.00	FLL/MLS	Polypropylene	Transparent	FJ25BNPGF010AD01
Glass Fiber (GF)	1.20	FLL/MLS	Polypropylene	Transparent	FJ25BNPGF012AD01
Glass Fiber (GF)	3.10	FLL/MLS	Polypropylene	Transparent	FJ25BNPGF031AD01

# 30 mm - CAMEO™

## Characteristics

**Membrane Material:** Cellulose Acetate, Glass Fiber, Nylon, PES, Polypropylene, PTFE, PVDF

**Membrane Diameter:** 30 mm

**Effective Filtration Area:** 4.8 cm<sup>2</sup>

**Housing Diameter:** 33 mm

**Housing Material:** Pure polypropylene is heat-sealed without the use of glues or sealants

**Inlet / Outlet:** FLL-MLS

**Prefilter:** 1.0 µ binderless glass-fiber, in some configurations

**Holdup Volume:** <60 microliter

**Maximum Operating Temperature:** 82°C/180°F

**Maximum Operating Pressure:** 130 psi

**Sterile:** No



## Applications

- ◆ Analytical sample preparation
- ◆ Dissolution testing
- ◆ Content uniformity
- ◆ Environmental samples
- ◆ Composite assays
- ◆ Food analysis
- ◆ Biofuel analysis

## Ordering information

Membrane Material	Pore Size (µm)	Color	Product Code				
			Packaging 50/pk	Packaging 200/pk	Packaging 500/pk	Packaging 1000/pk	Packaging 5000/pk
Cellulose Acetate (CA)	0.22	Transparent	1213641	1213192	1214014	1229443	1270152
Cellulose Acetate (CA)	0.45	Transparent	1214778	1214932	1214966	1229444	1227275
Cellulose Acetate (CA)	0.80	Transparent	1226939	1226941	1226940	1229445	
Cameo Glass Fiber (GF)	1.00	Transparent	1227204		1227205	1229451	1226150
Cameo Glass Fiber (GF)	0.70	Transparent	1227207			1227208	1227209
Nylon (NY)	0.10	Transparent	1224100	1224101	1224103	1229459	
Nylon (NY)	0.22	Transparent	1224104	1224105	1224106	1229461	1224110
Nylon (NY)	0.45	Transparent	1224112	1224113	1224114	1226917	1224117
Nylon (NY)	1.20	Transparent	1224119	1224120	1224121	1229463	
Nylon (NY)	5.00	Transparent	1224124	1224125	1224126	1229465	3019424
Polyethersulfone (PES)	0.22	Transparent	1233549			1233541	
Polyethersulfone (PES)	0.45	Transparent	1233550		1233551	1233543	
Polypropylene (PP)	0.22	Transparent	1224172	1224173	1224174	1229453	1237235
Polypropylene (PP)	0.45	Transparent	1224310	1224311	1224312	1229458	
Polytetrafluoroethylene (PTFE)	0.22	Transparent	1224143	1224144	1224145	1229448	1224146
Polytetrafluoroethylene (PTFE)	0.45	Transparent	1224150	1224151	1237721	1229450	1224153
Polyvinylidene Fluoride (PVDF)	0.22	Transparent	3038551			3038552	
Polyvinylidene Fluoride (PVDF)	0.45	Transparent	3020528		3020351	3023084	3049953
Glass Fiber/Cellulose Acetate	0.22	Transparent	1226942	1226944	1226943	1229466	3050049
Glass Fiber/Cellulose Acetate	0.45	Transparent	1226945	1226947	1226946	1229467	1270153
Glass Fiber/Cellulose Acetate	0.80	Transparent		1226951	1226950		
Glass Fiber/Nylon	0.10	Transparent				1229480	
Glass Fiber/Nylon	0.22	Transparent	1224127	1224128	1224129	1229478	1224133
Glass Fiber/Nylon	0.45	Transparent	1224135	1224136	1224137	1226916	1224138
Glass Fiber/Polyethersulfone	0.45	Transparent	3050121		3050122		
Glass Fiber/Polypropylene	0.22	Transparent	1224175	1224176	1224177	1229474	
Glass Fiber/Polypropylene	0.45	Transparent	1224313	1224314	1224315	1229476	
Glass Fiber/PTFE	0.22	Transparent	1224157	1224158	1224159	1229470	1224160
Glass Fiber/PTFE	0.45	Transparent	1224164	1224165	1224166	1229472	1224167

# Sterile Syringe Filters

## 13 mm Sterile - ABLUO®

### Characteristics

**Membrane Materials:** Cellulose Acetate, PES, PVDF

**Membrane Diameter:** 13 mm

**Effective Filtration Area:** 0.76 cm<sup>2</sup>

**Housing Diameter:** 18 mm

**Housing Material:** Acrylic

**Inlet / Outlet:** FLL / MLL-MLS

**Holdup Volume:** <50 microliter

**Maximum Operating Temperature:** PP Abluo - 90°C/194°F,

Acrylic Abluo 50°C /122°F

**Maximum Operating Pressure:** 80 psi

**Sterile:** Yes



### Applications

- ◆ Filtration of Aqueous Solutions
- ◆ Analytical Sample Preparation
- ◆ IC Chromatography
- ◆ Sterile Filtration and Clarification
- ◆ Protein Chemistry
- ◆ Cell Culture
- ◆ Clarification

### Ordering information

Membrane Material	Pore Size (μm)	End Fitting	Color	Product Code
				Packaging 50/pk
Cellulose Acetate (CA)	0.22	FLL/MLL	Blue	FJ13ASCCA002DL01
Cellulose Acetate (CA)	0.45	FLL/MLL	Yellow	FJ13ASCCA004FL01
Cellulose Acetate (CA)	0.80	FLL/MLL	Green	FJ13ASCCA008EL01
Cellulose Acetate (CA)	1.20	FLL/MLL	Red	FJ13ASCCA012CL01
Cellulose Acetate (CA)	5.00	FLL/MLL	Brown	FJ13ASCCA050PL01
Polyethersulfone (PES)	0.22	FLL/MLS	Transparent	FJ13BSCPS002AL01
Polyethersulfone (PES)	0.45	FLL/MLS	Transparent	FJ13BSCPS004AL01
Polyvinylidene Fluoride (PVDF)	0.22	FLL/MLS	Transparent	FJ13BSCPV002AL01
Polyvinylidene Fluoride (PVDF)	0.45	FLL/MLS	Transparent	FJ13BSCPV004AL01



# 25 mm Sterile - ABLUO®

## Characteristics

**Membrane Materials:** Cellulose Acetate, Nylon, PES, PVDF  
**Membrane Diameter:** 25 mm  
**Housing Diameter:** 33 mm  
**Housing Material:** Acrylic  
**Effective Filtration Area:** 4.6 cm<sup>2</sup>  
**Inlet / Outlet:** FLL / MLL-MLS  
**Holdup Volume:** <100 microliter  
**Maximum Operating Temperature:** PP Abluo - 90°C/194°F,  
 Acrylic Abluo 50°C /122°F  
**Maximum Operating Pressure:** 80 psi  
**Sterile:** Yes



## Applications

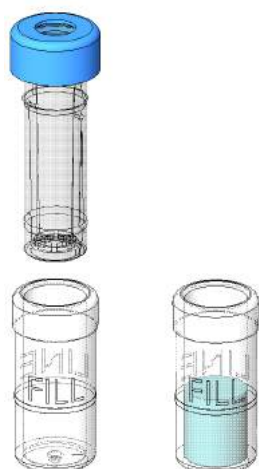
- ◆ Filtration of Aqueous and Alcohol Solutions
- ◆ Sterile Filtration and Clarification
- ◆ Cell Culture
- ◆ Analytical Sample Preparation
- ◆ IC Chromatography
- ◆ Clarification
- ◆ Protein Chemistry
- ◆ Filtration of Aqueous and Organic Solutions

## Ordering information

Membrane Material	Pore Size (µm)	End Fitting	Color	Product Code
				Packaging 50/pk
Cellulose Acetate (CA)	0.22	FLL/MLS	Blue	FJ25BSCCA002AL01
Cellulose Acetate (CA)	0.45	FLL/MLS	Yellow	FJ25BSCCA004AL01
Cellulose Acetate (CA)	0.8	FLL/MLS	Green	FJ25BSCCA008AL01
Cellulose Acetate (CA)	0.22	FLL/MLL	Blue	FJ25ASCCA002DL01
Cellulose Acetate (CA)	0.45	FLL/MLL	Yellow	FJ25ASCCA004FL01
Cellulose Acetate (CA)	0.80	FLL/MLL	Green	FJ25ASCCA008EL01
Cellulose Acetate (CA)	1.20	FLL/MLL	Red	FJ25ASCCA012CL01
Cellulose Acetate (CA)	5.00	FLL/MLL	Brown	FJ25ASCCA050PL01
Glass Fiber (GF)	1.00	FLL/MLS	Transparent	FJ25BSCGL010AL01
Mixed Cellulose Ester (MCE)	0.22	FLL/MLS	Transparent	FJ25BSCNC002AL01
Mixed Cellulose Ester (MCE)	0.45	FLL/MLS	Transparent	FJ25BSCNC004AL01
Nylon (NY)	0.10	FLL/MLS	Transparent	FJ25BSCNY001AL01
Nylon (NY)	0.22	FLL/MLS	Transparent	FJ25BSCNY002AL01
Nylon (NY)	0.45	FLL/MLS	Transparent	FJ25BSNY0042AL01
Nylon (NY)	1.20	FLL/MLS	Transparent	FJ25BSCNY012AL01
Nylon (NY)	5.00	FLL/MLS	Transparent	FJ25BSCNY050AL01
Polyethersulfone (PES)	0.80	FLL/MLS	Transparent	FJ25BSCPS008AL01
Polyethersulfone (PES)	0.22	FLL/MLS	Transparent	FJ25BSCPS002AL01
Polyethersulfone (PES)	0.45	FLL/MLS	Transparent	FJ25BSCPS004AL01
Polyvinylidene Fluoride (PVDF)	0.22	FLL/MLS	Transparent	FJ25BSCPV002AL01
Polyvinylidene Fluoride (PVDF)	0.45	FLL/MLS	Transparent	FJ25BSCPV004AL01

Save time and money in sample preparation process with SEPARA® syringeless filters.

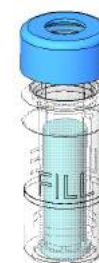
The single step filtering process is efficient, simple to use, easy to press and fast.



sample filling



press down to filter sample



filtered sample ready for analysis

## Features and Benefits

- ◆ Rapid sample preparation
- ◆ Single step process, filtering with a plunger in the vial
- ◆ Sample ready to use after filtration
- ◆ Pre-slitted cap ensures easy and clean sample transfer
- ◆ Replace syringe, syringe filter, glass vial and cap, reducing waste
- ◆ Increase sample integrity with all-in vial and filter
- ◆ Compatible with most auto-samplers
- ◆ Compatible with most multi-compressors

## Characteristics

**Dimensions:** 12 mm diameter x 32 mm height

**Materials:** Polypropylene, Septa, PTFE and silicone

**Fill Line Volume:** 480 microliter

**Filtrating Capacity:** 450 microliter

**Dead Volume:** 30 microliter

**Compression Force:** 8 psi (0.6 bar)

**Maximum operating temperature:** 120°F (50°C)

## Ordering information

Membrane Material	Pore Size (µm)	Color	Product Code
			100/pk
Nylon (NY)	0.45	Blue	MV32ANPNY004UC01
Nylon (NY)	0.20	Light Blue	MV32ANPNY002BC01
Polytetrafluoroethylene (PTFE)	0.45	Red	MV32ANPPT004CC01
Polytetrafluoroethylene (PTFE)	0.20	Pink	MV32ANPPT002TC01
Regenerated Cellulose (RC)	0.45	Black	MV32ANPRC004LC01
Regenerated Cellulose (RC)	0.20	Gray	MV32ANPRC002GC01
Polyvinylidene Fluoride (PVDF)	0.45	Orange	MV32ANPPV004IC01
Polyvinylidene Fluoride (PVDF)	0.20	Yellow	MV32ANPPV002FC01
Polyethersulfone (PES)	0.45	Dark Green	MV32ANPPS004WC01
Polyethersulfone (PES)	0.20	Light Green	MV32ANPPS002EC01

# Filter Holders

To insure precise filtration, GVS Life Sciences offers a selection of filter holders that are designed to work with different types of membranes and built to exacting standards.

Filter holders are available for a wide variety of applications including air analysis, chemotaxis, tissue culturing and general aqueous and solvent filtration.

## 13 mm Filter Holder

Excellent for small volume (1-5 mL) particulate removal from fluids dispensed with a syringe. It is used in filtering biofluids, ophthalmics, gas chromatography samples, and lubricants that must be applied dust free to critical parts such as bearing. The holder is resistant to alcohols, esters, ethers, glycols aromatic hydrocarbons, halogenated hydrocarbons, ketones, oils, photoresists and many other chemicals.

Although suitable for most weak acids and bases, we recommend that you test for compatibility with acids.

## 25 mm Filter Holder

Very useful for ultra cleaning and sterilizing small volumes of liquids from a syringe. Due to the polypropylene construction, they can be used over a wide temperature range with excellent chemical compatibility. The 25 mm filter holder can be used to filter up to 50 mL of sample. The dual support screens prevent membrane rupture and also allows for bi-directional sample flow.



## 47 mm Filter Holder

Designed especially for ultra cleaning and sterilizing of liquids under positive pressure. In addition, this holder can be used for aseptic sampling of liquid or gases at point of use or when samples must be collected and processed on-site. The 47 mm filter holder has dual support screens, which allow for flow in either direction. The inlet cap design and exterior locking ring allow the unit to be assembled quickly and efficiently without tearing the membrane. The 47 mm can filter up to 1 liter depending upon the viscosity of the sample. Conforms with EPA Method 1311 for Toxicity Characteristic leaching Procedure, 40 CFR, Part 261, 1991 Hazardous Waster Compliance Guide.

## Specifications

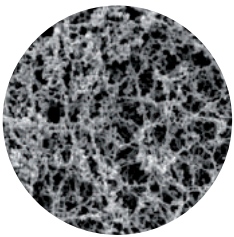
	13 mm	25 mm	47 mm
Materials	Celcon	Polypropylene	Polypropylene
O-rings	PTFE	Silicone	Silicone
Filter Size	13 mm	25 mm	47 mm
Prefilter Cap Size	10 mm	22 mm	42 mm
Filtration Area	0.8 cm <sup>2</sup>	3.5 cm <sup>2</sup>	13.5 cm <sup>2</sup>
Diameter	16 mm (0.6 in)	30 mm (1.2 in)	63.5 mm (2.5 in)
Height	35mm (1.4in)	30mm (1.2in)	50mm (2.0in)
Max Liquid Temperature	80°C (176°F)	80°C (176°F)	80°C (176°F)
Max Operating Pressure	2.8 bar (40 psi)	2.9 bar (42 psi)	1.9 bar (71 psi)
Autoclaving	15min/121°C/15psi	20min/121°C/15psi	20min/121°C/15psi
Connections, Inlet	Female Threaded Luer	Female LuerLok	1/4" NPTM, FLS
Connections, Outlet	Male Luer Slip	Male Luer Slip	1/4" NPTM, FLS



## Ordering Informations

Item	Description
1220950	Filter Holder Swinney 13mm 5/Pk
1214250	Filter Holder Polypropylene 25mm 10/Pk
1214526	Filter Holder Polypropylene Support Screen 25mm 10/Pk
1262579	Filter Holder Polypropylene 47mm 1/Pk
1214260	Filter Holder Polypropylene 47mm 10/Pk

# Filtration Membranes



## Cellulose Acetate (CA)

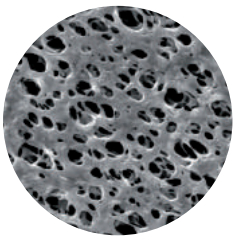
Hydrophilic membrane. Low protein binding, Ideal for protein, cell culture media and enzymes filtrations, tissue culture media sterilization, biological fluid filtration and other filtration applications where maximum recovery of proteins is critical.

### Characteristics

- ◆ Low protein binding, 3.8  $\mu\text{g}/\text{cm}^2$
- ◆ Hydrophilic
- ◆ High throughput
- ◆ Superior strength and stability
- ◆ Uniform pore structure, consistent flow rates
- ◆ Burst strength of 130 psi

### Applications

- ◆ Protein and enzyme filtration
- ◆ Biological fluid filtration sterilization
- ◆ Tissue culture media sterilization
- ◆ Clarification of aqueous and alcohol solutions
- ◆ Cell Culture



## Nylon (NY)

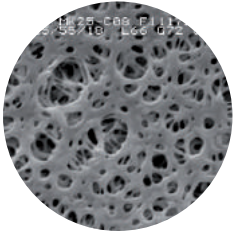
Hydrophilic membrane. Ideal for use in general filtration or medical assays. Superior strength, resistant to a range of organic solvents. Low extractables. High protein binding capacity. Very high lot-to-lot consistency.

### Characteristics

- ◆ Naturally hydrophilic
- ◆ Wide chemical compatibility range
- ◆ Strength and dimensional stability
- ◆ Low extractables

### Applications

- ◆ Sterilization, clarification of aqueous and organic solvent solutions
- ◆ Analytical sample preparation
- ◆ Chromatography
- ◆ Hydraulic Fluids and Machined Parts



## Polyethersulfone (PES)

Hydrophilic membrane. Designed to remove particulates during general filtration. Low protein and drug binding characteristics make it ideally suited for use in life science applications, maximizing recovery of critical drugs used in I.V. therapy, chemotherapy and open-heart surgery. Its strength and durability are advantageous during usage that involves aggressive handling or automated equipment. Low protein and drug binding characteristics.

### Characteristics

- Very Low Protein Binding
- Fast Flow Rates
- Low Extractables
- Wide Chemical Compatibility Range
- Strength and Dimensional Stability
- Autoclavable

### Applications

- Protein and enzyme filtration sterilization
- Biological fluid filtration sterilization
- Tissue culture media sterilization
- Pharmaceutical sterilizing filtration
- Environmental water studies
- Filtration of Aqueous Solutions
- Analytical Sample Preparation
- IC Chromatography
- Sterile Filtration and Clarification
- Cell Culture



## Asymmetric Polyethersulfone (PES)

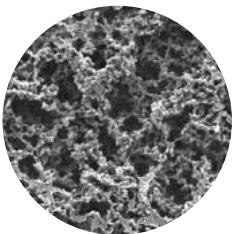
Asymmetric PES enables the fast filtration of aqueous solutions with greater throughput. The PES membrane has low drug and protein binding properties with aqueous solutions. Low ion and metals extractables provide for ideal analysis by ion chromatography and ICP MS.

### Characteristics

- Fast flow rate
- High filter capacity
- Low protein binding
- Extended filtration capacity and lifetime
- Higher particle loads and protein concentrations tolerance

### Applications

- Prefiltration and Clarification
- Liquid filtration and sterilization
- Ion chromatography
- Gas separation



## Nitrocellulose Mixed Esters (NC)

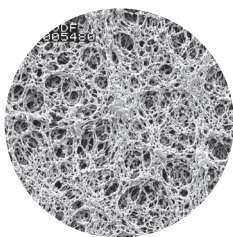
Hydrophilic membrane. Aqueous clarification and particulate capture. Consistent high flow rate for faster filtration. Uniform pore structure for selectivity. Hydrophilic, inert cellulose nitrate. High binding capacity.

### Characteristics

- Hydrophilic for aqueous clarification and particulate capture
- Consistent high flow rate for faster filtration
- Uniform pore structure for selectivity
- Hydrophilic, inert cellulose nitrate
- High binding capacity
- Manufactured thickness within 10 microns

### Applications

- Filtration of Aqueous and Organic Solutions
- Analytical Sample Preparation
- Chromatography
- Clarification

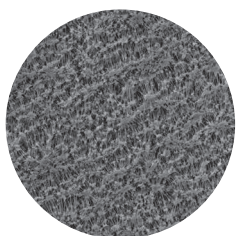


## Polyvinylidene Difluoride (PVDF)

Hydrophilic membrane. Ideal for use in Sterilizing and Clarifying filtration of biological solutions. High Flow Rates. Low Extractables. Broad Chemical Compatibility. Very low protein binding.

### Applications

- ◆ Filtration of Aqueous and Organic Solutions
- ◆ Analytical Sample Prep
- ◆ Chromatography
- ◆ Clarification



## Polytetrafluoroethylene (PTFE)

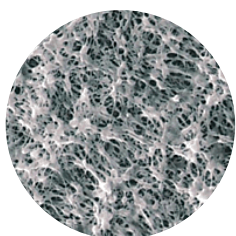
Hydrophobic membrane. Ideal for filtration of strong acids and aggressive solutions, venting applications, phase separations, aerosol samplings. Chemically and biologically inert. Superior chemical resistance. Can withstand high temperatures.

### Characteristics

- ◆ Naturally hydrophobic
- ◆ Compatible with strong acids and aggressive solutions
- ◆ Improved durability and handling

### Applications

- ◆ Filtration of strong acids and aggressive solutions
- ◆ Venting applications
- ◆ Phase separations
- ◆ Aerosol sampling



## Hydrophilic Polytetrafluoroethylene (PTFE HP)

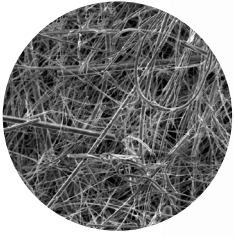
PTFE HP membrane is compatible with organic solvents, acids, and basic solutions. Hydrophilic PTFE membrane has low drug and protein binding properties with excellent aqueous and solvent compatibility. High sample recoveries and low ion and UV extractables provide for ideal analysis by  $\mu$ HPLC and LC/MS.

### Characteristics

- ◆ No need to pre-wet the membrane
- ◆ No need to flush membrane of pre-wetting chemicals
- ◆ No pre-wetting means production time reduction
- ◆ Reduce potential interference with biological processes
- ◆ Longer shelf life because the filters are stored and shipped dry

### Applications

- ◆ Molecular identification
- ◆ Structural determination
- ◆ Pharmacokinetics
- ◆ Drug discovery and development
- ◆ Drug testing
- ◆ Environmental monitoring
- ◆ Food safety monitoring
- ◆ Oil composition determination



## Glass Fiber (GF)

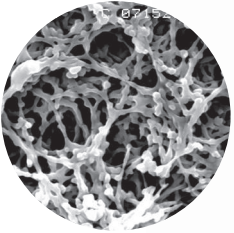
Hydrophilic material. Used also as a pre-filter to extend membrane life. Eliminate sample contamination. Excellent wet strength for each handling and filter integrity. Ideal for water/air pollution analysis, liquid clarification and cell harvesting.

### Characteristics

- ◆ Acrylic binder
- ◆ High dirt holding capacity
- ◆ Biologically inert
- ◆ Bonding reduces media migration

### Applications

- ◆ Filtration of Aqueous and Organic Solutions
- ◆ Analytical Sample Preparation
- ◆ Difficult to Filter Solutions
- ◆ Fuel Hydraulic Fluids and Machined Parts



## Regenerated Cellulose (RC)

Hydrophilic membrane. Resistant to a very wide range of solvents. Suitable for use with either aqueous solutions or organic solvents. Compatible with HPLC solvents. Very low protein binding capacity and hence excellent for protein recovery applications.

### Applications

- ◆ Filtration of Aqueous and Organic Solutions
- ◆ Analytical Sample Prep
- ◆ Chromatography
- ◆ Clarification
- ◆ Protein Chemistry



## Polypropylene (PP)

Broad chemical compatibility allowing use with aqueous and organic solvents samples. Low extractable levels designed to provide accurate, consistent analysis results for sensitive ion chromatography applications while prolonging column life.

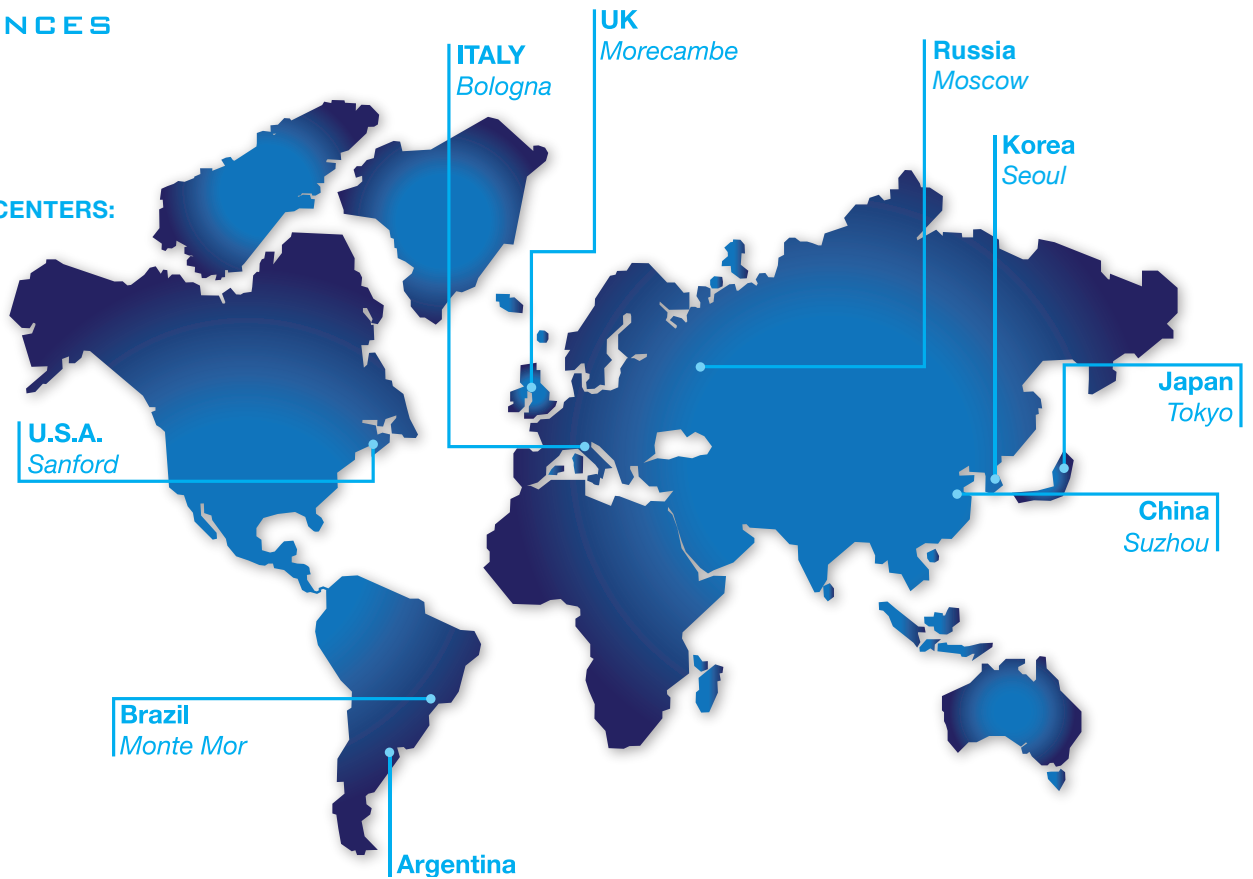
### Applications

- ◆ Aqueous and organic solvent filtration
- ◆ Analytical Sample Preparation requiring low detection levels
- ◆ Ion chromatography
- ◆ Total digest for heavy metals



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