



# Whatman Uniflo 13 mm Syringe Filters

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# Whatman™ Uniflo™ 13 mm Syringe Filters

## Product Information sheet

### Warning

For research use only.

Not recommended or intended for diagnosis of disease in humans or animals.

Do not use internally or externally in humans or animals.

Uniflo Syringe Filters are disposable filter units designed to provide clean filtrate from small volumes up to 10 ml. They are available in a variety of Whatman membrane choices with a polypropylene overmold housing. Uniflo filters are individually ink-jet printed for easy filter identification and packaged in a clean compact recyclable plastic box to optimize laboratory storage space.

This bulletin provides general information on the products listed below. The specifications in the Technical Data section are intended to provide a basis for establishing functional use, as well as for setting quality assurance test performance levels.

## Uniflo 13 mm Syringe Filters

Uniflo 13 mm Syringe Filters are designed to enable maximum filtrate throughput from typical sample volumes of 10 mL or less.

Filter Media	Typical Application
Nylon	Aqueous and/or organic samples; hydrophilic
PES	Aqueous samples
PTFE	Organic based samples. Hydrophobic membrane
PVDF	Aqueous and/or organic based samples; low protein binding membrane

### Nylon Membrane:

Nylon membrane is hydrophilic and is a good choice for aqueous and/or aqueous-organic samples. The membrane offers good chemical resistance to most common HPLC solvents, however it has limited resistance to acids, bases, halogenated hydrocarbons, aldehydes and strong oxidising agents. The most common application is HPLC sample filtration.

### Polyethersulfone (PES) Membrane:

Polyethersulfone membrane provides durability, high temperature resistance, good chemical compatibility and low protein absorption. It is particularly suitable for filtration of serum, plasma and tissue culture solutions as well as other protein containing solutions where minimal adsorptive protein loss is desired.

### Polytetrafluoroethylene (PTFE) Membrane:

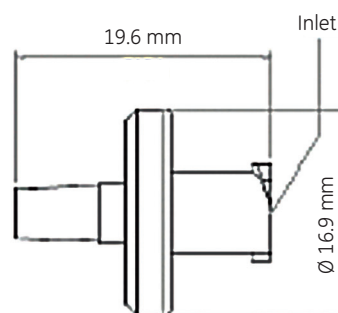
Polytetrafluoroethylene membrane is hydrophobic and will not allow water to pass without high pressures. Aqueous solutions may be filtered if the membrane is initially "wetted" with alcohol or another appropriate solvent. Polytetrafluoroethylene membrane will stop aqueous aerosols in gas streams.

### Polyvinylidene Difluoride (PVDF) Membrane:

Polyvinylidene Fluoride membrane is a suitable choice for most HPLC sample preparation applications. The membrane is slightly hydrophobic with low water breakthrough values. It offers good chemical resistance to all common HPLC solvents.

## Technical Data

Uniflo 13 mm Syringe Filters



Dimensions:	19.6 mm × 16.9 mm
Filtration Area:	0.65 cm <sup>2</sup>
Maximum Operating Pressure:	65.2 psi
Housing:	Polypropylene
Volume "Hold Up"	≤ 50 µl after air purge
Flow Direction:	Flow should enter from inlet
Connectors:	Inlet - Female Luer Lock (FLL) Outlet - Male Luer (ML)
Sterilization:	Autoclave at 121°C at 15 psi for 20 minutes
Biosafe:	Polymer grade and membrane types meet the USP test requirements (for Class VI Plastics)
Filter Media:	See chart below

## Integrity Test Data

Description	Pore Size Microns	Minimum Bubble Point psi
Nylon	0.2	29
Nylon	0.45	20
Polyethersulfone	0.2	40
Polyethersulfone	0.45	33
Polytetrafluoroethylene*	0.2	10
Polytetrafluoroethylene*	0.45	6
Polyvinylidene Difluoride	0.22	39
Polyvinylidene Difluoride	0.45	17.5

\* Bubble point determined with 95% Ethanol (v/v), all others determined with water.



## Operating Instructions

### Safety

When considering the special factors of your application, consult the Technical Data to determine correctness of use. Do not exceed the pressure, temperature or chemical compatibility recommendations. High pressures can be obtained when using syringes. The smaller the syringe the higher the pressure that can be generated. Each user should determine the pressure they can generate by hand with a specific size syringe and take appropriate safety precautions not to exceed the recommended rating for the device used. If these limitations are exceeded, bursting of the device may occur resulting in loss of sample or personal injury.

### Efficiency

To maximize filtration throughput, use the largest pore size filter that will provide the required cleanliness. To extend filter life use low flow rates or pressures.

### To use with a Syringe:

- 1) Fill the syringe with the solution to be filtered.
- 2) Secure the filled syringe to the FLL inlet of the syringe filter with a twisting motion.
- 3) With the outlet pointed upward, gradually apply thumb pressure to the syringe plunger to initiate flow.
- 4) Continue thumb pressure until all the air in the device is displaced with liquid.
- 5) Once liquid starts to exit the syringe filter from the outlet, stop applying pressure, point device downward and away from user.
- 6) Orientate syringe filter over suitable collection container or other apparatus and apply pressure again to filter sample.

### Air Lock

Air Lock can seriously hamper flow rates. To eliminate, point the outlet of the filter device upward during the initiation of liquid flow.

### Bubble Point (BP) Test

Flush the filter device with 1.0 ml or more of the test fluid. After the filter is completely wet, with the outlet pointed upward, apply air under controlled pressure to the inlet until air breaks through the filter and bubbles can be seen at the outlet. The pressure at which air passes through the wetted filter is the BP. Refer to table on page 1 for typical BP values.

## Whatman Uniflo 13 mm Non-Sterile Syringe Filters

Catalog Number	Membrane and Product Description	Pore Size $\mu\text{m}$	Quantity/Pack
9909-1302	PVDF	0.22	500
9909-1304	PVDF	0.45	500
9911-1302	PTFE	0.2	500
9911-1304	PTFE	0.45	500
9910-1302	Nylon	0.2	500
9910-1304	Nylon	0.45	500
9912-1302	PES	0.2	500
9912-1304	PES	0.45	500

## Certificate Of Conformance

Lot specific Certificate of Conformance for the Uniflo filters is available for download at –

<https://www.gelifesciences.com/en/us/support/quality/certificates>

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