

About Hawach Scientific

Hawach is a modern enterprise, contains well integration of R&D, production, sales and after -sales service. Hawach located at Xi'an High-Tech development Zone, which is one of the five national level High-Tech development Zones with plant covers a production workshop area of 8000m², with 4000m² of clean room. We have International advanced level of production lines to produce microporous Membrane Filters, Syringe Filter, Sample Vials, Septa and Caps, along with Filter Paper, Vacuum Pumps and manifolds etc.

Hawach Scientific never stop upgrading our technique, corporate with many famous universities including Northwestern Polytechnical Universities, Xi'an University of Technology, and Shaanxi University of Science and Technology. Hawach has established laboratory analysis institute, research and development center etc.

In Hawach Scientific, quality always comes first, in the very beginning, Hawach started to learn world advanced production technology and experience, especially quality control testing laboratory. We have ultraviolet absorption detector (UVD) , liquid chromatography, integrity tester, flow rate tester, dielectric strength tester, heating plate, laser particle counter etc. After production, all articles are delivered to QC center, only qualified products can be to the next procedure.

Today, we are happy to see our products exported to the United States, Korea, UK, Germany, Dubai, Israel and Mexico. The quality and service of our products receive consistent approval from customers.

Hawach's philosophy is "always high demand, cooperation make success", Hawach Scientific's mission is "one-stop laboratory solution", By joint efforts of Hawach's employee, business partners and customers, we believe Hawach can be a leader of laboratory industry.



Syringe Filters

FILTSTAR™ syringe filter

FILTSTAR™ syringe filters are used for small volume filtration of liquids, gas and other material-specified applications. They are available with many different membrane including Nylon, PTFE, Hydrophilic PTFE, PES, PVDF, MCE, CA, GF, PP, in both sterile and non-sterile varieties, and with or without pre-filters. They are made of extractable free virgin PP housings standard inlet (female luer lock) and outlet (male luer) connections unless otherwise stated. Options include different diameters, membrane types, sterile filters in blister packs for critical applications.

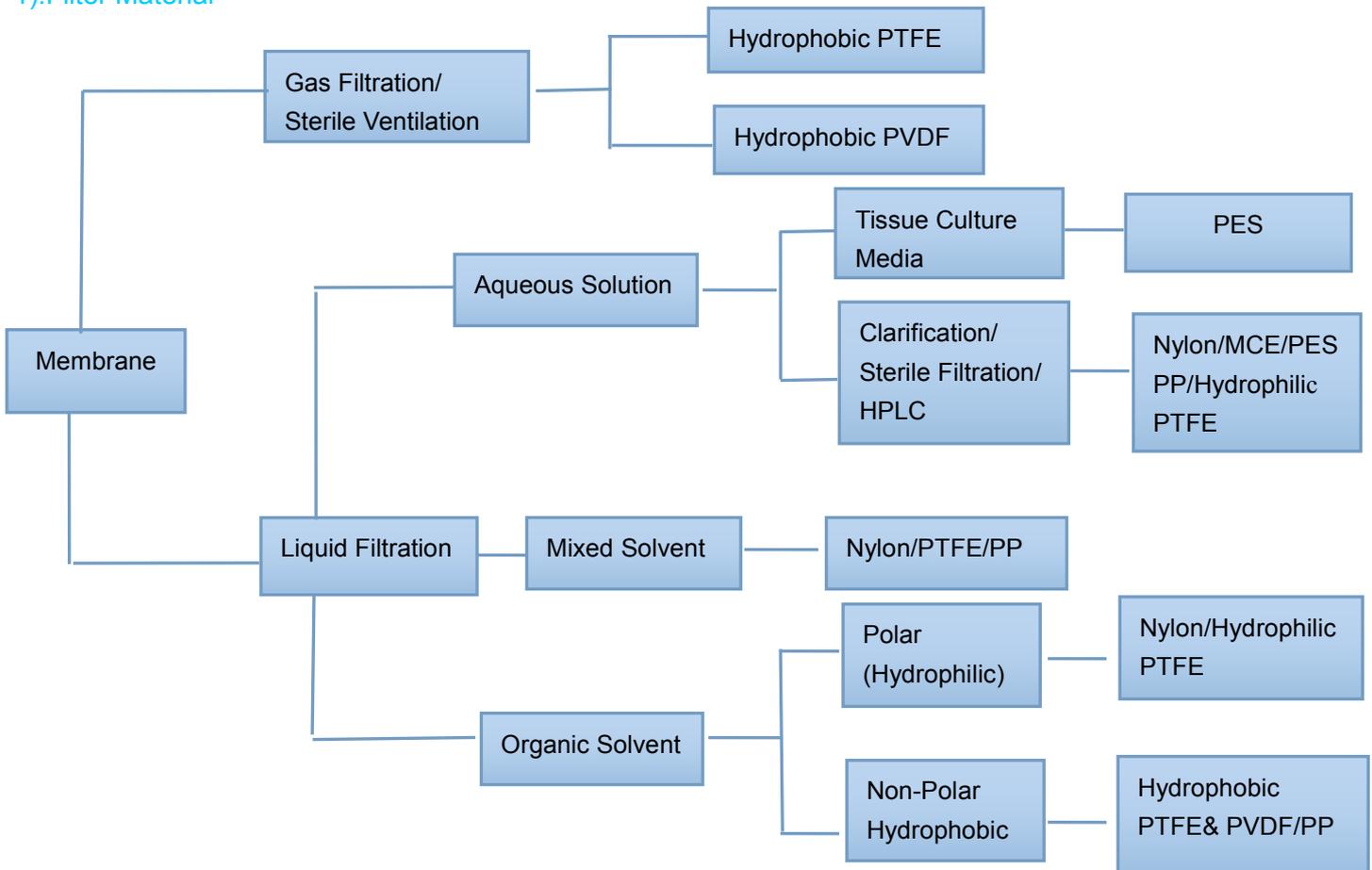


Hawach Scientific Syringe Filters Features and Application

Filter Media	Nylon/PTFE/PTFE L/PES/PVDF/MCE/CA/GF/PP/Active Carbon				
Pore Size, μm	0.1 μm , 0.22 μm , 0.45 μm , 0.65 μm , 0.8 μm , 1.0 μm , 3.0 μm , 5.0 μm , 10 μm				
Pre-filter	1 μm Glass Fiber or PP				
Diameter	4mm	13mm	25mm	33mm	50mm
Housing	PP	PP	PP	PP	PP
Filtration Area	0.2cm ²	1.3cm ²	4.9 cm ²	8.5 cm ²	19.8cm ²
Maximum Operating Pressure	5.2bar	5.2bar	5.2bar	5.2bar	5.2bar
Process Volume	2ml	10ml	100ml	200ml	5000ml
Hold-up Volume	<10ul	< 50ul	<100ul	<200ul	<350ul
Inlet	Female Luer Lock				7~13 mm stepped hose barb connection with 6:100 Luer slip
Outlet	Male Luer Unlock				
Flow Direction	Flow should enter from the inlet				Both is fine
Temperature	Maximum Operating Temperature 131 °C				
Sterilization	Autoclave at 121 °C at 1 bar for 20 minutes/EO/Gamma				By EO or autoclave cycles of 30 min at 123 °C.

Membrane Filter Selection Guide

1). Filter Material



2). Pore Size

0.1µm	0.22µm	0.45µm	0.65µm	>1.0µm
Mycoplasmas	UHPLC	HPLC	Yeasts	Large Particulates
Colloids	Bacteria	Particulates	Particulates	
Small Particulates	Small Particulates			

3). Process Volume

Process Volume	1-10ml	10-60ml	10-80ml	10-100ml
Syringe Filter Diameter	13mm	20mm	25mm	33mm

Features

- * Female Luer-Lock inlet and Male-Luer slip outlet.
- * Both Non-sterile and Individual packed Sterile syringe filters are available.
- * Pore size of filter media are available from 0.1 μ m, 0.22 μ m, 0.45 μ m, 0.65 μ m, 0.8 μ m, 1.0 μ m, 3.0 μ m, 5.0 μ m, 10 μ m.
- * Two layer syringe filters with 1 μ m Glass Fiber or PP pre-filter also available.
- * Housing Diameter can be choose from 4mm,13mm, 25mm, 33mm,50mm.

*Nylon66/Polyamide (NY)

Hydrophilic membrane. Resistant to a range of organic solvents. Suitable for use with high pH samples. Binds proteins, which makes it unsuitable for protein recovery applications.

* Polytetrafluoroethylene(PTFE)

Hydrophobic membrane. Resistant to organic solvents as well as strong acids and bases. Low protein binding. Low in extractables. Main applications are the filtration of non-aqueous samples. Prior to filtering of aqueous samples the membrane must be pre-wetted with a water-miscible organic solvent.

* Hydrophilic Polytetrafluoroethylene (PTFE L)

Hydrophilic PTFE membranes are unsupported membrane that ideal for HPLC and mixtures of aqueous and organic solvents. Use with both aqueous and organic solvents, along with their mixtures.

* Polyethersulfone(PES)

Hydrophilic membrane. Broad solvent compatibility. Suitable for filtration of aqueous and compatible organic solvents. Higher liquid flow than either PTFE or PVDF. Low in extractables. Low protein binding.

* Cellulose Acetate (CA)

Hydrophilic membrane. Limited solvent resistance. Very low protein binding capacity, which makes it an excellent choice for protein recovery applications.

* Polyvinylidene Difluoride (PVDF)

Hydrophobic membrane. Fast flow rate and very low protein binding. Generally compatible with most common solvents. Ideal for protein recovery applications.

* Mixed Cellulose Esters(MCE)

Hydrophilic MCE membranes. Biologically inert mixture of Cellulose Acetate and Cellulose Nitrate membranes which have higher protein binding than CA for most proteins. High porosity provides high flow rate. Good use for aqueous based samples.

* Glass Microfiber/Glass Fiber (GMF/GF)

Hydrophilic material. Excellent compatibility with organic solvents and strong acids (apart from hydrofluoric acid) and bases. Either used as a prefilter or as a final filter.

* Polypropylene (PP)

Slightly hydrophobic membrane. Resistant to a wide range of organic solvents. Also good choice used as a prefilter or as a final filter.

Ordering Information

Description	µm	Φ mm	Part No.	Pcs/pk
Nylon (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.1µm, 0.22µm, 0.45µm, 0.8µm, 1.0µm, 3.0µm, 5.0µm, 10µm)				
Nylon, female luer lock , non-sterile	0.22	4	SLNY0422N	100
Nylon, female luer lock , non-sterile	0.22	13	SLNY1322N	100
Nylon, female luer lock , non-sterile	0.22	25	SLNY2522N	100
Nylon, female luer lock , non-sterile	0.22	33	SLNY3322N	50
Nylon, female luer lock , non-sterile	0.22	50	SLNY5022N	25
Nylon, female luer lock , non-sterile	0.45	4	SLNY0445N	100
Nylon, female luer lock , non-sterile	0.45	13	SLNY1345N	100
Nylon,female luer lock , non-sterile	0.45	25	SLNY2545N	100
Nylon, female luer lock , non-sterile	0.45	33	SLNY3345N	50
Nylon, female luer lock , non-sterile	0.45	50	SLNY5045N	25
Nylon/GF Pre-filter,female luer lock , non-sterile	0.22	13	SLNY1322NG	100
Nylon/GF Pre-filter,female luer lock , non-sterile	0.22	25	SLNY2522NG	100
Nylon/GF Pre-filter, female luer lock , non-sterile	0.22	33	SLNY3322NG	50
Nylon/GF Pre-filter, female luer lock , non-sterile	0.22	50	SLNY5022NG	25
Nylon/GF Pre-filter,female luer lock , non-sterile	0.45	13	SLNY1345NG	100
Nylon/GF Pre-filter, female luer lock , non-sterile	0.45	25	SLNY2545NG	100
Nylon/GF Pre-filter,female luer lock , non-sterile	0.45	33	SLNY3345NG	50
Nylon/GF Pre-filter,female luer lock , non-sterile	0.45	50	SLNY5045NG	25
Nylon/PP Pre-filter, female luer lock , non-sterile	0.22	13	SLNY1322NP	100
Nylon/PP Pre-filter, female luer lock , non-sterile	0.22	25	SLNY2522NP	100
Nylon/PP Pre-filter, female luer lock , non-sterile	0.22	33	SLNY3322NP	50
Nylon/PP Pre-filter, female luer lock , non-sterile	0.22	50	SLNY5022NP	25
Nylon/PP Pre-filter, female luer lock , non-sterile	0.45	13	SLNY1345NP	100
Nylon/PP Pre-filter, female luer lock , non-sterile	0.45	25	SLNY2545NP	100
Nylon/PP Pre-filter, female luer lock , non-sterile	0.45	33	SLNY3345NP	50
Nylon/PP Pre-filter, female luer lock , non-sterile	0.45	50	SLNY5045NP	25
Nylon, female luer lock, sterile	0.22	13	SLNY1322S	100
Nylon, female luer lock, sterile	0.22	25	SLNY2522S	100
Nylon, female luer lock, sterile	0.22	33	SLNY3322S	50
Nylon, female luer lock, sterile	0.45	13	SLNY1345S	100
Nylon, female luer lock, sterile	0.45	25	SLNY2545S	100
Nylon, female luer lock, sterile	0.45	33	SLNY3345S	50
Nylon/GF Pre-filter , female luer lock, sterile	0.22	13	SLNY1322SG	100
Nylon/GF Pre-filter , female luer lock, sterile	0.22	25	SLNY2522SG	100
Nylon/GF Pre-filter , female luer lock, sterile	0.22	33	SLNY3322SG	50
Nylon/GF Pre-filter , female luer lock, sterile	0.45	13	SLNY1345SG	100
Nylon/GF Pre-filter , female luer lock, sterile	0.45	25	SLNY2545SG	100
Nylon/GF Pre-filter , female luer lock, sterile	0.45	33	SLNY3345SG	50

Nylon/PP pre-filter , female luer lock, sterile	0.22	13	SLNY1322SP	100
Nylon/PP pre-filter , female luer lock, sterile	0.22	25	SLNY2522SP	100
Nylon/PP pre-filter , female luer lock, sterile	0.22	33	SLNY3322SP	50
Nylon/PP pre-filter , female luer lock, sterile	0.45	13	SLNY1345SP	100
Nylon/PP pre-filter , female luer lock, sterile	0.45	25	SLNY2545SP	100
Nylon/PP pre-filter , female luer lock, sterile	0.45	33	SLNY3345SP	50
Hydrophobic PTFE (4mm, 13mm, 25mm, 20mm, 33mm, 50mm/0.1um, 0.22um, 0.45um, 1.0um, 3.0um,5.0um,10um)				
Hydrophobic PTFE, female luer lock , non-sterile	0.22	4	SLPT0422NB	100
Hydrophobic PTFE, female luer lock , non-sterile	0.22	13	SLPT1322NB	100
Hydrophobic PTFE, female luer lock , non-sterile	0.22	25	SLPT2522NB	100
Hydrophobic PTFE, female luer lock , non-sterile	0.22	33	SLPT3322NB	50
Hydrophobic PTFE, female luer lock , non-sterile	0.22	50	SLPT5022NB	25
Hydrophobic PTFE, female luer lock , non-sterile	0.45	4	SLPT0445NB	100
Hydrophobic PTFE, female luer lock , non-sterile	0.45	13	SLPT1345NB	100
Hydrophobic PTFE, female luer lock , non-sterile	0.45	25	SLPT2545NB	100
Hydrophobic PTFE, female luer lock , non-sterile	0.45	33	SLPT3345NB	50
Hydrophobic PTFE, female luer lock , non-sterile	0.45	50	SLPT5045NB	25
Hydrophobic PTFE/GF Pre-filter,female luer lock ,non-sterile	0.22	13	SLPT1322NG	100
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPT2522NG	100
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPT3322NG	50
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPT5022NG	25
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPT1345NG	100
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPT2545NG	100
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPT3345NG	50
Hydrophobic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPT5045NG	25
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPT1322NP	100
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPT2522NP	100
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPT3322NP	50
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPT5022NP	25
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPT1345NP	100
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPT2545NP	100
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPT3345NP	50
Hydrophobic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPT5045NP	25
Hydrophobic PTFE, female luer lock, sterile	0.22	13	SLPT1322SB	100
Hydrophobic PTFE, female luer lock, sterile	0.22	25	SLPT2522SB	100
Hydrophobic PTFE, female luer lock, sterile	0.22	33	SLPT3322SB	50
Hydrophobic PTFE, female luer lock, sterile	0.45	13	SLPT1345SB	100
Hydrophobic PTFE, female luer lock, sterile	0.45	25	SLPT2545SB	100
Hydrophobic PTFE, female luer lock, sterile	0.45	33	SLPT3345SB	50
Hydrophobic PTFE/GF Pre-filter , female luer lock, sterile	0.22	13	SLPT1322SG	100
Hydrophobic PTFE/GF Pre-filter , female luer lock, sterile	0.22	25	SLPT2522SG	100
Hydrophobic PTFE/GF Pre-filter , female luer lock, sterile	0.22	33	SLPT3322SG	50

Hydrophobic PTFE/GF Pre-filter , female luer lock, sterile	0.45	13	SLPT1345SG	100
Hydrophobic PTFE/GF Pre-filter , female luer lock, sterile	0.45	25	SLPT2545SG	100
Hydrophobic PTFE/GF Pre-filter , female luer lock, sterile	0.45	33	SLPT3345SG	50
Hydrophobic PTFE/PP Pre-filter , female luer lock, sterile	0.22	13	SLPT1322SP	100
Hydrophobic PTFE/PP Pre-filter , female luer lock, sterile	0.22	25	SLPT2522SP	100
Hydrophobic PTFE/PP Pre-filter , female luer lock, sterile	0.22	33	SLPT3322SP	50
Hydrophobic PTFE/PP Pre-filter , female luer lock, sterile	0.45	13	SLPT1345SP	100
Hydrophobic PTFE/PP Pre-filter , female luer lock, sterile	0.45	25	SLPT2545SP	100
Hydrophobic PTFE/PP Pre-filter , female luer lock, sterile	0.45	33	SLPT3345SP	50
Hydrophilic PTFE (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.22um, 0.45um)				
Hydrophilic PTFE ,female luer lock ,non-sterile	0.22	4	SLPT0422NL	100
Hydrophilic PTFE ,female luer lock ,non-sterile	0.22	13	SLPT1322NL	100
Hydrophilic PTFE ,female luer lock ,non-sterile	0.22	25	SLPT2522NL	100
Hydrophilic PTFE ,female luer lock ,non-sterile	0.22	33	SLPT3322NL	50
Hydrophilic PTFE ,female luer lock ,non-sterile	0.22	50	SLPT5022NL	25
Hydrophilic PTFE ,female luer lock ,non-sterile	0.45	4	SLPT0445NL	100
Hydrophilic PTFE ,female luer lock ,non-sterile	0.45	13	SLPT1345NL	100
Hydrophilic PTFE ,female luer lock ,non-sterile	0.45	25	SLPT2545NL	100
Hydrophilic PTFE ,female luer lock ,non-sterile	0.45	33	SLPT3345NL	50
Hydrophilic PTFE ,female luer lock ,non-sterile	0.45	50	SLPT5045NL	25
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPT1322NLG	100
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPT2522NLG	100
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPT3322NLG	50
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPT5022NLG	25
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPT1345NLG	100
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPT2545NLG	100
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPT3345NLG	50
Hydrophilic PTFE/GF Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPT5045NLG	25
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPT1322NLP	100
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPT2522NLP	100
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPT3322NLP	50
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPT5022NLP	25
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPT1345NLP	100
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPT2545NLP	100
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPT3345NLP	50
Hydrophilic PTFE/PP Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPT5045NLP	25
Hydrophilic PTFE, female luer lock, sterile	0.22	13	SLPT1322SL	100
Hydrophilic PTFE, female luer lock, sterile	0.22	25	SLPT2522SL	100
Hydrophilic PTFE, female luer lock, sterile	0.22	33	SLPT3322SL	50
Hydrophilic PTFE, female luer lock, sterile	0.45	13	SLPT1345SL	100
Hydrophilic PTFE, female luer lock, sterile	0.45	25	SLPT2545SL	100
Hydrophilic PTFE, female luer lock, sterile	0.45	33	SLPT3345SL	50

Hydrophilic PTFE/GF Pre-filter , female luer lock, sterile	0.22	13	SLPT1322SLG	100
Hydrophilic PTFE/GF Pre-filter , female luer lock, sterile	0.22	25	SLPT2522SLG	100
Hydrophilic PTFE/GF Pre-filter , female luer lock, sterile	0.22	33	SLPT3322SLG	50
Hydrophilic PTFE/GF Pre-filter , female luer lock, sterile	0.22	50	SLPT5022SLG	25
Hydrophilic PTFE/GF Pre-filter , female luer lock, sterile	0.45	13	SLPT1345SLG	100
Hydrophilic PTFE/GF Pre-filter , female luer lock, sterile	0.45	25	SLPT2545SLG	100
Hydrophilic PTFE/PP Pre-filter , female luer lock, sterile	0.22	13	SLPT1322SLP	100
Hydrophilic PTFE/PP Pre-filter , female luer lock, sterile	0.22	25	SLPT2522SLP	100
Hydrophilic PTFE/PP Pre-filter , female luer lock, sterile	0.22	33	SLPT3322SLP	50
Hydrophilic PTFE/PP Pre-filter , female luer lock, sterile	0.22	50	SLPT5022SLP	25
Hydrophilic PTFE/PP Pre-filter , female luer lock, sterile	0.45	13	SLPT1345SLP	100
Hydrophilic PTFE/PP Pre-filter , female luer lock, sterile	0.45	25	SLPT2545SLP	100
PES (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.1um, 0.22um, 0.45um, 0.65um, 0.8um, 1.2um)				
PES,female luer lock ,non-sterile	0.22	4	SLPES0422N	100
PES,female luer lock ,non-sterile	0.22	13	SLPES1322N	100
PES,female luer lock ,non-sterile	0.22	25	SLPES2522N	100
PES,female luer lock ,non-sterile	0.22	33	SLPES3322N	50
PES,female luer lock ,non-sterile	0.22	50	SLPES5022N	25
PES,female luer lock ,non-sterile	0.45	4	SLPES0445N	100
PES,female luer lock ,non-sterile	0.45	13	SLPES1345N	100
PES,female luer lock ,non-sterile	0.45	25	SLPES2545N	100
PES,female luer lock ,non-sterile	0.45	33	SLPES3345N	50
PES,female luer lock ,non-sterile	0.45	50	SLPES5045N	25
PES/GF Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPES1322NG	100
PES/GF Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPES2522NG	100
PES/GF Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPES3322NG	50
PES/GF Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPES5022NG	25
PES/GF Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPES1345NG	100
PES/GF Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPES2545NG	100
PES/GF Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPES3345NG	50
PES/GF Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPES5045NG	25
PES/PP Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPES1322NP	100
PES/PP Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPES2522NP	100
PES/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPES3322NP	50
PES/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPES5022NP	25
PES/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPES1345NP	100
PES/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPES2545NP	100
PES/PP Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPES3345NP	50
PES/PP Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPES5045NP	25
PES, female luer lock, sterile	0.22	13	SLPES1322S	100
PES, female luer lock, sterile	0.22	25	SLPES2522S	100
PES, female luer lock, sterile	0.22	33	SLPES3322S	50

PES, female luer lock, sterile	0.45	13	SLPES1345S	100
PES, female luer lock, sterile	0.45	25	SLPES2545S	100
PES, female luer lock, sterile	0.45	33	SLPES3345S	50
PES/GF Pre-filter ,female luer lock, sterile	0.22	13	SLPES1322SG	100
PES/GF Pre-filter ,female luer lock, sterile	0.22	25	SLPES2522SG	100
PES/GF Pre-filter ,female luer lock, sterile	0.22	33	SLPES3322SG	50
PES/GF Pre-filter ,female luer lock, sterile	0.45	13	SLPES1345SG	100
PES/GF Pre-filter ,female luer lock, sterile	0.45	25	SLPES2545SG	100
PES/GF Pre-filter ,female luer lock, sterile	0.45	33	SLPES3345SG	50
PES/PP Pre-filter ,female luer lock, sterile	0.22	13	SLPES1322SP	100
PES/PP Pre-filter ,female luer lock, sterile	0.22	25	SLPES2522SP	100
PES/PP Pre-filter ,female luer lock, sterile	0.22	33	SLPES3322SP	50
PES/PP Pre-filter ,female luer lock, sterile	0.45	13	SLPES1345SP	100
PES/PP Pre-filter ,female luer lock, sterile	0.45	25	SLPES2545SP	100
PES/PP Pre-filter ,female luer lock, sterile	0.45	33	SLPES3345SP	50
CA (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.1um, 0.22um, 0.45um, 0.8um, 1.0um, 3.0um,5.0um)				
CA,female luer lock ,non-sterile	0.22	4	SLCA0422N	100
CA,female luer lock ,non-sterile	0.22	13	SLCA1322N	100
CA,female luer lock ,non-sterile	0.22	25	SLCA2522N	100
CA,female luer lock ,non-sterile	0.22	33	SLCA3322N	50
CA,female luer lock ,non-sterile	0.22	50	SLCA5022N	25
CA,female luer lock ,non-sterile	0.45	4	SLCA0445N	100
CA,female luer lock ,non-sterile	0.45	13	SLCA1345N	100
CA,female luer lock ,non-sterile	0.45	25	SLCA2545N	100
CA,female luer lock ,non-sterile	0.45	33	SLCA3345N	50
CA,female luer lock ,non-sterile	0.45	50	SLCA5045N	25
CA/GF Pre-filter ,female luer lock ,non-sterile	0.22	13	SLCA1322NG	100
CA/GF Pre-filter ,female luer lock ,non-sterile	0.22	25	SLCA2522NG	100
CA/GF Pre-filter ,female luer lock ,non-sterile	0.22	33	SLCA3322NG	50
CA/GF Pre-filter ,female luer lock ,non-sterile	0.22	50	SLCA5022NG	25
CA/GF Pre-filter ,female luer lock ,non-sterile	0.45	13	SLCA1345NG	100
CA/GF Pre-filter ,female luer lock ,non-sterile	0.45	25	SLCA2545NG	100
CA/GF Pre-filter ,female luer lock ,non-sterile	0.45	33	SLCA3345NG	50
CA/GF Pre-filter ,female luer lock ,non-sterile	0.45	50	SLCA5045NG	25
CA/PP Pre-filter ,female luer lock ,non-sterile	0.22	13	SLCA1322NP	100
CA/PP Pre-filter ,female luer lock ,non-sterile	0.22	25	SLCA2522NP	100
CA/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLCA3322NP	50
CA/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLCA5022NP	25
CA/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLCA1345NP	100
CA/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLCA2545NP	100
CA/PP Pre-filter ,female luer lock ,non-sterile	0.45	33	SLCA3345NP	50
CA/PP Pre-filter ,female luer lock ,non-sterile	0.45	50	SLCA5045NP	25

CA, female luer lock, sterile	0.22	4	SLCA0422S	100
CA, female luer lock, sterile	0.22	13	SLCA1322S	100
CA, female luer lock, sterile	0.22	25	SLCA2522S	100
CA, female luer lock, sterile	0.22	33	SLCA3322S	50
CA, female luer lock, sterile	0.22	50	SLCA5022S	25
CA, female luer lock, sterile	0.45	4	SLCA0445S	100
CA, female luer lock, sterile	0.45	13	SLCA1345S	100
CA, female luer lock, sterile	0.45	25	SLCA2545S	100
CA, female luer lock, sterile	0.45	33	SLCA3345S	50
CA, female luer lock, sterile	0.45	50	SLCA5045S	25
CA/GF Pre-filter , female luer lock, sterile	0.22	13	SLCA1322SG	100
CA/GF Pre-filter , female luer lock, sterile	0.22	25	SLCA2522SG	100
CA/GF Pre-filter , female luer lock, sterile	0.22	33	SLCA3322SG	50
CA/GF Pre-filter , female luer lock, sterile	0.22	50	SLCA5022SG	25
CA/GF Pre-filter , female luer lock, sterile	0.45	13	SLCA1345SG	100
CA/GF Pre-filter , female luer lock, sterile	0.45	25	SLCA2545SG	100
CA/GF Pre-filter , female luer lock, sterile	0.45	33	SLCA3345SG	50
CA/GF Pre-filter , female luer lock, sterile	0.45	50	SLCA5045SG	25
CA/PP Pre-filter , female luer lock, sterile	0.22	13	SLCA1322SP	100
CA/PP Pre-filter , female luer lock, sterile	0.22	25	SLCA2522SP	100
CA/PP Pre-filter , female luer lock, sterile	0.22	33	SLCA3322SP	50
CA/PP Pre-filter , female luer lock, sterile	0.22	50	SLCA5022SP	25
CA/PP Pre-filter , female luer lock, sterile	0.45	13	SLCA1345SP	100
CA/PP Pre-filter , female luer lock, sterile	0.45	25	SLCA2545SP	100
CA/PP Pre-filter , female luer lock, sterile	0.45	33	SLCA3345SP	50
CA/PP Pre-filter , female luer lock, sterile	0.45	50	SLCA5045SP	25
PVDF (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.1um, 0.22um, 0.45um, 0.65um, 1.0um, 3.0um, 5.0um)				
PVDF,female luer lock ,non-sterile	0.22	4	SLPV0422N	100
PVDF,female luer lock ,non-sterile	0.22	13	SLPV1322N	100
PVDF,female luer lock ,non-sterile	0.22	25	SLPV2522N	100
PVDF,female luer lock ,non-sterile	0.22	33	SLPV3322N	50
PVDF,female luer lock ,non-sterile	0.22	50	SLPV5022N	25
PVDF,female luer lock ,non-sterile	0.45	4	SLPV0445N	100
PVDF,female luer lock ,non-sterile	0.45	13	SLPV1345N	100
PVDF,female luer lock ,non-sterile	0.45	25	SLPV2545N	100
PVDF,female luer lock ,non-sterile	0.45	33	SLPV3345N	50
PVDF,female luer lock ,non-sterile	0.45	50	SLPV5045N	25
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPV1322NG	100
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPV2522NG	100
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPV3322NG	50
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPV5022NG	25
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPV1345NG	100

PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPV2545NG	100
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPV3345NG	50
PVDF/GF Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPV5045NG	25
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.22	13	SLPV1322NP	100
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.22	25	SLPV2522NP	100
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLPV3322NP	50
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLPV5022NP	25
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLPV1345NP	100
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLPV2545NP	100
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.45	33	SLPV3345NP	50
PVDF/PP Pre-filter ,female luer lock ,non-sterile	0.45	50	SLPV5045NP	25
PVDF , female luer lock , sterile	0.22	13	SLPV1322S	100
PVDF , female luer lock , sterile	0.22	25	SLPV2522S	100
PVDF , female luer lock , sterile	0.22	33	SLPV3322S	50
PVDF , female luer lock , sterile	0.45	13	SLPV1345S	100
PVDF , female luer lock , sterile	0.45	25	SLPV2545S	100
PVDF , female luer lock , sterile	0.45	33	SLPV3345S	50
PVDF/GF Pre-filter , female luer lock , sterile	0.22	13	SLPV1322SG	100
PVDF/GF Pre-filter , female luer lock , sterile	0.22	25	SLPV2522SG	100
PVDF/GF Pre-filter , female luer lock , sterile	0.22	33	SLPV3322SG	50
PVDF/GF Pre-filter , female luer lock , sterile	0.45	13	SLPV1345SG	100
PVDF/GF Pre-filter , female luer lock , sterile	0.45	25	SLPV2545SG	100
PVDF/GF Pre-filter , female luer lock , sterile	0.45	33	SLPV3345SG	50
PVDF/PP Pre-filter , female luer lock , sterile	0.22	13	SLPV1322SP	100
PVDF/PP Pre-filter , female luer lock , sterile	0.22	25	SLPV2522SP	100
PVDF/PP Pre-filter , female luer lock , sterile	0.22	33	SLPV3322SP	50
PVDF/PP Pre-filter , female luer lock , sterile	0.45	13	SLPV1345SP	100
PVDF/PP Pre-filter , female luer lock , sterile	0.45	25	SLPV2545SP	100
PVDF/PP Pre-filter , female luer lock , sterile	0.45	33	SLPV3345SP	50
MCE (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.1um, 0.22um, 0.45um, 0.8um, 1.0um, 3.0um, 5.0um)				
MCE,female luer lock ,non-sterile	0.22	4	SLMCE0422N	100
MCE,female luer lock ,non-sterile	0.22	13	SLMCE1322N	100
MCE,female luer lock ,non-sterile	0.22	25	SLMCE2522N	100
MCE,female luer lock ,non-sterile	0.22	33	SLMCE3322N	50
MCE,female luer lock ,non-sterile	0.22	50	SLMCE5022N	25
MCE,female luer lock ,non-sterile	0.45	4	SLMCE0445N	100
MCE,female luer lock ,non-sterile	0.45	13	SLMCE1345N	100
MCE,female luer lock ,non-sterile	0.45	25	SLMCE2545N	100
MCE,female luer lock ,non-sterile	0.45	33	SLMCE3345N	50
MCE,female luer lock ,non-sterile	0.45	50	SLMCE5045N	25
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.22	13	SLMCE1322NG	100
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.22	25	SLMCE2522NG	100

MCE/GF Pre-filter ,female luer lock ,non-sterile	0.22	33	SLMCE3322NG	50
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.22	50	SLMCE5022NG	25
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.45	13	SLMCE1345NG	100
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.45	25	SLMCE2545NG	100
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.45	33	SLMCE3345NG	50
MCE/GF Pre-filter ,female luer lock ,non-sterile	0.45	50	SLMCE5045NG	25
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.22	13	SLMCE1322NP	100
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.22	25	SLMCE2522NP	100
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLMCE3322NP	50
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLMCE5022NP	25
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLMCE1345NP	100
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLMCE2545NP	100
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.45	33	SLMCE3345NP	50
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.45	50	SLMCE5045NP	25
MCE, female luer lock, sterile	0.22	13	SLMCE1322S	100
MCE, female luer lock, sterile	0.22	25	SLMCE2522S	100
MCE, female luer lock, sterile	0.22	33	SLMCE3322S	50
MCE, female luer lock, sterile	0.45	13	SLMCE1345S	100
MCE, female luer lock, sterile	0.45	25	SLMCE2545S	100
MCE, female luer lock, sterile	0.45	33	SLMCE3345S	50
MCE/GF Pre-filter , female luer lock, sterile	0.22	13	SLMCE1322SG	100
MCE/GF Pre-filter , female luer lock, sterile	0.22	25	SLMCE2522SG	100
MCE/GF Pre-filter , female luer lock, sterile	0.22	33	SLMCE3322SG	50
MCE/GF Pre-filter , female luer lock, sterile	0.45	13	SLMCE1345SG	100
MCE/GF Pre-filter , female luer lock, sterile	0.45	25	SLMCE2545SG	100
MCE/GF Pre-filter , female luer lock, sterile	0.45	33	SLMCE3345SG	50
MCE/PP Pre-filter , female luer lock, sterile	0.22	13	SLMCE1322SP	100
MCE/PP Pre-filter , female luer lock, sterile	0.22	25	SLMCE2522SP	100
MCE/PP Pre-filter , female luer lock, sterile	0.22	33	SLMCE3322SP	50
MCE/PP Pre-filter , female luer lock, sterile	0.45	13	SLMCE1345SP	100
MCE/PP Pre-filter , female luer lock, sterile	0.45	25	SLMCE2545SP	100
MCE/PP Pre-filter , female luer lock, sterile	0.45	33	SLMCE3345SP	50
Glass Fiber (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.45,1.0um, 1.6um)				
Glass Fiber,female luer lock ,non-sterile	0.45	4	SLGF04045N	100
Glass Fiber,female luer lock ,non-sterile	0.45	13	SLGF13045N	100
Glass Fiber,female luer lock ,non-sterile	0.45	25	SLGF25045N	100
Glass Fiber,female luer lock ,non-sterile	0.45	33	SLGF33045N	50
Glass Fiber,female luer lock ,non-sterile	0.45	50	SLGF50045N	25
Glass Fiber,female luer lock ,non-sterile	1.0	4	SLGF04100N	100
Glass Fiber,female luer lock ,non-sterile	1.0	13	SLGF13100N	100
Glass Fiber,female luer lock ,non-sterile	1.0	25	SLGF25100N	100
Glass Fiber,female luer lock ,non-sterile	1.0	33	SLGF33100N	50

Glass Fiber,female luer lock ,non-sterile	1.0	50	SLGF50100N	25
Glass Fiber,female luer lock ,non-sterile	1.6	4	SLGF04160N	100
Glass Fiber,female luer lock ,non-sterile	1.6	13	SLGF13160N	100
Glass Fiber,female luer lock ,non-sterile	1.6	25	SLGF25160N	100
Glass Fiber,female luer lock ,non-sterile	1.6	33	SLGF33160N	50
Glass Fiber,female luer lock ,non-sterile	1.6	50	SLGF50160N	25
Glass Fiber, female luer lock, sterile	0.45	13	SLGF13045S	100
Glass Fiber, female luer lock, sterile	0.45	25	SLGF25045S	100
Glass Fiber, female luer lock, sterile	0.45	33	SLGF33045S	50
Glass Fiber, female luer lock, sterile	1.0	13	SLGF13100S	100
Glass Fiber, female luer lock, sterile	1.0	25	SLGF25100S	100
Glass Fiber, female luer lock, sterile	1.0	33	SLGF33100S	50
Glass Fiber, female luer lock, sterile	1.6	13	SLGF13160S	100
Glass Fiber, female luer lock, sterile	1.6	25	SLGF25160S	100
Glass Fiber, female luer lock, sterile	1.6	33	SLGF33160S	50
PP (4mm, 13mm, 20mm, 25mm, 33mm, 50mm/0.1um, 0.22um, 0.45um, 1um, 3um, 5um,10um,20um,30um)				
PP,female luer lock ,non-sterile	1.0	4	SLPP04100N	100
PP,female luer lock ,non-sterile	1.0	13	SLPP13100N	100
PP,female luer lock ,non-sterile	1.0	25	SLPP25100N	100
PP,female luer lock ,non-sterile	1.0	33	SLPP33100N	50
PP,female luer lock ,non-sterile	1.0	50	SLPP50100N	25
PP,female luer lock ,non-sterile	1.6	4	SLPP04160N	100
PP,female luer lock ,non-sterile	1.6	13	SLPP13160N	100
PP,female luer lock ,non-sterile	1.6	25	SLPP25160N	100
PP,female luer lock ,non-sterile	1.6	33	SLPP33160N	50
PP,female luer lock ,non-sterile	1.6	50	SLPP50160N	25
PP, female luer lock, sterile	1.0	13	SLPP13100S	100
PP, female luer lock, sterile	1.0	25	SLPP25100S	100
PP, female luer lock, sterile	1.0	33	SLPP33100S	50
PP, female luer lock, sterile	1.6	13	SLPP13160S	100
PP, female luer lock, sterile	1.6	25	SLPP25160S	100
PP, female luer lock, sterile	1.6	33	SLPP33160S	50

Activated Carbon Syringe Filter

Activated carbon syringe filter is a filter filled with high-purity, high-efficiency, acid-washed, activated carbon and a High Efficiency Particulate Air (HEPA) filter. It is made specifically for adsorption of organic vapors, chlorine, decolorizing liquids and several heavy metal. The special stepped barb design make it connect with hosepipe which widely used in laboratory for removing Oxide, coloring substance and organic impurity from fluid.



Features

Available diameter: 50 mm

Available pore size: 5 µm

Widest chemical compatibility range

Stepped barb inlet and outlet suitable for linking with hosepipe

Extremely pure filter and thermofusion welding with very low extractable levels

Excellent adsorption media for color, organics, chlorine, and several heavy metal

Applications

Especially use for adsorption of organic vapors, chlorine, decolorizing liquids and several heavy metal.

Technical Data

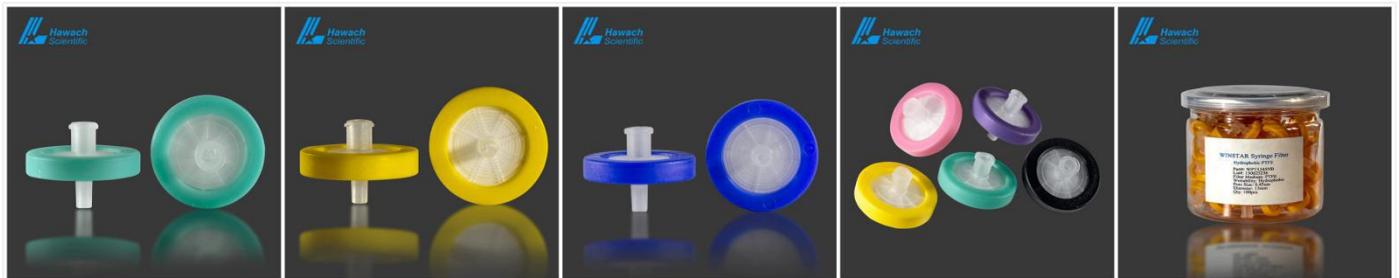
Diameter	50mm
Housing	Medical PP
Pore Size	5µm
Filtration Area	19.8cm ²
Process Volume	5000ml
Hold-up Volume	<350ul
Inlet	Stepped barb
Outlet	Stepped barb
Operate temperature	60°C
Maximum Operating Pressure (@23°C)	≥3bar

Ordering Information

Item code	Pore Size(um)	Diameter(mm)	Sterile	Quantity/pack
SLAC5050N	5	50	No	25pcs
SLAC5050S	5	50	Yes	25pcs

WINSTAR™ Syringe Filter

WINSTAR™ Syringe Filters units are used for small volume filtration of liquids, gas and other material-specific applications. They are made of extractable free virgin polypropylene housings with female luer lock and male luer slip fittings. New sealing ring design make itself for high operating pressure and faster filtration. They are produced to exceptional quality standards and eliminate common problems such as leaks and filter 'blow off'. Colour ring help identify membrane type inside easily. These syringe filters are ideal for applications in pharmaceutical, environmental, biotechnology, food, beverage and agricultural testing laboratories.



Features

- * Easy to identify- the color coded band on housing clearly indicates the membrane material
- * Pressure rated - to 90psi for unsurpassed integrity
- * Sealing ring - minimizes bursting and leakage
- * Pore size of filter media are available from 0.22µm, 0.45µm
- * Universal Luer lock/luer slip design for versatility and maximum operational safety
- * Chemically resistant - polypropylene housing
- * Maximum filtration area - ensure uniformity and speed due to sample distribution rings
- * Low extractable levels - generate interference free data
- * Unequivocal re-productibility across all filters and lots

Features and Application

Filter Media	Nylon /PTFE /PES /PTFEL/ PVDF/ PVDF L	
Pore Size, µm	0.22µm, 0.45µm	
Diameter	13mm	25mm

Housing	PP	PP
Filtration Area	1.0cm ²	4.3cm ²
Maximum Operating Pressure	6.2bar	6.2bar
Process Volume	10ml	100ml
Hold-up Volume	< 25µl	<100µl
Inlet	Female Luer Lock	Female Luer Lock
Outlet	Male Luer Unlock	Male Luer Unlock
Flow Direction	Flow should enter from the inlet	
Maximum Operating Temperature	131 °C	
Sterilization	Autoclave at 121 °C at 1 bar for 20 minutes/EO/Gamma	

* **Nylon** is a very pure hydrophilic membrane with very low levels of extractables - it is mechanically very strong and can be used in many different applications. The Nylon filter membrane undergoes extensive testing before it is encapsulated to ensure that the level of extractables is unsurpassed

* **Polytetrafluoroethylene (PTFE)** is chemically resistant to virtually all solvents and can be used for working with aggressive media such as Strong acids and bases. PTFE is hydrophobic and requires pre-wetting (normally by using a small amount of alcohol) before being used with aqueous samples. PTFE filters can also be used to prevent moisture passing through air vents.

* **Hydrophilic Polytetrafluoroethylene (PTFE)** is unsupported membrane that ideal for HPLC and mixtures of aqueous and organic solvents. Use with both aqueous and organic solvents, along with their mixtures.

* **Polyvinylidene Difluoride (PVDF)** is a broad purpose hydrophobic membrane that can be used in a variety of applications. It has high flow rates and is generally compatible with most common solvents. PVDF is a low protein binder.

* **Hydrophilic Polyvinylidene Difluoride (PVDF)** provides high flow rates & throughput, low extractables& broad chemical compatibility and bind far less protein than nylon, nitrocellulose or PTFE membranes.

* **PES** low affinity for proteins and extractable with substantially faster flow rates than PVDF, suitable for pre-filtration and filtration of buffers and culture media.

Color Coding

All Hawach WINSTAR Syringe Filters are color coded to help with easy identification.

Color	Filter Media	Pore Size/µm
Blue	PES	0.45
Yellow	PES	0.22
White	Nylon	0.45

Green	Nylon	0.22
Orange	Hydrophobic PTFE	0.45
Purple	Hydrophobic PTFE	0.22
Pink	Hydrophilic PTFE	0.45
Golden	Hydrophilic PTFE	0.22
Red	Hydrophobic PVDF	0.45
Black	Hydrophobic PVDF	0.22
Grey	Hydrophilic PVDF	0.45
Brown	Hydrophilic PVDF	0.22

Ordering Information

Description	Color	µm	Φ mm	Part No.	Pcs/pk
Nylon,female luer lock ,non-sterile	Green	0.22	13	WNY1322N	100
Nylon,female luer lock ,non-sterile	Green	0.22	25	WNY2522N	100
Nylon,female luer lock ,non-sterile	White	0.45	13	WNY1345N	100
Nylon,female luer lock ,non-sterile	White	0.45	25	WNY2545N	100
Hydrophobic PTFE,female luer lock ,non-sterile	Orange	0.45	13	WPT1345NB	100
Hydrophobic PTFE,female luer lock ,non-sterile	Orange	0.45	25	WPT2545NB	100
Hydrophobic PTFE,female luer lock ,non-sterile	Purple	0.22	13	WPT1322NB	100
Hydrophobic PTFE,female luer lock ,non-sterile	Purple	0.22	25	WPT2522NB	100
Hydrophilic PTFE,female luer lock ,non-sterile	Pink	0.45	13	WPT1345NL	100
Hydrophilic PTFE,female luer lock ,non-sterile	Pink	0.45	25	WPT2545NL	100
Hydrophilic PTFE,female luer lock ,non-sterile	Golden	0.22	13	WPT1322NL	100
Hydrophilic PTFE,female luer lock ,non-sterile	Golden	0.22	25	WPT2522NL	100
Hydrophobic PVDF,female luer lock ,non-sterile	Red	0.45	13	WPV1345NB	100
Hydrophobic PVDF,female luer lock ,non-sterile	Red	0.45	25	WPV2545NB	100
Hydrophobic PVDF,female luer lock ,non-sterile	Black	0.22	13	WPV1322NB	100
Hydrophobic PVDF,female luer lock ,non-sterile	Black	0.22	25	WPV2522NB	100
Hydrophilic PVDF,female luer lock ,non-sterile	Grey	0.45	13	WPV1345NL	100
Hydrophilic PVDF,female luer lock ,non-sterile	Grey	0.45	25	WPV2545NL	100
Hydrophilic PVDF ,female luer lock ,non-sterile	Brown	0.22	13	WPV1322NL	100
Hydrophilic PVDF,female luer lock ,non-sterile	Brown	0.22	25	WPV2522NL	100
PES,female luer lock ,non-sterile	Blue	0.45	13	WPES1345N	100
PES,female luer lock ,non-sterile	Blue	0.45	25	WPES2545N	100
PES,female luer lock ,non-sterile	Yellow	0.22	13	WPES1322N	100
PES,female luer lock ,non-sterile	Yellow	0.22	25	WPES2522N	100