

About Hawach Scientific

Hawach Scientific 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 and make global supply of microporous Membrane, Syringe Filter, HPLC Sample Vials, Septa and Caps, along with Filter Paper, Vacuum Filtration Manifolds and Vacuum Pumps, Chromatography Columns, QuEChERS etc.

Hawach Scientific never stop upgrading our technique, cooperate 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.

In Hawach Scientific, quality always comes first, in the very beginning, Hawach Scientific 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, Japan, UK, Germany, Dubai, Israel and Mexico. The quality and service of our products receive consistent approval from customers. Our prospect is to be leader and century enterprise, Provide superior products, service and solution to global laboratories and factories. Hawach Scientific's mission is "Accomplish Sciences, help employee realized their dreams.", By joint efforts of Hawach's employee, business partners and customers, we believe Hawach can be a leader of laboratory industry.



Content

1. Syringe Filters.....	1
1.1 FILTSTAR™ Syringe Filter.....	1
1.2 Active Carbon Syringe Filter.....	13
1.3 WINSTAR™ Syringe Filter.....	15
2. Membrane Filter.....	18
3. Sample Vial, Septa & Cap.....	29
3.1 9mm Screw Top Vials & Caps.....	29
3.2 Super Bonded Caps for 9-425 HPLC Vials.....	32
3.3 8mm Screw Top Vials & Caps.....	32
3.4 Snap Top Vials & Caps.....	35
3.5 Crimp Top Vials & Caps.....	37
3.6 Storage Vials and Volatile Organic Analysis (VOA)Vials & Caps.....	39
3.7 Headspace Vials & Caps.....	41
4. Filter Paper.....	42
4.1 Standard Qualitative Filter Paper.....	42
4.2 Wet Strengthened Qualitative Filter Paper.....	46
4.3 Quantative Filter Paper.....	48
5. Vacuum Filtration Set.....	52
5.1 Glass Solvent Filter.....	52
5.2 Multi-branch Vacuum Filtration Manifold.....	54
5.3 Diaphragm Vacuum Pump.....	57

1. Syringe Filters

1.1 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.



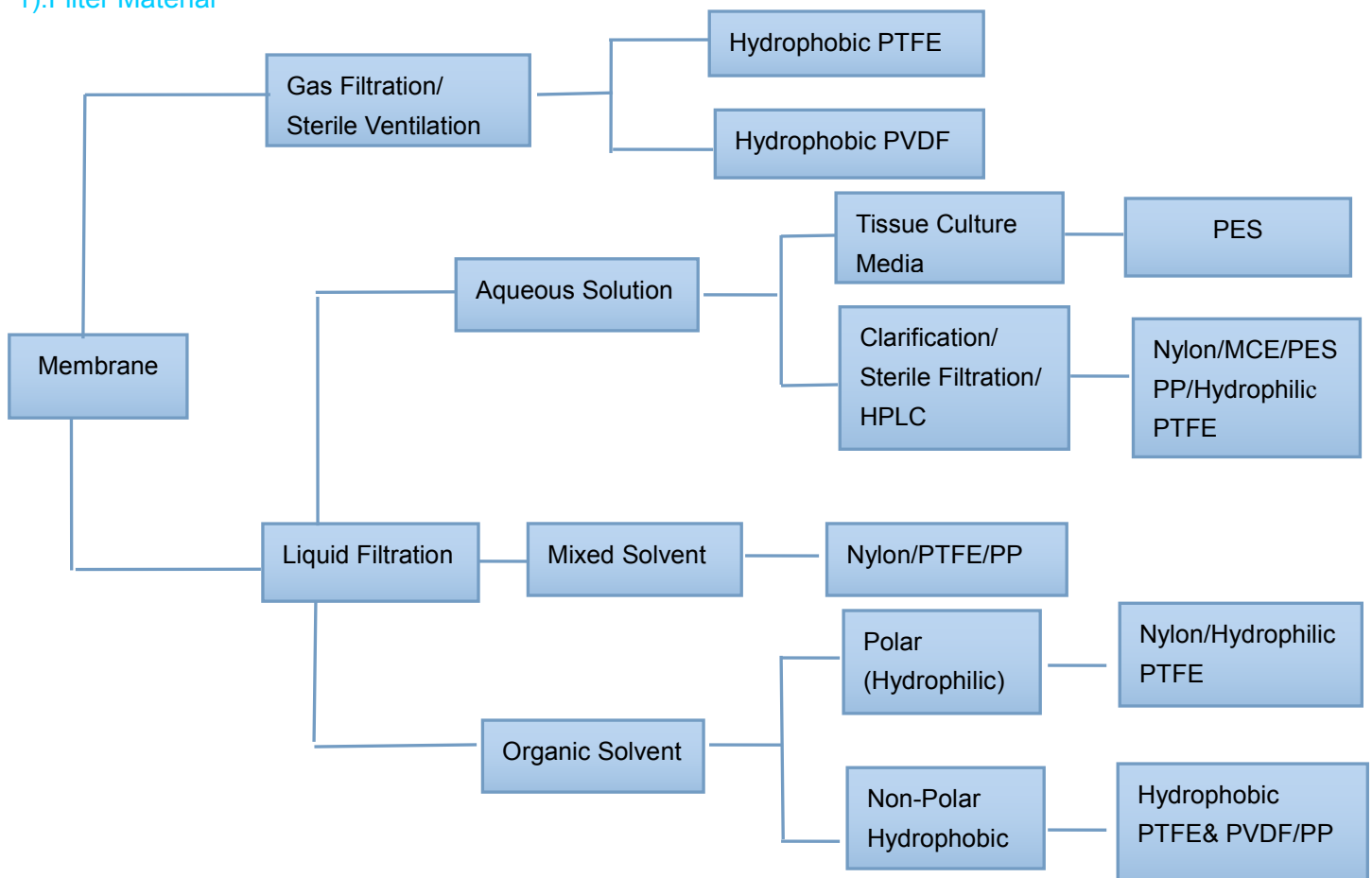
Hawach Scientific Syringe Filters Features and Application

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 0.1µm, 0.22µm, 0.45µm, 0.65µm, 0.8µm, 1.0µm, 3.0µm, 5.0µm, 10µm.
- * Two layer syringe filters with 1 µm 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/0.1um, 0.22um, 0.45um, 0.8um, 1.0um, 3.0um, 5.0um, 10um)				
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

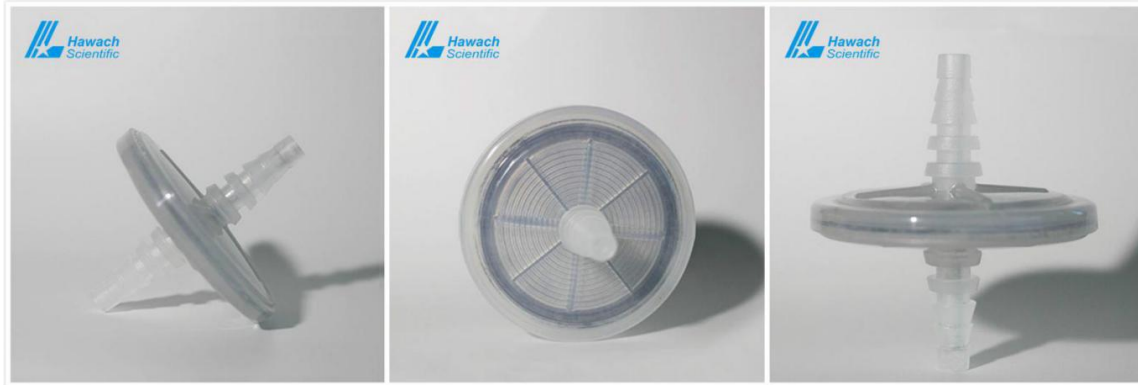
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.22	33	SLMCE3322NP	50
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.22	50	SLMCE5022NP	25
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.45	13	SLMCE1345NP	100
MCE/PP Pre-filter ,female luer lock ,non-sterile	0.45	25	SLMCE2545NP	100
MCE/PP Pre-filter ,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

1.2 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 μ m

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

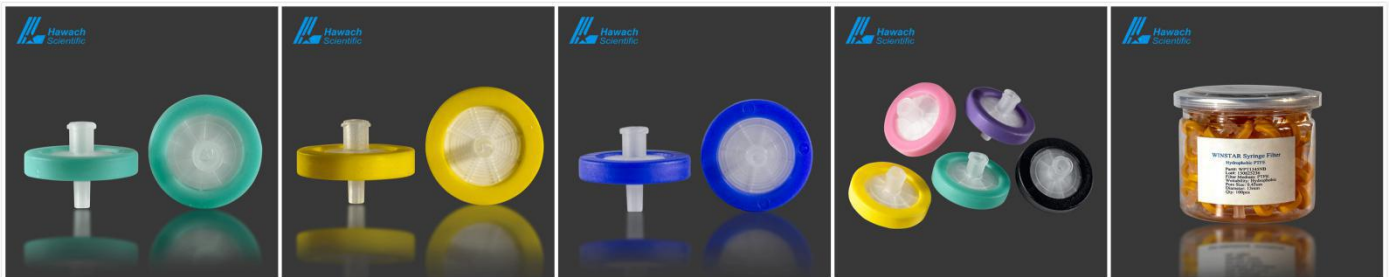
Diameter	50mm
Housing	Medical PP
Pore Size	5 μ m
Filtration Area	19.8cm ²
Process Volume	5000ml
Hold-up Volume	<350ul
Inlet	Stepped barb
Outlet	Stepped barb
Operate temperature	60°C
Maximum Operating Pressure (@23°C)	≥3bar

Ordering Information

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

1.3 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	0.22 μm , 0.45 μm	
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	< 25 μl	<100 μl
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	45°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

2.Membrane Filter

Hawach Scientific membrane filters are a thin, polymeric film made up of millions of microscopic pores. Membrane retain particles and microorganisms that exceed their pore ratings by acting as a physical barrier and capturing such particles on the surface of the membrane.

Membrane Disc Filters are pre-cut membrane filters which produced using the highest quality manufacturing standards and optimized to increase efficiency, reduce cost, and expand the capabilities of your laboratory-scale applications. It gives consistent and reliable results that optimized for HPLC media preparation, pharmaceuticals and cold sterilization.

We offer different kinds of membranes according to customers application needs which are available in variety of polymers, pore sizes, diameters and surface types. Most membranes can be sterilized by autoclave or non-sterile. Besides, customize is also available.

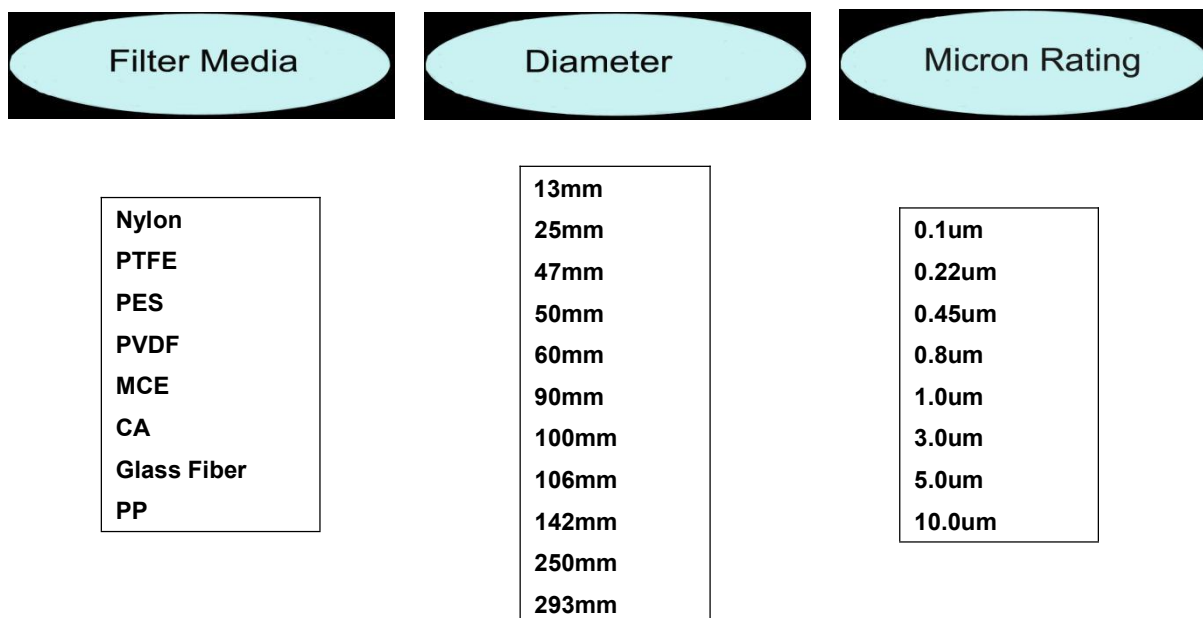


Selecting Right Membrane Filter

1. Clearly define your application requirements
2. Choose a compatible membrane
3. Select the most effective and efficient pore size

Selecting Membranes for Your Applications

1. Determine the particle size to be retained or filtered. Membrane will retain all particles equal to and larger than their designated pore size.
2. Assess the chemical compatibility of the membrane filter with the liquid or gas to be filtered. Consider the chemical resistance properties of all parts that will contact the filter.
3. Consider hydrophilic or hydrophobic membrane; temperature, flow rate, throughput, and sterilization needs.



*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.

*** Polytetrafluoroethylene(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.

Order Information

Description	um	Φ mm	Part No.	Pcs/pk
Nylon Membrane Disc, non-sterile	0.1	13	MLNY13010	400
	0.1	25	MLNY25010	400
	0.1	47	MLNY47010	100
	0.1	90	MLNY90010	50
	0.1	142	MLNY142010	25
	0.1	293	MLNY293010	25
Nylon Membrane Disc, non-sterile	0.22	13	MLNY13022	400
	0.22	25	MLNY25022	400
	0.22	47	MLNY47022	100
	0.22	90	MLNY90022	50
	0.22	142	MLNY142022	25
	0.22	293	MLNY293022	25

Nylon Membrane Disc, non-sterile	0.45	13	MLNY13045	400
	0.45	25	MLNY25045	400
	0.45	47	MLNY47045	100
	0.45	90	MLNY90045	50
	0.45	142	MLNY142045	25
	0.45	293	MLNY293045	25
Nylon Membrane Disc, non-sterile	0.8	13	MLNY13080	400
	0.8	25	MLNY25080	400
	0.8	47	MLNY47080	100
	0.8	90	MLNY90080	50
	0.8	142	MLNY142080	25
	0.8	293	MLNY293080	25
Nylon Membrane Disc, non-sterile	1.0	13	MLNY13100	400
	1.0	25	MLNY25100	400
	1.0	47	MLNY47100	100
	1.0	90	MLNY90100	50
	1.0	142	MLNY142100	25
	1.0	293	MLNY293100	25
Nylon Membrane Disc, non-sterile	3.0	13	MLNY13300	400
	3.0	25	MLNY25300	400
	3.0	47	MLNY47300	100
	3.0	90	MLNY90300	50
	3.0	142	MLNY142300	25
	3.0	293	MLNY293300	25
Nylon Membrane Disc, non-sterile	5.0	13	MLNY13500	400
	5.0	25	MLNY25500	400
	5.0	47	MLNY47500	100
	5.0	90	MLNY90500	50
	5.0	142	MLNY142500	25
	5.0	293	MLNY293500	25
Nylon Membrane Disc, non-sterile	10.0	13	MLNY131000	400
	10.0	25	MLNY251000	400
	10.0	47	MLNY471000	100
	10.0	90	MLNY901000	50
	10.0	142	MLNY1421000	25
	10.0	293	MLNY2931000	25
Hydrophobic PTFE Membrane Disc, non-sterile	0.1	13	MLPT13010	400
	0.1	25	MLPT25010	400
	0.1	47	MLPT47010	100

	0.1	90	MLPT90010	50
	0.1	142	MLPT142010	25
	0.1	293	MLPT293010	25
Hydrophobic PTFE Membrane Disc, non-sterile	0.22	13	MLPT13022	400
	0.22	25	MLPT25022	400
	0.22	47	MLPT47022	100
	0.22	90	MLPT90022	50
	0.22	142	MLPT142022	25
	0.22	293	MLPT293022	25
Hydrophobic PTFE Membrane Disc, non-sterile	0.45	13	MLPT13045	400
	0.45	25	MLPT25045	400
	0.45	47	MLPT47045	100
	0.45	90	MLPT90045	50
	0.45	142	MLPT142045	25
	0.45	293	MLPT293045	25
Hydrophobic PTFE Membrane Disc, non-sterile	1.0	13	MLPT13100	400
	1.0	25	MLPT25100	400
	1.0	47	MLPT47100	100
	1.0	90	MLPT90100	50
	1.0	142	MLPT142100	25
	1.0	293	MLPT293100	25
Hydrophobic PTFE Membrane Disc, non-sterile	3.0	13	MLPT13300	400
	3.0	25	MLPT25300	400
	3.0	47	MLPT47300	100
	3.0	90	MLPT90300	50
	3.0	142	MLPT142300	25
	3.0	293	MLPT293300	25
Hydrophobic PTFE Membrane Disc, non-sterile	5.0	13	MLPT13500	400
	5.0	25	MLPT25500	400
	5.0	47	MLPT47500	100
	5.0	90	MLPT90500	50
	5.0	142	MLPT142500	25
	5.0	293	MLPT293500	25
Hydrophobic PTFE Membrane Disc, non-sterile	10.0	13	MLPT131000	400
	10.0	25	MLPT251000	400
	10.0	47	MLPT471000	100
	10.0	90	MLPT901000	50
	10.0	142	MLPT1421000	25
	10.0	293	MLPT2931000	25

Hydrophilic PTFE Membrane Disc, non-sterile (unsupported & supported both available)	0.22	13	MLPT13022L	400
	0.22	25	MLPT25022L	400
	0.22	47	MLPT47022L	100
	0.22	90	MLPT90022L	50
	0.22	142	MLPT142022L	25
	0.22	293	MLPT293022L	25
Hydrophilic PTFE Membrane Disc, non-sterile (unsupported & supported both available)	0.45	13	MLPT13045L	400
	0.45	25	MLPT25045L	400
	0.45	47	MLPT47045L	100
	0.45	90	MLPT90045L	50
	0.45	142	MLPT142045L	25
	0.45	293	MLPT293045L	25
PES Membrane Disc, non-sterile	0.1	13	MLPES13010	400
	0.1	25	MLPES25010	400
	0.1	47	MLPES47010	100
	0.1	90	MLPES90010	50
	0.1	142	MLPES142010	25
	0.1	293	MLPES293010	25
PES Membrane Disc, non-sterile	0.22	13	MLPES13022	400
	0.22	25	MLPES25022	400
	0.22	47	MLPES47022	100
	0.22	90	MLPES90022	50
	0.22	142	MLPES142022	25
	0.22	293	MLPES293022	25
PES Membrane Disc, non-sterile	0.45	13	MLPES13045	200
	0.45	25	MLPES25045	100
	0.45	47	MLPES47045	100
	0.45	90	MLPES90045	50
	0.45	142	MLPES142045	25
	0.45	293	MLPES293045	25
PES Membrane Disc, non-sterile	0.65	13	MLPES13065	400
	0.65	25	MLPES25065	400
	0.65	47	MLPES47065	100
	0.65	90	MLPES90065	50
	0.65	142	MLPES142065	25
	0.65	293	MLPES293065	25
PES Membrane Disc, non-sterile	0.8	13	MLPES13080	400
	0.8	25	MLPES25080	400
	0.8	47	MLPES47080	100

	0.8	90	MLPES90080	50
	0.8	142	MLPES142080	25
	0.8	293	MLPES293080	25
PES Membrane Disc, non-sterile	1.2	13	MLPES13120	400
	1.2	25	MLPES25120	400
	1.2	47	MLPES47120	100
	1.2	90	MLPES90120	50
	1.2	142	MLPES142120	25
	1.2	293	MLPES293120	25
CA Membrane Disc, non-sterile	0.1	13	MLCA13010	400
	0.1	25	MLCA25010	400
	0.1	47	MLCA47010	100
	0.1	90	MLCA90010	50
	0.1	142	MLCA142010	25
	0.1	293	MLCA293010	25
CA Membrane Disc, non-sterile	0.22	13	MLCA13022	400
	0.22	25	MLCA25022	400
	0.22	47	MLCA47022	100
	0.22	90	MLCA90022	50
	0.22	142	MLCA142022	25
	0.22	293	MLCA293022	25
CA Membrane Disc, non-sterile	0.45	13	MLCA13045	400
	0.45	25	MLCA25045	400
	0.45	47	MLCA47045	100
	0.45	90	MLCA90045	50
	0.45	142	MLCA142045	25
	0.45	293	MLCA293045	25
CA Membrane Disc, non-sterile	0.8	13	MLCA13080	400
	0.8	25	MLCA25080	400
	0.8	47	MLCA47080	100
	0.8	90	MLCA90080	50
	0.8	142	MLCA142080	25
	0.8	293	MLCA293080	25
CA Membrane Disc, non-sterile	1.0	13	MLCA13100	400
	1.0	25	MLCA25100	400
	1.0	47	MLCA47100	100
	1.0	90	MLCA90100	50
	1.0	142	MLCA142100	25
	1.0	293	MLCA293100	25

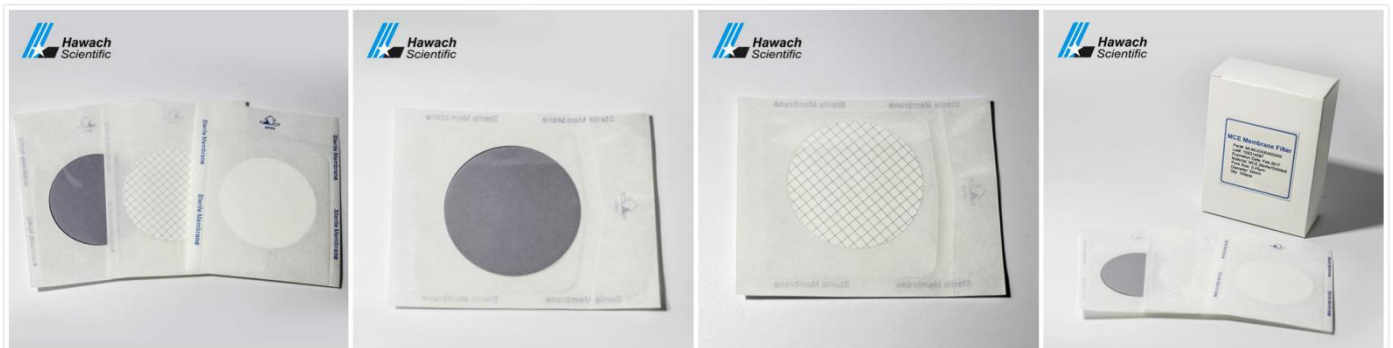
CA Membrane Disc, non-sterile	3.0	13	MLCA13300	400
	3.0	25	MLCA25300	400
	3.0	47	MLCA47300	100
	3.0	90	MLCA90300	50
	3.0	142	MLCA142300	25
	3.0	293	MLCA293300	25
CA Membrane Disc, non-sterile	5.0	13	MLCA13500	400
	5.0	25	MLCA25500	400
	5.0	47	MLCA47500	100
	5.0	90	MLCA90500	50
	5.0	142	MLCA142500	25
	5.0	293	MLCA293500	25
PVDF Membrane Disc, non-sterile	0.1	13	MLPV13010	400
	0.1	25	MLPV25010	400
	0.1	47	MLPV47010	100
	0.1	90	MLPV90010	50
	0.1	142	MLPV142010	25
	0.1	293	MLPV293010	25
PVDF Membrane Disc, non-sterile	0.22	13	MLPV13022	400
	0.22	25	MLPV25022	400
	0.22	47	MLPV47022	100
	0.22	90	MLPV90022	50
	0.22	142	MLPV142022	25
	0.22	293	MLPV293022	25
PVDF Membrane Disc, non-sterile	0.45	13	MLPV13045	400
	0.45	25	MLPV25045	400
	0.45	47	MLPV47045	100
	0.45	90	MLPV90045	50
	0.45	142	MLPV142045	25
	0.45	293	MLPV293045	25
PVDF Membrane Disc, non-sterile	0.65	13	MLPV13065	400
	0.65	25	MLPV25065	400
	0.65	47	MLPV47065	100
	0.65	90	MLPV90065	50
	0.65	142	MLPV142065	25
	0.65	293	MLPV293065	25
PVDF Membrane Disc, non-sterile	1.0	13	MLPV13100	400
	1.0	25	MLPV25100	400
	1.0	47	MLPV47100	100

	1.0	90	MLPV90100	50
	1.0	142	MLPV142100	25
	1.0	293	MLPV293100	25
PVDF Membrane Disc, non-sterile	3.0	13	MLPV13300	400
	3.0	25	MLPV25300	400
	3.0	47	MLPV47300	100
	3.0	90	MLPV90300	50
	3.0	142	MLPV142300	25
	3.0	293	MLPV293300	25
PVDF Membrane Disc, non-sterile	5.0	13	MLPV13500	400
	5.0	25	MLPV25500	400
	5.0	47	MLPV47500	100
	5.0	90	MLPV90500	50
	5.0	142	MLPV142500	25
	5.0	293	MLPV293500	25
MCE Membrane Disc, non-sterile	0.1	13	MLMCE13010	400
	0.1	25	MLMCE25010	400
	0.1	47	MLMCE47010	100
	0.1	90	MLMCE90010	50
	0.1	142	MLMCE142010	25
	0.1	293	MLMCE293010	25
MCE Membrane Disc, non-sterile	0.22	13	MLMCE13022	400
	0.22	25	MLMCE25022	400
	0.22	47	MLMCE47022	100
	0.22	90	MLMCE90022	50
	0.22	142	MLMCE142022	25
	0.22	293	MLMCE293022	25
MCE Membrane Disc, non-sterile	0.45	13	MLMCE13045	400
	0.45	25	MLMCE25045	400
	0.45	47	MLMCE47045	100
	0.45	90	MLMCE90045	50
	0.45	142	MLMCE142045	25
	0.45	293	MLMCE293045	25
MCE Membrane Disc, non-sterile	0.8	13	MLMCE13080	400
	0.8	25	MLMCE25080	400
	0.8	47	MLMCE47080	100
	0.8	90	MLMCE90080	50
	0.8	142	MLMCE142080	25
	0.8	293	MLMCE293080	25

MCE Membrane Disc, non-sterile	1.0	13	MLMCE13100	400
	1.0	25	MLMCE25100	400
	1.0	47	MLMCE47100	100
	1.0	90	MLMCE90100	50
	1.0	142	MLMCE142100	25
	1.0	293	MLMCE293100	25
MCE Membrane Disc, non-sterile	3.0	13	MLMCE13300	400
	3.0	25	MLMCE25300	400
	3.0	47	MLMCE47300	100
	3.0	90	MLMCE90300	50
	3.0	142	MLMCE142300	25
	3.0	293	MLMCE293300	25
MCE Membrane Disc, non-sterile	5.0	13	MLMCE13500	400
	5.0	25	MLMCE25500	400
	5.0	47	MLMCE47500	100
	5.0	90	MLMCE90500	50
	5.0	142	MLMCE142500	25
	5.0	293	MLMCE293500	25

Sterile MCE Gridded Membrane Filter

Mixed Cellulose Ester (MCE) membrane filter is composed of cellulose acetate and cellulose nitrate. Because MCE membrane is biologically inert, it is one of the most widely used membrane in analytical and research applications. Many microbiological techniques include Colony Counting after incubation as the standard method of quantification. Gridded filters have clearly defined grid lines spaced at 3.1mm intervals. The special link use non-toxic and completely free from bacterial growth inhibitors. Special color contrast provided by the membrane surface facilitates particle detection and minimize eye fatigue. It is ideal for Colony Counting and Sterility Testing, and the recovery and retention of bacteria in water/waste water analysis and other microbiological tests.



Features

- *Hydrophilic membrane
- *High flow rate for faster filtration and high binding capacity

*Diameter: 25mm, 47mm, 50mm

*Pore Size: 0.22um , 0.45um, 0.80um

*Clearly defined grid lines spaced at 3.1mm intervals

*Gamma irradiated for sterilization




*Individually sealed with easy-open white separator paper

Ordering Information

Description	um	Φ mm	Part No.	Pcs/pk
MCE Membrane Filter, White, Gridded, Sterile	0.22	47	MLMCE47022GWS	100
	0.22	50	MLMCE50022GWS	100
MCE Membrane Filter, White, Gridded, Sterile	0.45	47	MLMCE47045GWS	100
	0.45	50	MLMCE50045GWS	100
MCE Membrane Filter, White, Gridded, Sterile	0.80	47	MLMCE47080GWS	100
	0.80	50	MLMCE50080GWSP	100
MCE Membrane Filter, White, Gridded, Sterile,with Pad	0.22	47	MLMCE47022GWSP	100
	0.22	50	MLMCE50022GWSP	100
MCE Membrane Filter, White, Gridded, Sterile,with Pad	0.45	47	MLMCE47045GWSP	100
	0.45	50	MLMCE50045GWSP	100
MCE Membrane Filter, White, Gridded, Sterile,with Pad	0.80	47	MLMCE47080GWSP	100
	0.80	50	MLMCE50080GWSP	100
MCE Membrane Filter, Black, Gridded, Sterile	0.22	47	MLMCE47022GBS	100
	0.22	50	MLMCE50022GBS	100
MCE Membrane Filter, Black, Gridded, Sterile	0.45	47	MLMCE47045GBS	100
	0.45	50	MLMCE50045GBS	100
MCE Membrane Filter, Black, Gridded, Sterile	0.80	47	MLMCE47080GBS	100
	0.80	50	MLMCE50080GBSP	100
MCE Membrane Filter, Black, Gridded, Sterile,with Pad	0.22	47	MLMCE47022GBSP	100
	0.22	50	MLMCE50022GBSP	100
MCE Membrane Filter, Black, Gridded, Sterile,with Pad	0.45	47	MLMCE47045GBSP	100
	0.45	50	MLMCE50045GBSP	100
MCE Membrane Filter, Black, Gridded, Sterile,with Pad	0.80	47	MLMCE47080GBSP	100
	0.80	50	MLMCE50080GBSP	100

3. Sample Vial, Septa & Cap

HPLC Auto-sampler Vials Review

Picture			
Cap type	Screw Thread Top	Snap Top	Crimp Top
Volume	2 ml	2ml	2ml
Caliber	8 mm, 9 mm	11mm	11mm
Color	Clear, Amber		
Septa	Pre-slit and No Pre-slit PTFE/silicone Septa		
Cap	Blue&Black PP Cap		

3.1 9mm Screw Top Vials

9mm screw thread vials have a 9-425GPI thread and the closure is dimensionally equivalent to 11mm crimp top vials. This means that they can be used in any autosampler that use 11mm crimp vials. 9mm screw caps have an advantage over 11mm crimp caps because 9mm screw caps can easily be applied and removed by hand and be reused. Clear and Amber vials with or without graduated writing area. Both pre-slit and non pre-slit caps are available. All of Hawach vials are excellent fitted for autosamplers.

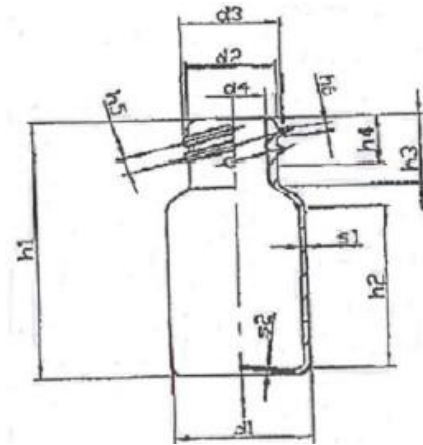


Features

*2 ml, 12 x 32 mm, 9 mm diameter, big volume also available

- *Color: Clear & Amber
- *Packaged in a unique box designed to reduce vial breakage
- *40% larger opening than standard narrow opening vials
- *Precision-formed neck for optimal robotic arm handling
- *Rigorous quality assurance for dimensional consistency from lot-to-lot
- *Optional ceramic write-on spot with fill marks
- *Certified for full warranted compatibility with autosampler

Instruction Drawing



2ml Screw Top Vial(9-425)

d1	11.6±0.2
d2	8.1-8.5
d4	6.0±0.2
h1	32.0±0.5
d3	9.4±0.25
h3	7.3-7.9
h5	≈1.2

Ordering Information

Part No.	Description	Qty/pk
SVS201C	2ml Clear vial, 12×32mm, DN9mm, screw top, USP1 Borosilicate Glass	100
SVS211C	2ml Clear vial, 12×32mm, DN9mm, screw top, graduated with writing area, USP1 Borosilicate Glass	100
SVS201A	2ml Amber vial, 12×32mm, DN9mm, screw top, USP1 Borosilicate Glass	100
SVS211A	2ml Amber vial, 12×32mm, DN9mm, screw top graduated with writing area, USP1 Borosilicate Glass	100
SVS201C-2	2ml Clear vial, 12×32mm, DN9mm, Borosilicate Glass, screw top	100
SVS211C-2	2ml Clear vial, 12×32mm, DN9mm, screw top, graduated with writing area, Borosilicate Glass	100

9mm Assembled Caps and Septa for Screw Top Vial

9-425 thread closures have the profile of a crimp or snap cap so are compatible with robotic autosamplers. These caps are manufactured from high quality polypropylene and fit all 9mm screw cap vials.

Features

- *Compatible with 12x32mm 9mm screw cap vials
- *Both Pre-slit and No pre-slit septa are available
- *PTFE/Silicone/PTFE septa are autoclavable and offer excellent resistance to coring
- *With a temperature range of -40°C to 200°C
- *Pre-assembled caps save you time and reduce contamination

Septum Selection Guide


Septum Material	Compatible with	Incompatible with	Resealability	Max. Temperature
PTFE/Silicone, PTFE/Silicone/PTFE	PTFE resistance until punctured, then septa will have compatibility of silicone	---	Average	< 200°C
Silicone/Silicone Rubber	Alcohol, acetone, ether, DMF, DMSO	ACN, THF, benzene chloroform, pyridine, toluene, hexane, heptane	Excellent	< 200°C
PTFE/Natural or Butyl Rubber	PTFE resistance until punctured, then septa will have compatibility of rubber	---	Good	< 100°C
Rubber (Natural or Butyl)	ACN, acetone, DMF, alcohols, diethylamine, DMSO, phenols	Chlorinated solvents, aromatics, hydrocarbons, carbon disulfide	Excellent	< 100°C

Ordering Information

Part No.	Description	Qty/pk
SLSSC002S	Preassemble, No pre-silt PTFE/silicone septa + Blue screw cap, for 9-425 Screw Vials	100
SLSSC002SP	Preassemble, Pre-slit PTFE/silicone septa + Blue screw cap, for 9-425 Screw Vials	100

3.2 New Super Bonded Caps for 9-425 HPLC Vials

Hawach utilizes proprietary bonding technology to bond septa to polypropylene caps, while maintaining the low bleed properties of the septa. This unique technology currently available in 9mm screw cap for 2ml screw thread vial. These septa bonded on cap provides an excellent adhesiveness and avoid common problem of non-bonded as following:



Advantages than general caps

- Septa can not fall into vial
- Avoid septa slip off during the long time shipment
- Avoid septa slip off during unscrewed cap
- Avoid septa slip off during washing
- Reduce handling/contamination, no interfering peaks
- Compatible with most common solvents, strong acid and bases
- Excellent cohesion and sealing property

Order Information

Part No.	Description	Qty/pk
SLSSC002SR	Super Bonded Red No pre-slit PTFE/silicone septa into a 9mm Blue screw cap	100
SLSSC002SPR	Super Bonded Red Pre-slit PTFE/silicone septa into a 9mm Blue screw cap	100
SLSSC002SR	Super Bonded Blue Pre-slit PTFE/silicone septa into a 9mm Blue screw cap	100

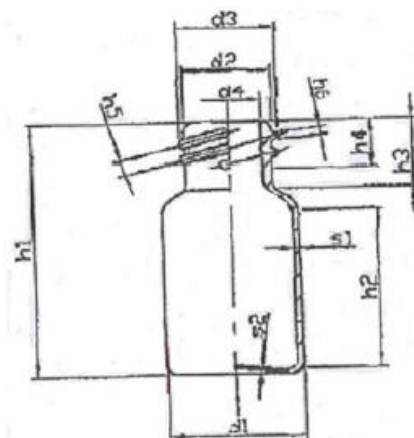
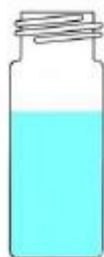
3.3 8mm Screw Top Vials

8mm (8-425) screw thread vials are the original smaller opening autosampler vials. They are designed to work in a variety of autosampler requiring narrow neck vials. Clear and Amber vials with or without graduated writing area. Both pre-slit and non pre-slit caps are available. All of Hawach vials are excellent fitted for autosamplers.

Features

- *2 ml, 12 x 32 mm, 8 mm diameter, big volume also available
- *Color: Clear & Amber
- *Packaged in a unique box designed to reduce vial breakage
- *Unique thread design for consistently secure seal
- *Precision-formed neck for optimal robotic arm handling
- *Rigorous quality assurance for dimensional consistency from lot-to-lot
- *Optional ceramic write-on spot with fill marks
- *Certified for full warranted compatibility with autosampler

Instruction Drawing



2ml Screw Top Vial(8-425)

d1	11.6 ± 0.25
d2	≤ 8.0
d4	5.0 ± 0.3
h1	32.0 ± 0.50
d3	8.8 ± 0.30
h3	≈ 7.8
h5	1.6

Ordering Information

Part No.	Description	Qty/pk
SVS202C	2ml Clear vial, 12×32mm, DN8mm, screw top, USP1 Borosilicate Glass	100
SVS212C	2ml Clear vial, 12×32mm, DN8mm, screw top, graduated with writing area, USP1 Borosilicate Glass	100
SVS202A	2ml Amber vial, 12×32mm, DN8mm, screw top, USP1 Borosilicate Glass	100
SVS212A	2ml Amber vial, 12×32mm, DN8mm, screw top graduated with writing area, USP1 Borosilicate Glass	100
SVS202C-2	2ml Clear vial, 12×32mm, DN8mm, Borosilicate Glass, screw top	100

SVS212C-2	2ml Clear vial, 12×32mm, DN8mm, screw top, graduated with writing area, Borosilicate Glass	100
-----------	---	-----

8mm Assembled Caps and Septa for Screw Top Vial

Pre-assembled caps and septa reduce the chance of contamination of the septa during sample preparation. These caps are manufactured from high quality polypropylene and fit all of the 8mm screw top vials.

Features

- *Compatible with 12x32mm 8mm screw cap vials
- *Both Pre-slit and No pre-slit septa are available
- *PTFE/Silicone/PTFE septa are autoclavable and offer excellent resistance to coring
- *Pre-assembled caps save you time and reduce contamination

Septum Selection Guide

Septum Material	Compatible with	Incompatible with	Resealability	Max. Temperature
PTFE/Silicone, PTFE/Silicone/PTFE	PTFE resistance until punctured, then septa will have compatibility of silicone	---	Average	< 200°C
Silicone/Silicone Rubber	Alcohol, acetone, ether, DMF, DMSO	ACN, THF, benzene chloroform, pyridine, toluene, hexane, heptane	Excellent	< 200°C
PTFE/Natural or Butyl Rubber	PTFE resistance until punctured, then septa will have compatibility of rubber	---	Good	< 100°C
Rubber (Natural or Butyl)	ACN, acetone, DMF, alcohols, diethylamine, DMSO, phenols	Chlorinated solvents, aromatics, hydrocarbons, carbon disulfide	Excellent	< 100°C

Ordering Information

Part No.	Description	Qty/pk
----------	-------------	--------

SLSSC001S	Preassembly, No pre-silt PTFE/silicone septa + Black screw cap, for 8-425 Screw Vials	100
SLSSC001SP	Preassembly, Pre-slit PTFE/silicone septa + Black screw cap, for 8-425 Screw Vials	100

3.4 Snap Top Vials

Snap Vials in 11mm size provide a secure seal that minimize evaporation, even with volatile samples. Snap caps are often more convenient than crimp caps they can easily be applied and remove by hand. An audible click ensures a secure seal has been formed and that the cap is correctly aligned. Both snap and crimp vials can be closed with either snap caps or crimp caps. Clear and amber vials with or without graduated writing area in available. Both pre-slit and non pre-slit caps are in supplied. All of Hawach vials are excellent fitted for autosamplers.



Features

- *2ml, 12 x 32 mm, 11mm mouth
- *Color: Clear & Amber
- *Packaged in a unique box designed to reduce vial breakage
- *Unique snap design for easily operation
- *Optional ceramic write-on spot with fill marks
- *Precision-formed neck for optimal robotic arm handling

Ordering Information

Part No.	Description	Qty/pk
----------	-------------	--------

SSVN201C	2ml Clear vial, 12×32mm, Snap Top(11 mm mouth),USP1 Borosilicate Glass	100
SSVN211C	2ml Clear vial, 12×32mm, Snap Top(11 mm mouth), graduated with writing area,USP1 Borosilicate Glass	100
SSVN201A	2ml Amber vial, 12×32mm, Snap Top(11 mm mouth),USP1 Borosilicate Glass	100
SSVN211A	2ml Amber vial, 12×32mm, Snap Top(11 mm mouth),graduated with writing area,USP1 Borosilicate Glass	100
SSVN201C-2	2ml Clear vial, 12×32mm, Borosilicate Glass, Snap Top(11 mm mouth)	100
SSVN211C-2	2ml Clear vial, 12×32mm, Borosilicate Glass,Snap Top(11 mm mouth), graduated with writing area	100

11mm Assembled Snap Cap and Septa

The plastic caps used are made of high quality polypropylene to exact manufacturing tolerances and lined in a controlled environment. Available cap colors are black, blue, and clear. Other colors are available upon request. The septa are manufactured using the finest and purest silicone rubber and highest quality PTFE film. We utilize proprietary laminating/bonding and conditioning technology to produce them with ease needle penetration.

Features

- *Pre-assembled 11mm clear snap cap with 1mm PTFE/Silicone septum
- *Snap caps provide a secure seal that minimize evaporation, even with volatile samples
- *Snap caps can be applied and removed by hand
- *Compatible with 12x32mm snap/crimp vials
- *PTFE/Silicone septa offer excellent resealing capabilities
- *Temperature range of -40°C to 200°C
- *Pre-assembled caps save you time and reduce contamination

Septum Selection Guide

Septum Material	Compatible with	Incompatible with	Resealability	Max. Temperature
PTFE/Silicone, PTFE/Silicone/PTFE	PTFE resistance until punctured, then septa will have compatibility of silicone	---	Average	< 200°C
Silicone/Silicone Rubber	Alcohol, acetone, ether, DMF, DMSO	ACN, THF, benzene chloroform, pyridine, toluene, hexane, heptane	Excellent	< 200°C

PTFE/Natural or Butyl Rubber	PTFE resistance until punctured, then septa will have compatibility of rubber	---	Good	< 100°C
Rubber (Natural or Butyl)	ACN, acetone, DMF, alcohols, diethylamine, DMSO, phenols	Chlorinated solvents, aromatics, hydrocarbon carbon disulfide	Excellent	< 100°C

Ordering Information

Part No.	Description	Qty/pk
SLSNC002S	Preassemble, No pre-slit PTFE/silicone septa + White plastic snap cap, for Snap Vials	100
SLSNC002SP	Preassemble, Pre-slit PTFE/silicone septa + White plastic snap cap, for Snap Vials	100

3.5 Crimp Top Vials

Crimp cap provides a larger target area for improved autosampler needle accuracy. We recommends using Certified crimp caps with PTFE/silicone septa to ensure seamless operation with your autosampler. And our crimp caps are guaranteed to work with your instrument to reduce autosampler malfunctioning and contamination. We have 2ml 12x32mm vials with 11mm mouth, Clear and Amber vials with or without graduated writing area in available. Both pre-slit and non pre-slit caps are in supplied. All of Hawach vials are excellent fitted for autosamplers.

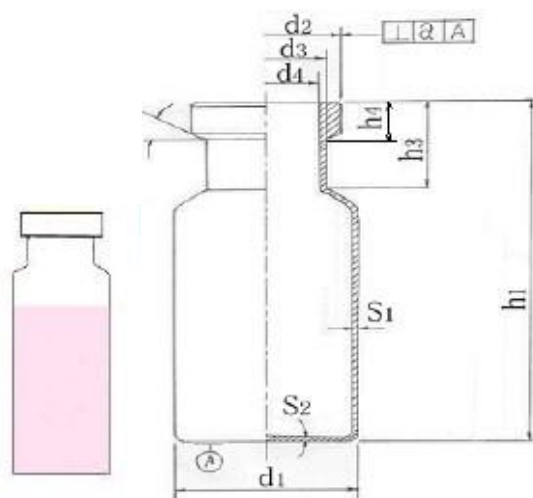


Features

- *2 ml, 12 x 32 mm
- *Color: Clear & Amber
- *Available in unique packaging designed to reduce vial breakage
- *Tightly controlled crown for improved crimping

- *Precision-formed neck for improved autosampler handling
- *Rigorous quality assurance provides dimensional consistency from lot-to-lot
- *Optional ceramic write-on spot with fill marks
- *Certified for full warranted compatibility with autosampler

Instruction Drawing



2ml Crimp Top Vial

d1	11.6±0.3
h1	32.0±0.5
d2	10.7±0.2
d4	6.0±0.2
h4	3.6±0.2
d3	8.3±0.3

Ordering Information

Part No.	Description	Qty/pk
SVC201C	2ml Clear vial, 12×32mm, crimp top(11 mm mouth),USP1 Borosilicate Glass	100
SVC211C	2ml Clear vial, 12×32mm, crimp top(11 mm mouth), graduated with writing area,USP1 Borosilicate Glass	100
SVC201A	2ml Amber vial, 12×32mm, crimp top(11 mm mouth),USP1 Borosilicate Glass	100
SVC211A	2ml Amber vial, 12×32mm, crimp top(11 mm mouth), graduated with writing area,USP1 Borosilicate Glass	100
SVC201C-2	2ml Clear vial, 12×32mm, Borosilicate Glass, crimp top(11 mm mouth)	100
SVC211C-2	2ml Clear vial, 12×32mm, Borosilicate Glass, crimp top(11 mm mouth), graduated with writing area	100

11mm Assembled Crimp Cap and Septa

Crimp caps provide the tightest seal, reducing the chance of sample evaporation. The 12x32mm crimp vials and 11mm

aluminium crimp caps are economical and easy to use with Hawach vial crimping tools.

Features

- *11mm silver aluminum crimp cap and 1mm PTFE/silicone/PTFE septum
- *Crimp caps provide the tightest seal reducing the chance of sample evaporation
- *Compatible with wide opening and standard opening 12x32mm snap/crimp cap vials
- *PTFE/Silicone/PTFE septa are autoclavable and offer excellent resistance to coring
- *Temperature range of -40°C to 200°C
- *Pre-assembled caps save you time and reduce contamination

Septum Selection Guide

Septum Material	Compatible with	Incompatible with	Resealability	Max. Temperature
PTFE/Silicone, PTFE/Silicone/PTFE	PTFE resistance until punctured, then septa will have compatibility of silicone	---	Average	< 200°C
Silicone/Silicone Rubber	Alcohol, acetone, ether, DMF, DMSO	ACN, THF, benzene chloroform, pyridine, toluene, hexane, heptane	Excellent	< 200°C
PTFE/Natural or Butyl Rubber	PTFE resistance until punctured, then septa will have compatibility of rubber	---	Good	< 100°C
Rubber (Natural or Butyl)	ACN, acetone, DMF, alcohols, diethylamine, DMSO, phenols	Chlorinated solvents, aromatics, hydrocarbon carbon disulfide	Excellent	< 100°C

Ordering Information

Part No.	Description	Qty/pk
SLSSC003S	Preassemble, No pre-slit PTFE/silicone septa + Aluminum cap, for crimp top 2ml vial(11 mm mouth)	100
SLSSC003SP	Preassemble, Pre-slit PTFE/silicone septa + Aluminum cap, for crimp top 2ml vial (11 mm mouth)	100

3.6 Storage Vials and Volatile Organic Analysis (VOA)Vials & Caps

Hawach Scientific offer full range of Volatile Organic Analysis Vials in 20ml, 40ml, etc. These are available in clear and amber glass, screw top, PP cap with PTFE/silicone septa and have a temperature range of -40°C to 125°C. 40ml VOA vials have high quality polypropylene caps with a 24-400 GPI thread top. As open top closures, they allow for sampling through a septum.



Features

- *Large volume 20ml, 40ml
- *PTFE/Silicone Septa
- * 24-400 GPI thread top
- *Screw thread top with Clear and Amber Borosilicate glass

Specification

Item code	Vial Finish	Vial Type	Vial Dimension	Sample Volume	Material	Color	Bottom Profile
20ml	24mm Screw	Storage	27.5x57mm	20ml	Borosilicate Glass	Clear/Amber	Flat
40ml	24mm Screw	Storage	27.5x95mm	40ml	Borosilicate Glass	Clear/Amber	Flat

Ordering Information

Part No.	Description	Qty/pk
SLV20C	20ml Clear Sample vial, Screw top, D27.5 X H57,,USP1 Borosilicate Glass	100
SLV202C	20ml Clear Sample Vial, Screw top, D27.5 X H57,Second Class Borosilicate Glass	100
SLV20A	20 ml Amber Sample vial, Screw top, D27.5 X H57,,USP1 Borosilicate Glass	100
SLV202A	20ml Amber Sample Vial, Screw top, D27.5 X H57,Second Class Borosilicate Glass	100

SLV40C	40ml Clear Sample vial, Screw top, D27.5 X H95, ,USP1 Borosilicate Glass	100
SLV402C	40ml Clear Sample Vial, Screw top, D27.5 X H95, Second Class Borosilicate Glass	100
SLV40A	40ml Amber Sample vial, Screw top, D27.5 X H95, ,USP1 Borosilicate Glass	100
SLV402A	40ml Amber Sample Vial, Screw top, D27.5 X H95, Second Class, Borosilicate Glass	100
SLV20SCH	PTFE/silicone Septa + White/Black Screw Cap With Hole, for 20ml/40ml Vial	100
SLV20SCS	PTFE/silicone Septa + White/Black Screw Cap Without Hole, For 20ml/40ml Vial	100
SLV20SAS	Aluminum Septa + White/Black Caps Without Hole, For 20ml/40ml Vial	100

3.7 Headspace Vials & Caps

Hawach headspace vials have a bevelled neck for a secure seal, uniform glass thickness for even heat distribution and a stable, strong design for ease of use. Available in Clear and Amber USP1 Borosilicate glass with Screw and Crimp top. Round bottom vials distribute the internal pressure created at high temperatures across the glass surface and are more easily handled by robotic arms that lift the vial from the tray. The screw headspace vials has 18mm magnetic cap suitable for autosamplers that use magnetic transportation, while Crimp top vials use together with Aluminium cap.



Specification

Item code	Vial Finish	Vial Type	Vial Dimension	Sample Volume	Material	Color	Bottom Profile
SLV101M	18mm Screw	Headspace vial	22.5x50mm	10ml	Borosilicate Glass	Clear/Amber	Round

SLV201M	18mm Screw	Headspace vial	22.5x70mm	20ml	Borosilicate Glass	Clear/Amber	Round
SLC101M	20mm Crimp	Headspace vial	22.5x46mm	10ml	Borosilicate Glass	Clear/Amber	Round
SLC201M	20mm Crimp	Headspace vial	22.5x75mm	20ml	Borosilicate Glass	Clear/Amber	Round

Ordering Information

Part No.	Description	Qty/pk
SLV101M	10ml Clear Headspace Screw Vials, D22.5xH50,USP1 Borosilicate Glass	100
SLV201M	20ml Clear Headspace Screw Vials, D22.5xH75,USP1 Borosilicate Glass	100
SLV10/20SCM	Screw Magnetic Cap + Septa, Match with SLV101M and SLV201M	100
SLC101M	10ml Clear Headspace Crimp Vials, D22.5xH50,USP1 Borosilicate Glass	100
SLC201M	20ml Clear Headspace Crimp Vials, D22.5xH75,USP1 Borosilicate Glass	100
SLC20CM	Crimp Aluminium Cap + Septa, Match with SLC101M/SLC201M	100

4.Filter Paper



4.1 Standard Grades Qualitative Filter Paper

Hawach Scientific Qualitative filter papers are manufactured from high-quality cotton linters, ensuring quality, re-reproducibility and uniformity. With average 0.1% ash content. Qualitative filter papers are used for analytical and routine analyses, when no gravimetric analyses are required. A wide range of retention/flow rate combinations matches numerous laboratory applications. The filter paper approved by certificate of CE.

Features

- * Supply in Slow, Medium and Fast flow rate
- * 55, 70, 90, 110, 125, 150, 180, 185, 240, 320, 400mm diameter or OEM size in available
- * Ideal for analytical and routine analyses

Grade Comparison

Hawach	BIO-1	BIO-2	BIO-4	BIO-5	BIO-6
Whatman	Grade 1	Grade 2	Grade 4	Grade 5	Grade 6
Advantec	2	232	1	235	131
Munktell	No.1/1F	No.2/150	1288/3	293/120H	1290/1001
Ahlstrom	601	642	631	610	950
Macherey Nagel	616	616md	1670	619eh	619eh

Technical Data

Grade	Particle Retention	Product Appearance	Filtration Speed	Ash Content (%)	Basis Weight (g/m ²)	Wet Burst (mm H ₂ O)
BIO-1	11µm	Smooth	Medium	<0.1	84	>140
BIO-2	8µm	Smooth	Medium	<0.1	84	>140
BIO-4	20µm	Smooth	Fast	<0.1	84	>120
BIO-5	2.5µm	Smooth	Slow	<0.1	84	>180

BIO-6	3.0µm	Smooth	Slow	<0.1	84	>180
-------	-------	--------	------	------	----	------

Applications

Qualitative filter paper covers a wide range of laboratory applications and frequently used for clarifying liquids.

- Soil analysis and seed testing procedures in agriculture
- Separate solid foodstuffs from associated liquid or extracting liquid in food industry
- Widely used in education for teaching simple qualitative analytical separations
- Use circles collect atmospheric dust from air flow in air pollution monitoring

Food Industry

- Wine
- Beer
- Juices
- Chocolate
- Milk
- Sugar
- Oil



Enviromental Analysis

- Air Polution
- Waste
- Water



Angricultural Analysis

- Fertilizers
- Fodders
- Seeds
- Soils



Order Information (Customized size available)

Description	µm	Φ mm	Equivalent to Whatman	Part No.	Pcs/pk
Qualitative Filter Papers, Grade 1, Medium	11	55	1001-055	BIO-1-055	100
Qualitative Filter Papers, Grade 1, Medium	11	70	1001-070	BIO-1-070	100
Qualitative Filter Papers, Grade 1, Medium	11	90	1001-090	BIO-1-090	100
Qualitative Filter Papers, Grade 1, Medium	11	110	1001-110	BIO-1-110	100
Qualitative Filter Papers, Grade 1, Medium	11	125	1001-125	BIO-1-125	100
Qualitative Filter Papers, Grade 1, Medium	11	150	1001-150	BIO-1-150	100
Qualitative Filter Papers, Grade 1, Medium	11	180	-	BIO-1-180	100
Qualitative Filter Papers, Grade 1, Medium	11	185	1001-185	BIO-1-185	100
Qualitative Filter Papers, Grade 1, Medium	11	240	1001-240	BIO-1-240	100
Qualitative Filter Papers, Grade 1, Medium	11	320	-	BIO-1-320	100

Qualitative Filter Papers, Grade 1, Medium	11	400	-	BIO-1-400	100
Qualitative Filter Papers, Grade 2, Medium	8	55	1002-055	BIO-2-055	100
Qualitative Filter Papers, Grade 2, Medium	8	70	1002-070	BIO-2-070	100
Qualitative Filter Papers, Grade 2, Medium	8	90	1002-090	BIO-2-090	100
Qualitative Filter Papers, Grade 2, Medium	8	110	1002-110	BIO-2-110	100
Qualitative Filter Papers, Grade 2, Medium	8	125	1002-125	BIO-2-125	100
Qualitative Filter Papers, Grade 2, Medium	8	150	1002-150	BIO-2-150	100
Qualitative Filter Papers, Grade 2, Medium	8	180	-	BIO-2-180	100
Qualitative Filter Papers, Grade 2, Medium	8	185	1002-185	BIO-2-185	100
Qualitative Filter Papers, Grade 2, Medium	8	240	1002-240	BIO-2-240	100
Qualitative Filter Papers, Grade 2, Medium	8	320	-	BIO-2-320	100
Qualitative Filter Papers, Grade 2, Medium	8	400	-	BIO-2-400	100
Qualitative Filter Papers, Grade 4, Fast	20	55	1004-055	BIO-4-055	100
Qualitative Filter Papers, Grade 4, Fast	20	70	1004-070	BIO-4-070	100
Qualitative Filter Papers, Grade 4, Fast	20	90	1004-090	BIO-4-090	100
Qualitative Filter Papers, Grade 4, Fast	20	110	1004-110	BIO-4-110	100
Qualitative Filter Papers, Grade 4, Fast	20	125	1004-125	BIO-4-125	100
Qualitative Filter Papers, Grade 4, Fast	20	150	1004-150	BIO-4-150	100
Qualitative Filter Papers, Grade 4, Fast	20	180	-	BIO-4-180	100
Qualitative Filter Papers, Grade 4, Fast	20	185	1004-185	BIO-4-185	100
Qualitative Filter Papers, Grade 4, Fast	20	240	1004-240	BIO-4-240	100
Qualitative Filter Papers, Grade 4, Fast	20	320	-	BIO-4-320	100
Qualitative Filter Papers, Grade 4, Fast	20	400	-	BIO-4-400	100
Qualitative Filter Papers, Grade 5, Slow	2.5	55	1005-055	BIO-5-055	100
Qualitative Filter Papers, Grade 5, Slow	2.5	70	1005-070	BIO-5-070	100
Qualitative Filter Papers, Grade 5, Slow	2.5	90	1005-090	BIO-5-090	100

Qualitative Filter Papers, Grade 5, Slow	2.5	110	1005-110	BIO-5-110	100
Qualitative Filter Papers, Grade 5, Slow	2.5	125	1005-125	BIO-5-125	100
Qualitative Filter Papers, Grade 5, Slow	2.5	150	1005-150	BIO-5-150	100
Qualitative Filter Papers, Grade 5, Slow	2.5	180	-	BIO-5-180	100
Qualitative Filter Papers, Grade 5, Slow	2.5	185	1005-185	BIO-5-185	100
Qualitative Filter Papers, Grade 5, Slow	2.5	240	1005-240	BIO-5-240	100
Qualitative Filter Papers, Grade 5, Slow	2.5	320	-	BIO-5-320	100
Qualitative Filter Papers, Grade 5, Slow	2.5	400	-	BIO-5-400	100
Qualitative Filter Papers, Grade 6, Slow	3.0	55	1006-055	BIO-6-055	100
Qualitative Filter Papers, Grade 6, Slow	3.0	70	1006-070	BIO-6-070	100
Qualitative Filter Papers, Grade 6, Slow	3.0	90	1006-090	BIO-6-090	100
Qualitative Filter Papers, Grade 6, Slow	3.0	110	1006-110	BIO-6-110	100
Qualitative Filter Papers, Grade 6, Slow	3.0	125	1006-125	BIO-6-125	100
Qualitative Filter Papers, Grade 6, Slow	3.0	150	1006-150	BIO-6-150	100
Qualitative Filter Papers, Grade 6, Slow	3.0	180	-	BIO-6-180	100
Qualitative Filter Papers, Grade 6, Slow	3.0	185	1006-185	BIO-6-185	100
Qualitative Filter Papers, Grade 6, Slow	3.0	240	1006-240	BIO-6-240	100
Qualitative Filter Papers, Grade 6, Slow	3.0	320	-	BIO-6-320	100
Qualitative Filter Papers, Grade 6, Slow	3.0	400	-	BIO-6-400	100

4.2 Wet Strengthened Grades Qualitative Filter Paper

Wet-strengthened filter papers are mainly used in normal liquid clarification when filtration is performed under pressure or vacuum and a standard filter is easy to break. These extremely strong filter papers have a high wet strength due to the addition of a small quantity of chemically stable resin. Their use in normal qualitative applications will not introduce any significant impurities into the filtrate. The resins do, however, contain nitrogen so these grades should not be used in applications such as Kjeldahl estimations.

Features

* Widely used to assay sucrose in cane sugar and within pharmaceutical laboratories.

* Full range of diameter: 55, 70, 90, 110, 125, 150, 180, 185, 240,320 and 400mm

* Available from medium and fast flow rate

* Don't recommend in applications of Kjeldahl estimations.

Grade Comparison

Hawach	BIO-91	BIO-113
Whatman	Grade 91	Grade 113
Advantec	n/a	n/a
Munktell	55/N	6 S/N
Ahlstrom	615	n/a
Macherey Nagel	n/a	n/a

Technical Data

Grade	Separating Property	Filtration Seconds	Filtration Speed	Ash Content (%)	Pore Size	Basis Weight (g/m ²)	Wet Burst (mm H ₂ O)
BIO-91	PbSO ₄	>35--<70	Medium	<0.13	10µm	84	>=320
BIO-113	Fe(OH) ₃	<35s	Fast	<0.13	30µm	68	>=320

Order Information (Customized size available)

Description	µm	Φ mm	Equivalent to Whatman	Part No.	Pcs/pk
Wet Strengthened Filter Papers, Grade 91, Medium	10	70	1091-070	BIO-91-070	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	90	1091-090	BIO-91-090	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	110	1091-110	BIO-91-110	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	125	1091-125	BIO-91-125	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	150	1091-150	BIO-91-150	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	180	--	BIO-91-180	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	185	1091-185	BIO-91-185	100

Wet Strengthened Filter Papers, Grade 91, Medium	10	240	1091-240	BIO-91-240	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	320	-	BIO-91-320	100
Wet Strengthened Filter Papers, Grade 91, Medium	10	400	-	BIO-91-400	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	70	1113-070	BIO-113-070	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	90	1113-090	BIO-113-090	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	110	1113-110	BIO-113-110	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	125	1113-125	BIO-113-125	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	150	1113-150	BIO-113-150	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	180	--	BIO-113-180	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	185	1113-185	BIO-113-185	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	240	1113-240	BIO-113-240	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	320	-	BIO-113-320	100
Wet Strengthened Filter Papers, Grade 113, Fast	30	400	-	BIO-113-400	100

4.3 Quantitative Filter Paper- Ashless Grades (Ash <0.007%)

Hawach Scientific ashless filter papers are particularly suited for quantitative routine analysis. The ashless quantitative filter paper is made from pure alpha cotton cellulose and double acid washed then rinsed with ultra-pure water to neutralize and good for gravimetric analysis and preparation of samples for instrumental analysis. These filter papers are manufactured under intense quality control standards to be of the highest quality and consistency, ensuring uniform performance so that you can be confident with your results which are as accurate as can be.

Features

- * Ashless - extremely low ash content <0.007%
- * Full range of diameter: 55, 70, 90, 110, 125, 150, 180, 185, 240, 320, 400mm
- * Available from slow, medium, fast flow rate
- * Good for gravimetric analysis and preparation of samples for instrumental analysis.

Grade Comparison

Hawach	BIO-40	BIO-41	BIO-42	BIO-43	BIO-44
Whatman	Grade 40	Grade 41	Grade 42	Grade 43	Grade 44

Advantec	No. 5B	7	5C	-	6/4A
Munktell	390	00M/389	393/00H	392/00A	391
Ahlstrom	74	-	94	75	95
Macherey	640d	640m	640de	640md	640de

Technical Data

Grade	Particle Retention	Product Appearance	Filtration Speed	Ash Content (%)	Basis Weight (g/m²)	Wet Burst (mm H₂O)
BIO-40	8.0µm	Smooth	Medium	<0.007	84	>140
BIO-41	20-25µm	Smooth	Fast	<0.007	84	>120
BIO-42	2.5µm	Smooth	Slow	<0.007	84	>180
BIO-43	16µm	Smooth	Medium to Fast	<0.007	84	>140
BIO-44	3µm	Smooth	Slow	<0.007	84	>180

Applications

Quantitative filter paper is suitable for a wide range of critical gravimetric analytical filtration procedures.

- Soil analysis, when separating solid matter from aqueous extracts
- Quantitative determination of milk sediment
- Analysis of constituent components in cements, clays, iron, and steel products
- Inorganic analysis in the construction, mining, and steel industries
- Particle collection for air pollution monitoring for subsequent analysis by X-Ray fluorescence (XRF) techniques

Food Industry

- Wine ■ Beer
- Juices ■ Chocolate
- Milk ■ Sugar
- Oil



Enviromental Analysis

- Air Polution ■ Waste
- Water



Angricultural Analysis

- Fertilizers ■ Fodders
- Seeds ■ Soils



Order Information

Description	µm	Φ mm	Equivalent to Whatman	Part No.	Pcs/pk
Quantitative Filter Papers, Grade 40, Medium	8	55	1440-055	BIO-40-055	100
Quantitative Filter Papers, Grade 40, Medium	8	70	1440-070	BIO-40-070	100
Quantitative Filter Papers, Grade 40, Medium	8	90	1440-090	BIO-40-090	100
Quantitative Filter Papers, Grade 40, Medium	8	110	1440-110	BIO-40-110	100
Quantitative Filter Papers, Grade 40, Medium	8	125	1440-125	BIO-40-125	100
Quantitative Filter Papers, Grade 40, Medium	8	150	1440-150	BIO-40-150	100
Quantitative Filter Papers, Grade 40, Medium	8	180	1440-180	BIO-40-180	100
Quantitative Filter Papers, Grade 40, Medium	8	185	1440-185	BIO-40-185	100
Quantitative Filter Papers, Grade 40, Medium	8	240	1440-240	BIO-40-240	100
Quantitative Filter Papers, Grade 40, Medium	8	300	1440-300	BIO-40-300	100
Quantitative Filter Papers, Grade 41, Fast	20-25	55	1441-055	BIO-41-055	100
Quantitative Filter Papers, Grade 41, Fast	20-25	70	1441-070	BIO-41-070	100
Quantitative Filter Papers, Grade 41, Fast	20-25	90	1441-090	BIO-41-090	100
Quantitative Filter Papers, Grade 41, Fast	20-25	110	1441-110	BIO-41-110	100
Quantitative Filter Papers, Grade 41, Fast	20-25	125	1441-125	BIO-41-125	100
Quantitative Filter Papers, Grade 41, Fast	20-25	150	1441-150	BIO-41-150	100

Quantitative Filter Papers, Grade 41, Fast	20-25	180	1441-180	BIO-41-180	100
Quantitative Filter Papers, Grade 41, Fast	20-25	185	1441-185	BIO-41-185	100
Quantitative Filter Papers, Grade 41, Fast	20-25	240	1441-240	BIO-41-240	100
Quantitative Filter Papers, Grade 41, Fast	20-25	300	1441-300	BIO-41-300	100
Quantitative Filter Papers, Grade 42, Slow	2.5	55	1442-055	BIO-42-055	100
Quantitative Filter Papers, Grade 42, Slow	2.5	70	1442-070	BIO-42-070	100
Quantitative Filter Papers, Grade 42, Slow	2.5	90	1442-090	BIO-42-090	100
Quantitative Filter Papers, Grade 42, Slow	2.5	110	1442-110	BIO-42-110	100
Quantitative Filter Papers, Grade 42, Slow	2.5	125	1442-125	BIO-42-125	100
Quantitative Filter Papers, Grade 42, Slow	2.5	150	1442-150	BIO-42-150	100
Quantitative Filter Papers, Grade 42, Slow	2.5	180	1442-180	BIO-42-180	100
Quantitative Filter Papers, Grade 42, Slow	2.5	185	1442-185	BIO-42-185	100
Quantitative Filter Papers, Grade 42, Slow	2.5	240	1442-240	BIO-42-240	100
Quantitative Filter Papers, Grade 42, Slow	2.5	300	1442-300	BIO-42-300	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	55	1443-055	BIO-43-055	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	70	1443-070	BIO-43-070	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	90	1443-090	BIO-43-090	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	110	1443-110	BIO-43-110	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	125	1443-125	BIO-43-125	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	150	1443-150	BIO-43-150	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	180	1443-185	BIO-43-180	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	185	1443-185	BIO-43-185	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	240	1443-240	BIO-43-240	100
Quantitative Filter Papers, Grade 43, Medium to fast	16	300	1443-300	BIO-43-300	100
Quantitative Filter Papers, Grade 44, Slow	3	55	1444-055	BIO-44-055	100
Quantitative Filter Papers, Grade 44, Slow	3	70	1444-070	BIO-44-070	100

Quantitative Filter Papers, Grade 44, Slow	3	90	1444-090	BIO-44-090	100
Quantitative Filter Papers, Grade 44, Slow	3	110	1444-110	BIO-44-110	100
Quantitative Filter Papers, Grade 44, Slow	3	125	1444-125	BIO-44-125	100
Quantitative Filter Papers, Grade 44, Slow	3	150	1444-150	BIO-44-150	100
Quantitative Filter Papers, Grade 44, Slow	3	180	1444-180	BIO-44-180	100
Quantitative Filter Papers, Grade 44, Slow	3	185	1444-185	BIO-44-185	100
Quantitative Filter Papers, Grade 44, Slow	3	240	1444-240	BIO-44-240	100
Quantitative Filter Papers, Grade 44, Slow	3	300	1444-300	BIO-44-300	100

5. Vacuum Filtration Set



5.1 Glass Solvent Filter

Vacuum filtration is used primarily in microbiological and analytical procedures that involve collecting a particulate (bacteria, precipitate, etc.) from a liquid suspension. Liquid poured into a funnel passes through a filter, which retains the particulate, and filtrate can be collected into a filter flask, directly or via a vacuum manifold. This glass solvent filter is made of high-quality extra hard glass. It is sparking and crystal-clear. Its thickness is even, With performance of withstanding voltage and very excellent leak-proof ability. Size agrees with the international standard size. Therefore, it also can be used for sterilization at high temperature and high pressure. All of our glass solvent filters are perfect with our vacuum pumps.

Features

- * High quality extra hard glass
- * Sparking and crystal-clear, even thickness
- * Funnel: 300ml & 500ml

- * Flask: 100ml & 2000ml
- * 47mm or 50mm diameter membrane
- * Excellent fitting with vacuum pump
- * Whole set can be used for Sterilization at high temperature and high pressure

Applications

- Filtration of aqueous and organic solvents
- Purification and outgas of solutions and HPLC solvents

Specifications

No.	Branch	Funnel Size	Funnel	Support Screen	Screen Pore Size	Connection	Flask
SLGSF03001	Single	300ml	Glass	Pyrex glass	10 μ m	Ground Joint	1000ml
SLGSF05002	Single	500ml	Glass	Pyrex glass	10 μ m	Ground Joint	2000ml

Instruction Drawing



Caution:

- a. Keep the liquid under the top measure. If need keep on filtering continuously, please add the liquid after the horizontal line is down to the bottom measure.
- b. Please don't collect filtrate to much in the flask. If the horizontal line is near the side arm, the liquid will breathe into the pump.
- c. If the pump make a halt, when you restart it, please release the air from the vacuum system.
- d. When you find the filtration become slower than before, please change the membrane immediately.

e. Not recommended for use with flammable liquids.



5.2 Multi-branch Vacuum Filtration Manifold

Multi-branch vacuum filtration system, an integrative filter with reasonable structure and beautiful contour and without wedding spots, equipped with separate valve so that it can filter single sample or multiple samples at the same time so as to save time when testing a lot of samples. Hawach solvent filter made with 316L stainless steel has the characteristics of acid-resistance, alkali resistance, fast filtering speed, long service life, reasonable structure, easily cleaning and operating. It can be widely used in the fields of chemical industry, biochemical pharmacy, environmental protection, food and beverage etc.

Features

- *47mm or 50mm diameter membrane
- * Glass and 316L stainless steel Funnel are available
- * Acid-resistance, alkali resistance and fast filtering speed for 316L version
- * Can worked under 180°C - 200°C high temperature
- * Individual control valve, convenient to operate several samples filtration at same time

Applications

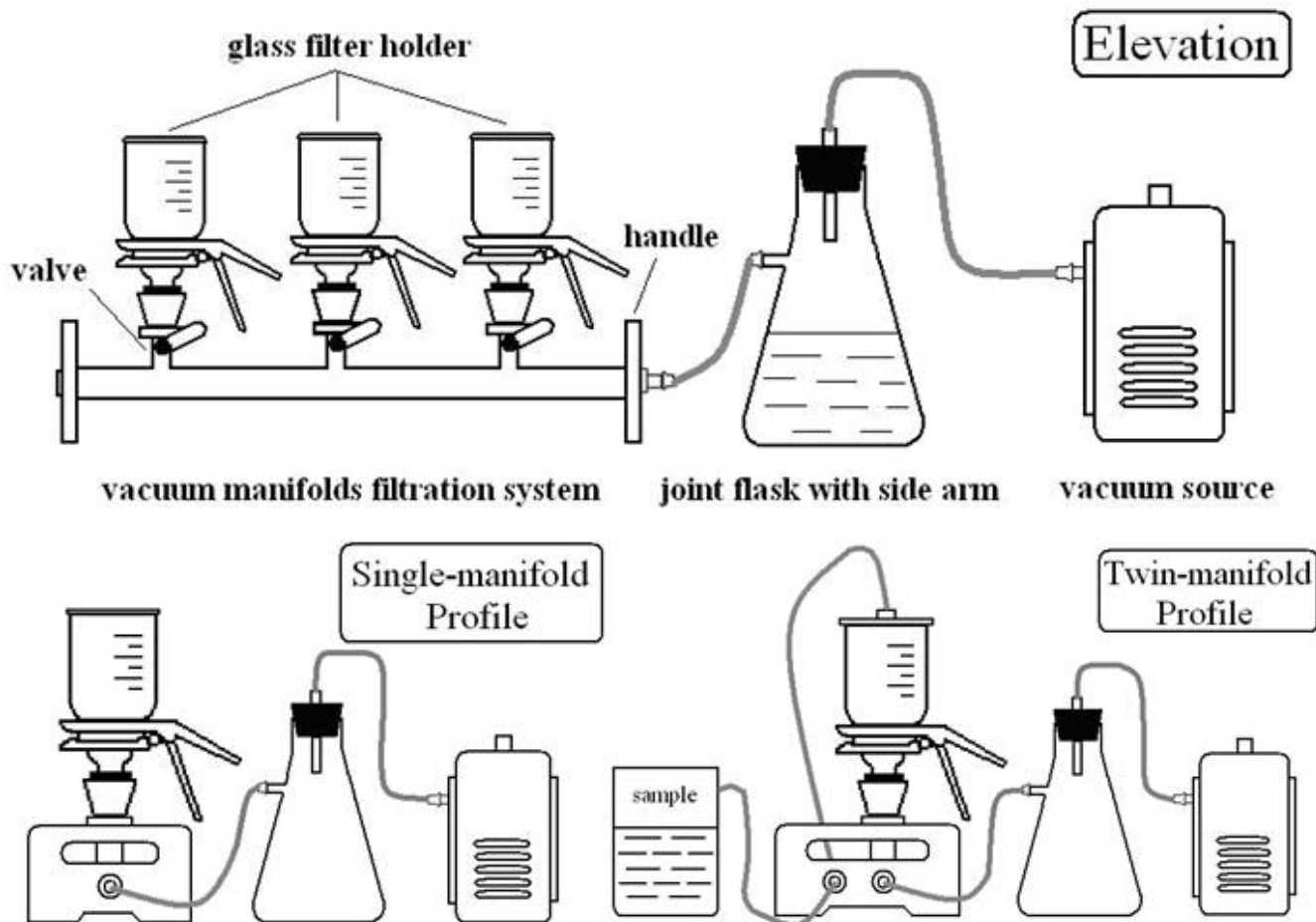
- Continuous filtration
- Microbiological fluids removal and particle analysis
- Filtration pf biological solutions (proteins)

Specifications

No.	Branch	Funnel Size	Funnel	Support Screen	Screen Pore Size	Connection	Flask
-----	--------	-------------	--------	----------------	------------------	------------	-------

SLOGF03001	One-branch	300ml	Glass	PTFE	20µm	Ground Joint	1000ml
SLOSF03001	One-branch	300ml	SS316L	SS316L	100µm	Stopper SS316L	1000ml
SLTGF03001	3-branch	300ml	Glass	PTFE	20µm	Ground Joint	1000ml
SLTSF03001	3-branch	300ml	SS316L	SS316L	100µm	Stopper SS316L	1000ml
SLSGF03001	6-branch	300ml	Glass	PTFE	20µm	Ground Joint	1000ml
SLSSF03001	6-branch	300ml	SS316L	SS316L	100µm	Stopper SS316L	1000ml

Instruction Drawing



Operation Method:

1. Link every component according to the structure chart and confirm that the whole system is placed in closeness appearance.
2. Put on the membrane and fix with the clamp.
3. Start the vacuum pump, open the valve door soon afterward.
4. The sample will be taken out into the collection bottle.

Ordering Information

Description	Part No.	Pcs/pack	Photo
-------------	----------	----------	-------

300ml Glass Solvent Filter

- 300ml glass funnel.
- 1000ml glass collection bottle.
- Anodized aluminum spring clamp.
- Support frit and base.

SLGSF03001

1



Whole set can be autoclaved at 121° C

500ml Glass Solvent Filter

- 500ml glass funnel.
- 2000ml glass collection bottle.
- Anodized aluminum spring clamp.
- Support frit and base.

SLGSF05002

1



Whole set can be autoclaved at 121° C

One-branch Glass Vacuum Filtration Manifold

- 300ml glass funnel
- 1000ml glass collection bottle
- Anodized aluminum spring clamp
- Support frit and base
- Two pieces of hosepipes.

SLOGF03001

1



Whole set can be autoclaved at 121° C

One-branch Stainless Steel Vacuum Filtration Manifold

- 300ml Stainless Steel(SS316L) funnel
- 1000ml glass collection bottle
- Anodized aluminum spring clamp
- Support frit and base
- Two pieces of hosepipes.

SLOSF03001

1



Whole set can be autoclaved at 121° C

3-branch Glass Vacuum Filtration Manifold

- Three of 300ml glass funnel
- 1000ml glass collection bottle
- Anodized aluminum spring clamp
- Support frit and base
- Two pieces of hosepipes.

SLTGF03001

1



Whole set can be autoclaved at 121° C

3-branch Stainless Steel Vacuum Filtration Manifold

- 300ml Stainless Steel(SS316L) funnel

SLTSF03001

1

- 1000ml glass collection bottle
- Anodized aluminum spring clamp
- Support frit and base
- Two pieces of hosepipes.

Whole set can be autoclaved at 121° C



6-branch Glass Vacuum Filtration Manifold

- Six of 300ml glass funnel
- 1000ml glass collection bottle
- Anodized aluminum spring clamp
- Support frit and base
- Two pieces of hosepipes.

SLSGF03001

1



Whole set can be autoclaved at 121° C

6-branch Stainless Steel Vacuum Filtration Manifold

- Six of 300ml Stainless Steel(SS316L) funnel
- 1000ml glass collection bottle
- Anodized aluminum spring clamp
- Support frit and base
- Two pieces of hosepipes.

SLSSF03001

1



Whole set can be autoclaved at 121° C



5.3 Diaphragm Vacuum Pump

Hawach Diaphragm Vacuum Pump has the features of continuous oil free pumping, low noise level, higher efficiency, long lifetime. It is mainly used in medical products analysis, tenuously chemical engineering, biochemical pharmacy, food examination, investigating and solving criminal cases, etc. It is an ideal product used with the high accuracy chromatogram apparatus, rotary evaporators and so on. This range of vacuum pumps was developed especially for laboratory operations the highest expectations in terms of precision, reliability and ease of use.

Features

- * Each model has PTFE Antiseptic pump
- * Work without any medium and not produce pollution. Gas exchange room has filtering material to ensure air is clean
- * Convenient to move, work smoothly, to ensuring the ideal vacuum degree and higher air velocity
- * Using frictionless membrane body movement not produce heat, friction consumption
- * Imported rubber diaphragm has corrosion resistance and long service life
- * Automatic cooling exhaust system to ensures continuous operation 24 hours a day
- * Pressure adjustable design satisfy a certain range of vacuum and gas velocity
- * Bearing imported classic bearing, smooth operation, low noise and high efficiency

Applications





- Vacuum Filtration, Distillation and Absorption.
- Solvent Filtration (Vacuum Filtration)
- Vacuum Drying
- Air Compressing And Converting
- SPE Vacuum Extraction (Solid Phase Extraction)
- Deaeration Application

Technical Parameter

Typical Data	SLVPGM100A/ SLVPGM100A-T	SLVPGM050B/ SLVPGM050B-T	SLVPGM050A/ SLVPGM050A-T	SLVPGM033A/ SLVPGM033A-T	SLVPGM020
Speed of Evacuation	60(L/min)	30 (L/min)	30 (L/min)	20 (L/min)	12 (L/min)
Ultimate Pressure Vacuum	≥0.08Mpa 200mbar	≥0.095Mpa 50mbar	≥0.08Mpa 200mbar	≥0.08Mpa 200mbar	≥0.075 Mpa 250mbar
Voltage Rating	220Vac/50Hz or 110Vac/60Hz				
Motor Power	160W	160W	160W	160W	75W
Inlet (mm)	Φ6				
Outlet (mm)	Φ6	Silencer	Φ6	Silencer	Φ6
Pump Head	2	2	1	1	Nylon
Temp of body	<55 °C				
Dimensions (mm)	300x160x235	300x120x235	210x160x235	210x120x235	195x98x156

Weight (Kgs)	10	10	8	7.5	4
Diaphragm	NBR for standard (PTFE for antiseptic type)				
Valves	NBR				-
Noise Level (DB)	<60				
Temperature of working Environment	7 - 40°C				

Ordering Information

Description	Part No.	Pcs/pack	Photo
Diaphragm Vacuum Pump - Speed of Evacuation:12 L/Min - Ultimate pressure: ≥ 0.075 Mpa - Vacuum: 250mbar - Motor Power (W): 75W	SLVPGM020	1	
Diaphragm Vacuum Pump - Speed of Evacuation:20 L/Min - Ultimate pressure: ≥ 0.08 Mpa - Vacuum: 200mbar - Motor Power (W): 160W	SLVPGM033A	1	
PTFE Diaphragm Vacuum Pump - PTFE diaphragm - Speed of Evacuation:20 L/Min - Ultimate pressure: ≥ 0.08 Mpa - Vacuum: 200mbar - Motor Power (W): 160W	SLVPGM033A-T	1	
Diaphragm Vacuum Pump - Speed of Evacuation:30 L/Min - Ultimate pressure : ≥ 0.08 Mpa -Vacuum: 200mbar - Motor Power (W): 160W	SLVPGM050A	1	

PTFE Diaphragm Vacuum Pump

- PTFE diaphragm
- Speed of Evacuation:30 L/Min
- Ultimate pressure : $\geq 0.08\text{Mpa}$
- Vacuum: 200mbar
- Motor Power (W): 160W

SLVPGM050A-T

1



Diaphragm Vacuum Pump

- Speed of Evacuation:30 L/Min
- Ultimate pressure : $\geq 0.095\text{Mpa}$
- Vacuum: 50mbar
- Motor Power (W): 160W

SLVPGM050B

1



PTFE Diaphragm Vacuum Pump

- PTFE diaphragm
- Speed of Evacuation:30 L/Min
- Ultimate pressure : $\geq 0.095\text{Mpa}$
- Vacuum: 50mbar
- Motor Power (W): 160W

SLVPGM050B-T

1



Diaphragm Vacuum Pump

- Speed of Evacuation:60 L/Min
- Ultimate pressure : $\geq 0.08\text{Mpa}$
- Vacuum: 200mbar
- Motor Power (W): 160W

SLVPGM100A

1



PTFE Diaphragm Vacuum Pump

- PTFE diaphragm
- Speed of Evacuation:60 L/Min
- Ultimate pressure : $\cong 0.08\text{Mpa}$
- Vacuum: 200mbar
- Motor Power (W): 160W

SLVPGM100A-T

1



Hi Demand for High Vacuum- Diaphragm Vacuum Pump SLVPGM200



Features



- * Oil free, not produce any pollution.
- * 120L/min evacuation speed to fill the vacancy of large flow speed pump.
- * New technology to ensure the pump works smoothly and guarantee ideal ultimate pressure and Vacuum.
- * Automatic cooling exhaust system to ensures continuous operation 24 hours a day.
- * Imported bearing, smooth operation, low noise and high efficiency

Technical Data

Typical Data	SLVPGM200
Speed of Evacuation(L/min)	120
Ultimate Pressure	≥0.08Mpa
Vacuum	200mbar
Voltage Rating	220V/50Hz
Motor Power (W)	300W
Inlet/Outlet (mm)	Φ9
Pump Head	2
Dimensions (LxBxH) (mm)	390x150x250
Temp of body (°C)	<55
Weight (Kgs)	20
Diaphragm	Imported Rubber

Valves	Stainless Steel
Noise Level (DB)	<60

Ordering Information

Description	Part No.	Pcs/pack	Photo
Diaphragm Vacuum Pump - Speed of Evacuation: 120 L/Min - Ultimate pressure: ≥ 0.08 Mpa - Vacuum: 200mbar - Motor Power (W): 300W	SLVPGM200	1	
PTFE Diaphragm Vacuum Pump - PTFE diaphragm - Speed of Evacuation: 120 L/Min - Ultimate pressure: ≥ 0.08 Mpa - Vacuum: 200mbar - Motor Power (W): 300W	SLVPGM200-T	1	

Super High Ultimate Vacuum and Antiseptic Pump for Rotary Evaporator



Features

- * Teflon treated Air chamber and air road, this makes perfect anti-corrosion ability. This model has strong resistance to chemical corrosion resistance and organic solvent properties.
- * Extremely high Ultimate Vacuum at 15mbar, higher vacuum efficiency than most pump in the market. Recommend used with Rotary evaporator.
- * Made of imported bearing, assured smooth operation and low noise.
- * Aerospace class diaphragm makes super high durability.
- * Imported electrical power system, automatic cooling exhaust system, ensures continuous operation 24 hours a day.

Applications

- Vacuum filtration and Solvent filtration.
- Vacuum absorption.
- Vacuum drying.
- Deaeration application.
- Reduced pressure distillation.
- Compressing and converting gas.
- Solid Phase Extraction vacuum extraction.

Technical Data

Typical Data	SLVPGM050F-T
Speed of Evacuation(L/min)	30
Ultimate Pressure	≥0.08Mpa
Vacuum	15mbar
Voltage Rating	220V/50Hz
Motor Power (W)	160W
Inlet/Outlet (mm)	Φ6
Pump Head	2
Dimensions (LxBxH) (mm)	370x144x275
Temp of body (°C)	<55
Weight (Kgs)	13.5
Diaphragm	Imported Rubber
Valves	Imported Rubber
Noise Level (DB)	<60
Temperature of working Environment	7 - 40°C

Ordering Information

Description	Part No.	Pcs/pack	Photo
-------------	----------	----------	-------

PTFE Diaphragm Vacuum Pump

- PTFE diaphragm
- Speed of Evacuation: 30 L/Min
- Ultimate Vacuum: 15mbar
- Motor Power (W): 160W

SLVPGM050F-T

1

