

Sartolab® RF/BT Filter Systems

Product Information

Sartolab® Disposable Sterile Filter Systems (RF) and Bottle Top Filters (BT) are designed for the vacuum filtration of tissue culture media and components, biological fluids, and other aqueous solutions.

The 150 mL, 250 mL, 500 mL, and 1000 mL bottles are designed as storage containers for sterile media, buffers, or other aqueous solutions.

These products are for laboratory use only. Not for human parenteral applications.

Materials

The filter funnels, dust covers, and receiver bottles are manufactured from virgin, heavy metal-free polystyrene. The tubing adapters, filter adapters, and the plug seal caps are made from heavy metal-free polyethylene. Sartolab® filter systems are available with polyethersulfone and cellulose acetate membranes. All units are sterile.

Performance

The filter units contain membranes integrally sealed to a support grid designed to maximize flow and reduce foaming and protein denaturation.

Pore Size	Membrane Material	Characteristics
0.1 µm	Polyethersulfone	Very low protein binding and low extractables, fast flow rates
0.22 µm	Polyethersulfone	Very low protein binding and low extractables, fast flow rate
0.45 µm	Cellulose acetate	Very low protein binding, optimized for aqueous liquids

The membranes are compatible with most aqueous solutions and tested for use in cell culture applications.

Sartolab® RF, Filter Systems

The filter adapter utilizes a gasket design to ensure a vacuum-tight seal on the receiver/storage bottle. Each filter unit also contains a convenient tubing adapter that will fit most vacuum hoses.

The bottles are single-use containers. They cannot withstand autoclaving or use at temperatures greater than 70°C. The suitability of the bottles for storage of solutions below 0°C depends both on the solution and the storage conditions. Many aqueous solutions, including culture media, have been successfully frozen and stored at temperatures down to -20°C. However, a trial run under actual conditions is strongly recommended to test the suitability of the bottles for frozen storage.

Sartolab® BT, Bottle Top Filters

The filter adapter is available in 45 mm thread finish, and is designed to ensure a vacuum tight seal on customer supplied bottles with the appropriate thread finish. Each filter unit also contains a tubing adapter that will fit most vacuum hoses.



Chemical Compatibility

The mechanical strength, color, appearance, and dimensional stability of filter systems, bottle top filters, and plastic bottles are affected to varying degrees by the chemicals with which they come in contact. Specific operating conditions, especially temperature, will also affect their chemical resistance. A table is provided to serve as a general guideline for the chemical resistance of Sartolab® disposable sterile filters as well as funnels and bottles.

Chemical Resistance of Sartolab® Filter Systems

Chemical Class	Membrane (PES)	Membrane (CA)	Funnel and Bottle (PS)
Weak Acids	1	2	1
Strong Acids	1	3	2
Alcohols	1	2	2
Aldehydes	3	3	3
Aliphatic Amines	1	3	3
Aromatic Amines	3	3	3
Bases	1	3	1
Esters	3	3	3
Hydrocarbons	3	2	3
Ketones	3	3	3

1 = recommended; 2 = may be suitable for some applications; a trial run is recommended; 3 = not recommended.

PES = polyethersulfone; CA = cellulose acetate; PS = polystyrene.

These filter systems, bottle top filters, and plastic bottles are intended for use by persons knowledgeable in safe laboratory practices. Failure can result from surface damage, improper pressure or temperature, or use with incompatible chemicals.

Directions for Use – Sartolab® RF, Filter Systems

1. Carefully remove the filter unit, tubing adapter, and individually wrapped sterile cap from the bag.
2. Check the filter unit for loosening of the receiver/storage bottle from the filter adapter during shipping. Hand-tighten if necessary.
3. Attach the vacuum port to a regulated vacuum source. The universal tubing adapter provided with each system will fit most vacuum hoses. If a water aspirator is used as the vacuum source, it is recommended that a check valve or in-line catch flask be used to prevent water from accidentally being drawn into the receiving bottle.
4. Place the filter unit upright and provide a suitable support to prevent tipping during use.
5. Certain solutions, having a high particle load, may require prior centrifugation or prefiltration to prevent premature filter clogging.
6. Remove the dust cover and carefully add the solution to be filtered to the funnel by pouring or pipetting. Apply vacuum and filter until funnel is empty or the receiver/storage bottle is full. An operations pressure differential of 5 to 10 PSIG is recommended to prevent premature membrane clogging and excessive foaming.

Warning: Eye protection is strongly recommended whenever glass or plastic vessels are used under partial vacuum to guard against possible implosion injuries.

7. Upon completion of filtration, disconnect the filter unit from the vacuum source. The receiver bottle can be removed from the filter unit by unscrewing it from the filter adapter. The contents can then be easily removed by pipetting or pouring. The receiver bottle can also be used as a storage container using the individually wrapped, sterile, plug seal cap.
8. When the solution particle load is light and the filter throughput is greater than the capacity of the receiving bottle, the sterile filtrate can be poured or pipetted into an appropriate secondary container. Then, the receiving bottle can be reattached to the filter unit for additional filtering. Careful aseptic technique must be used to maintain the sterility of the receiving bottle and downstream side of the filter holder.

Warning: Plastic roller bottles or other vessels not specifically designed for vacuum applications must not be used as a substitute for receiver/storage bottles due to the danger of implosion.

Directions for Use – Sartolab® BT, Bottle Top Filters

1. Carefully remove the filter unit from the packaging and screw onto a sterile bottle.

The filters with 45 mm adapters are specifically designed to be used with PYREX® Media Bottles of 2 liter capacity or less. Similar PYREXPLUS® bottles with transparent autoclavable plastic coating are recommended for increased safety during use under vacuum.

Warning: Use of the filter on glass or plastic bottles which can implode may cause personal injury. Do not use for vacuum applications if: bottle is not designed to withstand vacuum; bottle is scratched, checked or cracked; bottle is clamped in such a way to induce stress; or if bottle is being held. Use safety equipment including eye protection with glass or plastic bottles and follow good laboratory practices. Eye protection is strongly recommended to guard against personal injury from implosion whenever any glass or plastic vessels are used in vacuum applications.

2. Certain solutions, having a high particle load, may require prior centrifugation or prefiltration to prevent premature filter clogging.
3. Remove the dust cover and carefully add the solution to be filtered to the funnel by pouring or pipetting. Apply vacuum and filter until funnel is empty or the receiver storage bottle is full. An operations pressure differential of 5 to 10 PSIG is recommended to prevent premature membrane clogging and excessive foaming.
4. Upon completion of filtration, turn off the vacuum source prior to disconnecting the filter unit. If a water aspirator is being used as the vacuum source, disconnect from the vacuum line prior to turning off the water to prevent water from being sucked back into the filter unit.

Sartorius Lab Instruments
GmbH & Co. KG
Otto-Brenner-Str. 20
37079 Goettingen, Germany
Tel.: +49 551 308 0
www.sartorius.com