SolVac™ filter holder

Instructions for Use

Introduction

Important

Read these instructions carefully before using the products.

Intended use

Cytiva Lab Filtration products are designed for professional laboratory applications only. These products are not approved for use in medical, clinical, surgical or other patient protection applications. They are also not suitable for use in Biopharmaceutical manufacturing or production.

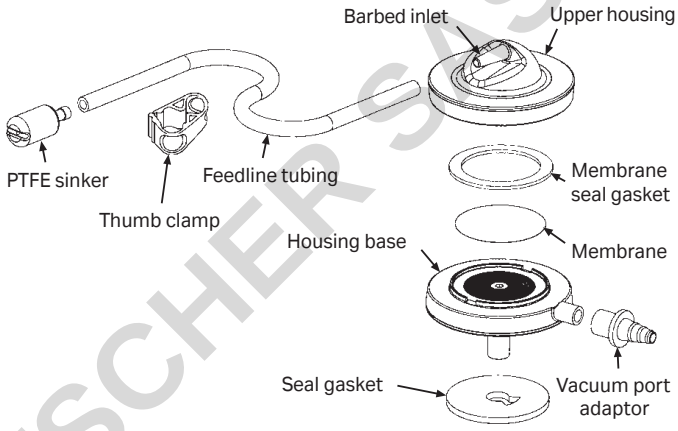
Background

Description

- Simplifies clean-up and degassing of mobile phase solvents and other solutions.
- Magnetic seal is reliable and leak-proof and prevents membrane shifting or tearing which can occur with aluminum clamps or threaded holders.
- Unique and versatile design allows filtration directly from the manufacturer's solvent bottle into the solvent reservoir, eliminating pour-and-wait filtration with traditional glass filter funnels.
- Fits most HPLC bottles, flasks, and containers.

Extractables

500 mL of each of the following HPLC-grade solvents—water, acetonitrile, methanol, tetrahydrofuran, hexane, and NMP—were filtered through a new SolVac™ filter holder. Three-milliliter aliquots from each filtrate were tested for extractable materials under common HPLC conditions. None of the chromatograms exhibited any trace of extractables leached from the Solvac filter holder to the final filtrate.



Instructions for use

Safety

There is a danger of implosion or breakage of glass or plastic containers, especially those having a capacity greater than 4 liters, in vacuum applications.

To reduce the possibility of injury from implosion and breakage:

WARNING

- Do not use a glass or plastic container that is not designed for use in vacuum applications.
- Do not use a container that is cracked or scratched.
- Do not use if the container is clamped as this could stress and/or weaken the container.
- Do not use if container and filter holder can tip over: use a ring stand to support the vacuum tubing attached to the SolVac filter holder.
- Always use safety equipment including protective eyewear in any vacuum application.
- Always follow good laboratory safety practices.
- Always use with appropriate size container.
- Always consult the container's manufacturer to determine its suitability for use in vacuum applications.

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Proper technique to prevent airlock and vacuum loss

Airlock occurs when the membrane is wet out with fluid and then air is pulled into the inlet tubing on the upstream side of the membrane surface. This air can reduce or stop fluid flow.

- Make certain the receiving vessel has a clean, smooth, flat rim.
- Always begin filtration using a dry membrane and clean dry support base.
- Make certain all connections are tight and secure, and the vacuum port adaptor fits snugly.
- Feedline tubing must be empty of all liquid before you begin. If air enters the feedline tubing during filtration, turn off the vacuum and begin again using a dry membrane and filter holder.
- Feedline sinker must remain below the surface of the solvent at all times to prevent air from entering the line.
- Firmly hold the SolVac holder, applying even pressure, onto the receiving vessel until the air is purged from the vessel and a good flow is initiated.

  Note: *Larger vessels will take slightly longer to completely purge the air.*
- Once vacuum is initiated, carefully lift your hand from the SolVac filter holder. Do not move, tilt, or pinch the upper housing from the base housing once vacuum is initiated as air may leak into the holder. Do not tip, move, or tilt the filter holder while running.
- PTFE and Supported Membranes. Supported membranes and fibrous media (e.g., PTFE and glass fiber) may not seal well in the SolVac filter holder due to the rigidity of the membrane or media surface. This may result in reduced flow rate. To correct this occurrence, place a membrane seal gasket on top of the membrane prior to final assembly of the filter holder.

  Note: *Make sure that you save these gaskets once you are done with your filtration so that you can use them in the future.*
- Place receiving vessel and solvent bottle at the same surface level during filtration.

Filtering a solvent or solution

Conventional laboratory vacuum pumps are ideal for use with the SolVac filter holder. It is also recommended to protect valve and pump components from damage due to liquids by using the Vacushield™ vent device, product number 4402.

Step	Action
1	Place base on the receiving vessel with gasket seal seated on the rim of the vessel, then place the membrane on the clean, dry filter support.



Note:
Certain membranes such as supported membranes and fibrous media (e.g., PTFE and glass fiber) may not seal well in the SolVac filter holder due to the rigidity of the membrane or media surface. This may result in reduced flow rate. To correct this occurrence, place a membrane seal gasket on top of the membrane prior to final assembly of the filter holder.

2 Attach the inlet feedline tubing with the thumb clamp and the sinker to the smooth, tapered inlet located on the upper housing and place the upper housing onto the housing base to securely seal the membrane.



3 While holding filter housing assembly on receiving vessel, attach tubing from vacuum source to the vacuum port adaptor located on the side of the housing base.

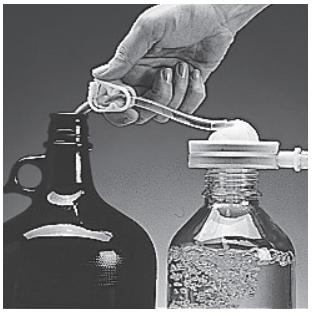


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Step	Action
4	Place feedline tubing into solvent to be filtered. Make sure that the sinker is located well below the surface of the solvent, preferably on the bottom of the vessel. Place the thumb clamp just above the solvent reservoir vessel and close it.



5	Apply vacuum while firmly holding the SolVac filter housing, applying even pressure to both sides, onto the receiving vessel until full vacuum is drawn. When the required vacuum is achieved and the system is "charged", open the thumb clamp to start the filtration. Continue to filter until all of the solvent is drawn through or the receiving vessel is full.



Note:
To stop the filtration at any time close the thumb clamp. After closing the thumb clamp it is possible to change the reservoir vessel.

Recommendations for optimum performance

- Always begin filtration using a dry membrane and a clean dry support base to prevent airlock which can decrease or prevent liquid flow.
- Always make sure the sinker and feedline remain below the surface of the solvent to prevent air from getting into the feedline and creating an airlock.
- Use a receiving vessel that is of equal or greater volume to the vessel you are drawing the mobile phase solvent from. Always monitor the filtration process to prevent overflow.
- For added stability, support large vacuum line tubing with ring stand and clamp to prevent device from tipping off of the receiving vessel while vacuum is being drawn.
- For optimum performance use vacuum pressure of 51 to 64 cm (20 to 25 in.) Hg.

Recommendations for cleaning

The SolVac filter holder is made of durable polypropylene and can be cleaned in the same manner as glassware or by rinsing an empty holder with the solvent to be filtered. After discarding the rinse fluid, make sure to dry the membrane support prior to placing the membrane into the holder.

Note: *Do not autoclave.*

Specifications

Parameter	Specification	
Materials of construction	Upper Housing, housing base	Polypropylene
	Feedline tubing	Ultra chemical-resistant Tygon, 4.80 mm (3/16 in.) ID
	Thumb clamp	Celcon plastic
	Feedline sinker	PTFE
	Vacuum port adaptor	Polyethylene
	Membrane seal gasket	Polyethylene
	Seal gasket	Polyethylene
Filter diameter	47 mm	
Effective filtration area	10.2 cm^2	
Inlet	Smooth, tapered inlet accepts 3.2 to 6.4 mm (1/8 to 1/4 in.) ID tubing	
Outlet	Seals to bottles with openings 17.8 mm (0.7 in.) ID to 48.3 mm (1.9 in.) OD.	
Vacuum port adaptor	4.8 to 7.9 mm (3/16 to 5/16 in.) tapered hose barb	
Maximum vacuum	63.5 cm (25 in.) Hg	
Operating temperature	Ambient; not to exceed 38°C (100 °F) Not autoclavable.	

Ordering information

Product number	Description	Packaging
4020	SolVac holder with 61 cm (2 ft.) feedline tubing, thumb clamp, sinker, vacuum port adaptor, 2 membrane seal gaskets, and 2 seal gaskets.	1/pkg
4022-N	122 cm (4 ft.) replacement feedline tubing.	1/pkg
4023-N	Replacement seal gaskets	10/pkg
4025-N	Membrane seal gaskets	10/pkg
4026	Sinker replacement kit	2/pkg
4028	Clamp replacement kit	2/pkg

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Related products

Mobile phase disc filters

Product number	Description	Packaging
7402-004	Nylon, 47 mm, 0.2 µm	100/pkg
7404-004	Nylon, 47 mm, 0.45 µm	100/pkg
60539	wwPTFE, 47 mm, 0.2 µm, hydrophilic	50/pkg
60548	wwPTFE, 47 mm, 0.45 µm, hydrophilic	50/pkg
10410312	RC58 regenerated cellulose, 47 mm, 0.2 µm	100/pkg
10410212	RC55 regenerated cellulose, 47 mm, 0.45 µm	100/pkg
10411411	TE35 PTFE, 47 mm, 0.2 µm, hydrophobic	50/pkg
10411311	TE36 PTFE, 47 mm, 0.45 µm, hydrophobic	50/pkg

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