PALL Life Sciences

Acro® 37 TF Vent Device

Description

The Acro 37 TF vent device is intended for small volume venting, solvent, and gas filtration. Its hydrophobic membrane will not pass water unless water breakthrough point is exceeded [2.1 bar (30 psi)]. It acts as a barrier to aqueous solutions and aerosols, allowing only sterile air to pass. The Acro 37 TF vent device is designed to connect easily to hoses of various sizes "in-line" or as a final filter. It can also be used for solvent filtration. The Acro 37 TF vent device houses a PTFE membrane capable of filtering aggressive solvents.

Ordering Information

Prod. No.	Description	Packaging
4464	Acro® 37 TF Vent Device, 0.2 µm, 37 mm	24/pkg
4465	Acro® 37 TF Vent Device, 0.2 µm, 37 mm	200/pkg

Specifications

Materials of Construction
Filter Media: PTFE on a polypropylene support
Housing: Polypropylene

Effective Filtration Area
7.5 cm^2

Inlet/Outlet Connections
Stepped hose barbs 6.4 - 9.5 mm (1/4 - 3/8 in.) diameter

Maximum Operating Temperature
100 °C (212 °F)

Maximum Operating Pressure
4.1 bar (60 psi)

Minimum Bubble Point (Methanol)
0.9 bar (13 psi)

Minimum Water Breakthrough Pressure
2.1 bar (30 psi)

Typical Air Flow
3.6 Lpm @ 0.2 bar (3 psi)

Sterilization
Provided non-sterile. Autoclave at 121 - 123 °C (250 - 253 °F) for a maximum of 20 minutes. **NOTE:** Pall Life Sciences tests indicate this unit can withstand multiple autoclave cycles. Reuse requires individual integrity testing and consideration for other problems including cross-contamination.

Applications

While some applications demand disposability, (radioactive applications, toxic substance filtration, etc.) there are benefits to purchasing disposable filter units rather than simple membranes. The low cost of the Acro 37 TF vent device can significantly reduce the initial cost of filtration when compared to purchasing stainless steel holders. Their disposability reduces the labor required for disassembly, cleaning, replacement of fragile membranes, reassembly and testing of reusable stainless steel holders. In certain applications, the Acro 37 TF vent device may be reused, however the user must determine suitability.

Connections

The stepped hose barb fits tubing with an I.D. of 6.4 - 9.5 mm (1/4 - 3/8 in.). Tubes should be slipped on tightly and hose clamps used in critical and/or high-pressure applications. Following its first autoclaving, the plastic connectors exhibit 1 to 2% shrinkage. NOTE: When connected to hoses prior to autoclaving, the hose clamps should be re-tightened following autoclaving.

The Acro® 37 TF will accept most male luer tapered connectors. This is useful in integrity testing but is not recommended for long-term or high-pressure connections. When filtering gases in moist atmospheres, orient membrane in a vertical plane.

Useful Life

Applied pressure plus volume and nature of contaminants determine life of filter. Maximum throughput is achieved by applying low initial pressures. Flow rates will decline as particle load on the upstream side increases. Gradual increase in pressures can be used to maintain flow rates up to the maximum of 4.1 bar (60 psi) pressure rating.

The use of prefilters on heavily contaminated solutions will extend filter life. The cost/benefit ratio of a dual system should be considered. Pall Life Sciences filtration specialists are available for consultation.

Integrity Testing

The Acro 37 TF vent device is manufactured and tested in accordance with Good Manufacturing Practices to assure compliance with published product specifications. However, for certain applications, additional "on-site" testing may be required. We recommend the following test procedures.

Bubble Point Method:

1. Fill a 10-mL or larger syringe with methanol.
2. Insert a 3-way connector between syringe and either end of the Acro 37 TF vent device.
3. Attach a pressure gauge and orient the outlet in an upward direction.
4. Gradually (with low pressure) wet the Acro 37 TF vent device membrane allowing the methanol to displace the air within the housing.
5. Flush the wetted filter with an additional 10-30 mL of methanol at higher syringe pressures to assure thorough wetting (using less than a 10 mL flush may result in incomplete wetting).
6. Disconnect the methanol source and attach an air filled syringe or pressure vessel and orient the filter in an upward direction.
7. Applying increasing pressure, gradually push the air into the filter, constantly watching for bubbles at the outlet of the Acro 37 TF vent device.
8. Read pressure gauges at the moment bubbles appear, to determine bubble point (see specifications).

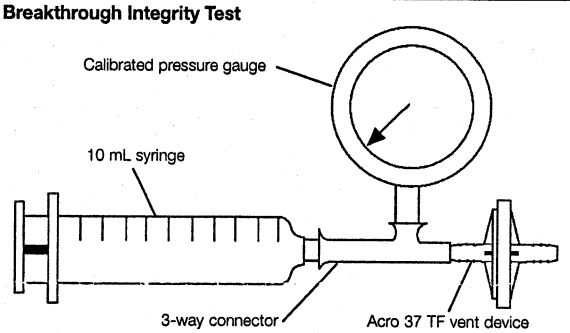
NOTE: Use of alcohol's other than methanol can lower bubble point value. It is imperative to use anhydrous methanol. Methanol open to the atmosphere can pick up 3 to 5% water. This can create wetting problems and result in low bubble points.

Water Breakthrough Test (WBT)
Due to the unacceptable nature of alcohol in many applications, and the need for an easy, routine procedure for integrity testing, we recommend the Water Breakthrough Test. The WBT is also referred to in the literature as water intrusion pressure or water entry pressure.

NOTE: A WBT cannot be performed on units following an alcohol Bubble Point Test due to the residual alcohol "wetting out" the membrane.

This relatively simple and reproducible test has been adopted by membrane manufacturers and reported in their literature and specifications for hydrophobic membranes. The naturally hydrophobic PTFE membrane resists water penetration. However, water can be forced through the membrane under high pressures. The pressure required to force water through (the water breakthrough point) is inversely correlated to the pore size of the membrane. Any physical destruction or rupture of the membrane is easily detected. The WBT takes only a minute to run and is very reproducible.

Water Breakthrough Integrity Test



1. Fill a 10 mL syringe* (male luer) with water.
2. By using a 3-way connector, attach the calibrated syringe pressure gauge [must measure up to 2.1 bar (30 psi)], syringe, and the external connector of the Acro 37 TF vent device.
3. Gently fill the housing and connectors with water.
4. Apply appropriate pressure [2.1 bar (30 psi)] with syringe plunger and hold this pressure for 15 seconds.
5. Integrity of housing and membrane is proven by retention of water in the syringe, and by the pressure remaining steady.
6. If failure occurs, check connectors for leaks and repeat above steps. If failure reoccurs, discard filter unit.
7. After completing test procedure, aspirate the water back into the syringe by pulling back on the syringe plunger. Disconnect the test equipment. Shaking the Acro 37 TF vent device by hand will aid in further removing residual water in the plastic housing.
   *NOTE: Over a period of time, the syringe and stopcock can begin to wear and may affect water breakthrough test results. Any standard 10 mL (or greater) syringe with luer slip fittings may be substituted.

Complementary Products

Prod. No.	Description	Packaging
Hydrophobic Vent Filters		
4210	Bacterial Air Vent, 1 µm, nominal, 37 mm	24/pkg
4250	Acro 50, Hose barb, 0.2 µm, 50 mm	72/pkg
4251	Acro 50, Hose barb, 0.2 µm, 50 mm	18/pkg
4400	Acro 50, 1/8 inch NPTM, 0.2 µm, 50 mm	18/pkg
4401	Acro 50, 3/8 inch straight pipe, 0.2 µm, 50 mm	18/pkg
4256	Acro 50, Hose barb, 0.45 µm, 50 mm,	18/pkg
4258	Acro 50, Hose barb, 1 µm, 50 mm	18/pkg
4249	AcroVent®, 0.2 µm, 50 mm	10/pkg
4402	Vacushield™, 0.45 µm, 50 mm	3/pkg
12082	AcroPak 300 Capsule w/ 0.2 µm PTFE	3/pkg
Integrity Test Kit		
4252	Acro 50 Integrity Test Kit	1/pkg
Sterile Vacuum Filters		
4631	VacuCap® 60, 0.1 µm, 60 mm,	10/pkg
4632	VacuCap 60, 0.2 µm, 60 mm,	10/pkg
4634	VacuCap 60, 0.45 µm, 60 mm,	10/pkg
4638	VacuCap 60 PF, 0.8/0.2µm, 60 mm,	10/pkg
4621	VacuCap 90, 0.1 µm, 90 mm,	10/pkg
4622	VacuCap 90, 0.2 µm, 90 mm,	10/pkg
4624	VacuCap 90, 0.45 µm, 90 mm,	10/pkg
4628	VacuCap 90 PF, 0.8/0.2µm, 90 mm,	10/pkg
TA4632	Tubing Attached VacuCap 60, 0.2 µm, 60 mm,	10/pkg
TA4622	Tubing Attached VacuCap 90, 0.2 µm, 90 mm,	10/pkg
Analytical Funnel Devices		
4242	Magnetic Filter Funnel, 300 mL, 47 mm	1/pkg
4241	Magnetic Filter Funnel with lid, 300 mL, 47 mm	1/pkg
4247	Magnetic Filter Funnel, 150 mL, 47 mm	1/pkg
4238	Magnetic Filter Funnel, 500 mL, 47 mm	1/pkg
4800	MicroFunnel™ Disposable Filter, 0.45 µm, 47 mm	50/pkg
4803	MicroFunnel SP Disposable Filter, 0.2 µm, 47 mm	50/pkg
4815	MicroFunnel 300 Disposable Filter, 0.45 µm, 47mm	20/pkg
Vacuum/Pressure Pump		
13157	115 V	1/pkg
13158	230 V	1/pkg
Filter Funnel Manifolds		
15402	3 place Aluminum	1/pkg
15403	6 place Aluminum	1/pkg
4205	3 place Polyurethane	1/pkg
Analytical Syringe Filters		**Pack/Case**
4472	Acrodisc® CR PTFE, 0.45 µm, 4 mm	250/750
4552	Acrodisc CR PTFE, 0.2 µm, 13 mm	100/300
4553	Acrodisc CR PTFE, 0.45 µm, 13 mm	100/300
4225	Acrodisc CR PTFE, 0.2 µm, 25 mm	50/200
4219	Acrodisc CR PTFE, 0.45 µm, 25 mm	50/200
4226	Acrodisc CR PTFE, 1 µm, 25 mm	50/200
4450	Acrodisc LC PVDF, 0.2 µm, 13 mm	100/300
4452	Acrodisc LC PVDF, 0.45 µm, 13 mm	100/300
4406	Acrodisc LC PVDF, 0.2 µm, 25 mm	50/200
4408	Acrodisc LC PVDF, 0.45 µm, 25 mm	50/200
4484	Nylon Acrodisc, 0.45 µm, 4 mm	250/750
4550	Nylon Acrodisc, 0.2 µm, 13 mm	100/300
4551	Nylon Acrodisc, 0.45 µm, 13 mm	100/300
4436	Nylon Acrodisc, 0.2 µm, 25 mm	50/200
4438	Nylon Acrodisc, 0.45 µm, 25 mm	50/200
4549	Nylon Acrodisc GF, 1/ 0.45 µm, 25 mm	50/200
4554	GHP Acrodisc , 0.2 µm, 13 mm	100/300
4556	GHP Acrodisc, 0.45 µm, 13 mm	100/300
4564	GHP Acrodisc, 0.2 µm, 25 mm	50/200
4560	GHP Acrodisc, 0.45 µm, 25 mm	50/200
4559	GHP Acrodisc GF, 1/ 0.45 µm, 25 mm	50/200
4523	Glass Fiber Acrodisc, 1 µm, 25 mm	50/200
4524	Glass Fiber Acrodisc, 1 µm, 37 mm	15/60

WARNING

Employment of the products in applications not specified, or failure to follow all instructions contained in this product information insert, may result in improper functioning of the product, personal injury, or damage to property or the product. See Statement of Warranty in our most recent catalog.

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