

Whatman Polycap TF

Product Information sheet

Introduction

Important

Read these instructions carefully before using the products.

Intended use

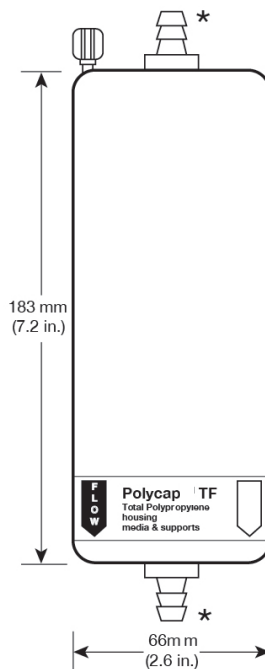
The products are intended for research use only, and shall not be used in any clinical or *in vitro* procedures for diagnostic purposes.

Description

- Venting
- Gas filtration
- Solvent filtration
- Solvent resistant capsule
- Autoclavable
- PTFE membrane

Polycap TF filter devices are manufactured with rugged PTFE membrane and polypropylene housing. No glue, adhesives, metal, epoxy or other extraneous materials are used in construction. All seals are fused.

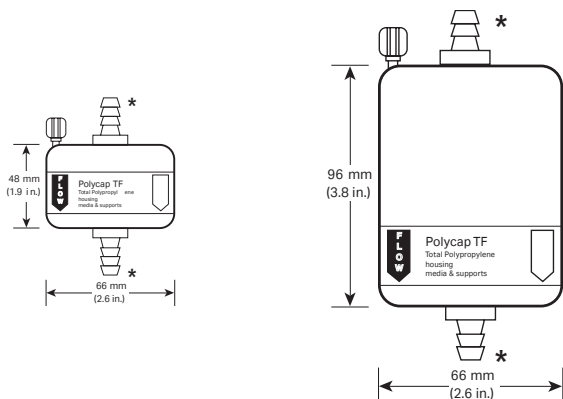
This document provides general information on the products listed. The specifications in [Technical Data: Polycap TF Venting & Solvent Filtration, on page 3](#) are intended to provide the basis for establishing functional use, as well as setting the quality assurance test performance levels.



* Connectors vary by product number, see [New Product Chart, on page 3](#)

Polycap TF Features

- **Hydrophobic** PTFE membrane
- **Autoclavable**
- **Flow Direction:** Bi-Directional; certain applications may require orientation, i.e., vents
- **Integrity testable: Bubble Point.**
- **Compact:** Efficient design provides high effective filtration area in small size
- **Vented:** Manual vent with luer lock can function to: bleed air from upstream, serve as injection or sample port. Vent is on inlet side of housing.
- **Product Identification and Lot No.** stamped into each housing
- **Package Clean "double wrapped"**
- **Manufactured in ISO controlled production facilities**
- **100% Integrity Tested during manufacture**



Typical Applications for Whatman Polycap TF Filter Capsules

Venting: Vent Filling, Mixing, Holding, Autoclave, and Fermentation Vessels

In Line Filtration:

- Sterilize and Remove Particles from Air/Gas/Liquid Streams
- Remove Liquid Aerosols from Air/Gas Streams
- Degas, Clarify, and Sterilize Liquid Streams

Other Uses:

- Clean Nitrogen used to dry samples • Ensure clean Inert Gases in vial filling lines
- Instrument Gas/Air preparation
- Point of use "Ultra Clean" Gases, Air, Solvents for Air Guns & Cleaning Wands

Isolation (gases pass, liquids/aerosols stopped):

- Isolation of Gases or Vents for Incubators, Autoclaves, Lyophilizers, EtO Sterilizers
- Isolation of Exhaust from Fermentors

Electronics: Photoresists, solvents, gases for research or industry

Pharmaceutical: Vents and In Line for production systems

Biotech: Vents & exhausts for biological environments, in-line gas sterilization.

Operating Instructions

Safety:

Considering the special factors of your application, consult the [Technical Data: Polycap TF Venting & Solvent Filtration, on page 3](#) to determine correct use. Key safety concern is not to exceed the pressure, temperature, or chemical compatibility recommendations.

PTFE membrane considerations:

PTFE membrane is hydrophobic and will not allow water (aqueous solutions) to pass without high pressure. These pressures are called the Water Breakthrough Test (WBT) values, and change with the pore size of the membrane. Aqueous solutions may be filtered if the membrane is initially "wetted" with alcohol or other appropriate solvents. PTFE membrane will stop aqueous aerosols in gas streams.

Efficiency:

To maximize filtration throughput, use the largest pore size filter that will provide the required cleanliness. If the material to be filtered is heavily contaminated, consider prefilters. To extend filter life use low flow or pressure.

Autoclaving:

Autoclave; requires 121°C at 1.05 Kg/cm² (15 psi) for 20 minutes. May tolerate 132°C for one hour. Multiple autoclave cycles may be possible, however, reuse is the responsibility of the operator, who should protect the device from cross contamination and detect loss of integrity by appropriate testing. (EtO sterilization should be possible but no studies have been conducted. Radiation is destructive to PTFE.)

Filtration Installations

Vents:

Attach one connector to vessel, the other connector is open to the atmosphere. If exhaust gas is saturated with moisture, install vent filter in a vertical position to allow collected moisture to drain back into vessel rather than fill (and block) vent filter housing. Sterilizing vents are typically 0.45 µm, or for longer duration and maximum security, use a 0.2 µm membrane.

Air/Gas "In-Line":

Effective service life varies. Replacement is required on a timely (routine) basis. Monitor pressure build-up or flow restriction to determine frequency. Pore size selection is based on application.

Solutions:

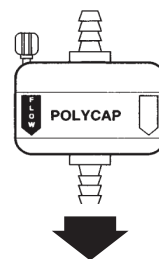
Small volumes may be filtered using a syringe; larger volumes may be filtered by connecting to the outlet of a pressure vessel or "in line" using gravity, vacuum, or peristaltic pump for the pressure required to filter. **Air Locks** seriously hamper flow rates; to eliminate, point the outlet of the filter device upward during initiation of liquid flow. The air in the system and filter device must be flushed prior to the membrane being wetted.

Integrity Testing

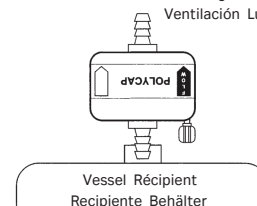
Bubble Point (BP) Test:

Flush the PTFE membrane filter device with an appropriate solution (methanol). After the membrane is completely wetted, apply air under controlled pressure until air breaks through the membrane and bubbles from the exit. The pressure at which air passes through the "wetted" membrane is the "bubble point". Refer to the table for pore size and methanol BP values. The test is best conducted with outlet connector pointed upward.

Filtration Liquid/Gas
Normal Flow



Venting Aération
Ventilación Luftung



Technical Data: Polycap TF Venting & Solvent Filtration

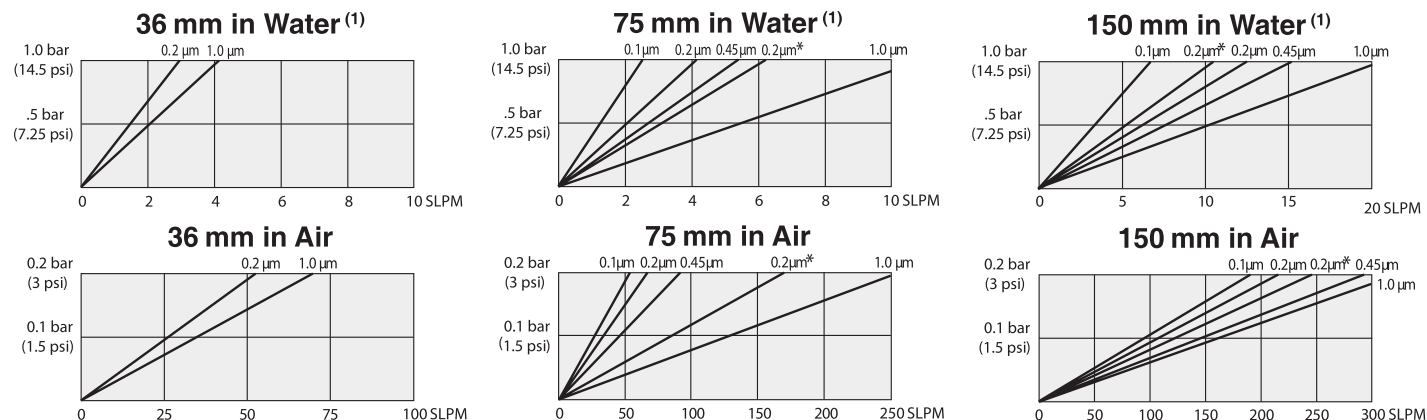
Chemical Resistance Summary¹

Classes of Substances 20°C (68°F)	Polypropylene/PTFE Guide ¹ for use
Acids, dilute	Long Term
Acids, concentrated	Long Term
Alcohols	Long Term
Aldehydes	One Month

Bases	Long Term
Esters	One Week
Hydrocarbons, aliphatic	One Month
Hydrocarbons, aromatic	One Week
Hydrocarbons, halogenated	One Week
Ketones	One Month
Oxidizing agents, strong	One Week

¹ Published as a general guide only. Due to time, temperature, and stress variations the user must evaluate the specific product and application to determine the appropriateness of use.

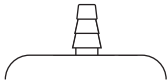
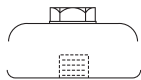
Typical Flow Rates



(1) Filters are wet out with alcohol prior to flow rates in water.

*Sanitary Connectors

New Product Chart

Filtration Ratings	Inlet and Outlet Fittings				
Pore Size	Capsule Size	1/4"–3/8" (6–9 mm) Stepped Hose Barb	1–1 1/2" (6–9 mm) Stepped Hose Barb	3/8" FNPT	1/4" MNPT
0.1 µm	Polycap 75 TF			2700T	
	Polycap 150 TF			2800T	
0.2 µm	Polycap 36 TF	2601		2601T	
	Polycap 75 TF			2702T	2703M
	Polycap 150 TF		2801	2802T	
	Polycap 36 TF		2602S		
0.45 µm	Polycap 75 TF			2703T	
	Polycap 150 TF			2803T	
1.0 µm	Polycap 36 TF	2603		2603T	
	Polycap 75 TF			2704T	
	Polycap 150 TF			2804T	

Technical Specifications

Housing:	Polypropylene
Filter Media:	PTFE
Vent:	On Inlet
Support System:	Polypropylene
Sealing:	Heat fused
Maximum Pressure:	60 psi (4.1 bar)
Effective Filtration area:	Polycap 36 – 500 cm ² Polycap 75 – 1000 cm ² Polycap 150 – 2000 cm ²
Alcohol Bubble Point:	0.1 µm – 23 psi (1.6 bar) 0.2 µm – 13 psi (0.9 bar) 0.45 µm – 7 psi (0.5 bar) 1.0 µm – 3 psi (0.2 bar)
Hold-up Volume:	Polycap 36 – 70 mL, Polycap 75 – 125 mL, Polycap 150 – 250 mL. Purging with air will minimize hold-up to a few mL.
Autoclaving:	Autoclavable @ 121°C for 15 minutes. Maximum cycle is 132°C for 1 hour. Multiple autoclave cycles are possible, but integrity testing and re-use is the responsibility of the operator.
Quantity per Pack:	5

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