

# Polydisc TF

## Whatman™ disposable filter

### Instructions for Use

#### 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.

#### Background

##### Description

Polydisc TF is a disposable filter intended for filtration of solvents, in-line filtration of air or gas, protection of equipment from particulate and aerosol intrusion, and general venting applications. This product contains a chemically resistant hydrophobic polytetrafluoroethylene (PTFE) membrane in a range of pore sizes to provide selection for the correct flow rate and particle retention needed in various applications.

Polydisc TF is intended for single use. Reuse is the responsibility of the operator who should protect the filter from cross contamination and detect loss of integrity by appropriate testing.

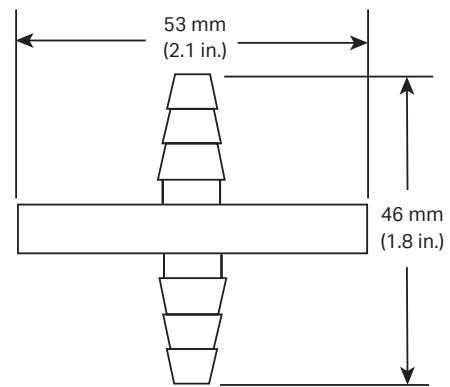
##### Typical applications

Polydisc TF is widely used in scientific research and industrial environments within food and beverage, and electronic industries. This product is suitable for the following applications:

- Non-critical venting of vessels used for filling, mixing, and holding
- In-line filtration of a gas/air/liquid stream such as found on instruments, incubators, and culture vessels
- Water barrier to protect instruments from intrusion and damage
- Filtration of solvents for particulate removal and reuse
- Filtration of solvents for fine particulate that could damage instrumentation and block small-bore tubing

#### Technical information

##### Illustration of Polydisc TF

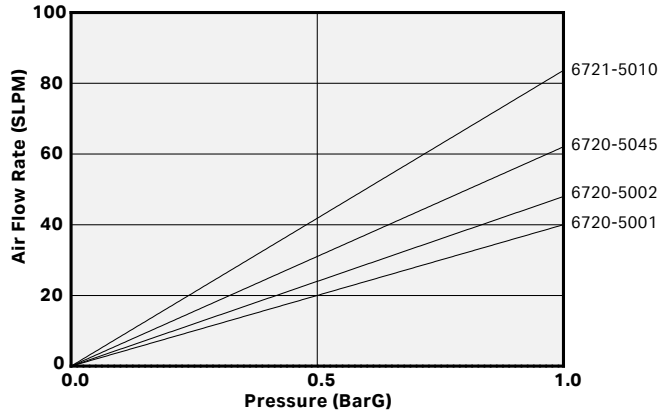


##### Technical data

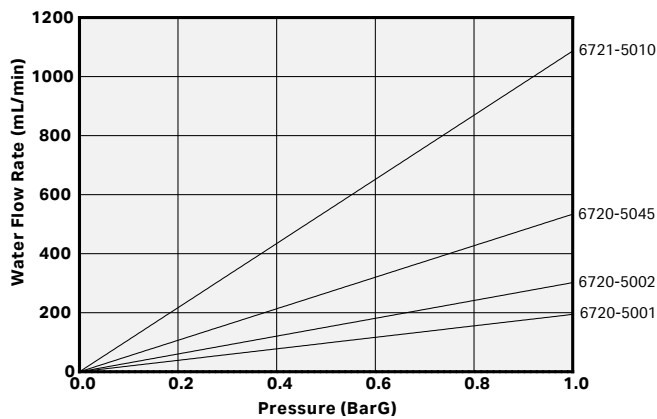
<b>Housing and support:</b>	Polypropylene	
<b>Filter media:</b>	PTFE	
<b>Pore size (µm):</b>	<b>Specifications</b>	<b>Product code</b>
	0.1	6720-5001
	0.2	6720-5002
	0.45	6720-5045
	1.0	6721-5010
<b>Hold-up volume:</b>	1.0 mL full housing <0.1 mL with air purge	
<b>Effective filtration area:</b>	16 cm <sup>2</sup>	
<b>Inlet/outlet connections:</b>	6 to 10 mm (¼ to ⅜ in.) stepped barb	
<b>Dimensions (W×L):</b>	53 × 46 mm (2.1 × 1.8 in.)	
<b>Sealing method:</b>	Heat-fused	
<b>Autoclavable:</b>	Autoclavable at 121°C (250°F) for 20 minutes at 0.1 MPa (1.0 bar, 15 psi)	
	<b>Note:</b> <i>Autoclaving is not recommended for 0.1 µm PTFE</i>	
<b>Maximum operating pressure:</b>	0.41 MPa (4.1 bar, 60 psi))	

<b>Minimum bubble point (isopropyl alcohol):</b>	0.1 $\mu\text{m}$ – 0.16 MPa (1.60 bar, 23 psi) 0.2 $\mu\text{m}$ – 0.09 MPa (0.90 bar, 13 psi) 0.45 $\mu\text{m}$ – 0.05 MPa (0.50 bar, 7 psi) 1.0 $\mu\text{m}$ – 0.02 MPa (0.20 bar 3 psi)
<b>Operating temperature:</b>	Ambient
<b>Flow direction:</b>	Inlet to outlet for liquid applications. Bidirectional for venting applications with limited pressure in the reverse direction.
<b>Biosafety:</b>	Materials pass USP Class VI

### Typical air flow rate



### Typical water flow rate



## Operating Instructions

### Safety

When considering the specific factors of your application, see *Technical data* for correct use. Make sure not to exceed the Maximum operating pressure and follow temperature or chemical compatibility recommendations.



### CAUTION

If the Maximum operating pressure is exceeded, bursting of the device can occur resulting in loss of sample or personal injury.

### Venting

For venting applications, connect the inlet port of the Polydisc TF to the vessel, leaving the outlet open to the atmosphere. The connection is made by securing the tubing to the filter ports using band clamps.

**Note:** Change filter if there is condensation or contact with fluid preventing sufficient air flow.

### In-line

To use the Polydisc TF for in-line application, securely connect both ports of the filter into the flow stream such that the orientation flows from inlet to outlet. The connections are made by securing the tubing to the filter ports using band clamps.

**Note:** Change filter if there is condensation or contact with fluid preventing sufficient air flow.

### Preparing integrity test (bubble point test)

Step	Action
1	Securely connect the filter to the test stand with band clamps.
2	Fill and flush the filter with the test fluid. <ol style="list-style-type: none"> <li>Open the flush valve and initiate flow into the filter at low pressure, <math>\leq 0.03</math> MPa (0.3 bar, 5 psi).</li> <li>Gently ramp up the pressure and allow the filter to flush for 2-3 minutes at approximately 0.03 MPa (0.3 bar, 5 psi), or flush minimum 2 L.</li> <li>Close the flush valve.</li> </ol>
3	Start the bubble point test.

## Performing bubble point test

Step	Action
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- |   |   |
|---|---|
| 1 | Immerse the outlet or tubing connected to the outlet below the test fluid surface in a suitable container for viewing a stream of bubbles.  |
| 2 | Open the gas valve and slowly ramp the pressure to 0.03 MPa (0.3 bar, 5 psi) and hold for 30 seconds.   |
| 3 | Slowly increase the pressure at a rate of 0.14 MPa (1.4 bar, 20 psi) per minute until you reach the minimum bubble point and hold for another 30 seconds. A steady stream of bubbles at or during the 30 second hold indicates an integral product. |

**Note:**

*The bubble point is the pressure at which you observe a steady stream of bubbles forming out of the end of the outlet. If you observe a rush of tiny bubbles that cease during the pressure hold or during the pressure ramp up, that may not be the bubble point but some residual trapped air downstream of the wetted membrane. Continue the procedure, observing for a steady stream of bubbles.*

**Note:**

*If you observe a steady stream of bubbles below the anticipated bubble point, the filter may not have wet properly. Return to step 2 in Preparing integrity test to flush the filter. If using water, it may aid wetting to warm the water to 79°C (175°F).*

**Note:**

*If a steady stream of bubbles is not observed and it is desired to take the filter to the bubble point, resume increasing the pressure at a rate of 0.14 MPa (1.4 bar, 20 psi) per minute until a steady stream of bubbles is observed and record that pressure.*

## Filtering solution

Step	Action
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|---|--|
| 1 | Press the tubing over the stepped barb inlet and secure with a band clamp. Repeat for the outlet if using for an in-line application.                |
| 2 | Fill the filter slowly and at a low pressure, allowing air to escape through the outlet until the filter is filled with fluid.                       |
| 3 | Ramp the pressure slowly until the desired flow rate is achieved, taking care not to exceed the Maximum operating pressure of the filter.            |
| 4 | When filtration is complete, make sure to release all pressure from the test stand before loosening band clamps and removing tubing from the filter. |

## Ordering information

Product Code	Product Name	Qty./Pk.
6720-5001	Polydisc TF	10
6720-5002	Polydisc TF	10
6720-5045	Polydisc TF	10
6721-5010	Polydisc TF	10



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