Whatman Polydisc AS

Disposable Filter Devices

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

Polydisc AS disposable filter devices have been designed to provide pure filtration of aqueous solutions. This product offers the best combination of large surface area and low hold up volume available.

Polydisc AS is composed of a Polyethersulfone (PES) membrane with a Glass Micro Fiber (GMF) pre-filter to extend filter life.

To ensure sterility, the outlet side of Polycap AS is covered in a protective sheath. The filter is then enclosed in a "medical grade" clear blister pack, radiation sterilized, and sealed again in its own protective shelf pack.

Disposable filter devices provide great labor saving efficiency while ensuring superior filtration when compared to hand assembled reusable filter housings.

This bulletin provides general information on the products listed below. The specifications in the Technical Data section are intended to provide the basis for establishing functional use, as well as setting the quality assurance test performance levels.

Polydisc AS 0.2µm Sterilizing Grade Filters

Note: *Will provide log reduction values (LRVs) of 7 per HIMA recommended sterilization standards.*

- **Low Protein Binding** Polyethersulfone (PES) Filter Membrane
- **Prefilter:** Glass Micro Fiber (GMF) Depth Media
- **Polypropylene Housing**
- **Connectors:** **Inlet:** 1/4 - 3/8" SB
  Outlet: 1/4 - 3/8" SB
- **Ultra Clean** – No mold release agents used in these devices
- **Outlet enclosed** in protective sheath to ensure sterility
- **Manufactured in a GMP controlled clean room environment**
- **Rugged Construction**
- **Integrity Testable:** Bubble Point (BP)
- **Filters enclosed** in medical grade clear blister packs
- **Radiation Sterilized** (No EtO Residuals)
- **Non Pyrogenic**

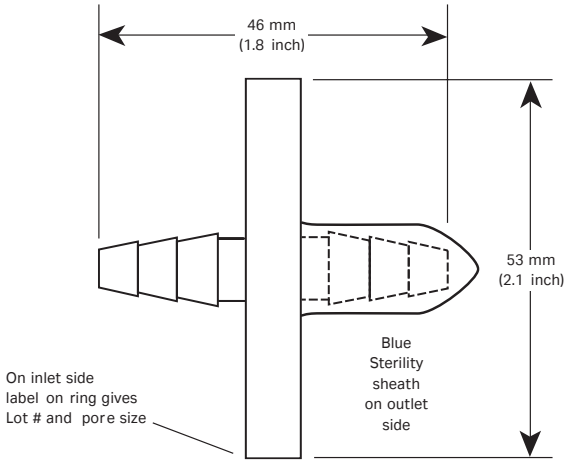
Polydisc AS — 50mm Filters

Product code	Product Name	Pore Size (µm)	Media	Sterile Non-Pyrogenic	Qty./ Pkg.
6724-5002	Polydisc AS	0.2µm	PES	Yes	10
6724-5045	Polydisc AS	0.45µm	PES	Yes	10
6724-5145	Polydisc AS	0.45µm	PES	No	50

Typical Applications for Polydisc AS Filter Devices

Tissue Culture Media	Enzymes	Pharmaceutical Preparations
Reagent Preparation	Biologicals	Respiratory Therapy Solutions
Water for Laboratory Use	Immunologicals	Extemporaneous Solutions
Salt Solutions	Virus Suspensions	Ophthalmic Solutions
Cleaning/Rinsing Solutions	Buffers	Irrigation Solutions
Particle Counting Solutions	Nutrients	Admixtures

TECHNICAL DATA: Polydisc AS Filter Device



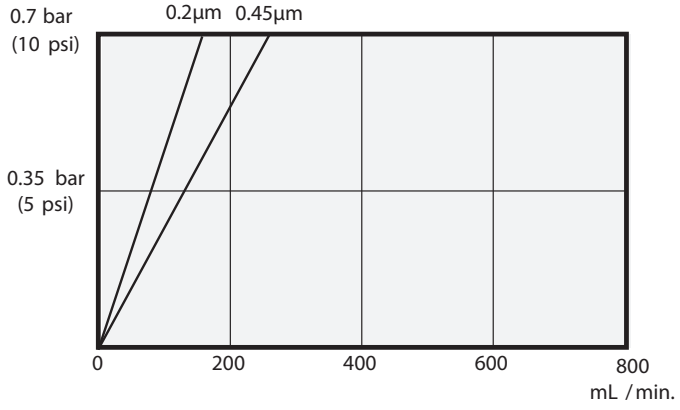
CHEMICAL RESISTANCE SUMMARY

Note: *Published as a general guide only. Due to time, temperature, and stress variations the user must evaluate the specific product and application to determine appropriate use.*

Class of Substance 23°C (68° F)	PP/PES
Acids, Concentrated	Not Usable
Acids, Dilute	Usable
Alcohols (Selected)	Usable
Amyl alcohol	Not Usable
Benzyl alcohol	Not Usable
Bases	Usable
Esters	Short Term
Ethers	Usable
Formaldehyde	
Glycols	Usable
Hydrocarbons:	
Aromatic	Not Usable
Aliphatic	Short Term
Halogenated	Short Term
Ketones	Not Usable
Oils	—

Weight:	11.5 grams
Effective Filtration Area:	16cm2
Maximum Pressure:	4.1 bar (60 psi)
Housing:	Polypropylene
Volume "Hold-Up":	Fill Housing 1ml, with air purge <0.1mL
Filter Media:	Polyethersulfone (0.2 & 0.45µm), all have a glass microfiber prefilter.
Flow Direction:	Supported bi-directionally; the prefilter is on the inlet side and flow should enter from the side marked **IN**
Sterilization:	These filter devices are sterilized by Cytiva. They may be autoclaved once at 121°C (132°C max.) for 20 minutes. However, an integrity test should be performed following autoclaving.
Non-Pyrogenic:	LAL TESTED. Endotoxin Levels 0.5 EU/ML
Biosafe:	Materials tested per USP Class VI

Typical Flow Rates in Water for Polydisc AS



Product code	Pore Size Microns	INTEGRITY TEST Water Bubble Point	
		bar	psi
6724-5002	0.2	2.1	30
6724-5045	0.45	1.3	20

OPERATING INSTRUCTIONS

SAFETY: When considering the special factors of your application, consult the Technical Data to determine correctness of use. Do not exceed the pressure, temperature or chemical compatibility recommendations. High pressures can be obtained when using syringes. The smaller the syringe the higher the pressure that can be generated. As a general guide, the following pressures can be obtained by hand with the syringes indicated: 20mL, 80 psi; 10mL, 140 psi; 5mL, 180 psi; 3mL, 200 psi; 1mL, 250 psi. Each user should determine the pressure they can generate by hand with a specific size syringe and take appropriate safety precautions not to exceed the recommended rating for the device used. If these limitations are exceeded, bursting of the device may occur resulting in loss of sample or personal injury.

MEMBRANE CONSIDERATIONS: Themembrane used in **Polydisc AS** is polyethersulfone (PES). (for 0.2 & 0.45µm) and nylon for 1.0 µm. Thesemembranes provide high flow rates and throughput. However, they are not suitable for aggressive chemicals. Cytiva recommends its **Polydisc TF** for aggressive chemicals.

The special PES and nylon membranes in Polydisc AS are hydrophilic. Hydrophilic membranes pass gas easily until they are wet. Once they have been "wetted" they will not pass gas easily. The pressure required to pass gas through a wetted membrane is dependent on the membrane's pore size. This pressure is called the "bubble point" and is used to test formembrane integrity. Air trapped on the upstream side of a wetted hydrophilic membrane blocks the flow path and reduces or stops flow. (see **Air Lock** in Filter Installation paragraph).

EFFICIENCY: Tomaximize filtration throughput, use the largest pore size filter that will provide the required cleanliness. (For sterilization of liquids, the 0.2µmis required.) If thematerial to be filtered is heavily contaminated, consider prefilters. To extend filter life use low flow or low pressure.

STERILIZATION: These filter devices are radiation sterilized. They may be autoclaved once at 121°C (132° max.) for 20 minutes. However, an integrity test should be performed following autoclaving.

FILTRATION INSTALLATIONS: Small volumes may be filtered using a syringe; larger volumes may be filtered by connecting a hose 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 the 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 filter device with 10ml or more of an appropriate aqueous solution. After the membrane is completely wetted, apply air under controlled pressure until air breaks through the membrane and bubbles from the outlet connector. The pressure at which air passes through the "wetted" membrane is the "bubble point". Refer to the table for pore size and BP values. The test is conducted with **outlet** connector pointed **upward**.

Because of the design and testing of **Polydisc AS** it is not normally required to test these products prior to use. It may be required because of a protocol, special application, or use of special solutions, or if the units are autoclaved.

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