



# FLUXA

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## Introduction

Poliflo W-PES membrane cartridges have been specifically designed, by Fluxa Filtri for wine and sparkling wine filtration, as a final filter for cold biological stabilisation. Poliflo W-PES utilises a double layer of naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure, which provides graded filtration throughout its depth, resulting in higher throughputs and long service life. When combined with quality all-polypropylene components and high integrity manufacturing techniques, the Poliflo W-PES filter cartridge is ideally suited to the most demanding process conditions.

## POLIFLO W-PES Double Layer Membrane Filter for Wine Filtration

### Features and Benefits

- The double layer PES membrane offers high flow with low pressure drop and exceptionally high dirt holding capacity.
- The PES membrane exhibits low colour binding and non-specific protein binding; these characteristics are regarded as essential to the organoleptic quality of wine and improved regeneration.
- The Poliflo W-PES 0.65 µm rated filter removes contaminating yeast, moulds, and spoilage bacteria from liquids. The Poliflo W-PES 0.45 µm rated filter removes yeasts and moulds including the smallest spoilage bacteria such as *Oenococcus oeni*. The Poliflo W-PES 0.2 µm rated cartridges provide sterile filtration for bottled water and other beverage grade water applications.
- Poliflo W-PES cartridges are 100% integrity tested during manufacture and integrity testing can be repeated while the filters are in service, thus providing assurance of the filter's efficiency to remove spoilage microorganisms.
- Chemical compatibility – extremely resistant to all conventional chemical regenerating agents and processes across the entire pH spectrum from 1 to 14.
- Poliflo W-PES cartridges contain no added surfactants or wetting agents that could alter taste.
- Advanced cartridge design coupled with enhanced thermal stability of the PES membrane ensures the cartridge integrity is maintained during multiple cycles of hot water sanitation and in-line steam sterilisation.
- Validation Guide available on request

## Cartridge Construction

Poliflo W-PES cartridges incorporate a double layer Polyethersulfone (PES) membrane pleated with polypropylene upstream irrigation and downstream drainage materials. The outer sleeve, inner core and integral end-cap adapters are made of polypropylene. Multiple length cartridges with industry standard adapter styles are produced to fit most housing designs and system sizes. All materials are traceable and CFR 21 listed for direct food contact. Cartridges are constructed in a clean room under tightly controlled conditions using advanced, highly specialised machinery. Quality and consistency of product is assured by the quality control and manufacturing procedures, which are in place throughout all stages of manufacture.

## Food and Biological safety

The Poliflo W-PES cartridges are manufactured using high quality components made from non-toxic and biologically inert raw materials. All components are FDA listed for food contact in the Code of Federal Regulations (CFR), Title 21.

## Specifications

### Materiali

Filter membrane	Polyethersulphone
Irrigation / support	Polypropylene
Drainage Layer	Polypropylene
Cartridge Hardware	Polypropylene
Adapter Insert (where applicable)	316 Stainless Steel
Standard 'O' Ring	Silicone/EPDM

### Cartridge Dimensions

Diameter	70 mm (2,8")
Length	125 mm (5")
	250 mm (10")
	510 mm (20")
	760 mm (30")
	1020 mm (40")

### Effective Filtration Area

0.92 m<sup>2</sup> (10ft<sup>2</sup>) per 250 mm (10") module

### Maximum Differential Pressure

Normal Flow Direction at:

20° C (68°F)	6.0 bar (87lb/in <sup>2</sup> )
80° C (176°F)	4.0 bar (57lb/in <sup>2</sup> )
100° C (212°F)	3.0 bar (43lb/in <sup>2</sup> )
120° C (248°F)	2.0 bar (29lb/in <sup>2</sup> )
125° C (257°F)	1.5 bar (22lb/in <sup>2</sup> )

Reverse Flow Direction at:

20° C (68°F)	2.1 bar (30lb/in <sup>2</sup> )
80° C (176°F)	1.0 bar (15lb/in <sup>2</sup> )
100° C (212°F)	0.5 bar (7lb/in <sup>2</sup> )

### Maximum recommended short term operating temperature

80° C (176°F)

### Sterilisation

In-line steam sterilisation – Cartridges can be in-line steam sterilised for a minimum of 80 cycles @ 125°C – duration 20 minutes per cycle.

Hot water sanitation – Cartridges can be hot water sanitised for a minimum of 200 cycles @ 80°C - duration 20 minute per cycle.

### Chemical Regeneration

Poliflo W-PES cartridges are manufactured to withstand a mild alkaline / acid flush in the normal flow direction.

## Retention Characteristics

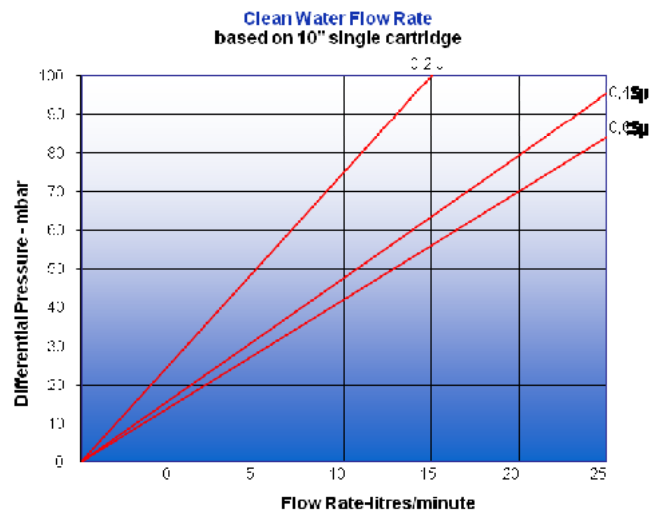
<b>Cartridges</b>	<b>CFU/cm<sup>2</sup> of filtering surface</b>
Poliflo W-PES 0.2 µ	>10 <sup>7</sup> Brevundimonas diminuta
Poliflo W-PES 0.45 µ	>10 <sup>7</sup> Serratia marcescens
Poliflo W-PES 0.65 µ	>10 <sup>7</sup> Saccharomyces cerevisiae

## Integrity Test Values

All Poliflo W-PES Cartridges are flushed with purified water prior to despatch. They are integrity tested to the following limits:

Filter Rating		* Test Pressure		Maximum Diffusional Flow
Code	µm	bar	psi	ml/min
A20	0.2	2.2	32	20
A45	0.45	1.5	22	20
A65	0.65	0.9	13	20

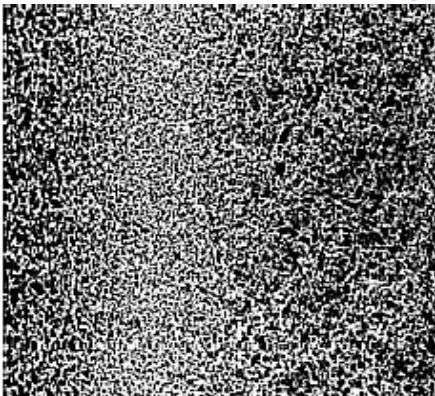
\* Using water as wetting liquid



## Applications

- Wine / Sparking wine
- Beer
- Spirits
- Soft drinks and bottled water

## Filter Media and Housings



Pes Membrane - cross section (x 675)



Sanitary Housing Group

## Cartridges part numbering guide

WES 40 01 7 S X X											
Code	Nominal Length	Code	Absolute Pore Rating	Code	End fitting	Code	Seal Material	Code	Version	Code	Additional Option
05	125 mm (5")	A20	0,2 µ	0	DOE	E	EPDM	W	Flushed and tested	X	Special
10	250 mm (10")	A45	0,45 µ	3	COD.3	S	SILICONE				
20	510 mm (20")	A65	0,65 µ	7	COD.7	N	NITRILE	S	STD hard cage		
30	760 mm (30")			8	COD.8	V	VITON	X	Special		
40	1020 mm (40")			9	COD.9	P	PTFE				
				X	SPECIAL	G	PTFE ENCAPSULED SILICONE				
						X	SPECIAL				