



MAIN FEATURES & BENEFITS

- Absolute grade rating of 0.45 µm
- Excellent flow rate
- Highly resistant materials
- Highly asymmetrical membrane design
- High mechanical and thermal stability
- Approved for food contact use acc. to CFR Title 21 & EC/1935/2004

PRODUCT DESCRIPTION

The LifeTec™ PES-BN 0.45 A filter element is an absolute grade rated, pleated high performance Polyethersulfone membrane filter. Developed for final filtration and microbial stabilization of highly colloidal liquids, it meets the high demands in terms of filtration performance, stability and service life.

The outstanding properties of the LifeTec™ PES-BN 0.45 A filter element is based on its state-of-the-art filtration media. The Polyethersulfone membrane is inherently hydrophilic and distinguishes itself by having an asymmetrically designed pore structure. The pore size steadily decreases towards the centre of the medium resulting in a highly porous structure.

All components meet the EU and USA requirements for food contact use in accordance with CFR (Code of Federal Regulations) Title 21 and 1935/2004/EC and subsequent amendments.

All LifeTec™ liquid elements are flushed with deionised water during manufacture. The LifeTec™ filter elements are manufactured in accordance with the GMP requirements as defined in EC/2023/2006 and do not contain any substances of very high concern (SVHC) as defined in EC/1907/2006 and EC/65/2011.

INDUSTRIES



- Breweries



- Soft Drinks



- Bottled Water



- Wineries



- Chemical Industry

APPLICATIONS

The absolute rated LifeTec™ PES-BN 0.45 A membrane filter is designed and developed for the filtration of highly colloidal liquids:

Clarification and cold sterilization of beverages like:

- Beer
- Beer Mix
- Wine
- Spirits

Clarification and final filtration of:

- Deionized Water
- Chemically treated Water
- High temperature Water
- Process Water
- Ingredient Water
- Soft Drinks
- Bottled Water

QUALITY TEST

All products have been inspected and released by Quality Assurance as having met the following requirements:

- All 10" filter modules are integrity tested to verify compliance with established quality and design specifications and to assure consistent and reliable performance.
- The traceability of each filter element according to EC/1935/2004 is provided by serial number.
- All LifeTec™ PES-BN 0.45 A filter elements are assembled, tested and packaged in Class 7 clean room facility, whose Quality Management System is approved by an accredited registering body to the appropriate ISO9001 Quality Systems Standard.







MATERIAL COMPLIANCE USA

All components of the LifeTec™ PES-BN 0.45 A filter element are FDA listed for food contact use in the Code of Federal Regulations (CFR), Title 21:

Filter Materials		CFR Title 21
Membrane	Polyethersulfone	§ 177.2240
Upstream support	Polypropylene	§ 177.1520
Scrim	Polypropylene	§ 177.1520
Outer guard	Polypropylene	§ 177.1520
Core	Polypropylene	§ 177.1520
End caps	Polypropylene	§ 177.1520
O-rings	EPDM	§ 177.2600
	Silicone	§ 177.2600
Sealing method	Thermal bonding	

MATERIAL COMPLIANCE EU

The Donaldson LifeTec™ PES-BN 0.45 A filter element meets the guideline for food contact use as given in European Regulation (EC) Number 1935/2004. All polymeric components (Polypropylene, Polyethersulfone) meet the requirements of EU Directive EC/10/2011 relating to plastic materials and articles intended to come into contact with food. Migration tests have been carried out in simulants (B, D1) after flushing or in flow conditions. All materials used do not contain any substances of very high concern (SVHC) as defined in EC/1907/2006 (REACH Guideline) and EC/65/2011 (RoHS Guideline) and are free of any Latex-based components. The PP materials used for cage and core are treated acc. to EMA/410/01 Rev.03 and thus bear no risk of transmitting TSE and BSE.

Regulation (EC) No. 1935/2004 Regulation (EU) No. 10/2011	
FDA Code of Federal Regulations Title 21	
USP Class VI, <88>	
ISO 9001:2015	
Regulation (EC) No. 1907/2006 (REACH)	
Directive 2011/65/EU (RoHS)	

RETENTION RATES (According to HIMA Challenge per ASTM)

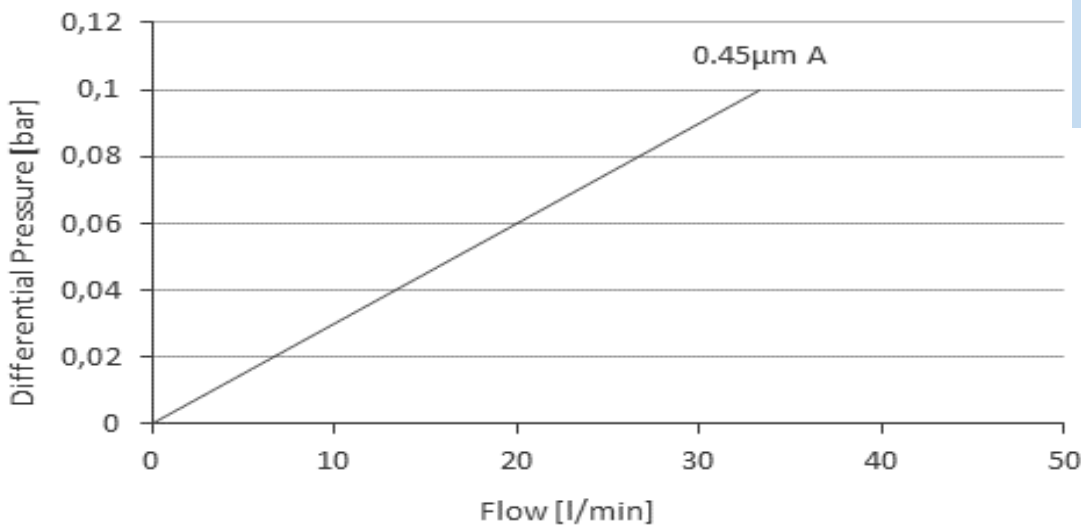
Filter Grade	Microorganism	LRV / cm ²
0.45 µm	Saccharomyces cerevisiae	> 7
	Brettanomyces bruxellensis	> 9
	Saccharomyces cerevisiae	10.39
	Brettanomyces bruxellensis	> 9.54

PRODUCT SPECIFICATIONS

Product Specifications				
Filter Grade	0.45 µm (absolute retention rate)			
Filtration Surface	0.72 m ² per 250 mm element (10")			
Maximum Differential Pressure	Operating temperature		Differential pressure	
	°C	°F	bar	psi
	38	100	5.5	79
	66	150	4.1	59
	82	180	2.1	30
Cumulative Steaming Time*	121°C – 125°C (30 minutes) saturated steam (forward flow) more than 100 cycles			

* Figures are based on lab tests to evaluate steaming resistance. Filter elements need to be checked in actual use. Contact Donaldson Sales Engineer for recommended autoclaving/steaming procedures.








FLOW CHARACTERISTICS



LifeTec™ PES-BN 0.45 A
10", Deionized water, 20°C

INTEGRITY TESTING

Bubble-Point-Test			Diffusion Test / Forward Flow Test	
Filter Grade	Minimum Bubble Point		Filter Grade	Maximum Diffusion Values
	bar	psi		
0.45 µm	1.25	18.1	0.45 µm	25 ml/min @ 1.0 bar (14.50 psi)

Connection	Description	
CODE 2 connection	2 x 226 o-rings, bayonet 2 locking tabs, flat end cap, integrated reinforcement ring	
CODE 3 connection	2 x 222 o-rings, plug connection, flat end cap, integrated reinforcement ring	
CODE 7 connection	2 x 226 o-rings, bayonet 2 locking tabs, locating fin, integrated reinforcement ring	
CODE 8 connection	2 x 222 o-rings, plug connection, locating fin, integrated reinforcement ring	
CODE 9 connection	2 x 222 o-rings, bayonet 3 locking tabs, locating fin, integrated reinforcement ring	
UF connection	2 x 226 o-rings, plug connection, flat end cap, integrated reinforcement ring	
DOE connection	Double open end with EPDM gaskets	

Other end cap configurations on request

- Integrity test was done with Bubble Point or Forward Flow Test
- For information on test equipment or test services, please contact your Donaldson Sales Engineer and visit our website at www.donaldson.com



donaldson.com/process

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Contact us



Important Notice: Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, specifications, availability and data are subject to change without notice, and may vary by region or country.

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