Technical Data Sheet

FIBRADISC® AF

LENTICULAR FILTER MODULES

Description

Lenticular modules containing FIBRAFIX® AF depth filter sheets manufactured under tightly controlled conditions to exacting specifications.

Module Version

Standard:	Standard lenticular module
Plus2:	Back flushable module
HT:	Hight temperature resistant module (Plus2 N/A)

Components

Filter Sheet:	Purified and bleached cellulose from sustainable sources, natural filter aids, wet strength agent
Standard and Plus2:	Polypropylene
Screen:	Polyester (installed on Plus2 only)
HT:	Polyamide
Gaskets:	Silicone sealing gasket (optionally EPDM, FKM, NBR)

Dimensions

	12" K		12"		16"(1)	
Adapter type(2)	DOE	DOR	DOE	DOR	DOE	DOR
Height [mm]	132	178	272	330	272	330
Filtration area [m²]	0.6	0.7	1.8		3.6	
Number of lenses	5	6	16		16	
Dry/wet weight(3) [kg]	2.0 / 3.5		4.4 / 8.5		8.6 / 17	
Diameter [mm]	290		290		400	

(1) Plus2 available, (2) DOE: Double Open End (flat adapter), DOR: Double O-Ring (plug-in adapter), (3) indicative values.

FIBRADISC® AF Product Range

Sheet grade	Retention rate [µm]	Water value(4) [L/m²×min]	Ash content [%]	Filtration type
AF 09	10.0 – 30.0	1500 – 2100	<1.0	Coarse
AF 11	10.0 – 30.0	1100 – 1700	<1.0	Coarse
AF 17	8.0 – 20.0	1200 – 1400	42.0 – 46.0	Coarse
AF 21(5)	6.0 – 15.0	690 – 870	19.0 – 25.0	Fine
AF 31(5)	5.0 – 12.0	280 – 360	39.5 – 44.5	Fine
AF 41(5)	4.0 – 9.0	240 – 300	29.0 – 35.0	Fine
AF 71(5)	1.5 – 3.0	160 – 220	35.0 – 41.0	Fine
AF 101(5)	0.5 – 1.5	98 – 121	39.0 – 45.0	Fine
AF 110	0.5 – 0.8	69 – 81	46.1 – 51.1	Sterile
AF 120	0.4 – 0.7	50 – 65	36.0 – 42.0	Sterile
AF 130	0.4 – 0.6	43 – 52	47.5 – 52.5	Sterile
AF 140	0.2 – 0.4	26 – 35	47.5 – 52.5	Sterile

(4) Δp = 100 kPa, the indicated water value is not related in any way to the actual filtration flow rate.
(5) Plus² available.

Bacterial Retention

Sheet grade	Bacterial species	Number of cells	LRV
AF 110	Serratia marcescens	1.0×10^6/cm²	>5
AF 120	Serratia marcescens	1.0×10^7/cm²	>6
AF 130	Serratia marcescens	1.0×10^8/cm²	>7
AF 140	Serratia marcescens	1.0×10^9/cm²	>8

General Operating Conditions

Parameter	Recommendation
Maximal differential pressure	2.4 bar / 35 psi
Maximal differential pressure for sterilizing filter sheets	1.5 bar / 21 psi
Rinsing volume	50 L/m²
Maximum temperature (continuous)	82 °C
Maximum temperature (short term)	90 °C
Minimum temperature	-5 °C
Sterilization	Hot water or chemically

Operating Conditions Plus2

Parameter	Recommendation
Maximum backflow differential pressure	0.5 bar / 7 psi at 25 °C

Operating Conditions HT

Parameter	Recommendation
Maximum temperature (continuous)	110 °C
Maximum temperature (short term)	140 °C

Chemical Stability

Substance	[%]	Media	PP	Gasket material			
				MVQ	EPDM	FKM	NBR
NaOH	1.0	r	r	r	r	lr	r
HCl	5.0	r	r	lr	lr	r	lr
HNO_3	5.0	r	r	nr	lr	r	nr
H_2SO_4	10	r	r	nr	lr	r	nr
Citric acid	10	r	r	r	r	r	r
Acetic acid	20	r	r	nr	lr	r	nr
Peracetic ac	1.0	r	r	r	lr	lr	lr
Acetone	conc	r	lr	lr	r	nr	nr
Ethanol	80	r	r	lr	r	r	nr
SO_2	0.1	r	r	r	r	r	nr

r = resistant, lr = limited resistance, nr = not resistant, at 50 °C. This table is for guidance purposes only.

Quality Assurance

Certified to:
- ISO 9001 (quality management)
- ISO 14001 (environmental management)
- Kosher standard

Compliant to:
- Recommendation XXXVI/1 of the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR)
- FDA (US Food and Drug Administration) 21 CFR 177.2260 e-k
- EU-Directive 10/2011
- USP Class VI

Packaging and Storage

Filter modules are hygienically packed in plastic bags and placed in cardboard boxes. They must be stored in their original packaging in a dry, odorless and well-ventilated area. The modules should be used within 60 months from the date of manufacture.

Disposal

The respective official regulations for disposal must be followed depending on the filtered product. Uncontaminated modules can be disposed of as non-hazardous waste.

Remarks

The validity of the information cannot be guaranteed for every application. All information is based on current knowledge and does not claim to be complete. No liabilities can be derived from this information. FILTROX reserves the right to make changes due to technical improvements.

DOCID-1519739887-1670 / Version: 4.0

Technical Data Sheet

FIBRAFIX® AF

HIGH QUALITY DEPTH FILTER SHEETS

Description

High quality depth filter sheets manufactured under controlled conditions.

Components

Purified and bleached cellulose from sustainable sources, natural filter aids, wet strength agent.

Formats

All standard sizes and tailored formats are available.

Product Range

Grade	Retention rate [µm]	Water value(1) [L/m²×min]	Thickness [mm]	Ash content [%]	Filtration type
AF 09	10.0 – 30.0	1500 – 2100	3.2 – 3.4	< 1.0	Coarse
AF 11	10.0 – 30.0	1100 – 1700	4.4 – 4.6	< 1.0	Coarse
AF 17	8.0 – 20.0	1200 – 1400	4.0 – 4.2	42.0 – 46.0	Coarse
AF 21	6.0 – 15.0	690 – 870	3.6 – 4.0	19.0 – 25.0	Fine
AF 31	5.0 – 12.0	280 – 360	4.4 – 4.6	39.5 – 44.5	Fine
AF 41	4.0 – 9.0	240 – 300	3.6 – 4.0	29.0 – 35.0	Fine
AF 71	1.5 – 3.0	160 – 220	3.6 – 4.0	35.0 – 41.0	Fine
AF 101	0.6 – 1.5	98 – 121	3.6 – 4.0	39.0 – 45.0	Fine
AF 110	0.5 – 0.8	69 – 81	3.7 – 3.9	46.1 – 51.1	Sterile
AF 120	0.4 – 0.7	50 - 65	3.5 – 4.0	36.0 – 42.0	Sterile
AF 130	0.4 – 0.6	43 – 52	3.7 – 3.9	47.5 – 52.5	Sterile
AF 140	0.2 – 0.4	26 – 35	3.7 – 3.9	47.6 – 52.5	Sterile

(1) Δp = 100 kPa, the indicated water value is not related in any way to the actual filtration flow rate.

Bacterial Retention

Grade	Bacterial species	Number of cells	LRV
AF 110	Serratia marcescens	$1.0 \times 10^6/cm^2$	>5
AF 120	Serratia marcescens	$1.0 \times 10^7/cm^2$	>6
AF 130	Serratia marcescens	$1.0 \times 10^8/cm^2$	>7
AF 140	Serratia marcescens	$1.0 \times 10^9/cm^2$	>8

Operating Conditions

Parameter	Recommendation
Maximum differential pressure	2.5 bar / 36 psi
Maximum differential pressure for sterile filtering sheets	1.5 bar / 21 psi
Rinsing volume	50 L/m²
Sterilization	Water 85 °C / Steam 125 °C

Chemical Stability

Substance	[%]	°C 20	°C 80	Substance	[%]	°C 20	°C 80	Substance	[%]	°C 20	°C 80
NaOH	1.0	r	r	HCl	5.0	r	lr	SO_2	0.1	r	-
NaOH	2.0	r	lr	HNO_3	5.0	r	lr	Acetone	conc	r	r
H_2O_2	1.0	r	lr	H_2SO_4	10.0	r	lr	Ethanol	80.0	r	r
Peracetic ac.	0.1	r	lr	Citric acid	10.0	r	r	Methanol	80.0	r	r

r = resistant, lr = limited resistance. This table is for guidance purposes only.

Quality Assurance

Certified to:
- ISO 9001 (quality management)
- ISO 14001 (environmental management)
- Kosher standard

Compliant to:
- Recommendation XXXVI/1 of the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR)
- FDA (US Food and Drug Administration) 21 CFR 177.2260 e-k

Packaging and Storage

Filter sheets are hygienically shrink-wrapped and packaged in cardboard boxes. They must be stored in their original packaging in a dry, odorless and well-ventilated area. The sheets should be used within 60 months from the date of manufacture.

Disposal

The respective official regulations for disposal must be followed depending on the filtered product. Uncontaminated sheets can be disposed of as non-hazardous waste.

Remarks

The validity of the information cannot be guaranteed for every application. All information is based on current knowledge and does not claim to be complete. No liabilities can be derived from this information. FILTROX reserves the right to make changes in the course of technical improvements.

DOCID-1519739887-1668 / Version: 2.0

Technical Data Sheet

FIBRACAP® AF

SINGLE-USE DEPTH FILTRATION UNITS

Description

Single-use capsule containing depth filter sheets in a disposable format.

- Designed for small-scale filtration trials and lab-scale process
- Easy handling
- Linear scalable from process development to production scale

Materials

	Material in contact with the filtered product
Filter sheet FIBRAFIX® AF	Refer to FIBRAFIX® AF Technical data sheet
Capsule plastic material	PA – Polyamide

Capsules technical data

	Value
Filter area	21.2 cm^2
Diameter / effective filter media Ø	60 mm / 52 mm [2"]
Housing	Transparent polyamide
In/outlet connection Ø [inches/mm]	¼" / 6.4
In/outlet	Marked

Operating Conditions

	Value
Flow rate	Depending on application and filter sheet grade
Max. operating temp. continuous [°C/°F]	60.0 / 140.0
Min. operating temp. continuous [°C/°F]	-5.0 / 23.0
Max. operating pressure at 25 °C [bar/psi]	2.5 bar / 36.0
Max. operating pressure at 60 °C [bar/psi]	2.0 / 29.0
Rinsing volume	50.0 L/m^2 [100 mL]
Sterilization	Autoclave 100 °C / 20 min. or chemically

Chemical Stability

Substance	**[%]**	**Media**	**PA**	**Substance**	**[%]**	**Media**	**PA**
NaOH	1.0	r	r	Acetic acid	20.0	r	lr
HCl	5.0	r	r	Peracetic ac	0.1	r	r
HNO_3	5.0	r	lr	Acetone	conc.	r	lr
H_2SO_4	10.0	r	lr	Ethanol	80.0	r	lr
Citric acid	10.0	r	lr	SO_2	0.1	r	r

r = resistant, lr = limited resistance at T = 20 °C. This table is for guidance purposes only.

Quality Assurance

Certified to:
- ISO 9001 (quality management)

Compliant to:
- Recommendation XXXVI/1 of the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR)
- FDA (US Food and Drug Administration) 21 CFR 177.2260 e-k
- USP Class VI

Packaging and Storage

Filter capsules are hygienically packed in plastic bags and placed in cardboard boxes. They must be stored in their original packaging in a dry, odorless, and well-ventilated area. The capsules are intended for immediate use and should be used within 36 months for life science and 60 months for food and beverages from the date of manufacture.

Disposal

The respective official regulations for disposal must be followed depending on the filtered product. Uncontaminated capsules can be disposed of as non-hazardous waste.

Remarks

The validity of the information cannot be guaranteed for every application. All information is based on current knowledge and does not claim to be complete. No liabilities can be derived from this information. FILTROX reserves the right to make changes in the course of technical improvements.

DOCID-1519739887-2053 / Version: 3.0