

ultradepth II[®] P-SRF

The sterile depth filter for compressed or process air and technical gases.

Product description:

The ultradepth II[®] filter is a wounded depth filter with inner and outer guard end caps made from stainless steel. The retention rate is 99.99998% related to 0.01 µm.

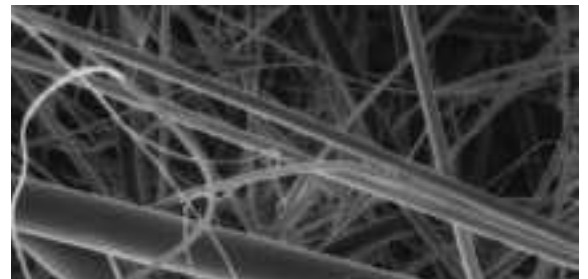
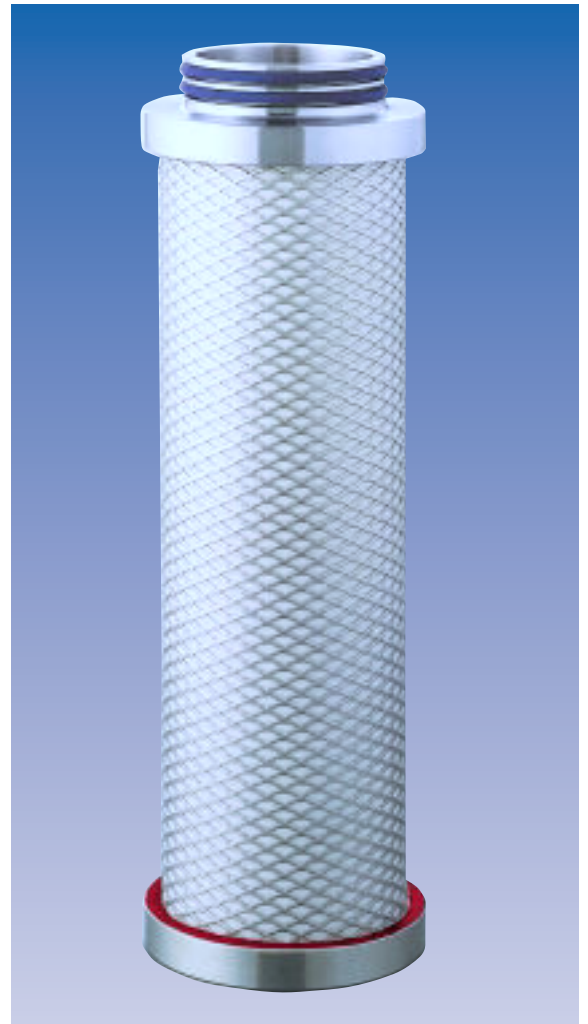
The ultradepth II[®] binder-free, three-dimensional borosilicate depth media has a large void volume of 95%. This ensures a high dirt containment capacity at a low differential pressure and a high flow rate. The filter media is inherently hydrophobic.

Features:

All components meet the FDA requirements for the contact with food in accordance with the CFR requirements (code of Federal Regulations), title 21. ultradepth II[®] filter elements have passed the toxicological tests according to USP XX Class VI for plastics.

The filter element corresponds to the cGMP requirements (current Good Manufacturer practice) and is manufactured according to DIN EN ISO 9001. The filter medium is non-fiber releasing, it is asbestos-free and manufactured without the use of binders or other chemical additives.

The ultradepth II[®] P-SRF – ensures a safe operation and is proven thousands of times in application



SEM of the ultradepth II[®] media

Applications:

The ultradepth II[®] sterile filters are, among others, designed and developed for the following applications:

- Chemical industry
- Pharmaceutical industry
- Biotechnology
- Breweries
- Dairies
- Aseptic packaging
- Food industry
- Hospitals

Technical alterations reserved (Date 10/00)

ultradePTH II® P-SRF

Features:	Benefits:
High-quality stainless steel construction	High mechanical and thermal stability, good durability range against chemicals and numerous aggressive gases
Absolute retention rate of 99.99998% related to 0.01 µm	Validated retention rate, integrity testable with DOP test according to HIMA
Manufactured in accordance with cGMP and DIN EN ISO 9001	Constant product quality, high operational- and process safety
Three-dimensional borosilicate depth filter media	High waste containment capacity, low differential pressure, high flow rate
Biologically and chemically inert	No breeding ground for separated micro-organisms
100 sterilization cycles guaranteed	Highly economical and low filtration costs
100% integrity tested by factory	Guaranteed quality
Available in 13 sizes	Optimum filter size for the individual application
Stainless steel core and endcaps	Temperature range from -20°C (-4°F) to 200°C (400°F), sterilizable at a steam temperature of up to 141°C (290°F)

Bacterial retention:
LRV > 7/cm ² for T1 Coliphagen

Sterilization:
<ul style="list-style-type: none"> In-line sterilization with slow speed saturated steam <ul style="list-style-type: none"> max. 121°C (250°F) for 30 minutes max. 131°C (270°F) for 20 minutes max. 141°C (290°F) for 10 minutes Autoclave <ul style="list-style-type: none"> 125°C (260°F) for 30 minutes ultradePTH II® filter elements are guaranteed for 100 sterilization cycles – without loss of integrity

Maximum differential pressure:
5 bar (75 psid), independent of the system pressure or the flow direction

Technical data

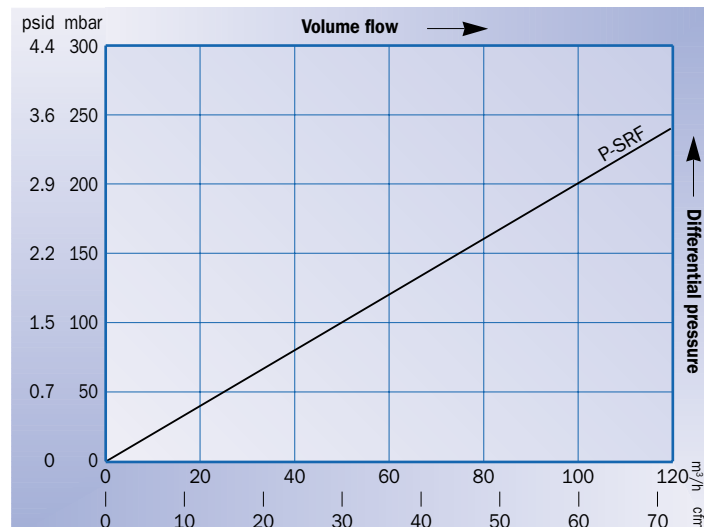
Materials:	
Filter medium:	Borosilicate
Outer core:	SS 1.4301 (304)
Inner core:	SS 1.4301 (304)
Supporting fabric:	Polyester
Endcaps:	SS 1.4301 (304)
Bonding material:	Silicone
O-Rings:	Silicone (standard), Buna N, EPDM or Viton

Filtration surface:
494 cm ² for 10" element (10/30) For other sizes see correction factor (CF)

Temperature range:
-20°C (-4°F) to 200°C (400°F)*
* > 150°C (300°F) only for dry compressed air

Absolute retention rate:
99.99998% related to 0.01 µm

Flow rate of a 10" P-SRF element – air



Dimensions:						
Element size	A	B	Ø C	Ø D	CF	
03/10	76	12	3/4"	42	0.12	
04/10	104	12	3/4"	42	0.17	
04/20	104	14	1"	52	0.19	
05/20	128	14	1"	52	0.25	
05/25	128	14	1"	62	0.32	
07/25	180	14	1"	62	0.47	
05/30	128	16	2"	86	0.46	
07/30	180	16	2"	86	0.68	
10/30	254	16	2"	86	1.00	
15/30	381	16	2"	86	1.55	
20/30	508	16	2"	86	2.10	
30/30	762	16	2"	86	3.28	
30/50	762	16	3"	140	5.89	

Technical alterations reserved (Date 10/00)

ultrex® P-GS

Filter for the removal of particles from gases, liquids and steam.

Product description:

The ultrex® filter consists of a regenerable weldless filter pipe made from sintered stainless steel. The retention rate extends from 1 µm to 25 µm.

Features:

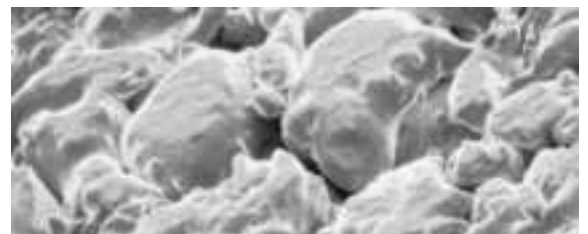
The ultrex® filter retains contaminants, such as particles, abrasion of valves and sealings as well as rust. An improved steam quality ensures longer service life of the filters to be sterilized and increases the efficiency of the entire process.

The ultrex® filter element offers the possibility of a particularly economic filtration, since the filter medium can be regenerated by ultrasonic bath. This is especially essential at high particle loads. The porosity level is more than 50% which ensures high particle and dirt holding as well as a good flow rate at a low differential pressure. The heavy-duty construction of the ultrex® filter is designed to withstand a maximum differential pressure up to 5 bar (75 psid). The filter may also be used in a temperature range of -20°C (-4°F) up to 210°C (410°F).

The ultrex® P-GS –
sintered stainless steel
steam filter



SEM of the
ultrex® media



Applications:

The ultrex® filter is, among others, designed and developed for the following applications:

- Breweries
- Chemical industry
- Pharmaceutical industry
- Food and beverage
- Aseptic packaging
- Electronic industry
- Dairy industry
- Plastic industry

Technical alterations reserved (Date 10/00)

ultrex II® P-GS

Features:	Benefits:
Filter medium and end caps made from stainless steel	Good durability against most liquids, gases and aggressive steams
Retention rate of 1 µm, 5 µm and 25 µm (98% efficiency for steam and 100% efficiency for gases)	Exactly defined particle retention rate at given pore size
Sintered stainless steel filter medium with a porosity level of more than 50%	High dirt holding capacity, good flow rate at low differential pressure
Available in 13 sizes	Optimum filter size for the individual application
Regenerable with ultrasonic bath	Filtration costs reduced to a minimum, in particular for high dirt load
Components made from stainless steel	Permanent operation up to 150°C, up to 210°C with welded end caps
Stainless steel sintering technology	No use of additives or other chemical binders needed

Technical data

Materials:	
Filter medium:	Sintered SS 1,4404 (316L)
End caps:	Stainless steel 1,4301 (304)
Bonding material:	Plastic steel*
O-Rings:	EPDM**

* > 150°C welded end caps
 ** Silicone, Buna N, Viton, Aflas or Kalrez on request

Absolute retention rates:
1 µm, 5 µm, 25 µm

Filtration surface:
494 cm ² for 10" element (10/30) For other sizes see correction factor (CF)

Dimensions:						
Element size	A	B	Ø C	Ø D	CF	
03/10	76	12	3/4"	42	0,12	
04/10	104	12	3/4"	42	0,17	
04/20	104	14	1"	52	0,19	
05/20	128	14	1"	52	0,25	
05/25	128	14	1"	62	0,32	
07/25	180	14	1"	62	0,47	
05/30	128	16	2"	86	0,46	
07/30	180	16	2"	86	0,68	
10/30	254	16	2"	86	1,00	
15/30	381	16	2"	86	1,55	
20/30	508	16	2"	86	2,10	
30/30	762	16	2"	86	3,28	
30/50	762	16	3"	140	5,89	

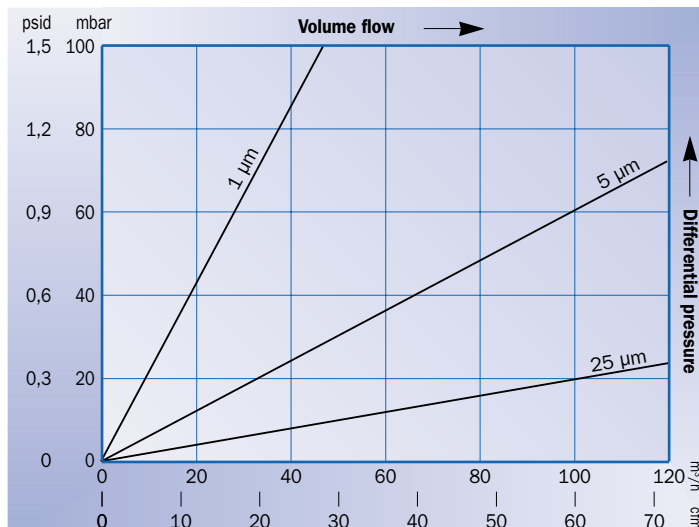
Maximum differential pressure:			
Operating temp.		Differential pressure	
[°C]	[°F]	[bar]	[psid]
≤ 20	70	≤ 5.0	75

Temperatur range (constant operation):
-20°C (-4°F) to 210°C (410°F)*

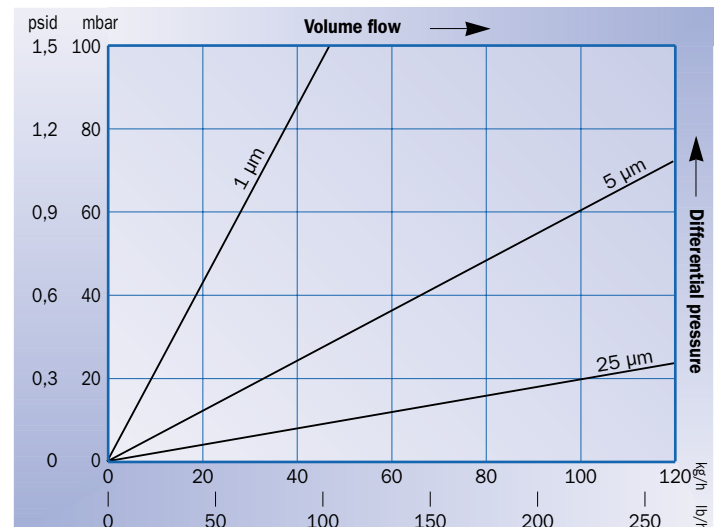
* > 150°C (300°F) welded endcaps required

Conversion factor for steam temperature					
Steam temperature	°C	100	121	140	160
	°F	212	250	285	320
Conversion factor		0,5	1	2	3

Flow rate of a 10" P-GS element – air



Flow rate of a 10" P-GS element – saturated steam, 121°C (250°F)



Technical alterations reserved (Date 10/00)

Ultrair P-FF, P-MF, P-SMF

The depth filter for the removal of water and oil aerosols as well as solid particles from compressed air and gases with absolute retention efficiency.

Product description:

The Ultrair depth filter employs the three dimensional micro fibre fleece Ultrair made out of binderfree glassfibre. A pre-filter medium 1 μm is integrated and realises an effective two stage filtration.

Characteristics:

By utilising various filtration mechanisms such as retention by direct impact, sieve effect and diffusion effect, liquid aerosols and solid particles down to the size of 0.01 μm are being retained in the filter.



Cross section of the Ultrair depth filter

Applications:

The Ultrair depth filter is for example being utilised in the following industries

- Chemical industry
- Petrochemical industry
- Pharmaceutical industry
- Plastic industry
- General machine fabrication
- Air conditioning technology
- Food industry
- Paint industry
- Beverage industry
- Process industry for instrumentation and control air

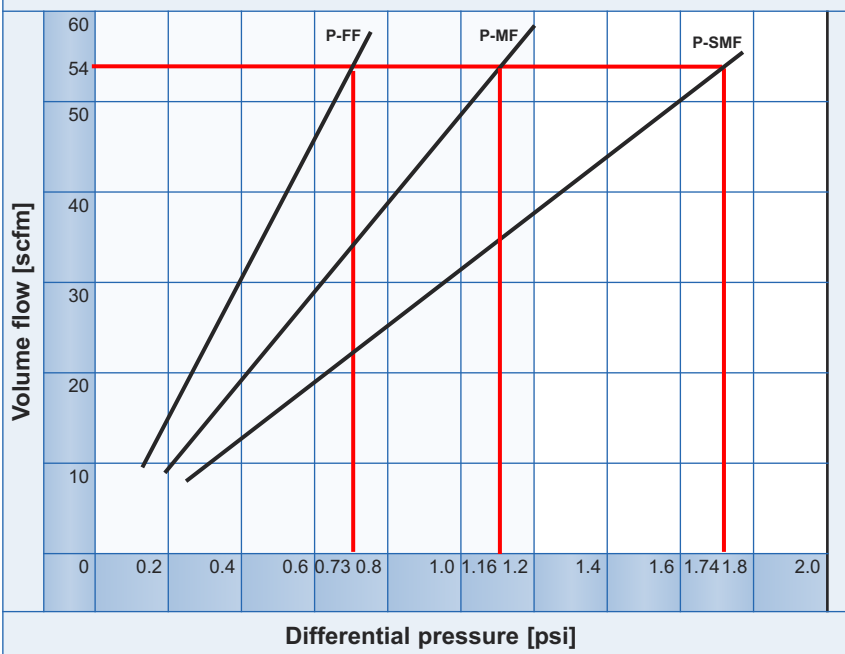
Ultrair P-FF, P-MF, P-SMF

Features:	Benefits:
Expanded inner and outer stainless steel sleeves for the secure hold of the filter medium	No danger of corrosion - large openings ensure low differential pressure drop and high throughput
Binderfree depth filter medium made out of borosilicate	Low differential pressure drop; high throughput
Removal of liquid aerosols and solid particles down to 0.01 µm	Validated retention efficiency, high level of security and safety
Large surface area, large void volume (> 94%)	High dirt holding capacity; guaranteed service life time

Materials:	
Outer foam sock	Blue polyurethane foam sock up to 176°F HT/ CR sock up to 250°F HT/ NX sock up to 350°F
Support sleeves - inner and outer	Stainless steel 304
Pre-and after filter medium	Cerex®
Filter medium	Binderfree borosilicate
Bonding	Polyurethane
End caps	Stainless steel
2 O-Rings	Perbunan - silicon free and free of parting compound (Standard)

Performance of P-FF-, P-MF-, P-SMF-elements - compressed air

These curves define the flow of a 10/30 filter element at standard conditions (14.5 psi; 68°F; R.H. = 70%)



Retention rate related to particles 0.01 µm:	
P-FF =	99.999%
P-MF =	99.99998%
P-SMF =	99.99999%

Residual oil content at an inlet concentration of 3 ppm	
P-FF =	0.1 ppm
P-MF =	0.03 ppm
P-SMF =	< 0.01 ppm

Max. differential pressure:
72.5 psi at 68°F, irrespective of system pressure

Initial differential pressure at nominal flow:	
P-FF =	0.73 psi
P-MF =	1.16 psi
P-SMF =	1.74 psi

Elemente type	Correction factor Filter surface KF
02/05	0.06
03/05	0.09
03/10	0.12
04/10	0.17
04/20	0.19
05/20	0.25
05/25	0.32
07/25	0.47
07/30	0.68
10/30	1.0
15/30	1.55
20/30	2.10
30/30	3.20
30/50	5.73