

Product Data Sheet

Sterile Filter Elements ERUF..PST, PSTBE

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Field of application

Type ERUF..P filter elements of filtration grade ST and STBE provide the opportunity to use our high performance, energy efficient and safe to operate filtration technology also in ultrafilter series P-EG and P-BE filter housings (so called 90 series). We recommend the following filtration grade assignment:

		ultrafilter
Sterile	PST	P-SRF
	PSTBE	P-BE

Features

Filter elements of filtration grade ST and STBE are sterile filter elements, designed for separating micro-biological contaminants from compressed air flows, i.e. viruses, bacteria, etc. (sterile filtration). The filter elements can be sterilised (steaming and autoclaving) and are therefore used for generating sterile compressed air flows (sterile air). Filtration grade ST filter elements, of course, also separate finest solid contaminants and are therefore used for fine dust separation and to generate ultra clean compressed air flows (ultra clean air).

Filter elements of filtration grade ST and STBE consist of a wrapped glass fibre depth filter media, supported by an additional NOMEX layer inside and outside. The media pack is compactly located between the two stainless steel cylinders and end caps and therefore completely integrated in the filter element.

To avoid a breakthrough at an early stage and to achieve a high number of sterilisation cycles, the media pack is provided with several layers.

Filter elements of filtration grade ST are manufactured using a high temperature resin bonded joint. This feature allows high operating and sterilising temperatures.

All the features mentioned above are a contribution to a filter element which has a high performance (high separation efficiency) and maximum operating safety (integrated, multi-layer design).



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Basic data

Model PST	Nominal volume flow PST (VN) *1.1	Model PSTBE	Nominal volume flow PSTBE (VN) *1.2 *1.3	Max. operating pressure	Min./Max. operating temperature
ERUF03/10PST	90 m ³ /h	ERUF03/10PSTBE	4.5 m ³ /h	---	+2°C - +150°C Sterilisation*2 (100 cycles) 121°C for 30 minutes 131°C for 20 minutes 141°C for 10 minutes
ERUF04/10PST	120 m ³ /h	---	---		
ERUF04/20PST	180 m ³ /h	---	---		
ERUF05/20PST	270 m ³ /h	---	---		
ERUF05/25PST	360 m ³ /h	ERUF05/25PSTBE	12 m ³ /h		
---	---	ERUF05/30PSTBE	17 m ³ /h		
ERUF07/25PST	480 m ³ /h	---	---		
ERUF07/30PST	720 m ³ /h	---	---		
ERUF10/30PST	1,080 m ³ /h	ERUF10/30PST	35 m ³ /h		
ERUF15/30PST	1,440 m ³ /h	---	---		
ERUF20/30PST	1,920 m ³ /h	ERUF20/30PST	70 m ³ /h		
ERUF30/30PST	2,880 m ³ /h	ERUF30/30PST	105 m ³ /h		
ERUF30/50PST	4,320 m ³ /h	---	---		

*1.1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure

*1.2 - refers to 1 bar(a) and 20°C at 20 mbar differential pressure

*1.3 - type ERUF vent filter elements must not be used if the tank the filter is related to is not equipped with a suitable safety valve and burst plate for overpressure and vacuum protection

*2 - steaming and autoclaving

Purity classes according to ISO 8573-1

Contamination	
Solid particles*3	Class 0-1
Water content	---
Total oil content	---

*3 - typical result, on the assumption of suitable inlet concentrations as well as operating and marginal conditions.

Volume flow conversion factors

«F1» - Pressure (in bar)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.125	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

«F2» - Temperature (in °C)

2	10	20	25	30	35	40	50	60	70	80	90	100	110	120	130	140	150
1.07	1.04	1.00	0.98	0.97	0.95	0.94	0.91	0.88	0.85	0.83	0.81	0.79	0.77	0.75	0.73	0.71	0.69

Calculation of the converted volume flow

Converted volume flow VK	Nominal required volume flow VN _{min}
$VK = VN \times F1 \times F2$	$VN_{min} = VK / F1 / F2$

VK : Converted volume flow calculated for the operating conditions

VN_{min}: Nominal required volume flow calculated for the operating conditions, based on the volume flow at operating conditions

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Maintenance rules

Pressure range		
0-4 bar	Replacement of filter element once a year the latest on a differential pressure of 50 mbar	Replacement of filter element latest after 100 sterilisation cycles, depending on the type of sterilisation (hard/soft) earlier, if required
5-16 bar	Replacement of filter element once a year the latest on a differential pressure of 350 mbar	

Product specific data

Specification	
Differential pressure, dry	PST: 30 mbar PSTBE: 20 mbar
Micron rating (nominal) for air	0.01 μ
Efficiency	PST: 100% PSTBE: 99.999%

Materials

Component	
Depth filter media	Borosilicate micro glass fibres
Supporting fabric of depth filter media	NOMEX
Bonded joint	Silicon
Cylinders	Stainless steel 1.4301
End caps	Stainless steel 1.4301
Sealing materials	Silicon

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Dimensions

Model	Height (total height)	Ø	Ø Inlet (inside)
ERUF03/10P..	76 mm (94 mm)	42 mm	20 mm
ERUF04/10P..	104 mm (122 mm)	42 mm	20 mm
ERUF04/20P..	104 mm (128 mm)	52 mm	25 mm
ERUF05/20P..	125 mm (149 mm)	52 mm	25 mm
ERUF05/25P..	128 mm (152 mm)	62 mm	25 mm
ERUF05/30P..	128 mm (152 mm)	86 mm	53 mm
ERUF07/25P..	180 mm (204 mm)	62 mm	25 mm
ERUF07/30P..	180 mm (206 mm)	86 mm	53 mm
ERUF10/30P..	254 mm (280 mm)	86 mm	53 mm
ERUF15/30P..	381 mm (397 mm)	86 mm	53 mm
ERUF20/30P..	508 mm (524 mm)	86 mm	53 mm
ERUF30/30P..	760 mm (776 mm)	86 mm	53 mm
ERUF30/50P..	760 mm (776 mm)	140 mm	77 mm

Classification according to Pressure Equipment Directive 2014/68/EU for group 2 fluids

Model	Volume	Category
All models	Filter elements are not part of the Pressure Equipment Directive 2014/68/EU	

Other directives

Model	
All models	---