Product Data Sheet
Filter Cartridges EFST..CA (Activated Carbon)

Field of application

Type EFST.. filter cartridges of filtration grade CA are mainly designed for separating oil vapours from compressed air flows (dry-type filtration). The properties of the activated carbon are especially suitable to separate gaseous contaminants. Filtration grade CA is therefore used, if there are no liquid contaminants in the compressed air flow.

Features

EFST..CA filter cartridges consist of a loose activated carbon granulate filling, embedded between two coarse filter cloths and mesh screens. Furthermore a pleated general purpose filter element (Z) is fully integrated into the cartridge downstream in order to reliably prevent even the finest activated carbon dust from leaving the filter cartridge. A transparent perspex cylinder as a main body makes the granulate filling visible, the pleated general purpose filter media is located between two stainless steel cylinders. Both granulate and filter stage are completed / separated by plastic end caps. The adsorptive activated carbon stage as well as general purpose filter stage is fully incorporated in a single, compact cartridge unit. As a result a further downstream dust filtration is no longer required.

Cartridges in general offer much higher amounts of activated carbon compared to same size filter elements. The longish shaped activated carbon bed ensures a long contact time of the compressed air with the activated carbon and thus a high separation efficiency and long lifetime. The integrated general purpose filter makes a downstream dust filtration by means of a complete separate dust filter unit superfluous (housing and element) and thus reduces differential pressure and costs - operating as well as investment costs. All the features mentioned above contribute to a filter cartridge which has a long service life (high adsorption capacity) combined with economic efficiency (low differential pressure, investment costs) and maximum operating safety (integrated design). This guarantees an extremely low residual oil content.

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Basic data

Model	Recommended volume flow[*1]	Nominal volume flow[*1]	Max. operating pressure	Min./Max. operating temperature
EFST 50	---	70 m³/h	---	+2°C - +45°C
EFST 70	---	100 m³/h		
EFST 90	---	160 m³/h		
EFST 110	240 m³/h	330 m³/h		
EFST 120	208 m³/h	500 m³/h		
EFST 130	176 m³/h	800 m³/h		

[*1] - refers to 1 bar(a) and 20°C at 7 bar operating pressure
　　The recommended volume flow is determined for a differential of 300 mbar (see product-specific data)
　　Reducing the volume flow improves all specifications

Purity classes according to ISO 8573-1

Contamination	
Solid particles[*2]	(Class 2)
Water content	---
Total oil content[*2] [*3]	Class 0-1

[*2] - typical result, on the assumption of suitable inlet concentrations as well as operating and marginal conditions.
[*3] - the liquid residual oil content is not taken into account and may reduce the purity class (should be separated in advance by means of fine filtration)

Volume flow conversion factors

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

Temperature (in °C)

2	5	10	15	20	25	30	35	40	45
1.07	1.05	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.92

Calculation: *Actual volume flow = nominal volume flow x correction factor for pressure x correction factor for temperature*

Maintenance rules

Pressure range	
Entire pressure range	Replacement of filter cartridge every 6 months, depending on the operating temperature and therefore on the specified oil vapour amount earlier, if required

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Specifications subject to change without notice   Date 17.09.2019   Latest version see www.fstweb.de

Product specific data

Specification	
Differential pressure, dry*4	see following table
Differential pressure, wet	---
Separation efficiency, dry(nominal)	---
Separ. efficiency, dry (ISO 12500-3)	---
Oil vapour content (nominal) *5	≤ 0.003 mg/m³
Capacity (ISO 12500-2)*6	---

*4 - measured at 1 bar(a) and at equivalent volume flow
*5 - at an inlet concentration ≤ 0.01 mg/m³, the liquid residual oil content is not taken into account (should be separated in advance by means of fine filtration)
*6 - measured referring to ISO 12500-2 with n-hexane, model EFST30, test concentration100 mg/kg, result at 80% saturation

Model	Volume flow at a differential pressure of	Differential pressure at nominal volume flow			
	300 mbar	25%	50%	75%	100%
EFST 50	---	20 mbar	40 mbar	60 mbar	80 mbar
EFST 70	---	28 mbar	55 mbar	83 mbar	110 mbar
EFST 90	---	30 mbar	60 mbar	90 mbar	120 mbar
EFST 110	240 m³/h (73%)	105 mbar	210 mbar	315 mbar	420 mbar
EFST 120	208 m³/h (42%)	183 mbar	365 mbar	548 mbar	730 mbar
EFST 130	176 m³/h (22%)	343 mbar	685 mbar	1028 mbar	1370 mbar

Model	Amount of activated carbon
EFST 50	20 g
EFST 70	76 g
EFST 90	84 g
EFST 110	249 g
EFST 120	414 g
EFST 130	727 g

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Materials

Component	
Filling	Activated carbon pellets
Filter cloths	Polyester-Polyurethane
Mesh screens	Stainless steel 1.4301
Filter media general purpose filtration	Glass fibre
Bonded joint	PU (Polyurethane)
Cylinder filling	Acrylic
Cylinders filter media	Stainless steel 1.4301
End caps	PA6 (Polyamide)
Sealing materials	NBR

Dimensions

Model	Height (total height)	Ø	Ø Inlet (inside)
EFST 50	73 mm (73 mm)	52,5 mm (50.8 mm)	24 mm
EFST 70	142 mm (142 mm)	52,5 mm (50.8 mm)	24 mm
EFST 90	118 mm (124 mm)	75 mm (73.3 mm)	44 mm
EFST 110	218 mm (224 mm)	75 mm (73.3 mm)	44 mm
EFST 120	318 mm (324 mm)	75 mm (73.3 mm)	44 mm
EFST 130	508 mm (514 mm)	75 mm (73.3 mm)	44 mm

Classification according to Pressure Equipment Directive 97/23/EC for group 2 fluids

Model	Volume	Category	Commissioning-inspection	Routine Inspection
All models	Filter cartridges are not part of the Pressure Equipment Directive 97/23/EC			

Other directives

Model	
All models	---