

Selection Guide

S Series PSS® Filter Elements

Description

S Series PSS® Series filter elements are constructed of 316L low carbon, stainless steel powder, sinter bonded in an inert environment. In addition to stainless steel, these filter elements are also available in the following alloys: Inconel, Nickel, 300 series stainless, Monel 400, Hastelloy C276, Iron Aluminide, and other high nickel/chrome alloys. These elements provide state-of-the-art removal efficiency and economy of use, with at least two times the dirt holding capacity of conventional porous metal elements. A patented manufacturing process for S Series PSS elements eliminates the undesirable effects of forming and longitudinally welding flat sheets into cylindrical filter elements. This results in seamless elements that are more resistant to mechanical, chemical and thermal stresses. This unique process also produces a sintered medium of significantly higher void volume and a highly uniform pore structure. Designs are available suitable for temperatures up to 1250°F/677°C.

Operating Characteristics

Standard stainless steel cartridges are capable of withstanding a minimum collapse differential pressure of 50 psid/3.45 bar d in the forward flow (outside-in) direction to 600°F†/315.5°C and 50 psid/3.45 bar d in the reverse flow direction. Pressure ratings for cartridges constructed of other alloys can be obtained from Pall Corporation.

† Threaded connector series only. Due to seal limitations, 1000 Series suitable for applications up to 450°F/232°C.



Figure 1. Standard S Series PSS Filter Elements

Sizes

S Series PSS cartridges are 2 3/8"/60.3 mm in diameter and are available in incremental lengths of 10"/254 mm up to 30"/762 mm. The filter medium thickness is a nominal 1/16". For AB style S Series PSS cartridges consult the factory.

Table 1. S Series PSS Elements and Their Characteristics

Filter Grade	Removal Ratings						Clean Pressure Drop			
	Liquid Service ⁽¹⁾				Gaseous Service ⁽²⁾		Liquid Service	Gaseous Service	Recommended Flow Density	
	Rating In µm At % Efficiency				Weight % Removal	100% Removal (µm)	Aqueous Pressure Drop ⁽³⁾ psi/gpm/ft ² / mbar/lpm/m ²	Air Pressure Drop ⁽⁴⁾ psi/acfm/ft ² / mbar/m ³ /min/m ²	Aqueous gpm/ft ² / m ³ /hr/m ²	Air acfm/ft ² / m ³ /min/m ²
S050	0.5*	2	3	5	99.99	0.4	0.54/0.91	0.048/10.85	0.5 - 3/1-7	5 - 20/1.5-6.1
S100	4	7	8	10	99.98	0.8	0.21/0.36	0.016/3.62	0.75 - 5/2-12	10 - 40/3-12.2
S200	7	10	14	20	99.94	2.8	0.04/0.07	0.003/0.68	2 - 7/5-17	15 - 50/4.5-17.4
S350	13	17	24	35	99.80	11.0	0.01/0.02	0.001/0.23	3 - 10/7-24	25 - 80/7.6-24.4

* These removal ratings should be used when comparing S Series PSS to competitive grades.

⁽¹⁾ Liquid removal efficiency ratings are based on a modified F2 test method and actual particle count data. The 50% removal values should be used when comparing S Series PSS efficiency data to other competitive sintered powder media.

⁽²⁾ Weight percent removal data based on AC Fine Test Dust in air. Absolute retention ratings based on actual particle count.

⁽³⁾ Pressure drop in psi obtained by multiplying value shown by actual flow desired in gpm, viscosity of liquid in centipoise (if other than 1 cp), all divided by total filtration area (ft²) selected. See Table 2 for area.

⁽⁴⁾ Pressure drop in psi obtained by multiplying value shown by actual gaseous flow rate desired (acfm), ratio of viscosities $\frac{\text{actual cp of gas}}{0.018 \text{ (viscosity of air)}}$, all divided by total filtration area (ft²) selected. See Table 2 for area.

Part Numbers/Ordering Information

Table 2. Standard Configurations of S Series PSS Elements

100% Removal Rating (µm)	S Series PSS Element Part Number		
	1000 Series	Cylinder Series	
		1½"/38.1 mm Diameter Elements	2 ¾"/60.3 mm Diameter Elements
5	MBS 100 ■ S050 ▲	C - 14 - ◆ - ● - S050	C23 ◆ ● S050
10	MBS 100 ■ S100 ▲	C - 14 - ◆ - ● - S100	C23 ◆ ● S100
20	MBS 100 ■ S200 ▲	C - 14 - ◆ - ● - S200	C23 ◆ ● S200
35	MBS 100 ■ S350 ▲	C - 14 - ◆ - ● - S350	C23 ◆ ● S350

■ Code	Nominal Length (in)	Area (ft²)/m²	▲ Code	Gasket Option	◆ Code	Nominal Length (in)/(mm)	Area (ft²)/(m²)	
							C-14	C-23
1	10	0.5/0.046	H13 (Std.)	Buna-N (Nitrile)	06	6/152.4	0.2/0.019	0.31/0.029
2	20	1.0/0.093	H	Viton*	09	9/228.4	0.29/0.027	0.47/0.044
3	30	1.5/0.139	J	Ethylene Propylene	18	18/457.2	0.59/0.055	0.93/0.086
			J7	Ethylene Propylene for Steam Service	19	19**/482.6	0.62/0.058	1.0/0.093

● Code	Connection
1	1/4" NPT
4	1" NPT
6	1½" NPT

* Trademark of E.I. du Pont de Nemours & Company.

** C-23-19 has connection Code 6. Other C-23 part numbers have Code 4. All C-14 part numbers have Code 1.

Housing Information

A full selection of standard Pall industrial housings are available for S Series PSS elements. Threaded connector elements are designed to fit a special line of housings capable of a broader range of temperature (cryogenic to 800°F/427°C) and chemical service. Custom designed housings for specific applications are also available.

Table 3. Housings For S Series PSS Elements

Type of Element	Housing Available
MBS 100 ■ Series	See Housing Data Sheets H14-19
Threaded Connector Series	See Housing Data Sheets H48, H49 and H50



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