

SEITZ® K SERIES DEPTH FILTER SHEETS

DESCRIPTION

Seitz® depth filter sheets by Pall® are available in multiple grades suitable for microbial reduction and applications requiring fine, clarifying, and coarse filtration. Suitable for a wide range of applications in wine, cider, sparkling wine, beer, distilled spirits, etc.

FEATURES

- Homogenous and consistent media available in multiple grades with reliable microbial reduction with tighter grades
- High solids retention due to the combination of surface, depth, and adsorptive filtration
- Full traceability as each individual filter sheet is laser etched with the sheet grade, batch number, and production date

CHARACTERIZATION

GRADE	Mass per Unit Area (g/m ²)	Thickness (mm)	Ash %	Water Permeability L/m ² /min (gal/ft ² /min)
EKS	1400	3.7	58	29 (0.7)
EK1	1450	3.8	51	41 (1)
EK	1400	3.8	46	68 (1.7)
KS50	1350	3.7	46	93 (2.3)
KS80	1350	3.7	46	113 (2.8)
K100	1350	3.7	46	146 (3.6)
K150	1350	3.9	46	185 (4.6)
K200	1350	3.9	46	213 (5.2)
K250	1250	4.0	46	510 (12.5)
K300	1250	4.2	46	785 (19.3)
K700	1250	4.1	46	925 (22.8)
K800	1250	4.1	46	1275 (31.4)
K900	1250	4.3	46	1700 (41.8)

These figures have been determined in accordance with in-house test methods and the methods of the Technical/Analytical Work Group within the European Depth Filtration Association. The permeability was measured under test conditions with clean water at 20 °C (68 °F) and a Δp of 1 bar (14.5 psi).

CLEANING & REGENERATION

CLEANING/SANITIZATION

METHOD	Temperature °C (°F)	Maximum Differential Pressure bar (psi)	# Cycles
Steam	125 (257)	0.5 (7.2)	20
Hot Water	90 (194)	1 (14.5)	30

The actual time required may vary as a function of the process conditions.

REGENERATION

K series filter sheets may be rinsed with clean water (in the forward or reverse direction) to increase throughput and to optimize economic efficiency. Optimal regeneration of filter sheets installed in a plate and frame filter may be achieved with serial rinses of warm water followed by hot water. An example protocol is shown below:

- 1.1 Rinse with warm water (60 °C / 140 °F) for 15 minutes
- 1.2 Rinse with hot water (70 – 80 °C / 158 – 176 °F) for 8 – 10 minutes

The rinse flow rate should be equivalent to the filtration flow rate with a back pressure of 0.5 – 1 bar (7.2 – 14.5 psi).

When rinsing in the reverse flow direction it is critical to control particulate and microbial levels in the rinse water so that the filtrate side of the sheet is not contaminated. Water used for reverse flow flushes should be particle-free, and if the filter will not be sterilized prior to re-use the water should be free of microbes. Backwashing should be in a diagonal direction from outlet to inlet in a sheet filter.

SPECIFICATIONS

FOOD CONTRACT COMPLIANCE



Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121°C (249.8°F).

MAIN CONSTITUENTS

Cellulose, diatomaceous earth (DE, Kieselguhr), perlite

QUALITY

- Filter sheets produced in a controlled environment
- Manufactured according to ISO 9001:2008 certified Quality Management System



OPTIMAL OPERATING CONDITIONS

WINE

SHEET SIZE	Effective Filter Area	Filtration Type	Optimum Speed (gal/hr/sheet)	Maximum Differential Pressure
20 x 20	0.43 ft ² (0.04 m ²)	Microorganism reduction	5	21 psi (1.5 bar)
		Polishing filtration	9	45 psi (3.0 bar)
40 x 40	1.54 ft ² (0.143 m ²)	Microorganism reduction	20	21 psi (1.5 bar)
		Polishing filtration	35	45 psi (3.0 bar)
60 x 60	3.58 ft ² (0.330 m ²)	Microorganism reduction	46	21 psi (1.5 bar)
		Polishing filtration	75	45 psi (3.0 bar)

BEER

SHEET SIZE	Effective Filter Area	Filtration Type	Optimum Speed (bbl/hr/sheet)	Maximum Differential Pressure
20 x 20	0.43 ft ² (0.04 m ²)	Microorganism reduction	0.14	27 psi (1.8 bar)
		Polishing filtration	0.40	37 psi (2.5 bar)
40 x 40	1.54 ft ² (0.143 m ²)	Microorganism reduction	0.20	27 psi (1.8 bar)
		Polishing filtration	0.60	37 psi (2.5 bar)
60 x 60	3.58 ft ² (0.330 m ²)	Microorganism reduction	0.50	27 psi (1.8 bar)
		Polishing filtration	1.40	37 psi (2.5 bar)

Microorganism reducing filter sheets are grades KS80, KS50, EK, EK1, and EKS. Polishing sheets are grades K900 through K100.



FILTER MEDIA GRADE SELECTION

WINE

SHEET GRADE	NOMINAL MICRON RETENTION RATING	WINE FILTRATION
K900	9-10	Rough polishing filtration (retention of yeast and larger particles)
K800	7-8	
K700	5-7	Polishing filtration (retention of yeast and larger particles)
K300	3-4	Polishing filtration (clarity filtration of clear wine)
K250/ZD25	2.5	
K200	2.0	Higher polishing (clarity filtration of clear wine)
K150	1.5	
K100/ZD10	1.0	
KS80/ZD08	0.8	Microorganism reduction
KS50	0.5	Microorganism reduction
EK/ZDEK	0.45	Pre-bottling (pre-membrane) microorganism reduction
EK1	0.35	Pre-bottling (pre-membrane) microorganism reduction for difficult-to-filter wines
EKS	0.25	

BEER

SHEET GRADE	NOMINAL MICRON RETENTION RATING	BEER FILTRATION
K900	9-10	Rough polishing filtration for dark beer
K800	7-8	
K700	5-7	Polishing to occasionally very slight haze filtration for amber and light-colored beers
K300	3-4	Polishing-bright beer filtration. Most common grade used by brewpubs and for keg beer
K250/ZD25	2.5	Bright beer filtration
K200	2.0	
K150	1.5	
K100/ZD10	1.0	
KS80/ZD08	0.8	Microorganism reduction
KS50	0.5	Pre-bottling (pre-membrane) microorganism reduction
EK/ZDEK	0.45	

DISTILLED SPIRITS

SHEET GRADE	NOMINAL MICRON RETENTION RATING	BROWN SPIRITS	WHITE SPIRITS	FLAVORED SPIRITS/ LIQUEUR
K900	9-10	Large particle removal		
K800	7-8			
K700	5-7	Polishing filtration		
K300	3-4			
K250/ZD25	2.5	Fatty acid removal	Polishing filtration	
K200	2.0		Chill haze filtration	
K100/ZD10	1.0			
KS80/ZD08	0.8	Brilliant polish filtration		
KS50	0.5	Brilliant polish filtration/fine particle removal		
EK/ZDEK	0.45			
EK1	0.35			
EKS	0.35			