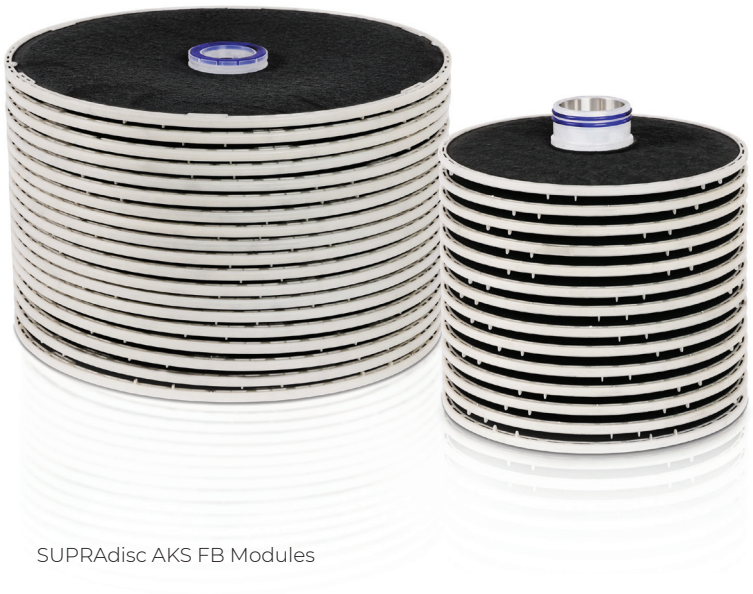
FOOD & BEVERAGE

Data Sheet

FBDSSDAKSFBENa

SUPRAdisc™ AKS FB Modules

For Color and Flavor Correction



SUPRAdisc AKS FB Modules

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SUPRAdisc AKS FB modules were developed to satisfy general purpose carbon adsorption applications in the food and beverage industry.

Description

Powdered activated carbon (PAC) is widely used in the food and beverage industry for adsorption applications. The use of bulk PAC has significant drawbacks relating to the handling of bulk carbon powder, cleaning of the process equipment, as well as time and costs associated with carbon removal from the process.

SUPRAdisc AKS FB Modules alleviate these concerns by incorporating activated carbon within a matrix of cellulosic fibers. This immobilized carbon media is coupled with a downstream protective filter paper to prevent any possible carbon particle shedding downstream of the filter. Additionally, the adsorption efficiency of Seitz® AKS FB immobilized carbon filter media is greater than an equivalent amount of bulk powdered activated carbon (PAC), reducing overall process time and increasing product yield. An internal comparative study using the same carbon grade showed up to 150% better color removal efficiency when compared to bulk PAC.

Features	Benefits
Carbon-impregnated media with a homogeneous and consistent matrix	· Free of carbon dust · Simplified handling and cleaning · When using protection paper downstream, no further trap filtration required
High adsorption efficiency as compared to PAC	· Reduction of overall process time · Increased product yield · Good permeability with excellent filtrate quality
General-duty media targeted to food and beverage industry needs	· High economic efficiency due to a long service life

Quality

· Filter sheets produced in a controlled environment
· Manufactured according to ISO 9001:2025 certified Quality Management System

Food Contact Compliance

Please refer to the Pall website www.pall.com/foodandbev for a Declaration of Compliance to specific National Legislation and/or Regional Regulatory requirements for food contact use.

Main Constituents

Cellulose, powdered activated carbon

Applications

· Correction of color, flavor and odors in distilled spirits
· Color removal in cannabis
· Color removal in hard seltzer
· Decolorization of sweetener and sugar syrups
· Color correction in juice and beer applications
· Dechlorination of water
· Gelatin decolorization and deodorization

Adsorption Capability

At an optimized flow rate, the probability of contact between the impurities and carbon particles is greater in carbonimpregnated sheets. This is due to process fluids more efficiently contacting carbon particles immobilized into a sheet matrix. Because of the depth (thickness) of the sheet, it is possible to consider the structure as being made up of a series of layers containing PAC. Having a depth of PAC and passing the fluid at an optimal flow rate through that depth enables maximum utilization of the carbon.

Macro- and mesopores can generally be regarded as the highways into the carbon particle, and are crucial for adsorption kinetics. Macropores are used for the transport, and adsorption occurs in the meso- and micropores.

Small molecules, such as methylene blue, which has a molecular weight of 319.86 Dalton, are mainly captured in micropores. Typically, over 200 g/m² methylene blue is adsorbed.

Characterization

Sheet with Protection Paper	Mass per Unit Area g/m²	Thickness mm	Ash %	Water Permeability[1] L/m²/min (gal/ft²)min)
Yes	1250	4.5	< 1	189 (4.60)

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.

[1] The permeability was measured under test conditions with clean water at 20 °C (68 °F) and a Δp of 1 bar (14.5 psi).

Regeneration

Depending upon the application and the nature of the adsorbed contaminants, AKS FB sheets may be regenerated by means of rinsing with clean water in the forward direction. However, the achievable regeneration efficiency must be determined by monitoring filtrate quality.

Maximum backpressure during all operations is 0 bar. Any backpressure will cause damages to the sheet media.

Sanitization

Method	Temperature °C (°F)	Maximum Differential Pressure bar (psi)	Time[3]/Cycle min
Steam[2]	125 (257)	0.5 (7.2)	20
Hot Water	90 (194)	1 (14.5)	30

[2] Max. 2 steam cycles

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

General Instructions for Use

In order to maximize the required adsorption of impurities, particle filtration must occur upstream of carbon-impregnated filter sheets.

Filtration Guidelines

Typical flux rates used on food and beverage fluids are 150-250 L/m²/h (3.7-6.2 gal/ft²/h).

Higher fluxes may be possible according to the application. Due to the various factors, which may affect the adsorption process, Pall recommends an initial scaled-down testing as a reliable method of qualifying filter performance.

For additional operating guidelines, including rinsing of sheets prior to use, please refer to instructions for use or contact Pall.

SUPRAdisc AKS FB Formats:

12” diameter (284 mm), 14 cells, 1.6 m² area
16” diameter (410 mm), 16 cells, 3.7 m² area

SUPRAdisc AKS FB Ordering Codes:

Material Number	Material Description	Size	Adapter	Seal
7008708	SUPRADISC SD AKSFB 300XAKFBC214SPW	12”	Flat Gasket	Silicone
7008710	SUPRADISC SD AKSFB 300XAKFBC214EPW	12”	Flat Gasket	EPDM
7008709	SUPRADISC SD AKSFB 300XAKFBC416SPW	16”	Flat Gasket	Silicone
7008711	SUPRADISC SD AKSFB 300XAKFBC416EPW	16”	Flat Gasket	EPDM

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