

Depth Filtration
BECODISC® Range



Premium Mineral-Free Depth Filter Medium

BECODISC stacked disc cartridges from Eaton's Begerow Product Line are characterized by maximum purity. BECODISC offers exceptionally high chemical resistance both in alkaline and acidic applications.

In Eaton's innovative BECODISC stacked disc cartridge's range, high-purity celluloses form a unique structure, which even for microbe removal does not require mineral components.

The specific advantages of BECODISC stacked disc cartridges:

- Very good chemical and mechanical resistance
- Mineral-free, low ion content
- Virtually no ash content
- Low charge-related adsorption
- 20% higher performance
- Rinsing volume reduced by 50%, resulting in reduced process costs

Ingredients

BECODISC stacked disc cartridges are made only of high-purity cellulose and wet strength agents.

Areas of Application

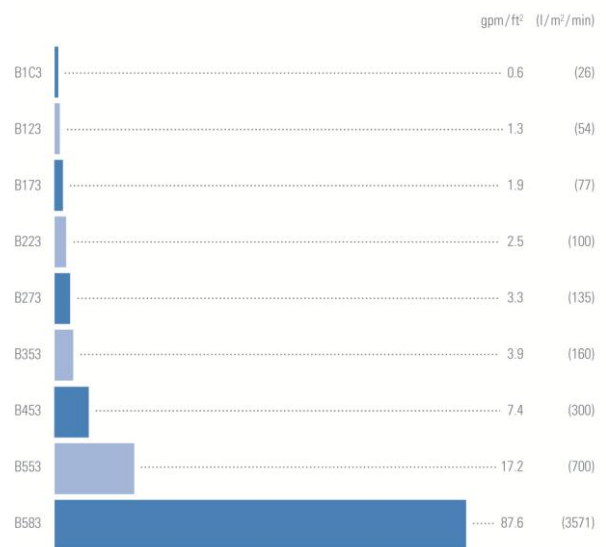
BECODISC stacked disc cartridges can be used for filtration of all liquid media. Application options range from coarse filtration to microbe removal.

BECODISC Stacked Disc Cartridges

BECODISC stacked disc cartridges are very low cationic. This means there is only a minor charge-related adsorption during the filtration. Valuable substances are not adsorbed and remain in the filtrate. The chemical resistance and the mechanical stability are exceptionally high.



Water throughput BECODISC range



Conditions: Δp = 14.5 psi (100 kPa, 1 bar), Medium: Water at 68 °F (20 °C)

BECODISC stacked disc cartridges are suitable for applications involving primarily mechanical separation of particles from aggressive media, for example, catalyst and/or activated carbon removal. For applications where the important substance should remain in the filtrate, e.g., in the flavor or cosmetic industry, the BECODISC is ideal due to the low charge-related adsorption.

Physical Data

This information is intended as a guideline for the selection of BECODISC stacked disc cartridges.

Type	Utilized depth filter sheet	Nominal retention rate µm	Thickness in (mm)	Ash content %	Bursting strength wet psi (kPa)	Water throughput at	
						Δ p = 14.5 psi gpm/ft ²	(Δ p = 100 kPa* l/m ² /min)
B1C3	BECOPAD 115 C	0.1 – 0.2	0.16 (4.1)	< 1.0	> 21.8 (150)	0.6	(26)
B123	BECOPAD 120	0.1 – 0.3	0.15 (3.9)	< 1.0	> 21.8 (150)	1.3	(54)
B173	BECOPAD 170	0.2 – 0.4	0.15 (3.9)	< 1.0	> 21.8 (150)	1.9	(77)
B223	BECOPAD 220	0.3 – 0.5	0.15 (3.9)	< 1.0	> 21.8 (150)	2.5	(100)
B273	BECOPAD 270	0.5 – 0.7	0.15 (3.9)	< 1.0	> 21.8 (150)	3.3	(135)
B353	BECOPAD 350	0.7 – 1.0	0.15 (3.9)	< 1.0	> 21.8 (150)	3.9	(160)
B453	BECOPAD 450	1.0 – 2.0	0.15 (3.9)	< 1.0	> 21.8 (150)	7.4	(300)
B553	BECOPAD 550	2.0 – 3.0	0.15 (3.9)	< 1.0	> 21.8 (150)	17.2	(700)
B583	BECOPAD 580	3.0 – 4.0	0.15 (3.9)	< 1.0	> 21.8 (150)	87.6	(3571)

The water throughput is a laboratory value characterizing the different BECOPAD® depth filter medium types. It is not the recommended flow rate.

* 100 kPa = 1 bar

Chemical Data

BECOPAD depth filter medium meets the requirements of LFGB*, Recommendation XXXVI/1 issued by BfR**, and the test criteria of FDA*** Directive CFR 21 § 177.2260.

Chemical resistance of the BECO depth filter sheets to different solvents over a contact time of 3 hours at 68 °F (20 °C).

Chemical compound		Max. tested temperature, Contact time	Mechanical resistance	Chemical compound	Max. tested temperature, Contact time	Mechanical resistance
Caustic:				Organic solvents:		
Ammonia solution	25%	68 °F (20 °C), 168 h	x	Acetone	68 °F (20 °C), 168 h	x
Potassium hydroxide	30%	68 °F (20 °C), 48 h	(x)	Butanol	68 °F (20 °C), 168 h	x
Sodium hydroxide	30%	68 °F (20 °C), 24 h	-	Cyclohexane	68 °F (20 °C), 168 h	x
	5%	68 °F (20 °C), 4 h	x	Dimethyl sulphide	68 °F (20 °C), 168 h	x
	2%	104 °F (40 °C), 4 h	x	Ethanol	68 °F (20 °C), 168 h	x
	1%	104 °F (40 °C), 4 h	x	Ethylene glycol	68 °F (20 °C), 168 h	x
	0.5%	104 °F (40 °C), 4 h	x	Ethyl methyl ketone	68 °F (20 °C), 168 h	x
				Isopropanol	68 °F (20 °C), 168 h	x
Acids:				Methanol	68 °F (20 °C), 168 h	x
Acetic acid	25%	68 °F (20 °C), 168 h	x	N,N dimethyl formamide	68 °F (20 °C), 168 h	x
Peracetic acid	0.1%	68 °F (20 °C), 168 h	x	N-hexane	68 °F (20 °C), 168 h	x
Peracetic acid	0.2%	68 °F (20 °C), 168 h	x	Tetrachloroethylene	68 °F (20 °C), 168 h	x
Peracetic acid	0.5%	68 °F (20 °C), 168 h	x	Toluene	68 °F (20 °C), 168 h	x
Nitric acid	25%	68 °F (20 °C), 48 h	x	Triethanolamine	68 °F (20 °C), 168 h	x
Hydrochloric acid	25%	68 °F (20 °C), 168 h	x	Xylene	68 °F (20 °C), 168 h	x
Sulphuric acid	25%	68 °F (20 °C), 48 h	x			
Citric acid	25%	68 °F (20 °C), 168 h	x	Aqueous solutions:		
				Iron trichloride	25% 68 °F (20 °C), 168 h	x
				Sodium hypochlorite free chlorine	12% 68 °F (20 °C), 168 h	x
				Hydrogen peroxide	10% 68 °F (20 °C), 72 h	x

x = resistant

(x) = limited resistance

- = not resistant

Guide to Choosing the Right BECODISC Stacked Disc Cartridge

B1C3

Fine colloids removal., especially for membrane protection

B123, B173

Microbe removal filtration

B223, B273

Microbe reduction filtration

B353

Fine filtration, activated carbon removal

B453

Clarifying filtration, activated carbon removal

B553, B583

Coarse filtration, catalyst separation and recovery

Recommendations for Avoiding Damage

BECODISC stacked disc cartridges can be used only in the specified flow direction. This applies to product filtering as well as sanitizing with hot water, and sterilizing with the stacked disc cartridges with saturated steam. In order to avoid damage to the filter cells, the system should be protected with a suitable non-return valve.

Refer to the insert included with each BECODISC stacked disc cartridge carton for detailed application information.

Depending on the filtered liquids, the operating temperature should not exceed 176 °F (80 °C). Please contact Eaton regarding filtration applications at higher temperatures.

Intermediate Plates

If more than two BECODISC stacked disc cartridges (12" or 16") with double O-ring adapters are stacked in the housing, install a central spindle for safety reasons. In the event, more than one 16" BECODISC stacked disc cartridge (flat adapter/double O-ring adapter) is used in the housing, Eaton recommends the installation of stainless steel intermediate plates between the BECODISC stacked disc cartridges.

Sterilizing (Optional)

Sterilizing with Steam

The wetted BECODISC stacked disc cartridges can be sterilized with saturated steam up to a maximum temperature of **273.2 °F (134 °C)** as follows:

- Steam quality: The steam must be free of foreign particles and impurities.
- Temperature: Max. **273.2 °F (134 °C)** (saturated steam)
- Duration: Approx. 20 minutes after steam exits from all filter valves
- Rinsing: After sterilizing with 6.6 gal/sqm (25 l/m²) at 1.25 times the flow rate

Filter Preparation and Filtration

Unless already completed after sterilization, rinse the stacked disc cartridges with 6.6 gal (25 l) of water per square meter at 1.25 times the flow rate prior to the first filtration. Check the entire filter for leakage at maximum operating pressure.

High-proof alcoholic solutions and products that cannot be rinsed with water should be circulated with the product. Discard the rinsing solution after rinsing.

Differential Pressure

Terminate the filtration process once the maximum permitted differential pressure of 43.5 psi (300 kPa, 3 bar) is reached. A higher differential pressure could damage the depth filter sheet material. For safety reasons, a differential pressure of 21.8 psi (150 kPa, 1.5 bar) should not be exceeded in applications for separating microorganisms.

Safety

When used and handled correctly, there are no known unfavorable effects associated with this product.

Further safety information can be found in the relevant Material Safety Data Sheet, which can be downloaded from our website.

Disposal

Due to their composition, BECODISC stacked disc cartridges can be disposed of as harmless waste. Comply with relevant current regulations, depending on the filtered product.

Storage

BECODISC stacked disc cartridges must be stored in a dry, odor-free, and well ventilated place.

Do not expose the BECODISC stacked disc cartridges to direct sunlight.

BECODISC stacked disc cartridges are intended for immediate use and should be used within 24 months of delivery.

Delivery Information

BECODISC stacked disc cartridges are available with 12-inch and 16-inch diameters. Further information about filter areas and gasket types can be found in the current BECODISC stacked disc cartridge folder.

HS Customs Tariff: 84219900

Quality Assurance According to DIN EN ISO 9001

Eaton's Begerow Product Line comprehensive Quality Management System has been certified according to DIN EN ISO 9001.

This certification verifies that a fully functioning comprehensive Quality Assurance System covering product development, contract controls, choice of suppliers, receiving inspections, production, final inspection, inventory management, and shipment has been implemented. Extensive quality assurance measures incorporate adherence to technical function criteria and chemical purity and quality recognized as safe under the German legislation governing the production of foods and beverages.

North America - HQ

44 Apple Street,
Tinton Falls, NJ 07724
Toll Free: 800 656-3344
(North America Only)
Voice: +1 732 212-4700

Europe/Africa/Middle East

Auf der Heide 2
53947 Nettersheim, Germany
Voice: +49 2486 809-0

Internormen Product Line

Friedensstraße 41
68804 Altlussheim, Germany
Voice: +49 6205 2094-0

Begerow Product Line

An den Nahewiesen 24
55450 Langenlonsheim, Germany
Voice: +49 6704 204-0

Brazil

Av. Julia Gaioli, 474 - Bonsucesso
07251-500 - Guarulhos
Brazil
Voice: +55 11 2465 8822

China

No. 7 Lane 280 Linhong Road,
Changning District,
Shanghai 200335, China
Voice: +86 21 5200 0422

Singapore

4 Loyang Lane #04-01/02
Singapore 508914
Voice: +65 6825 1668

For more information, please e-mail us at filtration@eaton.com or visit us online at eaton.com/filtration for a complete list of Eaton's filtration products.

Not all products in Eaton's Begerow Product Line are available in all regions. Please contact your local Eaton office to determine availability.

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