

## Depth Filtration

### BECODISC® R+ Range

#### Backflushable, Extra Robust Stacked Disc Cartridges with BECOPAD® Premium Depth Filter Sheets

BECODISC R+ stacked disc cartridges from Eaton are characterized by maximum purity. Through continuous product improvement, we have been able to improve the outstanding purity properties with even greater stability. Users can increase the filter service life considerably by backflushing. For backflushing a backflush kit is not required.

Different types of high-purity cellulose are cross-linked in Eaton's innovative BECODISC R+ stacked disc cartridges to form a special structure that does not require the addition of any inorganic material, even for super fine filtration.

The specific advantages of BECODISC R+ stacked disc cartridges:

- Increased service life due to possibility of backflushing
- Very high robustness due to the special design
- Optimized flow distribution upstream and downstream of the filter sheets maximizes filter utilization
- Combines all advantages of BECOPAD filter material
- No additional backflushing kit is required

#### Ingredients

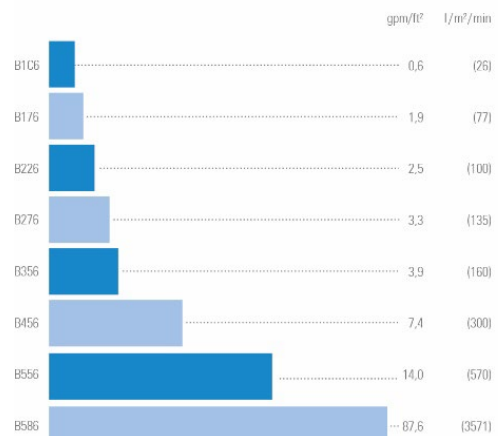
BECODISC R+ stacked disc cartridges are made only of high-purity cellulose and wet strength agents and a special fabric spacer as drainage layer.

#### Areas of Application

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



Water throughput BECODISC R+ range



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

#### Guide to Choosing the Right BECODISC R+ Stacked Disc Cartridge

##### B1C6

Microbial removal filtration, fine colloids removal, especially for membrane protection

##### B176

Microbial removal filtration

##### B226, B276

Microbial reduction filtration

##### B356

Fine filtration, removal of yeasts

##### B456

Clarifying filtration

##### B556, B586

Coarse filtration

## Physical Data

This information is intended as a guideline for the selection of BECODISC R+ stacked disc cartridges. The water throughput is a laboratory value characterizing the different BECOPAD depth filter sheet types. It is not the recommended flow rate.

Type*	BECOPAD depth filter sheet	Nominal retention range $\mu\text{m}$	Thickness in (mm)	Ash content %	Bursting strength wet psi (kPa**)	Water throughput at	
						$\Delta p = 14.5 \text{ psi}$ gpm/ft <sup>2</sup>	$(\Delta p = 100 \text{ kPa}^{**})$ l/m <sup>2</sup> /min)
B1C6	115 C	0.1 – 0.2	0.16 (4.1)	< 1	> 21.8 (150)	0.6	(26)
B176	170	0.2 – 0.4	0.15 (3.9)	< 1	> 21.8 (150)	1.9	(77)
B226	220	0.3 – 0.5	0.15 (3.9)	< 1	> 21.8 (150)	2.5	(100)
B276	270	0.5 – 0.7	0.15 (3.9)	< 1	> 21.8 (150)	3.3	(135)
B356	350	0.7 – 1.0	0.15 (3.9)	< 1	> 21.8 (150)	3.9	(160)
B456	450	1.0 – 2.0	0.15 (3.9)	< 1	> 21.8 (150)	7.4	(300)
B556	550	2,0 – 3,0	0.15 (3.9)	< 1	> 21.8 (150)	14.0	(570)
B586	580	8,0 – 10,0	0.15 (3.9)	< 1	> 21.8 (150)	87.6	(3571)

\* B = Polypropylene version (e.g. B1C6)

\*\* 100 kPa = 1 bar

## Ordering Information



<sup>1</sup> B1C6 with 16 cells only

### Example: B17612SF

Backflushing polypropylene stacked disc cartridge with BECODAD 170 depth filter sheets, nominal retention range from 0.2 to 0.4  $\mu\text{m}$ , 17 filter cells, 10.9 in (276 mm) high, 12", with silicone gaskets and flat adapter.

## Compliance Notice

BECOPAD depth filter sheets fulfill the requirements of Regulation (EC) 1935/2004 as well as the FDA Guideline 21 CFR § 177.2260 test criteria. The polypropylene components comply with Regulation (EU) 10/2011. The polypropylene meets FDA requirements, 21 CFR § 177.1520. The polyamide meets the requirements of FDA, 21 CFR § 177.1500. The sealing materials (silicone, EPDM) meet FDA requirements, 21 CFR § 177.2600. For further details on individual components and materials see the declaration of conformity.

For more information:

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## Filter Preparation and Filtration

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Unless already completed after sterilization, rinse the stacked disc cartridges with 0.61 gal/ft<sup>2</sup> (25 l/m<sup>2</sup>) of water 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.

## Rinsing the Filter

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BECODISC R+ stacked disc cartridges can be operated against the direction of flow for regeneration purposes. This applies for regenerating with cold and hot water.

The maximum permissible differential pressure for backwashing is 7.25 psi (50 kPa, 0.5 bar) at 50 to 185 °F (10 to 85 °C).

## Sanitizing and Sterilizing (Optional)

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### Sanitizing with Hot Water

The hot water temperature should be 185 °F (85 °C). A differential pressure of 21.8 psi (150 kPa, 1.5 bar) must not be exceeded when sterilizing with hot water.

Sanitization time: At least 30 minutes once a temperature of 185 °F (85 °C) is reached at all filter openings. In the interest of energy conservation, the water may be circulated provided the specified temperatures are maintained.

### Sterilizing with Steam

The wetted BECODISC R+ stacked disc cartridges can be sterilized with saturated steam up to a maximum temperature of **250 °F (121 °C)** as follows:

- Steam quality: The steam must be free of foreign particles and impurities.
- Temperature: Max. **250 °F (121 °C)** (saturated steam)
- Duration: Approx. 20 minutes after steam exits from all filter valves
- Rinsing: After sterilizing with 0.61 gal/ft<sup>2</sup> (25 l/m<sup>2</sup>) at 1.25 times the flow rate

## Recommendations for Avoiding Damage

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BECODISC R+ stacked disc cartridge can be operated against the direction of flow for regeneration purposes. This applies to product filtering as well as sterilizing with saturated steam. Refer to the insert included with each BECODISC R+ 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/Baffle Plates

If more than one BECODISC R+ stacked disc cartridges (12" or 16") stacked in the housing, Eaton recommends the installation of stainless steel intermediate plates between the BECODISC R+ stacked disc cartridges. For backflushing of BECODISC R+ stacked disc cartridges, stainless steel intermediate plates and a lower and upper baffle plate are mandatory.

## Safety

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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

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

## Storage

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

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

BECODISC R+ stacked disc cartridges are intended for immediate use and should be used within 36 months after production date.

## Delivery Information

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BECODISC R+ stacked disc cartridges are available with 17 cells, 12-inch (295 mm, 2.1 m<sup>2</sup>) and 16-inch (402 mm, 4 m<sup>2</sup>) diameters, flat adapters, and standard silicone gaskets.

## **Quality Assurance According to DIN EN ISO 9001**

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The Quality Management System of Eaton Technologies GmbH 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.

All information is given to the best of our knowledge. However, the validity of the information cannot be guaranteed for every application, working practice and operating condition. Misuse of the product will result in all warranties being voided.

Subject to change in the interest of technical progress.

### **For more information:**

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