

Depth Filtration

BECOPAD and **BECOPAD +**

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Premium Depth Filtration for the Beverage and Food Industries

BECOPAD is a new, mineral-free depth filtration system for a wide range of applications, including coarse and sterile filtration.

BEGEROW developed this innovative product in its in-house research facility. In the bepure process, different types of high-purity cellulose are cross-link to form a unique structure that does not require the addition of any inorganic material, even for sterile filtration duties. **BECOPADs** are characterized by their unparalleled purity when compared with conventional depth filter sheets, giving rise to much lower values for extractable ions and organoleptic quality affecting substances.

The advantages of **BECOPAD**:

- ▶ Mineral-free
- ▶ 20 % higher capacity
- ▶ Flushing volume reduced by 50 %
- ▶ Drip losses reduced by 99 %
- ▶ Maximum filtration hygiene
- ▶ Biodegradable

Ingredients

BECOPADs are made only of high-purity cellulose and wet strength materials.

Areas of Application

BECOPADs can be used for filtration of all liquid foodstuffs. Application options range from coarse filtration to sterile filtration.

Guide to **BECOPAD** Selection

Like conventional depth filter sheets, **BECOPADs** can be selected according to the required filtrate quality.

BECOPAD 120
Sterile filtration with increased safety

BECOPAD 170
Sterile filtration

BECOPAD 220
Germ-reducing filtration with average initial burden

BECOPAD 270
Germ-reducing filtration with low initial burden

BECOPAD 350
Fine filtration, removal of yeasts

BECOPAD 450
Clarification filtration, removal of yeasts in applications with low cell count

BECOPAD 550
Coarse filtration, particle retention

BECOPAD +

Highly-cationic **BECOPADs** are also available that offer increased adsorption of charged particles and an even lower content of extractable ions. They are suitable for applications in which minimum ion input into the filtrate is desirable.

Please note that at the beginning of the filtration process, **BECOPAD +** filters also retain colourants and foam-positive substances. **BECOPAD +** filters are therefore unsuitable for small batches of sensitive products. Selection based on filtrate quality is similar to **BECOPADs**.

Guide to **BECOPAD +** Selection

Sterile filtration:
BECOPAD 120 +
BECOPAD 170 +

Germ-reducing filtration:
BECOPAD 220 +

Fine filtration:
BECOPAD 350 +

Coarse filtration:
BECOPAD 550 +

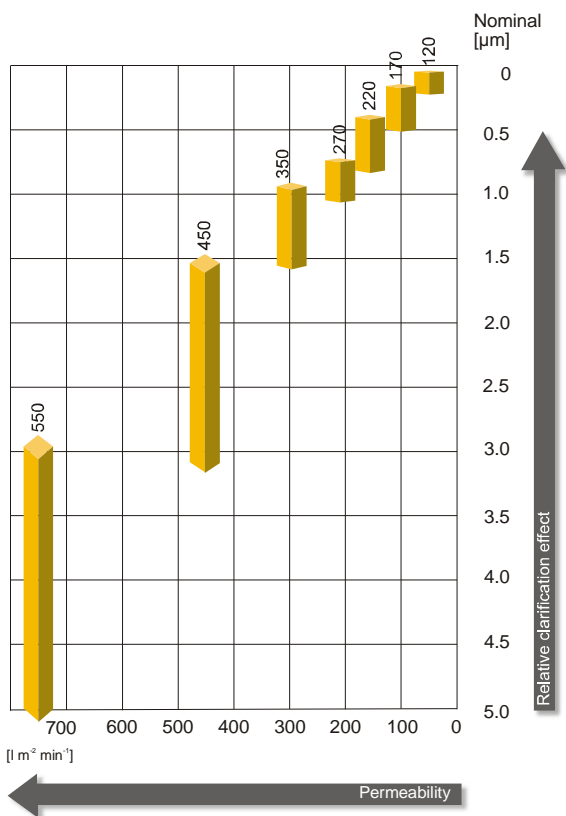
Properties

All **BECOPADs** have a thickness of 3.9 mm, a wet bursting strength > 200 kPa, and an ash content < 1 %.

Nominal Retention Range and Permeability

BECOPAD has a permeability of:
($\Delta p = 100 \text{ kPa}$, $20 \text{ }^\circ\text{C}$)

	Nominal Retention Range / μm	Permeability/ $\text{l/m}^2 \text{ min}$
BECOPAD 120	0.1 – 0.3	75
BECOPAD 170	0.2 – 0.5	105
BECOPAD 220	0.4 – 0.8	150
BECOPAD 270	0.7 – 1.1	200
BECOPAD 350	0.9 – 1.6	300
BECOPAD 450	1.5 – 3.2	450
BECOPAD 550	2.9 – 5.0	750



Conditions: $\Delta p - 100 \text{ kPa}$ (1 bar), medium: water at $20 \text{ }^\circ\text{C}$ (68 $^\circ\text{F}$)

Application Notes

BECOPADs require careful handling during unpacking and inserting into the plate and frame filter. Avoid impact, bending, and abrasion. Do not use damaged **BECOPADs**.

Sanitisation and Sterilisation (optional)

Wetted **BECOPADs** can be sterilised with hot water or saturated steam up to a maximum temperature of $134 \text{ }^\circ\text{C}$ ($273 \text{ }^\circ\text{F}$).

Ensure complete sterilisation of the entire filtration system. Open all valves slightly. The compression on the depth filter sheets should be reduced slightly. Allow the depth filter sheet assembly to cool before re-tightening.

Sterilisation with hot water

The specific flow rate should at least equal the flow rate. The hot water should be softened and free from contamination.

The following parameters must be adhered to:

Temperature: > $85 \text{ }^\circ\text{C}$ ($185 \text{ }^\circ\text{F}$)

Duration: 25 minutes after $85 \text{ }^\circ\text{C}$ ($185 \text{ }^\circ\text{F}$) is reached at all valves

Pressure: > 50 kPa at the filter outlet

Sterilisation with steam

The steam must be free from foreign particles and contamination.

The following parameters must be adhered to:

Temperature: $\leq 134 \text{ }^\circ\text{C}$ ($273 \text{ }^\circ\text{F}$) (saturated steam)

Duration: > 20 minutes after steam emerges from all filter valves

Rinsing: At 1.25 times filtration flow rate after sterilisation

Filter Preparation and Filtration

Prior to the first filtration, we recommended pre-rinsing the closed filter with water at 1.25 times filtration flow rate until the wash water is tasteless and clear, unless this has already been done after sterilisation.

Check the entire filter for leaks at maximum operating pressure.

High-proof alcoholic solutions and products that cannot be pre-rinsed with water should be circulated for 5 – 10 minutes. Discard the rinsing solution after rinsing.

Differential Pressure

Filtration should normally be stopped once a differential pressure of 300 kPa has been reached.

For safety reasons, a differential pressure of 150 kPa should not be exceeded in applications for removing microorganisms.

Regeneration/Backwashing

During regeneration the following parameters must be maintained:

Cold rinsing: Against the filtration direction
at 1.25 times filtration flow rate

Temperature: 15 – 20 °C (59 – 68 °F)

Duration: > 5 minutes

Hot rinsing: Against the filtration
at 1.25 times filtration flow rate

Temperature: 60 – 80 °C (140 – 176 °F)

Duration: > 10 minutes

Safety

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

An EC safety data sheet is available on request.

Disposal

BECOPADs are suitable for composting, product contaminants retained in the sheet permitting.

Relevant current regulations must be adhered to depending on the filtered product.

Storage

BECOPADs are made of adsorptive materials. The product must be handled carefully during shipping and storage. Depth filter sheets must be stored in a dry, odour-free, and well-ventilated place.

BECOPADs must not be exposed to direct sunlight.

The product is intended for immediate use and should be used within 36 months of delivery.

Delivery Information

BECOPADs are available in all common filter sizes, both rectangular and round. Special formats are available on request.

HS Customs Tariff No.: 4812 00 00

Quality Control According to DIN EN ISO 9001:2000

The comprehensive BEGEROW quality management system is certified by DQS according to DIN EN ISO 9001:2000.

This certification confirms that a fully functioning and comprehensive quality control system covering product development, contract review, supplier selection, receiving inspection, production, final inspection, inventory management, and delivery has been implemented. Extensive quality assurance measures comprise the adherence to technical criteria regarding the function as well as the confirmation of chemical purity and quality recognized as safe under the German law governing the production of foods and beverages.

BECOPADs meet the requirements of recommendation XXXVI/1 regarding the LFGB (German Food, Commodity and Feed Act) by the BfR (Federal Institute of Risk Assessment), and the test criteria of FDA directive CFR 21 § 177.2260.



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