



BECOPAD and **BECOPAD P**
A New Dimension in Depth Filtration

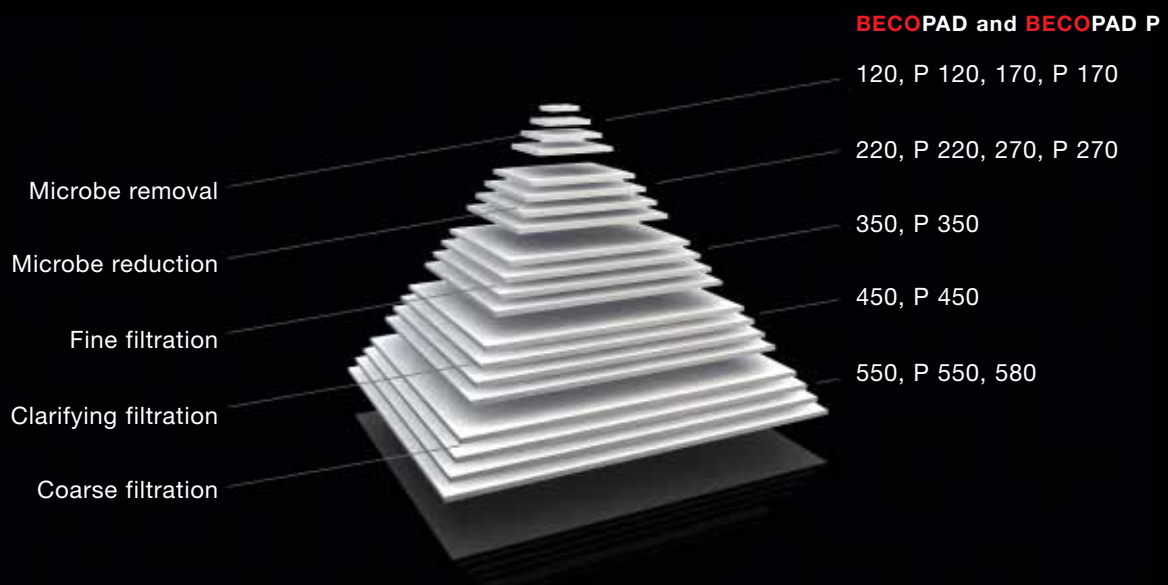


BECOPAD and BECOPAD P revolutionize the filtration process

The new, pure BECOPAD and the high-purity BECOPAD P are the first and only mineral-free depth filter media produced to date with special, high-purity cellulose.

Reasons for using BECOPAD or BECOPAD P:

- ▶ Exceptional purity
- ▶ Very low heavy metal and ion extractables
- ▶ Very high chemical resistance and extremely high wet bursting strength (> 150 kPa/21.8 psi)
- ▶ Almost no ash content (< 1 %)
- ▶ Up to 20 % higher on-stream life
- ▶ Excellent rinsing characteristics (reduced from 50 to 25 l/m²)
- ▶ 100 % biodegradable
- ▶ Optimized depth filter media over the entire range from 0.1 to 4.0 µm
- ▶ Conformity to national and international quality standards¹⁾ and guidelines²⁾
- ▶ BECOPAD P optimized for:
 - extremely low endotoxin content
 - very low calcium and magnesium ion extractables

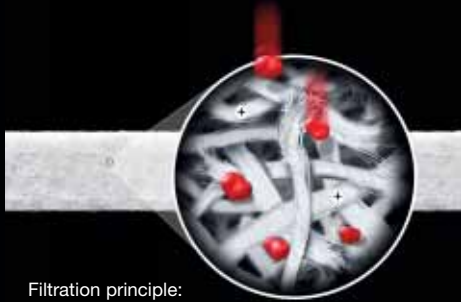


¹⁾ LFGB: Food, Commodity and Feed Act, Germany
BfR: Federal Institute of Risk Assessment, Germany

²⁾ FDA: Food and Drug Administration, USA

BECOPAD

For industrial, non-pharmaceutical processes



Filtration principle:

Mechanical separation, very low adsorption

The pure **BECOPAD** is available for non-critical industrial and non-pharmaceutical processes where the main focus is on maximum filtration outputs combined with optimal clarification and highest particle retention capacity.

The filtration principle is mainly based on mechanical separation of particles because of their size. The very low cationic charge reduces the degree of charge-specific adsorption and thus, desirable beneficial ingredients remain in the final product.

BECOPAD provides excellent filtration quality and maximizes filtration throughput for chemical applications demanding high dirt holding capacity and high chemical resistance.

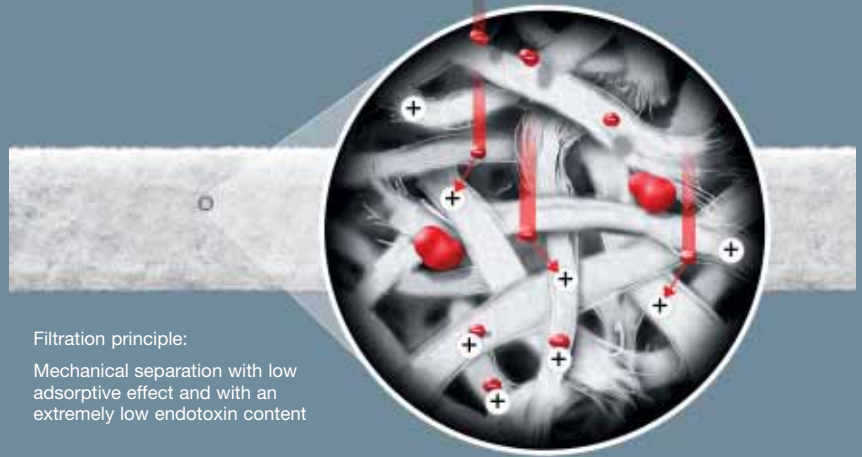
Selected application examples:

- ▶ Activated carbon removal
- ▶ Catalyst removal
- ▶ Purification of industrial enzymes
- ▶ Filtration processes in the production of chemicals and solvents
- ▶ Clarification of varnishes and resins
- ▶ Particle and precipitate removal from cosmetic products as well as from flavors and fragrances

| Type | BECOPAD / BECODISC Type No. | Nominal retention range [µm] | Water throughput $\Delta p = 100 \text{ kPa}$ [$\text{l m}^{-2} \text{ min}^{-1}$] |
|--------------------|---|------------------------------|--|
| BECOPAD 120 | Q2112 / B123 | 0.1 – 0.3 | 55 |
| BECOPAD 170 | Q2117 / B173 | 0.2 – 0.4 | 80 |
| BECOPAD 220 | Q2122 / B223 | 0.3 – 0.5 | 100 |
| BECOPAD 270 | Q2127 / B273 | 0.5 – 0.7 | 135 |
| BECOPAD 350 | Q2135 / B353 | 0.7 – 1.0 | 160 |
| BECOPAD 450 | Q2145 / B453 | 1.0 – 2.0 | 300 |
| BECOPAD 550 | Q2155 / B553 | 2.0 – 3.0 | 700 |
| BECOPAD 580 | Q2158 / B583 | 3.0 – 4.0 | 3571 |

BECOPAD P

In compliance with pharmaceutical processes



Filtration principle:

Mechanical separation with low adsorptive effect and with an extremely low endotoxin content

The manufacturing method for new mineral-free **BECOPAD P** assures consistent product quality and the highest purity of filter media to meet the manufacturing requirements of pharmaceutical products plus the regulatory need for risk avoidance.

In pharmaceutical applications, in addition to mechanical separation, the high-pure **BECOPAD P** offers the preservation of desirable beneficial target ingredients in the filtrate due to low charge-specific adsorption effects.

Further distinguishing features include the very low level of extractables and extremely low endotoxin content (< 0.025 EU/ml after rinsing with 25 l/m^2 WFI).

The detection of ion content after extraction with 40 % ethanol (after rinsing with 25 l/m^2 ethanol) is extremely low e.g.

- Calcium < 50 ppb
- Magnesium < 25 ppb
- Aluminum < 5 ppb

The depth filter media meet the requirements of Plastic Class Test VI and Cytotoxicity test.

All quality related test reports and documents are enclosed in a Validation Guide, which is available upon request.

Exceptionally good filtration results are achieved for:

- ▶ Clarification of proteins, enzymes or ion sensitive solutions
- ▶ Purification steps in active pharmaceutical ingredient production, fine and specialty chemicals, plant extracts, flavors and fragrances
- ▶ Blood plasma derivatives

| Type | BECOPAD P Type No. | BECODISC P Type No. | Nominal retention range [µm] | Water throughput $\Delta p = 100 \text{ kPa}$ [$\text{l m}^{-2} \text{ min}^{-1}$] | Endotoxin content ¹⁾ [EU/ml] |
|----------------------|---------------------------|----------------------------|------------------------------|--|---|
| BECOPAD P 120 | Q1112 | B121 | 0.1 – 0.3 | 55 | < 0.025 |
| BECOPAD P 170 | Q1117 | B171 | 0.2 – 0.4 | 80 | < 0.025 |
| BECOPAD P 220 | Q1122 | B221 | 0.3 – 0.5 | 100 | < 0.025 |
| BECOPAD P 270 | Q1127 | B271 | 0.5 – 0.7 | 135 | < 0.025 |
| BECOPAD P 350 | Q1135 | B351 | 0.7 – 1.0 | 160 | < 0.025 |
| BECOPAD P 450 | Q1145 | B451 | 1.0 – 2.0 | 300 | < 0.025 |
| BECOPAD P 550 | Q1155 | B551 | 2.0 – 3.0 | 700 | < 0.025 |

¹⁾ The endotoxin content is determined after rinsing with 25 l/m^2 WFI (Water for Injection)

All information is given to the best of our knowledge.

They reflect current know-how and do not claim to be complete.

No warranty is expressed or implied.

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