Depth Filtration
BECOPAD® Range

Premium Mineral-Free Depth Filter Medium

BECOPAD depth filter medium from Eaton’s Begerow Product Line is characterized by maximum purity. BECOPAD offers exceptionally high chemical resistance both in alkaline and acidic applications.

Eaton’s innovative BECOPAD depth filter sheet’s range, high-purity cellulosics form a unique structure, which even for microbe removal does not require mineral components.

The specific advantages of BECOPAD depth filter medium:
- Very good chemical and mechanical resistance
- Mineral-free, therefore low ion content
- Virtually no ash content, therefore optimum ashing
- Low charge-related adsorption
- 20% higher performance
- Rinsing volume reduced by 50%, resulting in reduced process costs
- Drip losses reduced by 99% in open filter systems
- Biodegradable

Ingredients
BECOPAD depth filter medium is made only of high-purity cellulose and wet strength materials.

Areas of Application
BECOPAD depth filter medium can be used for filtration of any liquid media.
Application options range from coarse to superfine filtration.

BECOPAD Depth Filter Medium
BECOPAD depth filter medium is 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 BECOPAD range

BECOPAD depth filter medium is therefore particularly suitable for applications involving primarily mechanical separation of particles from aggressive media, e.g., for 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 BECOPAD depth filter medium is ideal due to the low charge-related adsorption.
Physical Data

This information is intended as a guideline for the selection of BECOPAD depth filter medium.

<table>
<thead>
<tr>
<th>Type</th>
<th>Article no.</th>
<th>Nominal retention range (µm)</th>
<th>Thickness (in.)</th>
<th>Ash content (% by wt)</th>
<th>Bursting strength wet (psi)</th>
<th>Water throughput at Δp = 14.5 psi* (gpm/ft²)</th>
<th>Water throughput at Δp = 100 kPa* (l/m²/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BECOPAD 115 C</td>
<td>Q2C11</td>
<td>0.1 – 0.2</td>
<td>0.16 (4.1)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>0.6</td>
<td>(26)</td>
</tr>
<tr>
<td>BECOPAD 120</td>
<td>Q2112</td>
<td>0.1 – 0.3</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>1.3</td>
<td>(54)</td>
</tr>
<tr>
<td>BECOPAD 170</td>
<td>Q2117</td>
<td>0.2 – 0.4</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>1.9</td>
<td>(77)</td>
</tr>
<tr>
<td>BECOPAD 220</td>
<td>Q2122</td>
<td>0.3 – 0.5</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>2.5</td>
<td>(100)</td>
</tr>
<tr>
<td>BECOPAD 270</td>
<td>Q2127</td>
<td>0.5 – 0.7</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>3.3</td>
<td>(135)</td>
</tr>
<tr>
<td>BECOPAD 350</td>
<td>Q2135</td>
<td>0.7 – 1.0</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>3.9</td>
<td>(160)</td>
</tr>
<tr>
<td>BECOPAD 450</td>
<td>Q2145</td>
<td>1.0 – 2.0</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>7.4</td>
<td>(300)</td>
</tr>
<tr>
<td>BECOPAD 550</td>
<td>Q2155</td>
<td>2.0 – 3.0</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>17.2</td>
<td>(700)</td>
</tr>
<tr>
<td>BECOPAD 580</td>
<td>Q2158</td>
<td>3.0 – 4.0</td>
<td>0.15 (3.9)</td>
<td>&lt; 1.0</td>
<td>&gt; 21.8 (150)</td>
<td>87.6</td>
<td>(3571)</td>
</tr>
</tbody>
</table>

The water flow 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.

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

x = resistant  
(x) = limited resistance  
- = not resistant
Guide to Choosing the Right
BECOPAD Depth Filter Medium

**BECOPAD 115C**
This depth filter medium is ideally used as membrane protection. Micro colloids impairing the filtration are safely retained.

**BECOPAD 120**
High microbe removal filtration with increased safety. Filtration for separating bacteria for heavily used or delicate products.

**BECOPAD 170**
Microbe removal filtration for filling or storing with high initial burden.

**BECOPAD 220**
Microbe reduction filtration with average initial burden.

**BECOPAD 270**
Microbe reduction filtration with low initial burden.

**BECOPAD 350**
Fine filtration, removal of yeasts and reduction of bacteria, as well as activated carbon removal.

**BECOPAD 450**
Clarifying filtration, removal of yeasts in applications with low cell count.

**BECOPAD 550, BECOPAD 580**
Coarse filtration, particle retention, yeast reduction and catalyst separation.

**Instructions for Correct Use**

**BECOPAD depth filter medium** requires careful handling when inserting them into the plate and frame filter. Avoid banging, bending, and rubbing. Do not use damaged BECOPAD depth filter media.

**Inserting**
Each BECOPAD depth filter medium has a rough side and a smooth side. The rough side is the feed side; the smooth side is the filtrate side. Always ensure that the filtrate side is in contact with the clear filtrate plate when inserting the sheets.

**Sterilization (Optional)**
The wetted BECOPAD depth filter medium may be sterilized with saturated steam up to a maximum temperature of 273.2 °F (134 °C). The pressed filter package should be loosened slightly. Make sure to sterilize the entire filter system thoroughly. Do not apply final pressure until after the filter package has cooled down.

**Sterilization 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:** > 185 °F (85 °C)
- **Duration:** 25 minutes after 185 °F (85 °C) is reached at all valves
- **Pressure:** > 7.2 psi (50 kPa, 0.5 bar) at the filter outlet

**Filter Preparation and Filtration**

Unless already completed after sterilization, rinse the depth filter with 6.6 gal/sqm (25 l/m²) 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 when a differential pressure of 43.5 psi (300 kPa, 3 bar) is reached.

For safety reasons, a differential pressure of 21.8 psi (150 kPa, 1.5 bar) should not be exceeded in applications for removing micro-organisms.

**Regeneration/Backwashing for Beverage Applications**

More detailed information regarding regeneration can be found in Note of Application 1 A 2.7.1.1

**Framework Conditions**

**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.

**Waste Disposal**

Due to their composition BECOPAD depth filter media are 100% biodegradable. Relevant current regulations must be followed, depending on the filtered product.

**Storage**

BECOPAD depth filter medium consists of strongly adsorbing materials. The product must be handled carefully during shipping and storage.

Store BECOPAD depth filter medium in a dry, odor-free, and well-ventilated place.

BECOPAD depth filter medium is intended for immediate use and should be used within 24 months of delivery.
Available Formats

All common square or round filter sizes are available for delivery. Special formats are available on request.

HS Customs Tariff: 4812 00 00

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.

All information contained herein is current as of the issue of this document. Subject to change in the interest of technical progress.

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.

© 2012 Eaton Corporation. All Rights Reserved. All trademarks and registered trademarks are the property of their respective owners.

All information and recommendations appearing in this brochure concerning the use of products described herein are based on tests believed to be reliable. However, it is the user’s responsibility to determine the suitability for his own use of such products. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Eaton as to the effects of such use or the results to be obtained. Eaton assumes no liability arising out of the use by others of such products. Nor is the information herein to be construed as absolutely complete, since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.