

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 celluloses 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

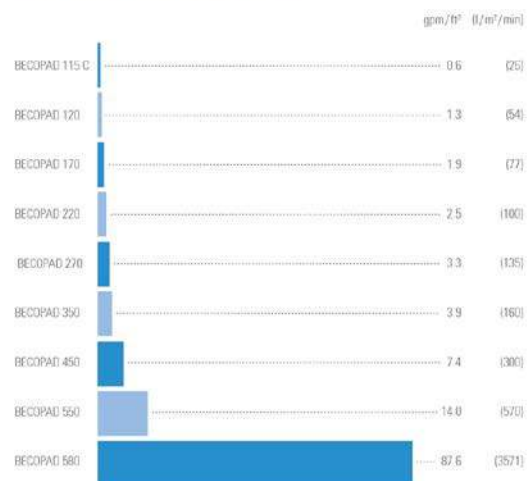
BECOPAD depth filter medium can be used for filtration of any liquid media.

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



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

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.

Type	Article no.	Nominal retention range μm	Thickness in (mm)	Ash content %	Bursting strength wet psi (kPa)	Water throughput at	
						$\Delta p = 14.5 \text{ psi}$ gpm/ft ²	$(\Delta p = 100 \text{ kPa}^*)$ l/m ² /min)
BECOPAD 115 C	Q2C11	0.1 – 0.2	0.16 (4.1)	< 1.0	> 21.8 (150)	0.6	(26)
BECOPAD 120	Q2112	0.1 – 0.3	0.15 (3.9)	< 1.0	> 21.8 (150)	1.3	(54)
BECOPAD 170	Q2117	0.2 – 0.4	0.15 (3.9)	< 1.0	> 21.8 (150)	1.9	(77)
BECOPAD 220	Q2122	0.3 – 0.5	0.15 (3.9)	< 1.0	> 21.8 (150)	2.5	(100)
BECOPAD 270	Q2127	0.5 – 0.7	0.15 (3.9)	< 1.0	> 21.8 (150)	3.3	(135)
BECOPAD 350	Q2135	0.7 – 1.0	0.15 (3.9)	< 1.0	> 21.8 (150)	3.9	(160)
BECOPAD 450	Q2145	1.0 – 2.0	0.15 (3.9)	< 1.0	> 21.8 (150)	7.4	(300)
BECOPAD 550	Q2155	2.0 – 3.0	0.15 (3.9)	< 1.0	> 21.8 (150)	14.0	(570)
BECOPAD 580	Q2158	3.0 – 4.0	0.15 (3.9)	< 1.0	> 21.8 (150)	87.6	(3571)

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. The chemical compatibilities listed in the table below are a guide only.

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%	68 °F (20 °C), 48 h	(x)	Ethanol	68 °F (20 °C), 168 h	x
	1%	68 °F (20 °C), 72 h	x	Ethylene glycol	68 °F (20 °C), 168 h	x
	0.5%	68 °F (20 °C), 72 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	20%	68 °F (20 °C), 24 h	x	Triethanolamine	68 °F (20 °C), 168 h	x
Hydrochloric acid	20%	68 °F (20 °C), 4 h	(x)	Xylene	68 °F (20 °C), 168 h	x
Sulphuric acid	20%	68 °F (20 °C), 72 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 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

Sterilization with Steam

Steam quality: The steam must be free of foreign particles and impurities

Temperature: Max. **273.2 °F (134 °C)**
(saturated steam)

Duration: Min. 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 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

Framework Conditions

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

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.

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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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