

Laboratory-Scale Depth Filtration
BECO® MiniCap™

Disposable Filtration Unit for the Pharmaceutical and Biotechnology Industries

BECO MiniCap filters are ready-to-use for the filtration of small volumes of media containing particles, or for microbiological removal in pharmaceutical and biotechnology applications.

The specific advantages of BECO MiniCap filters:

- Shorter process times
- Higher process safety
- No cleaning effort or cleaning validation required

Applications

- Scale-up trials: Selection of suitable filter media and determination of the required filter area
- Sample preparation
- Separation of cell debris
- Filtration of cell culture media
- Filtration of serum

BECO MiniCap filters have a filter area of 3.3 in² (21 cm²). With a filtration volume of 0.26 – 2.6 gal (1 – 10 liter), they are suitable for laboratory applications and scale-up trials.

BECO MiniCap filters are available with the BECO PR depth filter sheets for pharmaceutical and biotechnology applications, or with more open BECO CP2KS filters type for effective pre-filtration.

BECO MiniCap Filters with BECO PR Depth Filter Sheet

The PR range, specifically for pharmaceutical and biotechnology applications, has an innovative production process that ensures the endotoxin content is less than 0.125 EU/ml. The special characteristic of this series is high endotoxin retention during filtration of different pharmaceutical products.

BECO MiniCap CP2KS Filters

BECO MiniCap CP2KS filters are optimal for the filtration of strongly colloidal and highly viscous liquids and for liquids containing particles. The high dirt holding capacity enables long service life of the depth filter medium.



Overview of BECO MiniCap Filters

Order number	BECO MiniCap Filters PR Range
F001P300	BECO MiniCap PR Steril S 100
F002P300	BECO MiniCap PR Steril S 80
F004P300	BECO MiniCap PR Steril 40
F008P300	BECO MiniCap PR 12
F020P300	BECO MiniCap PR 5
F040P300	BECO MiniCap PR 1
CP2KS	
F270T300	BECO MiniCap CP2KS

Technical Data

Effective filter area	3.3 in ² (21.2 cm ²)
Diameter of the filtration unit	2.9 in (74 mm)
Housing	Polypropylene according to FDA CFR § 177.1520
Connections (filtrate inlet and outlet)	Hose connections 0.24 – 0.47 in (6 – 12 mm) in diameter
Reference values for the flow capacity	0.26 – 0.52 gal/h (1 – 2 l/h)
Max. inlet and differential pressure	44 psi (300 kPa/3 bar) at 77 °F (25 °C)
Filling volume	0.44 fl oz (13 ml)
Dead volume after purging with compressed air 4.4 psi (30 kPa/300 mbar)	0.17 fl oz (5 ml)

The data listed below refer to the specific BECO depth filter sheets used.

Type	Article No.	Nominal retention rate	Thick-ness	Ash content	Bursting strength wet	Water throughput at		Endo-toxin content (EU/ml ^{**})
						$\Delta p = 14.5 \text{ psi}$ gpm/ft ²	$\Delta p = 100 \text{ kPa}^*$ l/m ² /min	
		μm	in (mm)	%	psi (kPa)			
PR Steril S100	27295	0.1	0.15 (3.9)	58	> 7.3 (50)	0.7	(30)	< 0.125
PR Steril S 80	27280	0.2	0.15 (3.9)	50	> 11.6 (80)	1.1	(46)	< 0.125
PR Steril 40	27240	0.4	0.15 (3.9)	49	> 7.3 (50)	1.5	(61)	< 0.125
PR 12	27212	0.8	0.15 (3.9)	50	> 18.9 (130)	4.3	(175)	< 0.125
PR 5	27205	2.0	0.15 (3.9)	50	> 8.7 (60)	8.1	(330)	< 0.125
PR 1	27200	4.0	0.11 (2.9)	49	> 7.3 (50)	58.4	(2380)	< 0.125
CP2KS	27031	27.0	0.15 (3.9)	< 1	> 21.8 (150)	239.5	(9760)	-

* 100 kPa = 1 bar

** Endotoxin content analysis after rinsing with 13 gal/sqm (50 l/m²) of endotoxin-free water for BECO PR depth filter sheets

Chemical Data

Chemical resistance of the BECO depth filter sheets to different solvents over a contact time of 3 hours at 68 °F (20 °C).

Solvent	Mechanical strength	Solvent appearance	Solvent	Mechanical strength	Solvent appearance	Solvent	Mechanical strength	Solvent appearance
Aqueous solutions:						Organic solvents:		
Caustic soda:			Hydrochloric acid:			Methanol		
1%	r	nc	1%	r	nc	Ethanol	r	nc
2%	r	nc	3%	r	nc	Isopropanol	r	nc
4%	r	0	5%	r	nc	Toluene	r	nc
			10%	r	nc	Xylene	r	nc
Ammonia:			Azonic acid:			Dioxan	r	nc
1%	r	nc	1%	r	nc	Acetone	r	nc
3%	r	nc	3%	r	nc	Methyl ethyl ketone	r	nc
5%	r	nc	5%	r	nc	n-hexane	r	nc
			10%	r	nc	Tetrachloroethylene	r	nc
						Ethylene glycol	r	nc
			Sulfuric acid:			Cyclohexane	r	nc
			1%	r	nc	N,N-dimethyl formamide	r	nc
			3%	r	nc	Dimethyl sulfide	r	nc
			5%	r	nc			
			10%	r	nc			
			Acetic acid:					
			1%	r	nc			
			3%	r	nc			
			5%	r	nc			
			10%	r	0			

r = resistant

nc = no change

0 = slight opalescence

Components

BECO depth filter media are made from cellulose fibers, cationic charge carriers and high-quality, diatomaceous earth.

BECO CP2KS filter type is made without mineral components.

Sterilization (optional)

If required, BECO MiniCap filters can be sterilized 3 times at 255 °F (124 °C) in an autoclave for a period of 30 minutes each.

Before proceeding with the sterilization, rinse the depth filter sheet with a minimum of 1.7 fl oz (50 ml) sterile water to wet the depth filter sheet.

After sterilizing, rinse according to the rinse volumes specified below.

Filter Preparation and Filtration

Rinse volume BECO MiniCap PR filters:
3.4 fl oz (100 ml)

The operating temperature should not exceed 176 °F (80 °C), depending on the filtered liquids. Please contact Eaton regarding filtration applications with higher temperatures.

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 materials.

For sterilizing filtration, the differential pressure must not exceed 21.8 psi (150 kPa/1.5 bar) at 77 °F (25 °C).

Waste Disposal

BECO MiniCap filters may be disposed of as domestic waste, depending on the filtered product. Comply with current official regulations.

Storage

BECO MiniCap filters should be stored in a dry, dark, and odor-free place, ideally in their original packaging. Do not expose the depth filter sheets to direct sunlight.

BECO MiniCap filters are intended for immediate use and should be used within 36 months of delivery.

Available Formats

One package contains three individually packed BECO MiniCap filters. The carton label shows the following information: article description, article, batch, and lot numbers.

Quality Assurance According to DIN EN ISO 9001

The comprehensive Quality Management System of Eaton's Begerow Product Line 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.

The application of our products outside the test criteria specified in the technical information requires separate verification by the customer. In such cases, no liability for any damage whatsoever can be accepted. Further detailed information can be found in the respective technical information sheet. Failure to use the product as directed will void all warranties including any third-party commercial property rights.

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

North America

44 Apple Street
Tinton Falls, NJ 07724
Toll Free: 800 656-3344
(North America only)
Tel: +1 732 212-4700

Europe/Africa/Middle East

Auf der Heide 2
53947 Nettersheim, Germany
Tel: +49 2486 809-0

Friedensstraße 41
68804 Altlußheim, Germany
Tel: +49 6205 2094-0

An den Nahewiesen 24
55450 Langenlonsheim, Germany
Tel: +49 6704 204-0

China

No. 3, Lane 280,
Linhong Road
Changning District, 200335
Shanghai, P.R. China
Tel: +86 21 5200-0099

Singapore

4 Loyang Lane #04-01/02
Singapore 508914
Tel: +65 6825-1668

Brazil

Rua Clark, 2061 - Macuco
13279-400 - Valinhos, Brazil
Tel: +55 11 3616-8400

**For more information, please
email us at filtration@eaton.com
or visit www.eaton.com/filtration**

EN
1 A 4.2.8.3
12-2016

© 2016 Eaton. 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.



Powering Business Worldwide