Technical Data Sheet

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.

Overview of BECO MiniCap Filters

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

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.

Technical Data

Effective filter area	3.3 in² (21.2 cm²)
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
		µm	in (mm)	%	psi (kPa)	Δ p = 14.5 psi gpm/ft²	(Δ p = 100 kPa* l/m²/min)	(EU/ml**)
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 appear-ance	Solvent	Mechanical strength	Solvent appear-ance	Solvent	Mechanical strength	Solvent appear-ance
Aqueous solutions:						**Organic solvents:**		
Caustic soda: 1%	r	nc	**Hydrochloric acid:** 1%	r	nc	Methanol	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
						Dioxan	r	nc
Ammonia:			**Azonic acid:** 1%	r	nc	Acetone	r	nc
						Methyl ethyl ketone	r	nc
1%	r	nc	3%	r	nc	n-hexane	r	nc
3%	r	nc	5%	r	nc	Tetrachloroethylene	r	nc
5%	r	nc	10%	r	nc	Ethylene glycol	r	nc
						Cyclohexane	r	nc
			Sulfuric acid:			N,N-dimethyl formamide	r	nc
			1%	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.