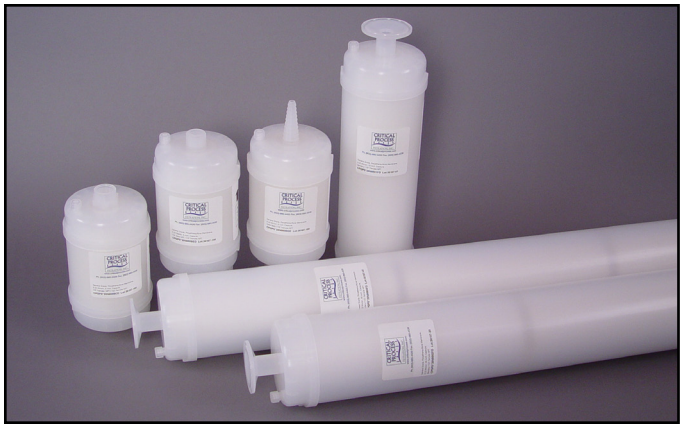
BBC Capsule Filters

Blended Cellulose Membrane

CRITICAL PROCESS FILTRATION, INC.



Excellent flow rates with excellent retention characteristics

Remove organic contaminants from media, serum and plasma products

Prefiltration of SVPs and LVPs

Applications

- Pre-filtration to increase the life of expensive final filters
- Final filtration — reduce bacteria counts and particle levels
- Typical Fluid Streams
  - Reagents/Standards
  - Animal Serums
  - Human Serums/Albumin
  - Culture Media
  - Fermentation Products

BBC Capsules are hydrophilic and manufactured with blended cellulose membrane. The proprietary membrane casting process creates a thick membrane with excellent retention characteristics and flow rates.

BBC capsule filters are used for prefiltration and clarification applications in the biopharmaceutical industry. Applications include bacteria and particulate removal in cell culture media, plasma products, serum, SVPs, LVPs and biological products. The filter elements are 100% integrity tested during production.

Blended cellulose membranes are particularly suited for the filtration of products that contain elements that can adsorb to the media, such as proteins. The lower binding characteristics of cellulose ester membranes make them a good choice for filtration of valuable protein solutions such as serum and other biologicals.

Biopharmaceutical Grade

BBC Capsule Filters - Filtration Area

Media	Capsule Length				
	2″	5″	10″	20″	30″
Blended Cellulose Membrane	1.0 ft^2 (0.093m^2)	3.0 ft^2 (0.279m^2)	7.0 ft^2 (0.650m^2)	14.0 ft^2 (1.301m^2)	21.0 ft^2 (1.951m^2)

Flow Rate / Filtration Area

The following table represents typical water flow at a one psi (69 mbar) pressure differential across a single 2 inch capsule with 1.0 ft^2 (0.093 m^2) of media with 1/2″ FNPT ports. The test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore Size	0.22 µm	0.45 µm	0.65 µm	1.2 µm
GPM	0.17	0.21	0.71	1.14
LPM	0.64	0.79	2.69	4.31

* For approximate flow rates for 5″ through 30″ capsules, refer to the appropriate cartridge data sheet

Construction Materials

Housing	Polypropylene
Filtration Media	Blended Cellulose Membrane
Media Support	Polypropylene
End Caps	Polypropylene
Center Core	Polypropylene
Outer Support Cage	Polypropylene
Sealing Method	Thermal Bonding

Maximum Operating Parameters

Liquid Operational Pressure	80 psi (5.5 bar) at 20 °C (68 °F)
Gases Operational Pressure	60 psi (4.1 bar) at 20 °C (68 °F)
Operating Temperature	43 °C (110 °F) at 30 psi (2.1 bar) in water
Forward Differential Pressure	50 psid (3.4 bard) at 20 °C (68 °F)
Reverse Differential Pressure	40 psid (2.7 bard) at 20 °C (68 °F)
Recommended Changeout Pressure	35 psid (2.4 bard)

Sanitization/Sterilization

Autoclave.....250° F (121° C), 30 min, 5+ cycles
Chemical Sanitization .... Industry standard concentrations of hydrogen peroxide, paracetic acid, and other selected chemicals.
Note.....BBC capsules are not to be used in steam.
Pre-Sterilized.....BBC capsules are offered in both non- and pre-sterilized forms.

Extractables

Biopharmaceutical grade filters typically exhibit low levels of non-volatile residues.

USP Biosafety and FDA Compliance

The materials used to construct biopharmaceutical grade BC capsule filters are non-toxic and meet the requirements for the MEM Elution Cytotoxicity Test and the requirements for Biological Reactivity Tests in the current version of the United States Pharmacopeia (USP) for Class VI - 121 °C Plastics. In addition, the materials meet the requirements listed by the FDA as appropriate for use in articles intended for repeated food contact as specified in Title 21 CFR sections 174.5, 177.1500, 177.1520, 177.1630, 177.2440, and 177.2600 as appropriate. BBC capsule filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters. The levels of bacterial endotoxins in aqueous extracts from biopharmaceutical grade capsule filters are below current USP limits as specified for water for injection.

Ordering Information

Capsule order number example: Biopharmaceutical Grade Blended Cellulose Membrane, 0.22 Micron Rating, Pre-Sterilized, 10" Length, Sanitary Inlet, Sanitary Outlet = CPBBC-20S0001FF.

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Micron Rating
-20 - .22 **-60** - .65
-40 - .45 **1-2** - 1.2

Pre-Sterilized or Not
S - Pre-Sterilized
N - Not Sterilized

Length
A - 2"
B - 5"
1 - 10"
2 - 20"
3 - 30"

Inlet
A - 1/4" Female NPT
B - 1/4" Male NPT
C - 3/8" Female NPT
D - 1/2" Female NPT
E - 1/2" Male NPT
F - 1"-1½" Sanitary
G - Hose Barb*

Outlet
A - 1/4" Female NPT
B - 1/4" Male NPT
C - 3/8" Female NPT
D - 1/2" Female NPT
E - 1/2" Male NPT
F - 1"-1½" Sanitary
G - Hose Barb*

Hose Barb Diameter Ranges*

	Minimum	Maximum
Outer Diameters	11/32" (8.6mm)	9/16" (14.0mm)
Inner Diameters	5/32" (4.0mm)	13/32" (10.5mm)

Quality Assurance and Standards

Critical Process Filtration uses state of the art computer controlled equipment to consistently produce high quality products as well as significantly reduce hand operations that can compromise quality. All manufacturing and testing is continuously monitored in real time so that data can be quickly and easily analyzed to facilitate improvements in both quality and cost.

The Critical Process Filtration manufacturing and quality systems meet rigorous ISO 9001-2008 standards. Each operation, including assembly, testing, cleaning, drying and packaging, is done in an appropriately rated clean room. Manufacturing is controlled using a sophisticated manufacturing system that networks work stations, manufacturing centers and inspection points. During the manufacturing and inspection processes, data is collected in real time to allow continuous quality monitoring and full traceability of all materials and processes.

Each capsule filter assembly is integrity tested before release.

Total Performance

Critical Process Filtration, Inc. is a vertically integrated manufacturer of filtration products to industries in which filtration is considered a critical part of the manufacturing process. We supply a complete line of products and services to help you cost effectively satisfy all your filtration requirements from a single source.

Request a QUOTE from your area representative

CRITICAL PROCESS FILTRATION, INC.

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