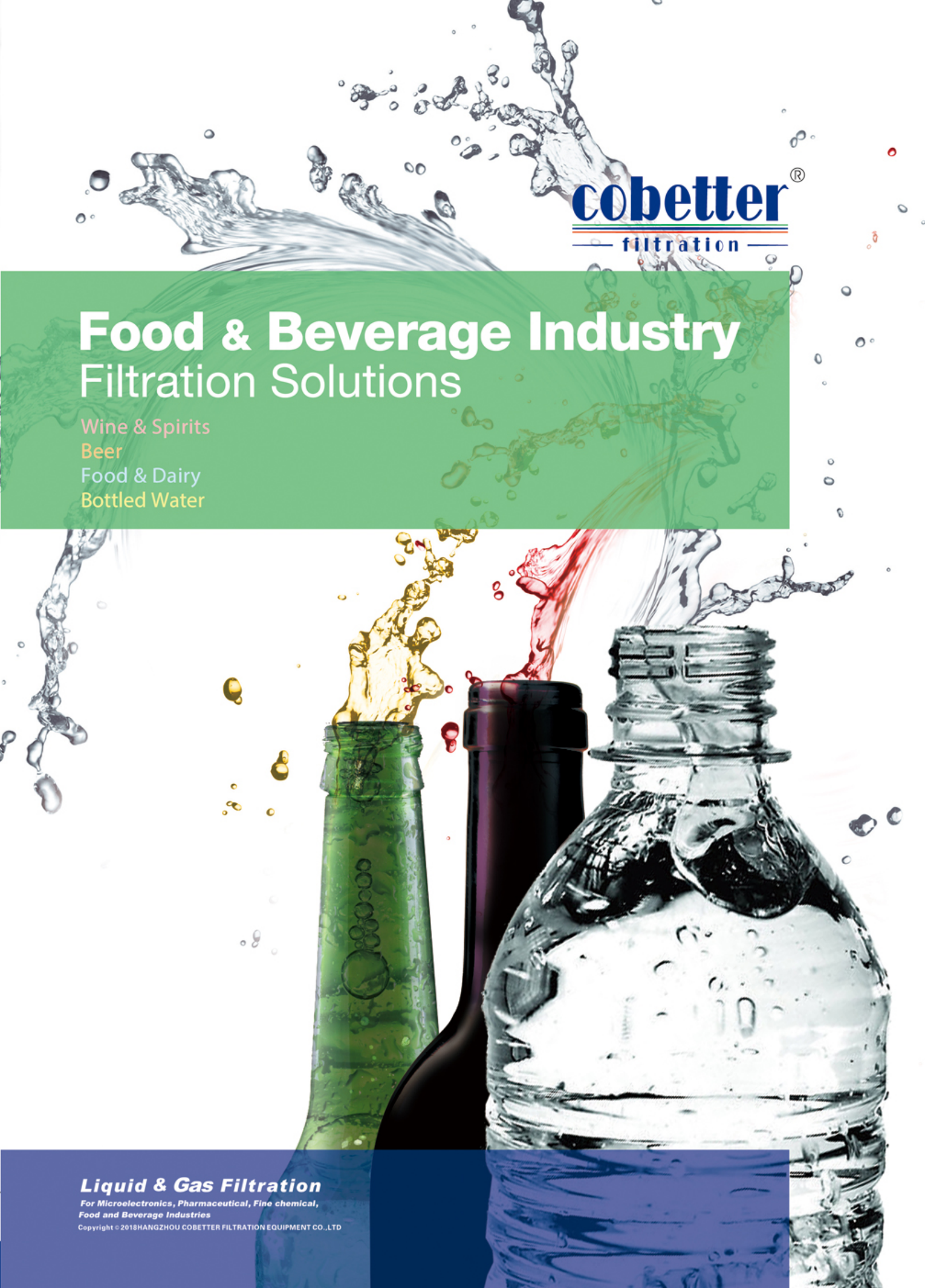
cobetter®
filtration

Food & Beverage Industry
Filtration Solutions

Wine & Spirits
Beer
Food & Dairy
Bottled Water

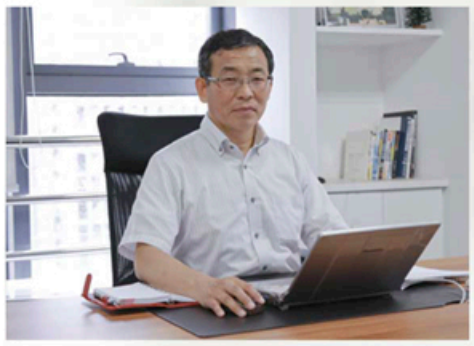


Liquid & Gas Filtration

For Microelectronics, Pharmaceutical, Fine chemical, Food and Beverage Industries

Purifying the Environment & Delivering Peace of Mind

Quality Control



Hara Shinji (はら　しんじ)

Quality Director
Decades of Experience in the Filtration Industry in Japan
Director of Product Development and Quality Control

Product Validation

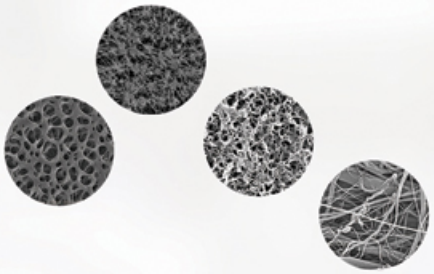
Taketomi Hidetoshi (たけとみ　ひでとし)

Validation Expert
More than 20 Years of Validation Experience in Japan

- Bacterial Challenge Test
- Filter Integrity Test
- Filter Extractable Test
- Raw Material Biological Safety Test
- pH, TOC, snd Endotoxins Test
- Steam Sterilization Cycle Test

Filter Performance Test Lab

Manufacturing Capability



- Microfiltration Membrane Development
- Filter Membrane & Membrane Products
- Filter Cartridge Production
- Disposable Capsule Filter Production
- Cobetter Filter Housing Factory
- Validation & Technical Service
- Filtration Solutions Provider

About Cobetter

Quality Control Procedures

- Quality Control Procedures are implemented throughout the entire manufacturing process.
- Quality Control Charts are available where applicable. All goods are fully inspected before they leave the factory.

Why We Are the Most Advanced Global Filtration Solution Provider

- Installed advanced pleating machine
- Own and operate fully equipped Bacterial Challenge Laboratory which provides full Validation Services
- Own SEM (Scan Electron Microscope) 10,000+
- Class 10,000 Grade Clean Room which meets all GMP requirements

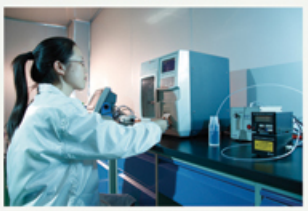
Experience You Can Rely on

- We are technical experts in critical filtration and are dedicated to helping our customers solve their application challenges.
- We will continue to provide our customers with excellent technical and other sales services and products.

Process Validation

- Bacterial Challenge Test under Certain Conditions and Processes
- Extractable Test
- Chemical Compatibility
- Product Pre-Wetted Integrity Test
- Adsorption Test
- Hydraulic Stress Resistance
- Thermal Stress Resistance
- Cleanliness

SEM Analysis Lab



Particle Efficiency Test Lab

Chemical Analysis Lab

Bacterial Challenge Test Lab
First domestic

Third Party Validation

- ROSH Testing Certificate by SGS
- HALAL Certificate
- 97 / 23 / EC Pressure Equipment

Food Contact Compliance

SGS
European Regulation (EC) No.1935/2004

SGS
Commission Regulation(EU) No.10/2011

SGS
The specific migration limits of phthalates stated in EU No.10/2011

SGS FDA 21 CFR

cobetter® filtration
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Wine Making

1 Clarification

BevClear® AB Filters Series
BevClear® BW Filters Series
BevClear® GF Plus Filters Series

- Polypropylene/ Glass Fiber Media
- Effective particulate removal
- Repetitive back wash cleaning

2 Pre-Filtration

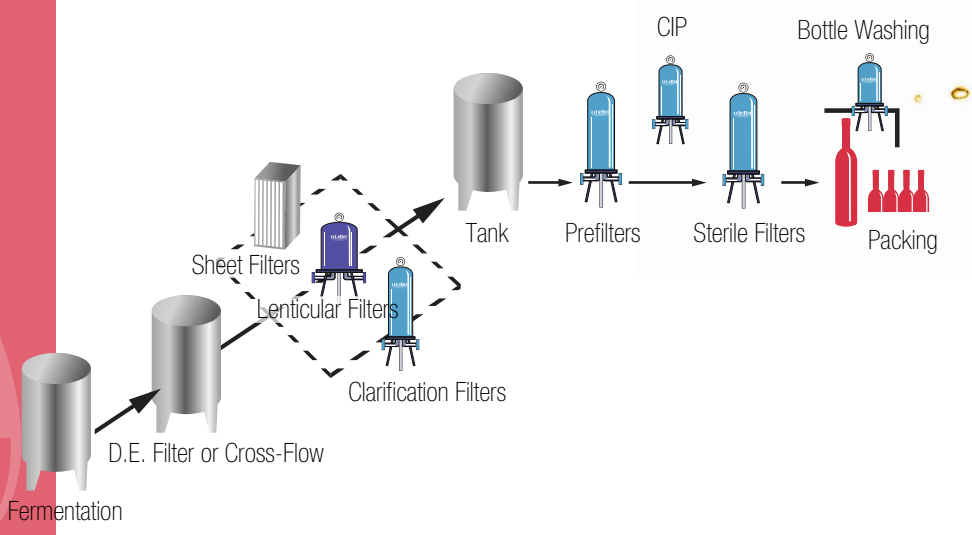
BevPure® Filters Series
BevPure® XL Filters Series

- Asymmetric PES VS Symmetric PES membrane
- Advanced life of Membrane Filters

3 Microbiological Stabilization

BevPure® Filters Series
BevPure® XL Filters Series
BevPure® XL Plus Filters Series

- Built in Asymmetric Pre-filter for longer life
- Highest level of sterile assurance
- Highly Asymmetric Membrane with large filter area
- Repetitive steam sterilization and chemical regeneration
- Diffusional flow & Bubble point testable

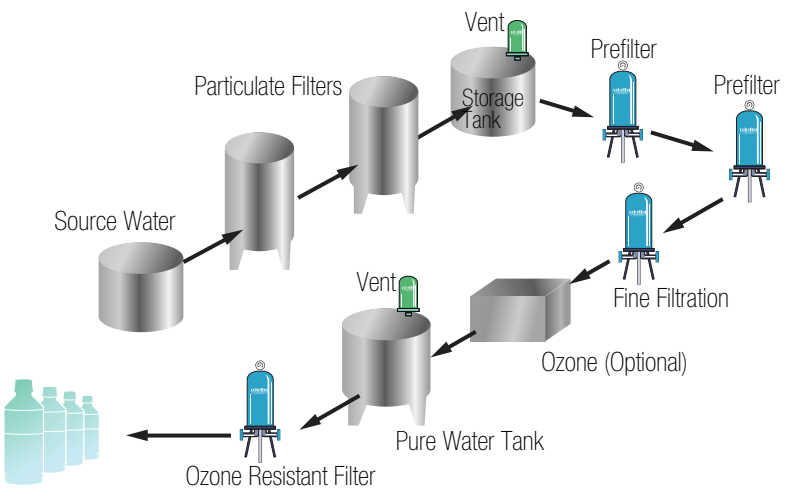


Bottled Water

Clarification 1

BevClear® AB Filters Series
BevClear® BW Filters Series
BevClear® HF Filters Series

- Polypropylene media
- Effective particulate removal
- High flow format with high dirty holding capacity



Pre-Stabilization 2

BevPure® Filters Series
BevPure® XL Filters Series
BevPure® AB Filters Series

- Bioburden reduction&clarification
- Advanced life of Membrane Filters
- Remove Cryposporidium & Giardia

Final Stabilization 3

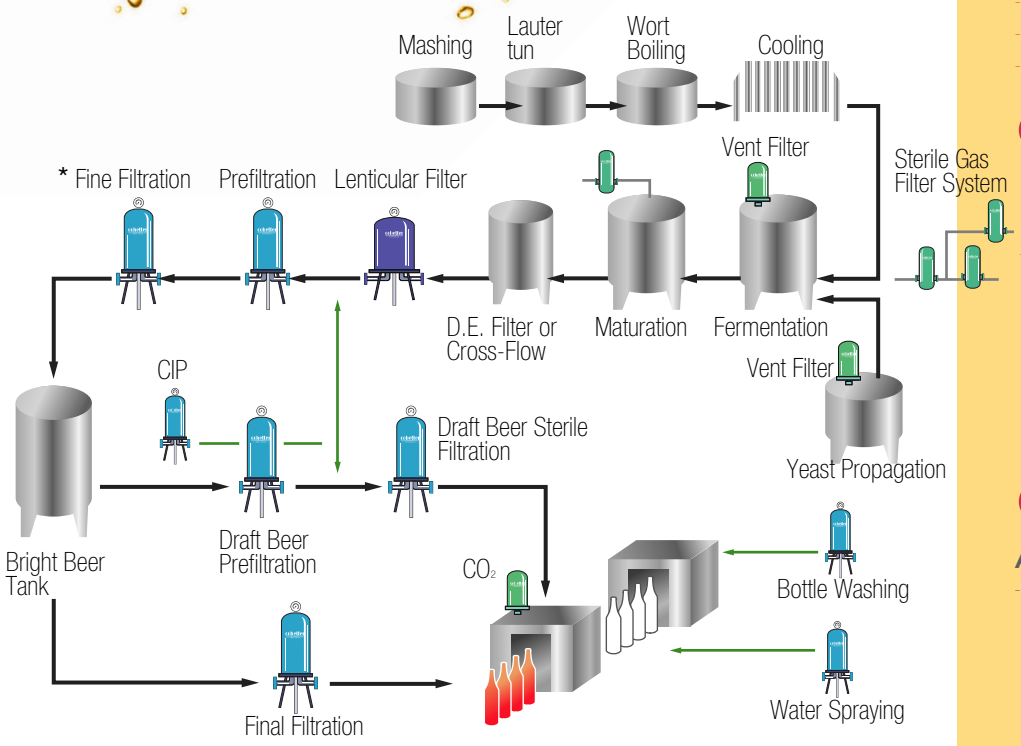
BevPure® Filters Series
BevPure® XL Filters Series
BevPure® Plus Filters Series

- Built in Asymmetric Pre-filter for longer life
- Highest level of sterile assurance
- Diffusional flow & Bubble point testable

Ozone Resistant Filtration 4

AquaFlour® Filters Series

- Anti-oxidizing filter with ozonated water resistance



* Prefilteration not always 3 steps

Brewing

1 Beer Trap Filtration

- *Remove Diatomaceous Earth(DE) or PVPP*
- *Unwanted particulate removal*

BevClear® BW Filters Series

- Polypropylene media
- Effective particulate removal
- Singe cage design
- Repetitive back wash cleaning

2 Prefiltration of beer prior to Terminal Microbiological Stabilization

- *Remove Yeast ,bacterial reduction and remove colloid*

Bevclear® AB Filters Series
CSD Lenticular Filters Series
Bevclear® HF Filters Series
Bevclear® BW Filters Series

3 Final Stabilization

Aseptic brewing & Cold filtered Beer

- *Remove beer spoilage organisms: Lactobacillus & Pediculus*

BevPure® Filters Series
BevPure® XL Filters Series
BevPure® Plus Filters Series

- Built in Asymmetric Pre-filter for longer life
- Highest level of sterile assurance
- Highly Asymmetric Membrane with large filter area
- Repetitive steam sterilization and chemical regeneration
- Diffusional flow & Bubble point testable

Fine/Polishing Filtration (Pasteurized)

BevClear® AB Filters Series
BevPure® Filters Series
BevClear® BW Filters Series

- PP Nano fiber media with high efficiency
- Asymmetric PES membrane ensure bio-security

4 Sterile Gas & Vent Filtration

TefloGas® Filters Series

- PTFE membrane assure of bio-security

5 Steam Filtration

PSSF Filters Series

Sterile Gas & Vent Filtration 5

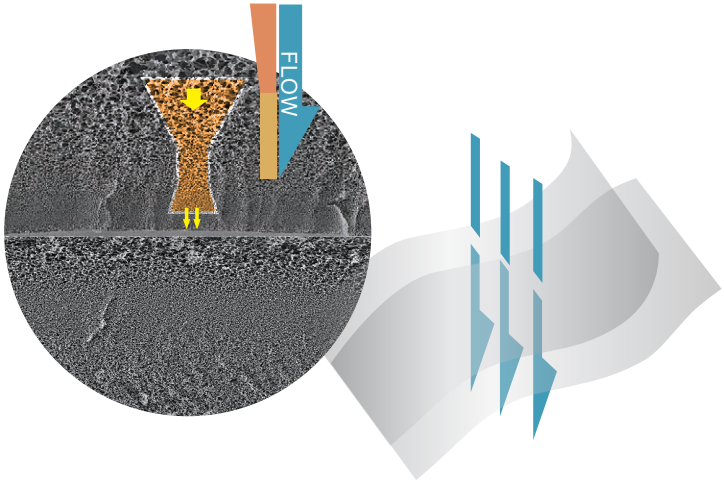
AquaFlour® Filters Series
TefloGas® Filters Series

- PTFE membrane assure of sterilization
- Anti-oxidizing filter with ozonated water venting resistance

BevPure Plus Filter Cartridges

Double-layer PES Membrane · Sterilizing Grade

BevPure Plus Filter Cartridges have been established as a new generation of PES membranes in sterilizing grade filtration. The unique double-layer PES membrane provides excellent micro-biological retention with economical filtration. BPP Filter Cartridges can be steam or hot water sterilized frequently for longer service life. They can be used in a wide range of food and beverage applications which demand the highest level of microbiological process safety.



Features and Benefits

- Double-layer membrane structure provides excellent reliability and safety
- Asymmetric pre-filter layer for longer service life and more economical costs
- Large effective filtration area (0.58 m^2/10 inch)
- Can be steam sterilized up to 50 sterilization cycles
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Materials of Construction

Filter Media	Double-Layer PES Membrane (Asymmetric PES + Symmetric PES)
Cage/Support	Polypropylene
Core/End Caps	Polypropylene

Microbiological Stability

Longer Life & Excellent Filtration Performance

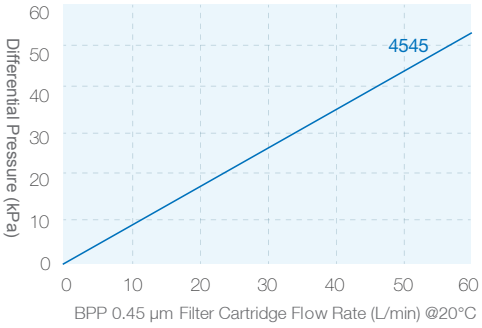
Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C
Max. Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C
Bubble Point	≥0.34MPa(49psi),air
Diffusion Flow	≤ 20 mL/min @ 2.75 bar
Sterilization	

Inline Steam Sterilization: 100 cycles for 30 minutes at 135 °C (< 0.3 bar, 5 psi).
Autoclave: 200 cycles for 30 minutes at 130 °C.
Hot water sanitization: 50 cycles for 30 minutes at 85 °C
Chemistry sanitization: 50 cycles for 30 minutes at 40 °C in a mix solution of sodium hypochlorite (NaClO, 100 ppm) and peroxyacetic acid (100 ppm).

Cleaning Solution	2% NaOH Solution @ ≤65°C
Effective Filtration Area	0.6 m^2 (6.5 ft^2) / Φ 69-10 inch

Flow Rate Characteristics



Reliable Microbiological Control

Lot,no	S/N	BP Limit	Measured BP	DF Limit	Measured DF	LRV
8081001	365	>0.22Mpa	0.28	<40ml/min @1500mbr	28	> 6
8081001	377		0.28		28	> 6
8081001	650		0.28		29	> 6
8082001	932		0.27		28	> 6
8082001	581		0.27		27	> 6
8082001	596		0.27		28	> 6
8083001	748		0.28		28	> 6
8083001	756		0.28		29	> 6
8083001	268		0.28		28	> 6

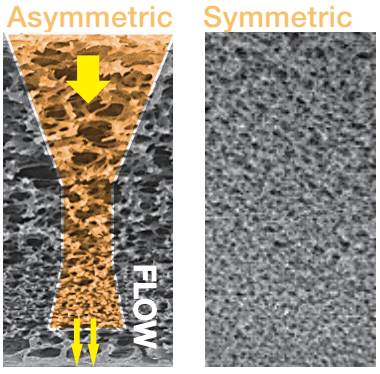
Ordering Information

BPP	Removal Ratings	End Cap	Nominal Length	Seal Material	-F
[Φ69]	**4522** =0.45+0.22μm	**DOE** =Double Open End	**05** = 5"	**S** =Silicone	
	4545 =0.45+0.45μm	**HTC** =222 O-ring/Flat (PBT Insert)	**10** =10"	**E** =EPDM	
	6545 =0.65+0.45μm	**HTF** =222 O-ring/Fin (PBT Insert)	**20** =20"	**V** =Viton	
		HSF =226 O-ring/Fin (PBT Insert)	**30** =30"		
		SSF =226 O-ring/Fin (SS Insert)	**40** =40"		
		SSC =226 O-ring/Flat (SS Insert)			
		STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

BevPure XL Filter Cartridges

Extended Service Life through Asymmetric PES Membrane · Sterilizing Grade

BevPure XL Filter Cartridges have a unique membrane arrangement of single-layer asymmetric hydrophilic PES membrane. Characteristics include excellent throughput, high dirt holding capacity and durability. The extremely high flow rates in comparison to other sterilizing grade filter media can significantly reduce filtration costs.

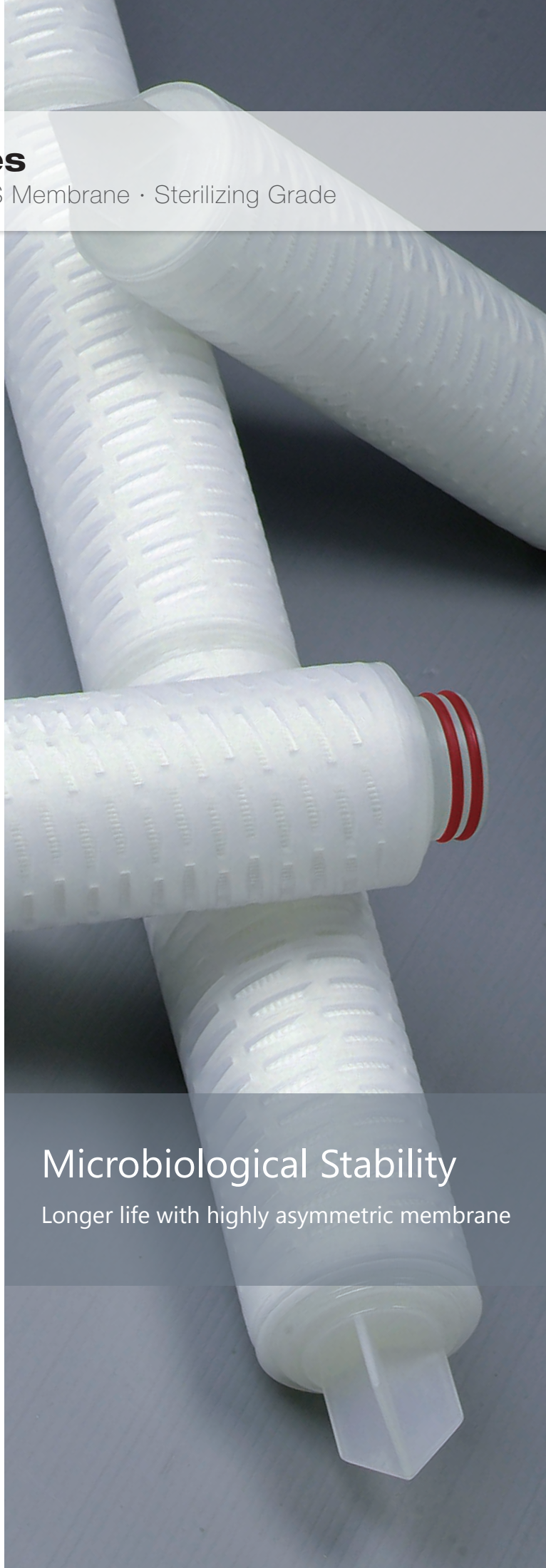


Features and Benefits

- Highly asymmetric PES membrane provides high dirt holding capacity for longer service life
- Each filter is individually Integrity Tested prior to factory dispatch
- Available in ratings from 0.1µm to 1.2µm for precise bacteria and particle removal
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Materials of Construction

Filter Media	Asymmetric PES Membrane
Cage/Support	Polypropylene
Core/End Caps	Polypropylene



Operating Conditions

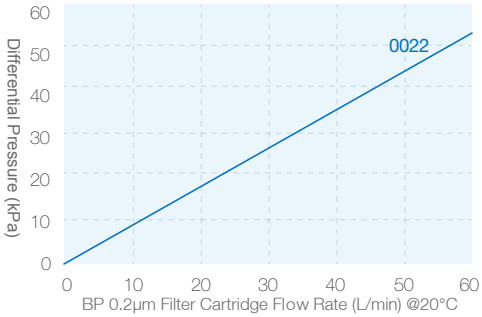
Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C
Max. Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Bubble Point (BPXLR)	≥3.4 bar (49 psi) , air ,0.22μm ≤ 30 mL/min at 2.5 bar, water

Sterilization

Inline Steam Sterilization: 100 cycles for 30 minutes at 135 °C (< 0.3 bar, 5 psi).
Autoclave: 200 cycles for 30 minutes at 130 °C.
Hot water sanitization: 50 cycles for 30 minutes at 85 °C
Chemistry sanitization: 50 cycles for 30 minutes at 40 °C in a mix solution of sodium hypochlorite (NaClO, 100 ppm) and peroxyacetic acid (100 ppm).

Cleaning Solution	2% NaOH Solution @ ≤65°C
Effective Filtration Area	0.58m² / Φ69-10 inch

Flow Rate Characteristics



Flow Rate (LPM)	10	20	30	40	50	60
Differential Pressure (kPa)	9.2	18.5	27.7	37.0	46.2	55.5

Raliable Microbiological Control

The primary purpose of a membrane filter cartridge in beverage processing is to effectively control spoilage microorganisms.

Typical Log Reduction Value (LRV)			
	B.*diminuta*	**Lactobaccilus Brevis**	**Sasharomyces Cerevisiae**
0.2μm	>7/cm²	N/A	N/A
0.45μm	N/A	>7/cm²	>7/cm²
0.65μm	N/A	>4/cm²	>7/cm²
0.8μm	N/A	N/A	>7/cm²
1.2μm	N/A	N/A	>7/cm²

Log Reduction Values are calculated using the following formula: $LRV = \log_{10}\left(\frac{\text{total number of organisms entering the filter}}{\text{total number of organisms exiting the filter}}\right)$

Ordering Information

BPXL		Removal Ratings	End Cap	Nominal Length	Seal Material	**-F**
[Φ69]	-R	**0022**=0.22 μm	**DOE**=Double Open End	**05** = 5"	**S** =Silicone	
		0045=0.45 μm	**HTC** =222 O-ring/Flat (PBT Insert)	**10** =10"	**E** =EPDM	
		0065=0.65 μm	**HTF** =222 O-ring/Fin (PBT Insert)	**20** =20"	**V** =Viton	
		0080=0.8 μm	**HSF** =226 O-ring/Fin (PBT Insert)	**30** =30"		
		0120=1.2 μm	**SSF** =226 O-ring/Fin (SS Insert)	**40** =40"		
			SSC =226 O-ring/Flat (SS Insert)			
			STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

BevPure Filter Cartridges

Symmetric PES Membrane · Sterilizing Grade

BevPure Filter Cartridges are specially designed to provide reliable sterilizing filtration at the most economical costs. Hydrophilic PES membrane filters require no pre-wetting and are ready to use. This filter is recommended for the sterile filtration of a wide range of liquids e.g. diluting water and beverages.

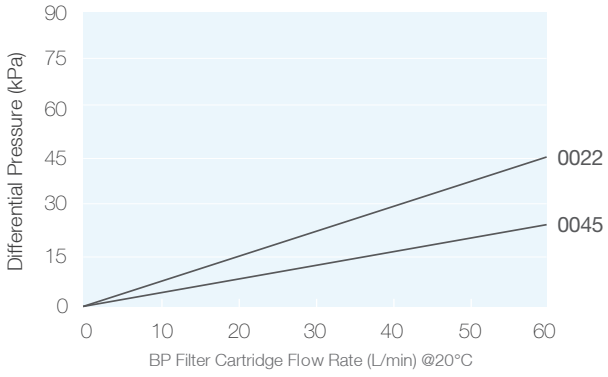
Features and Benefits

- Inherent hydrophilic PES membrane
- Each filter is individually Integrity Tested prior to factory dispatch
- Bacterial Challenge Test with B.*diminuta* bacteria
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Materials of Construction

Filter Media	Symmetric PES Membrane
Cage/Support	Polypropylene
Core/End Caps	Polypropylene

Flow Rate Characteristics



Microbiological Stability

Operating Conditions

Maximum Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Bubble Point (BPR)	≥ 3.2 bar (46 psi) with air
Diffusion Flow (BPR)	Water wet ≤ 25 mL/min at 2.75 bar (40 psi)

Sterilization

Inline Steam Sterilization: 100 cycles for 30 minutes at 135 °C (< 0.3 bar, 5 psi).
Autoclave: 200 cycles for 30 minutes at 130 °C.
Hot water sanitization: 50 cycles for 30 minutes at 85 °C
Chemistry sanitization: 50 cycles for 30 minutes at 40 °C in a mix solution of sodium hypochlorite (NaClO, 100 ppm) and peroxyacetic acid (100 ppm).

Cleaning Solution	2% NaOH Solution @ ≤65°C
Effective Filtration Area	0.58m² / Φ69-10 inch

Reliable Microbiological Control

The primary purpose of this membrane filter cartridge in beverage filtration is to effectively remove product spoiling microorganisms

Typical Log Reduction Value(LRV)			
	B.*diminuta*	Lactobaccilus Brevis	Sasharomyces Cerevisiae
0.2μm	>7/cm²	N/A	N/A
0.45μm	N/A	>7/cm²	N/A

Log Reduction Values are calculated using the following formula:

$$LRV = \log_{10}\left(\frac{\text{total number of organisms entering the filter}}{\text{total number of organisms exiting the filter}}\right)$$

Ordering Information

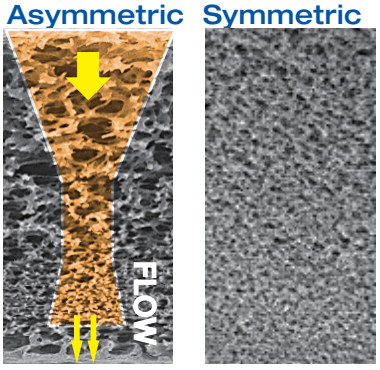
BP		Removal Ratings	End Cap	Nominal Length	Seal Material	**-F**
[Φ69]	**R**	**0022** =0.22μm	**DOE** =Double Open End	**10** =10"	**S** =Silicone	
	Blank	**0045** =0.45μm	**HTC** =222 O-ring/Flat (PBT Insert)	**20** =20"	**E** =EPDM	
			HTF =222 O-ring/Fin (PBT Insert)	**30** =30"	**V** =Viton	
			HSF =226 O-ring/Fin (PBT Insert)	**40** =40"		
			SSF =226 O-ring/Fin (SS Insert)			
			SSC =226 O-ring/Flat (SS Insert)			
			STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

BevPure XL-EA Filter Cartridges

Asymmetric PES Membrane·Bioburden Reduction Liquid Filter

BevPure XL-EA Filter Cartridges are constructed of a single-layer asymmetric hydrophilic PES membrane. Characteristics include excellent throughput and high dirt hold capacity and durability. These lters are recommended as a bio-burden reduction lter as it providesnal stage steriliz-ing-grade lters with additional protection to increase its service life.

Asymmetric **Symmetric**

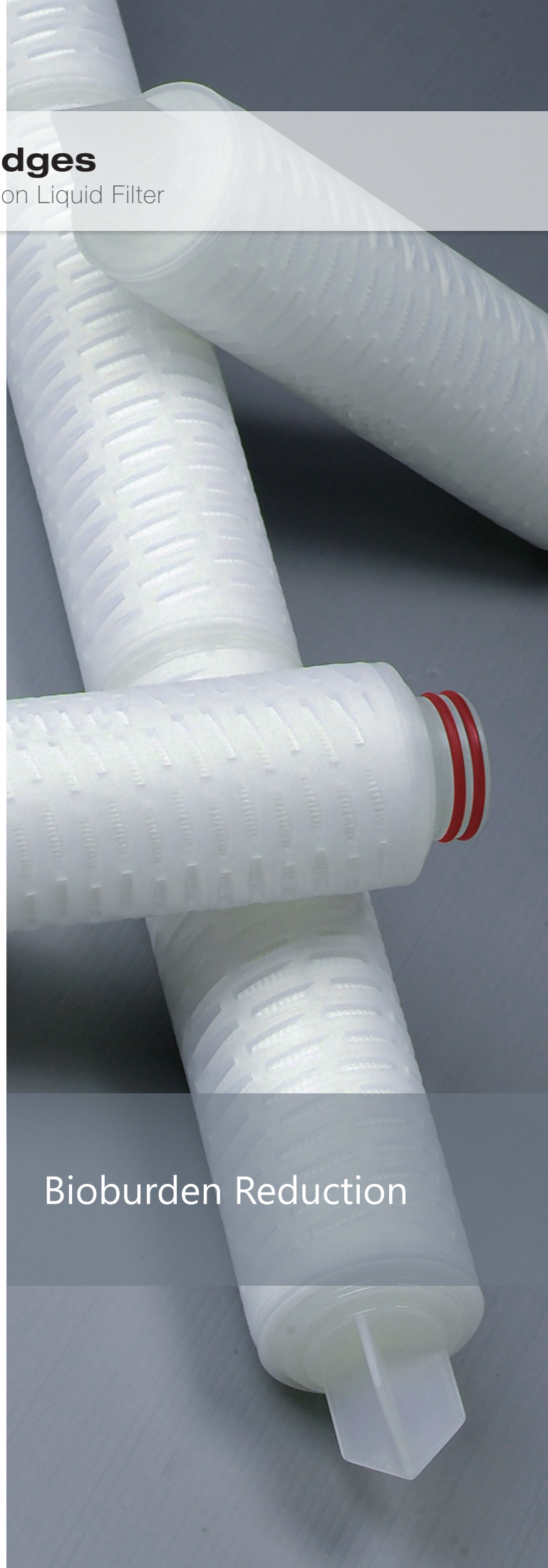


Features and Benefits

- Highly asymmetric PES membrane provides high dirt holding capacity and longer service life
- Broad chemical compatibility

Quality Standards

- Manufactured in a facility which adheres to ISO 9001:2015 Practices .
- Full Regulatory Compliance with following :
  - Bacterial Endotoxin :Aqueous extraction of autocalved filter contains <0.25 EU/ml as determined by Limulus Amebcyte Lysate (LAL),USP<85>.
  - Non-fiber Releasing :Component materials meet the criteria for a " Non-fiber-releasing filter " as defined in 21 CFR 210.3(b)(6).
  - Component Material Toxicity :Meet the requirement of USP <87> In Vitro Cytotoxicity Test ; Meet the Criteria of USP<88> Biological Reactivity Test for Class VI-121℃ plastics
  - TOC/Conductivity at 25℃: Autoclaved filter effluent meet the USP<643> for Total Organic Carbon and USP<645> for Water Conductivity per WFI requirements after a UPW flush of specified volume .
  - Particle Shedding : Autoclaved filter effluent meet the USP<788>for large volume Injections .
  - Indirect Food Additive: All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182 ,and EU framework regulation [1935/2004/EC].



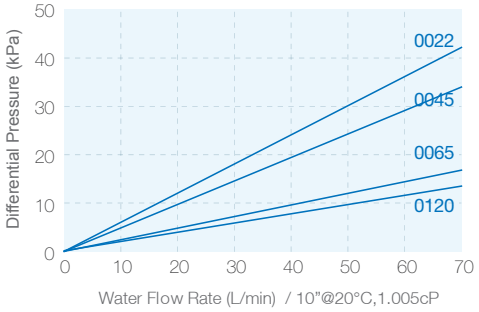
Materials of Construction

Filter Medium	Asymmetric PES Membrane
Cage/Support	Polypropylene
Core/End Caps	Polypropylene

Operating Conditions

Max. Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Max. Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Effective Filtration Area	0.58m² / Φ69-10 inch

Flow Rate Characteristics



Sterilization

Inline Steam Sterilization	up to 100 cycles (135°C for 30min< 0.3 bar per cycle)
Autoclave	up to 200 cycles (130°C for 30min per cycle)

Ordering Information

BPXL-EA | Removal Ratings | End Cap | Nominal Length | Seal Material | **-F**

Removal Ratings	End Cap	Nominal Length	Seal Material
0022 =0.22 µm	**DOE** =Double Open End	**05** = 5"	**S** =Silicone
0045 =0.45 µm	**HTC** =222 O-ring/Flat (PBT Insert)	**10** =10"	**E** =EPDM
0065 =0.65 µm	**HTF** =222 O-ring/Fin (PBT Insert)	**20** =20"	**V** =Viton
0080 =0.8 µm	**HSF** =226 O-ring/Fin (PBT Insert)	**30** =30"	
0120 =1.2 µm	**SSF** =226 O-ring/Fin (SS Insert)	**40** =40"	
	SSC =226 O-ring/Flat (SS Insert)		
	STF =222 O-ring/Fin (SS Insert, 3 Tabs)		

BevPure NY Filter Cartridges

Nylon66 Membrane·Sterile Liquid Filter

BevPure NY Filter Cartridges are composed of an inherently Nylon66 membrane. It's specifically designed for bio-burden reduction and the final filtration of a wide range of food and beverage solutions. Nylon66 membrane with positive-charged Zeta particles is available, which provides enhanced retention of fine particles.

Features and Benefits

- Intrinsically water wettability
- Nylon66 membrane filter removes endotoxins through the formation of positive-charged Zeta particles
- High bubble point ensures a more reliable retention efficiency
- Low pressure drops and high flow rates
- Longer service life

Quality Standards

- Retention of 10^7cfu/cm^2 Brevundimonas diminuta (ATCC® 19146) according to ASTM F838.
- 100% Integrity testing in manufacturing .
- Each filter is fully traceable with unique serial number .
- These products are manufactured in a facility which adheres to ISO 9001:2015 Practices.
- Full Regulatory Compliance with following :

  •Bacterial Endotoxin :Aqueous extraction of autoclaved filter contains < 0.25 EU/mL as determined by Limulus Amebocyte Lysate (LAL), USP <85>.

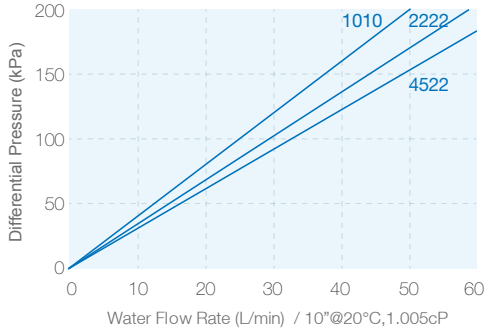
  •Non-fiber Releasing :Component materials meet the criteria for a "Non-fiber-releasing filter" as defined in 21 CFR 210.3 (b) (6).

  •Component Material Toxicity :Meet the criteria of the USP <88> Biological Reactivity Test for Class VI-121°C plastics.

Materials of Construction

Filter Media	Hydrophilic Nylon 66 Membrane
Support	PET
Cage/Core/End Caps	Polypropylene

Flow Rate Characteristics



Operating Conditions

Max. Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Max. Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Effective Filtration Area	0.69m^2 (8.1ft^2) / Φ69-10inch

Sterilization

Inline Steam Sterilization	Up to 50 cycles (121 °C for 30 min < 0.3 bar per cycle)
Autoclave	Up to 50 cycles (121 °C for 30 minutes)

Integrity Test Data

Bubble Point	BP : ⩾0.38 MPa (water), 0.1 μm +0.1 μm BP : ⩾0.34 MPa (water), 0.22 μm +0.22 μm BP : ⩾0.30 MPa (water), 0.45 μm +0.22 μm

Ordering Information

DN66TC (Double-Layer)

NY6TC (Single-Layer)

Removal Ratings	End Cap	Nominal Length	Seal Material	
				-F
0101 =0.1+0.1μm	**DOE**=Double Open End	**10**=10"	**S**=Silicone	
2222 =0.22+0.22μm	**HTC** =222 O-ring/Flat (PBT Insert)	**20**=20"	**E**=EPDM	
4522 =0.45+0.22μm	**HTF** =222 O-ring/Fin (PBT Insert)	**30**=30"	**V**=Viton	
0010 =0.1μm	**HSF** =226 O-ring/Fin (PBT Insert)	**40**=40"		
0022 =0.22μm	**SSF** =226 O-ring/Fin (SS Insert)			
0045 =0.45μm	**SSC** =226 O-ring/Flat (SS Insert)			
	STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

BevPure PV Filter Cartridges

PVDF Membrane·Sterile Liquid Filter

BevPure PV Filter Cartridges are made of unique hydrophilic polyvinylidene fluride (PVDF)membrane characterized by high throughput and low binding. It is suitable for the sterilized flltration of a wide range of beverage applications.

Features and Benefits

- Low extractable and protein binding
- Broad chemical compatibility and temperature resistance
- Excellent durability proven by testing forward/ reverse pulse up to 100x
- Ideal for the removal of particles and beverage-spoiling microorganisms

Quality Assurance

- Integrity Test correlates to ASTM F838-05-Bacterial Challenge Test(BCT)
- Each Iter is individually Integrity Tested prior to leaving the factory
- Each Iter package includes a Certi cate of Quality
- Each Iter is Fully Traceable with a unique serial number
- Designed,developed and manufactured in compliance with ISO9001
- Cartridge materials were tested and meet the criteria of the USP Class VI Biological Test for plastics.
- Meets the criteria for a “non-fiber releasing” filter as defined in 21CFR 210.3(b)(6)
- Compiles with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004EC

Materials of Construction

Filter Media	BPPVI: Single-Layer Hydrophilic PVDF Membrane
	BPPVII: Double-Layer Hydrophilic PVDF Membrane
Support	Polypropylene
Cage/Core/End Caps	Polypropylene

High Throughput, Low Binding Filters

Operating Conditions

Max. Temperature	80°C
Max. Differential Pressure	4.5 bar / 21°C (forward flow) 2.4 bar / 80°C (forward flow)
Bubble Point	BP: >3.2 bar (water), 0.45+0.22 μm
Diffusion Flow	DF:≤23 mL/min/10"@ 2.8bar(water), 0.45+0.22 μm
Steam Sterilization (Saturated Steam)	Up to 100 cycles (Forward& Reverse) (135°C/30 min @ Max.Differential Pressure of 0.3 bar)
Hot Water Sterilization	85°C/30 min @ Max. Differential Pressure of 2 bar
Cleaning Solution	Chlorine 100ppm at 40°C/ peracetic acid 100 ppm at 40°C
Effective Filtration Area	0.66m^2 / Φ69-10 inch

Reliable Microbiological Control

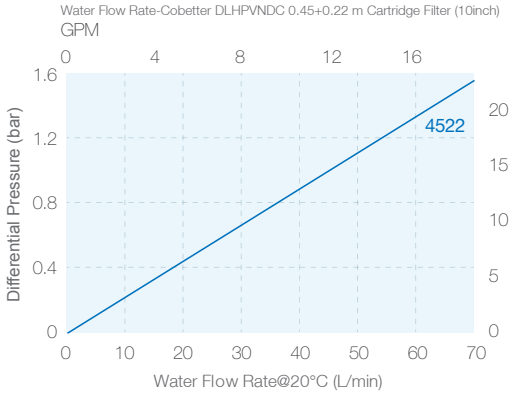
The primary purpose of this membrane filter cartridge in beverage filtration is to effectively remove product spoiling microorganisms

Typical Log Reduction Value(LRV)			
	B.*diminuta*	Lactobaccilus Brevis	Sasharomyces Cerevisiae
0.22+0.22μm	>7/cm^2	N/A	N/A
0.45+0.22μm	>7/cm^2	N/A	N/A

Log Reduction Values are calculated using the following formula:

$$LRV = \log_{10}\left(\frac{\text{total number of organisms entering the filter}}{\text{total number of organisms exiting the filter}}\right)$$

Flow Rate Characteristics



Ordering Information

BPPVI
(Single-Layer)

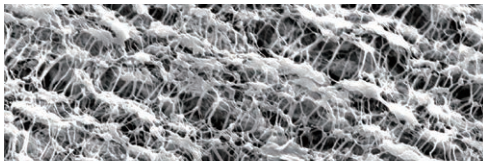
BPPVII
(Double-Layer)

Removal Ratings	End Cap	Nominal Length	Seal Material	-F
0022 =0.22μm	**DOE** =Double Open End	**10** =10"	**S** =Silicone	
0045 =0.45μm	**HTC** =222 O-ring/Flat (PBT Insert)	**20** =20"	**E** =EPDM	
0065 =0.65μm	**HTF** =222 O-ring/Fin (PBT Insert)	**30** =30"	**V** =Viton	
2222 =0.22+0.22μm	**HSF** =226 O-ring/Fin (PBT Insert)	**40** =40"		
4522 =0.45+0.22μm	**SSF** =226 O-ring/Fin (SS Insert)			
6545 =0.65+0.45μm	**SSC** =226 O-ring/Flat (SS Insert)			
	STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

TefloFlow HT Filter Cartridges

Hydrophobic PTFE / Hydrophilic PTFE Membrane · Sterilizing Grade

Cobetter **TefloFlow HT** Filter Cartridges are composed of a hydrophilic PTFE membrane, polyphenylsulfide (PPS) support layers, and oxidation stabilized polypropylene hardware. This filter is recommended for sterile filtration of liquids in critical high temperature applications or filtration of ozonized water. The cartridge is also available with hydrophobic PTFE media upon request



Features and Benefits

- Oxidation-resistant materials provide longer service life in critical air and vent applications
- Exceptionally high flow rates at low pressure drops
- Robust construction offers outstanding stability during steam sterilization
- Wide chemical compatibility

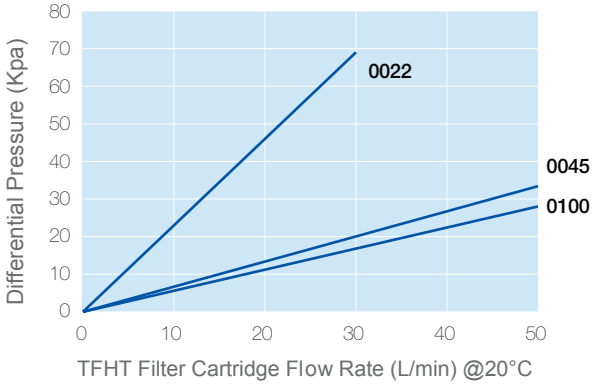
Materials of Construction

Filter Media	TFHTI (Hydrophilic PTFE Membrane) TFHT (Hydrophobic PTFE Membrane)
Cage/Support	Polyphenylenesulphide (PPS)
Core/End Caps	Polypropylene (High antioxidant formulation)

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Maximum Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Bubble Point	≥ 1.1 bar (16 psi) in 60%/40% IPA/Water, Air,0.22μm
Pre-wetting Process	Soak in purified water@30°C for 2h
Sterilization	Inline Steam Sterilization: 100 cycles for 30 minutes at 145 °C,forward (Differential Pressure< 0.3 bar)+50 cycles, reverse (Differential Pressure< 0.1 bar) Autoclave Can be autoclaved 400 cycles for 30 minutes at 130 °C.
Cleaning Solution	2% NaOH Solution @ ≤65°C
Effective Filtration Area	0.68m^2 / Φ 69-10 inch

Flow Rate Characteristics



Test Criteria: single length (254mm) cartridge @IPA 21°C

Ordering Information

	Removal Ratings	End Cap	Nominal Length	Seal Material	-F
TFHT [Hydrophobic PTFE]					
TFHTI [Hydrophilic PTFE]	**0005** =0.05μm **0010** =0.1 μm **0022** =0.22μm **0045** =0.45μm **0100** =1.0 μm **0500** =5.0 μm	**DOE** =Double Open End **HTC** =222 O-ring/Flat (PBT Insert) **HTF** =222 O-ring/Fin (PBT Insert) **HSF** =226 O-ring/Fin (PBT Insert) **SSF** =226 O-ring/Fin (SS Insert) **SSC** =226 O-ring/Flat (SS Insert) **STF** =222 O-ring/Fin (SS Insert, 3 Tabs)	**05** = 5" **10** =10" **20** =20" **30** =30" **40** =40"	**S** =Silicone **E** =EPDM **V** =Viton	

BevClear BW Filter Cartridges

Backwash Polypropylene Media · Particle Removal

Cobetter **BevClear BW** Filter Cartridges are constructed of nanofiber media with support layers that allow maximum backwash cleaning efficiency. Characterized by its high dirt holding capacity and flow rates, they effectively remove particles. It is recommended for fine filtration in brewing applications.

Features and Benefits

- Special design ensures backwash cleaning and therefore increases filter lifetime
- Super fine nanofiber media provides high dirt holding capacity and retention efficiency
- Provides defined porosity with high filtration area
- No fiber releasing per FDA 21CFR
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Materials of Construction

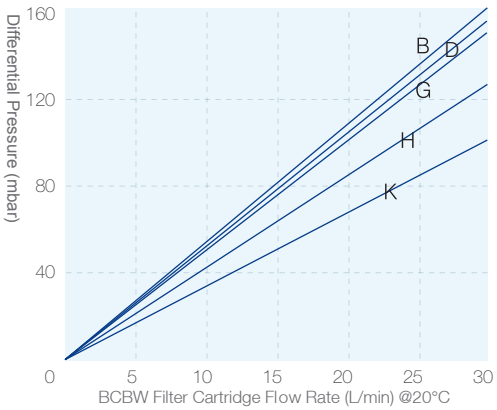
Filter Media	Super Fine Nanofiber
Cage/Support	Polypropylene (Nanofiber)
Core/End Caps	Polypropylene

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Maximum Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Sterilzation	Inline Steam Sterilization: 20 cycles for 30 min at 121 °C Hot Water Sterilization: 50 cycles for 30 min at 85 °C
Cleaning Solution	2% NaOH Solution @≤ 65°C
Effective Filtration Area	0.6m² / Φ71-10 inch 1.12m² / Φ64-30 inch

For BCBW Filter Cartridge backwash and sterilization instructions, please contact your Cobetter Sales Engineer.

Flow Rate Characteristics



Efficiency	>99.99%	99.98%	99.90%	99%	95%	90%
β ratio	**10000**	**5000**	**1000**	**100**	**20**	**10**
B	1.9	1.0	1.2	0.8	0.5	0.1
D	2.2	2.0	1.9	1.2	0.9	0.5
G	3.0	3.0	2.2	1.7	1.3	1.1
H	5.0	5.0	3.4	2.7	2.0	1.7
K	10	10	7.7	5.6	4.1	3.8

Ordering Information

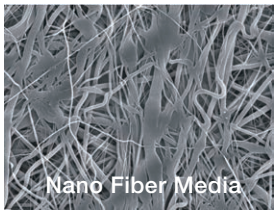
BCBW	Removal Ratings	End Cap	Nominal Length	Seal Material	**-F**
[Φ71] [Φ64]	**B**=PPB **D**=PPD **G**=HAG **H**=HAH **K**=HAK **U**=PPU	**DOE**=Double Open End **HTC**=222 O-ring/Flat (PBT Insert) **HTF**=222 O-ring/Fin (PBT Insert) **HSF**=226 O-ring/Fin (PBT Insert) **SSF**=226 O-ring/Fin (SS Insert) **SSC**=226 O-ring/Flat (SS Insert) **STF**=222 O-ring/Fin (SS Insert, 3 Tabs)	**05**= 5" **10**=10" **20**=20" **30**=30" **40**=40"	**S**=Silicone **E**=EPDM **V**=Viton	

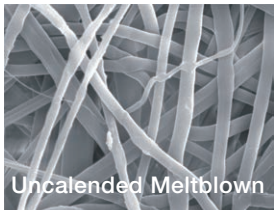
* Φ64mm BCBW Filter Cartridge: available in 30", 40", 60", 70" and 80" configuration

BevClear AB Filter Cartridges

Absolute Rated Polypropylene Media · Particle Removal

Cobetter **BevClear AB** Filter Cartridges, composed of a polypropylene media, are absolute-rated with high dirt holding capacity, long service and high flow rates. This type of media provides absolute and reliable efficiency for particle retention in beverage filtration.





Features and Benefits

- Super fine nanofiber media provides excellent particle retention and bio-burden reduction from liquids
- Absolute-rated to ensure high efficiency and dirt holding capacity
- Complies with Plastic Class VI standard
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Materials of Construction

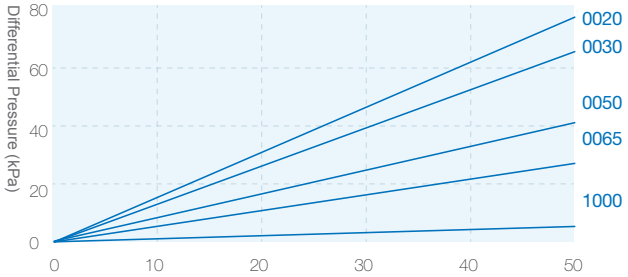
Filter Media	Multi-Layer Polypropylene
Cage/Support	Polypropylene
Core/End Caps	Polypropylene

Particle & Bioburden Reduction

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Maximum Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Sterilzation	Inline Steam Sterilization: 30 cycles for 30 min at 135 °C (Differential Pressure<30kPa) Hot Water Sterilization: 50 cycles for 30 min at 85 °C
Cleaning Solution	2% NaOH Solution @≤ 65°C
Effective Filtration Area	0.53m² / Φ71-10 inch

Flow Rate Characteristics



BCAB Filter Cartridge Flow Rate (L/min) @20°C

Retention Rates

Retention Rates (%)								
	1.0μm	3.0μm	4.0μm	5.0μm	6.0μm	7.0μm	10μm	20μm
BCAB0020	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99
BCAB0030	≥99.98	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99
BCAB0050	≥99.90	≥99.98	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99
BCAB0065	≥99.50	≥99.90	≥99.98	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99
BCAB0080	≥99.20	≥99.50	≥99.90	≥99.98	≥99.99	≥99.99	≥99.99	≥99.99
BCAB0100	≥99.00	≥99.20	≥99.50	≥99.90	≥99.98	≥99.99	≥99.99	≥99.99
BCAB0300		≥99.00	≥99.20	≥99.50	≥99.90	≥99.98	≥99.99	≥99.99
BCAB0400			≥99.00	≥99.20	≥99.50	≥99.90	≥99.98	≥99.99
BCAB0500				≥99.00	≥99.20	≥99.50	≥99.90	≥99.98
BCAB0600					≥99.00	≥99.20	≥99.50	≥99.90
BCAB0700						≥99.00	≥99.20	≥99.50
BCAB1000							≥99.00	≥99.20
BCAB2000								≥99.00

Tested by ISO 12103-1 A4 Coarse Test Dust

Ordering Information

BCAB	Removal Ratings		End Cap	Nominal Length	Seal Material	**-F**
[Φ71]	**0020** =0.2μm	**0400** =4.0μm	**DOE** =Double Open End	**05** = 5"	**S** =Silicone	
	0030 =0.3μm	**0500** =5.0μm	**HTC** =222 O-ring/Flat (PBT Insert)	**10** =10"	**E** =EPDM	
	0050 =0.5μm	**0600** =6.0μm	**HTF** =222 O-ring/Fin (PBT Insert)	**20** =20"	**V** =Viton	
	0065 =0.65μm	**0700** =7.0μm	**HSF** =226 O-ring/Fin (PBT Insert)	**30** =30"		
	0080 =0.8μm	**0800** =8.0μm	**SSF** =226 O-ring/Fin (SS Insert)	**40** =40"		
	0100 =1.0μm	**1000** =10μm	**SSC** =226 O-ring/Flat (SS Insert)			
	0300 =3.0μm	**2000** =20μm	**STF** =222 O-ring/Fin (SS Insert, 3 Tabs)			

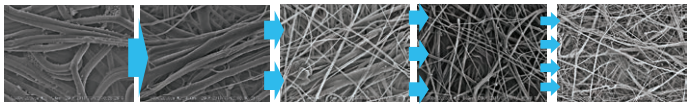
BevClear XL Filter Cartridges

Multi-layer Polypropylene Media · Pre-filtration

Cobetter **BevClear XL** are composed of an all-polypropylene construction. The pleated depth filter cartridge with a graded pore size distribution from coarse (upstream) to fine (downstream) captures particles gradually which improves filter service life. Filter characteristics include higher dirt loading capacity and removal of contaminants (including particulates, colloids, and gels).

Features and Benefits

- Graded pore size (5-7 layers of PP media) enables additional particle loading and higher dirt holding capacity



- Eliminates particles according to pore size distribution which significantly increases filter lifetime
- All-polypropylene construction yields excellent compatibility
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

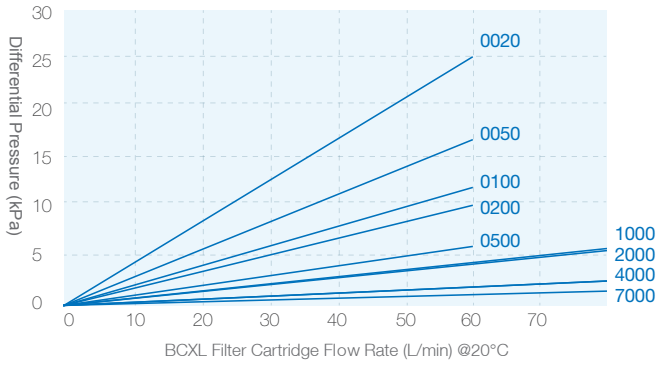
Materials of Construction

Filter Media	Multi-Layer Polypropylene
Cage/Support	Polypropylene
Core/End Caps	Polypropylene

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Maximum Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Sterilzation	Inline Steam Sterilization: 20 cycles for 30 min at 125 °C (Differential Pressure<30kPa) Hot Water Sterilization: 50 cycles for 30 min at 85 °C
Cleaning Solution	2% NaOH Solution @≤ 65°C
Effective Filtration Area	0.23m² / Φ71-10 inch

Flow Rate Characteristics



Retention Rates

	Retention Rates (%)						
BCXL	1.0μm	2.0μm	5.0μm	10.0μm	20μm	40μm	70μm
0020	⩾99.90	⩾99.90	⩾99.90	⩾99.99	⩾99.99	⩾99.99	⩾99.99
0050	⩾99.00	⩾99.50	⩾99.90	⩾99.90	⩾99.99	⩾99.99	⩾99.99
0100	⩾98.00	⩾99.00	⩾99.50	⩾99.90	⩾99.98	⩾99.99	⩾99.99
0200		⩾98.00	⩾99.00	⩾99.50	⩾99.90	⩾99.98	⩾99.99
0500			⩾98.00	⩾99.00	⩾99.50	⩾99.90	⩾99.98
1000				⩾98.00	⩾99.00	⩾99.50	⩾99.90
2000					⩾98.00	⩾99.00	⩾99.50
4000						⩾98.00	⩾99.00
7000							⩾98.00

Tested by ISO 12103-1 A4 Coarse Test Dust

Ordering Information

BCXL	Removal		End Cap	Nominal Length	Seal Material	**-F**
[Φ71]	**0020** =0.2μm	**0200** =2.0μm	**DOE** =Double Open End	**05** = 5"	**S** =Silicone	
	0030 =0.3μm	**0500** =5.0μm	**HTC** =222 O-ring/Flat (PBT Insert)	**10** =10"	**E** =EPDM	
	0050 =0.5μm	**1000** =10μm	**HTF** =222 O-ring/Fin (PBT Insert)	**20** =20"	**V** =Viton	
	0600 =0.6μm	**1500** =15μm	**HSF** =226 O-ring/Fin (PBT Insert)	**30** =30"		
	0080 =0.8μm	**2000** =20μm	**SSF** =226 O-ring/Fin (SS Insert)	**40** =40"		
	0100 =1.0μm	**4000** =40μm	**SSC** =226 O-ring/Flat (SS Insert)			
	0150 =1.5μm	**7000** =70μm	**STF** =222 O-ring/Fin (SS Insert, 3 Tabs)			
		9000 =90μm				

PoliFlow Filter Cartridges

Polypropylene · Pre-filter for Liquids

PoliFlow Filter Cartridges are composed entirely of pleated polypropylene microfiber which provides great filtration performance with a low cost. Characteristics include high flow rates, dirt holding capacity, and filtration efficiency making it the ideal solution for the pre-filtration of liquids.

Features and Benefits

- High filtration efficiency
- Broad chemical compatibility makes it suitable for acids, bases, and solvents
- Pleated surface area provides superior flow rate and extended service life
- Welded design eliminates the need for adhesives which can be a contamination source
- Available in nominal ratings from 0.2µm to 25µm for precise particle removal

Quality Standards

- Designed, developed and manufactured in compliance with ISO9001
- Full Regulatory Compliance with the following:
  - · 21CFR.210.3(b)(5)(6), 211.72 for Non-Fiber Release
  - · Endotoxins: <0.25EU/ml/10inch filter
  - · USP <88> Plastic Class VI-121°C
  - · FDA 21 CFR177-182 & EU 1935/2004/EC

Applications

- Process Water
- RO Water Pre-Filtration
- Clarification

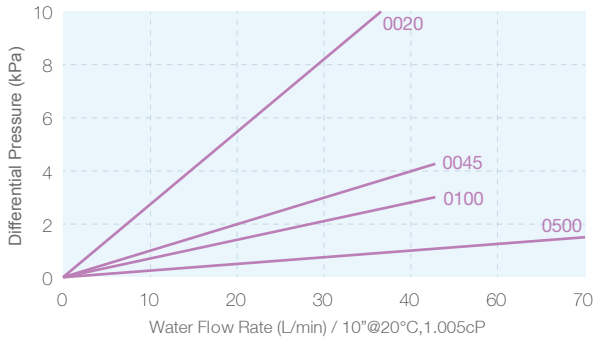
Materials of Construction

Filter Media	Polypropylene
Support	Polypropylene
Core/Cage/End Caps	Polypropylene

Operating Conditions

Max. Temperature	80°C
Max. Differential Pressure	4.0 bar / 21°C 2.4 bar / 80°C
Effective Filtration Area	0.51-0.61m² / Φ69-10 inch

Flow Rate Characteristics



Ordering Information

HPP	Removal Ratings	End Cap	Nominal Length	Seal Material	-F

0020 =0.2μm
0030 =0.3μm
0045 =0.45μm
0100 =1.0μm
0300 =3.0μm
0500 =5.0μm
1000 =10μm
2000 =20μm
2500 =25μm

DOE =Double Open End
HTC =222 O-ring/Flat (PBT Insert)
HTF =222 O-ring/Fin (PBT Insert)
HSF =226 O-ring/Fin (PBT Insert)
SSF =226 O-ring/Fin (SS Insert)
SSC =226 O-ring/Flat (SS Insert)
STF =222 O-ring/Fin (SS Insert, 3 Tabs)

10 =10"
20 =20"
30 =30"
40 =40"

S =Silicone
E =EPDM
V =Viton

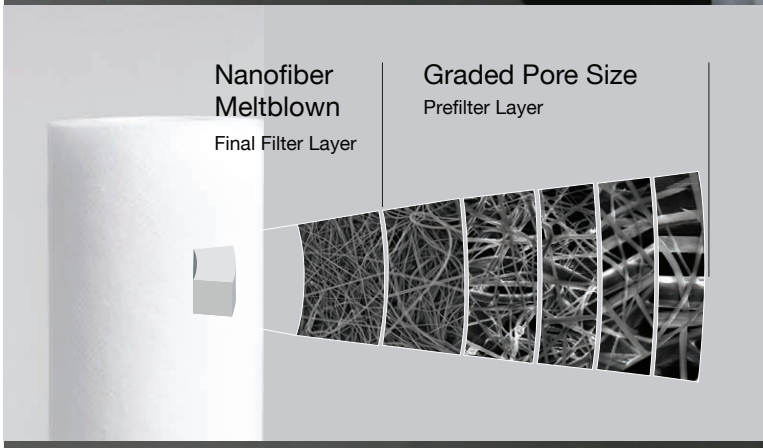
Meltgradient High-efficiency Depth Filter

Melt-Blown Cartridge with Absolute Filtration Rate

Meltgradient series is the PP melt-blown cartridge with the absolute filtration rate. It adopts the reasonable gradient pores configuration, cooperating with the structure of "deep". The cartridge is capable of efficiently capturing particles of different sizes, and its flow rate and life are not inferior to the pleated cartridge. Polypropylene raw material that meets FDA requirements, with extensive chemical compatibility, suitable for RO water pre-filtration, industrial water treatment and clarification.

Features and Benefits

- Particle interception efficiency is up to 99.9%. For the structure with gradient pores, the inner layer is interwoven with high density nano-fibers.
- Long service life, high flow rate. Due to the polypropylene fiber with different linear diameters and unique interwoven density control process, Meltgradient TM has a porosity far beyond that of similar products, which means lower pressure loss across the cartridge and higher dirty holding capacity.
- High purity. Using long fiber fusion and spray process, continuous fiber hot melt interweave into rich and stable pore structure. No adhesive or surfactant, no silicone oil, low precipitate;
- Extensive chemical compatibility. Fully polypropylene structure, complete series with reinforced center bar and optional external frame/end cover, the 68MBCY type .The cartridge can withstand the pressure difference of 4Bar and avoid short circuit of material caused by deformation of cartridge core when using.
- Wide range of optional filtration rate. It is available from 0.3μm to 120μm, which meets various operating conditions.



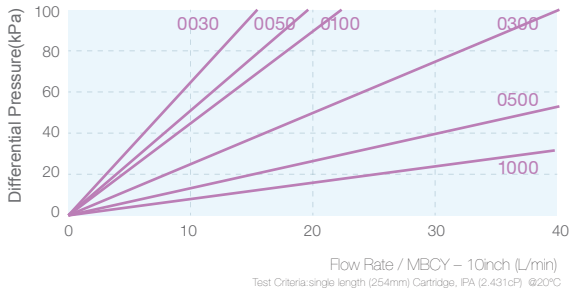
Applications

- RO Water Prefiltration
- Industrial Water Treatment
- Clarification

Materials of Construction

Filter Medium	Polypropylene
Core/Cage/End Caps	Polypropylene
O-Rings	Refer to ordering information
O.D. (mm)	2.51" (64mm)
I.D. (mm)	1.10" (28mm)

Flow Rate Characteristic



Operating Conditions

Max. Temperature	80°C
Max. Differential Pressure	4.0 bar / 21°C

Filtration Efficiency

Particle Size **MBCY**(μm)	0.3	0.5	1.0	3.0	5.0	10	15	30
≥0.5μm	99.99%	99.98 %	95.73%	\	\	\	\	\
≥1.0μm	100.0%	100.0%	99.98 %	\	\	\	\	\
≥2.0μm	100.0%	100.0%	100.0%	99.0%	97.3%	\	\	\
≥3.0μm	100.0%	100.0%	100.0%	99.8%	98.3%	\	\	\
≥5.0μm	100.0%	100.0%	100.0%	100.0%	99.9%	89.1%	\	\
≥8.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	99.2%	90.6%	\
≥10.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	99.0%	\
≥12.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	86.5%
≥25.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	93.6%
≥35.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%
≥50.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
≥70.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
≥90.0μm	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Ordering Information

MBCY | Removal Ratings | End Cap | Nominal Length | Seal Material | **-F**

[Φ64]
[Φ68]

0020 =0.2μm
0030 =0.3μm
0050 =0.5μm
0100 =1.0μm
0300 =3.0μm
0500 =5.0μm
0600 =6.0μm
0700 =7.0μm
1000 =10μm
2000 =20μm
3000 =30μm
4000 =40μm
7000 =70μm
9000 =90μm

DOE =Double Open End
HTC =222 O-ring/Flat (PBT Insert)
HTF =222 O-ring/Fin (PBT Insert)
HSF =226 O-ring/Fin (PBT Insert)
SSF =226 O-ring/Fin (SS Insert)
SSC =226 O-ring/Flat (SS Insert)
STF =222 O-ring/Fin (SS Insert, 3 Tabs)

10 =10"
20 =20"
30 =30"
40 =40"

S =Silicone
E =EPDM
V =Viton

High Service Time GUF Filter Cartridge

Rolled Polypropylene Denpth Filter · Long Service Life

Cobetter High Service Time Guard Filter Cartridge (GUF) is made of polypropylene non-woven. It provides excellent life time and efficiency ,which is 2-3 times of general Melt-blown filters. It is an exceptional value for general applications where long life, high dirt-holding and low change-out frequency are required. Suitable for water treatment industry.

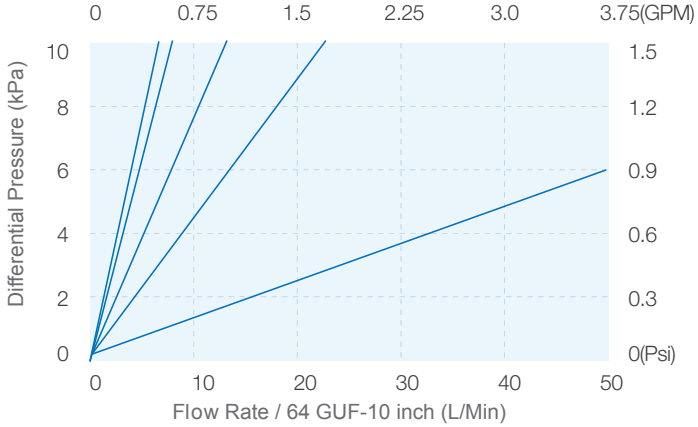
Features and Benefits

- 100% pure polypropylene depth filter with high dirt holding capacity
- 3x longer lifetime than meltblown filters
- No Wetting agents, solvents, surfactants,or binders,or adhesives
- Reduce filtration cost
- No fiber-releasing

Typical Application

- Guard Filter for RO System
- Potable Water Filtration
- Cooling Water System
- Plating Baths

Flow Rate Characteristics



Test Criteria:single length (250mm) cartridge,water @21°C.

Materials of Construction

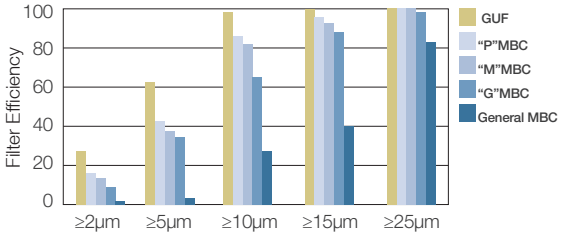
Filter Medium	Polypropylene
Inner Core/End Caps/Adaptors	Polypropylene
Nominal O.D.	64mm
Nominal I.D.	30mm

Operating Conditions

Max. Operating Temperature	70°C
Max. Pressure	3 bar / 21°C 1.2 bar / 70°C
Recommended Design Flow Rate	0.5 m³/h(10'')

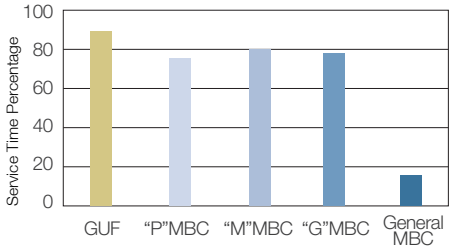
Filter Performance

Efficiency Comparison of Filters



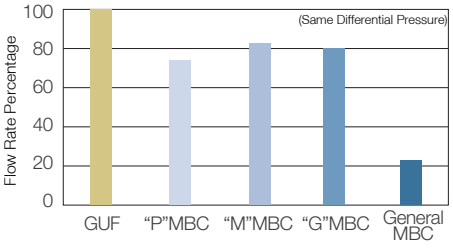
Particles	GUF 5μm	"P" MBC	"M" MBC	"G" MBC	General MBC
≥2μm	26.48%	14.49%	12.85%	9.81%	1.57%
≥5μm	64.21%	43.11%	36.44%	35.38%	5.36%
≥10μm	98.84%	86.74%	82.27%	64.87%	27.41%
≥15μm	99.88%	94.71%	92.73%	88.60%	40.38%
≥25μm	100%	100%	100%	98.21%	85.02%

Service Time Comparison of Filters



Brand List	Service Time Percentage(%)
GUF	90
"P"MBC	75
"M"MBC	80
"G"MBC	78
General MBC	17

Flow Rate Comparison of Filters



Brand List	Flow Rate Percentage(%)
GUF	100
"P"MBC	75
"M"MBC	85
"G"MBC	80
General MBC	25

Ordering Information

GUF	Removal Ratings	End Cap	Nominal Length	Seal Material	-F

0050 =0.5μm
0100 =1.0μm
0200 =2.0μm
0300 =3.0μm
0500 =5.0μm
1000 =10μm
2000 =20μm

DOE =Double Open End
HTC =222 O-ring/Flat (PBT Insert)
HTF =222 O-ring/Fin (PBT Insert)
HSF =226 O-ring/Fin (PBT Insert)
SSF =226 O-ring/Fin (SS Insert)
SSC =226 O-ring/Flat (SS Insert)
STF =222 O-ring/Fin (SS Insert, 3 Tabs)

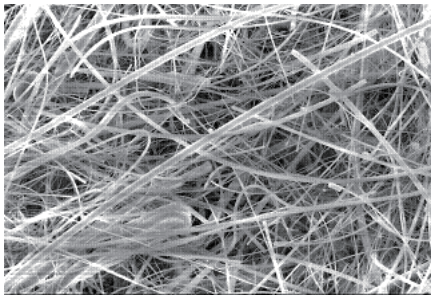
10 =10"
20 =20"
30 =30"
40 =40"

S =Silicone
E =EPDM
V =Viton

BevClear GF Plus Filter Cartridges

Glass Fiber Media · Particle Removal

Cobetter **BevClear GF Plus** Filter Cartridges are composed of positive Zeta modified microfiber media and ideal for the removal of contaminants such as colloids, yeast, and particles in brewing applications. This advanced media has higher dirt holding capacity combined with efficiency. The filter is characterized by high particle efficiency compared to other polypropylene filters.



Features and Benefits

- High dirt holding capacity and excellent particle retention.
- Ideal for the retention of colloids
- Low pressure drop and high flow rates and long service life
- Excellent chemical compatibility

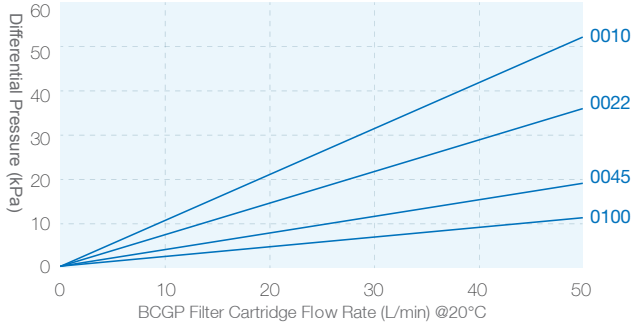
Materials of Construction

Filter Media	Glass Micro Fiber
Cage/Support	Polypropylene (Nanofiber)
Core/End Caps	Polypropylene

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Maximum Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Sterilzation	Inline Steam Sterilization: 20 cycles for 30 min at 125 °C (Differential Pressure<30kPa) Hot Water Sterilization: 50 cycles for 30 min at 85 °C
Cleaning Solution	2% NaOH Solution @≤ 65°C
Effective Filtration Area	0.26m² / Φ71-10 inch

Flow Rate Characteristics



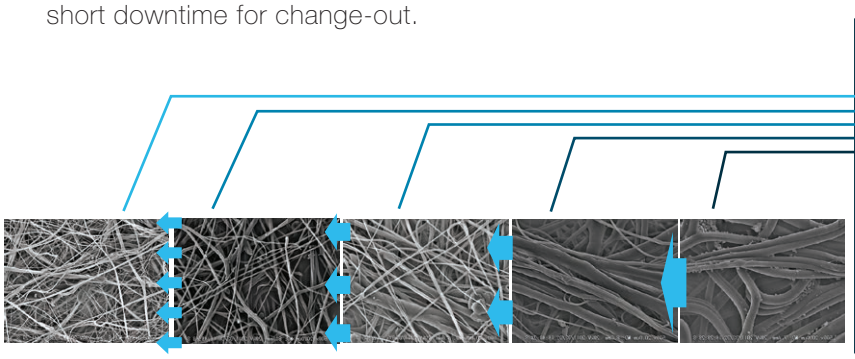
Ordering Information

BCGP	Removal Ratings	End Cap	Nominal Length	Seal Material	-F
[Φ71]	**0020**=0.2 μm	**DOE**=Double Open End	**05**= 5"	**S**=Silicone	
	0025=0.25 μm	**HTC**=222 O-ring/Flat (PBT Insert)	**10**=10"	**E**=EPDM	
	0045=0.45 μm	**HTF**=222 O-ring/Fin (PBT Insert)	**20**=20"	**V**=Viton	
	0080=0.8 μm	**HSF**=226 O-ring/Fin (PBT Insert)	**30**=30"		
	0100=1.0 μm	**SSF**=226 O-ring/Fin (SS Insert)	**40**=40"		
	0300=3.0 μm	**SSC**=226 O-ring/Flat (SS Insert)			
	0500=5.0 μm	**STF**=222 O-ring/Fin (SS Insert, 3 Tabs)			

BevClear HF Filter Cartridges

Pleated High Flow Filter

BevClear HF Filter Cartridge is a large diameter filter for high flow applications. The filter has a single-open pleated construction with a 6"/152mm diameter, high filtration area, and high flow rates up to 90m³/hr. It can be used in a wide variety of application with large flow rate requirements and short downtime for change-out.



Features and Benefits

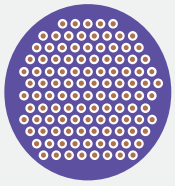
- Large filtration area provides high flow rates combined with low pressure drops and long service life
- The unique media structure ensures high particle retention rates
- Flow rate configuration from inside out ensures that all contamination is held within the single-open end of the filter
- Quick and easy change-out.
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Comparison of Housing Dimension and Element Number

150m³/h

High Flow Filtration System

Pleated Cartridge Filtration System



Depth Filter System

Easy and Safe
Cartridge Replacement

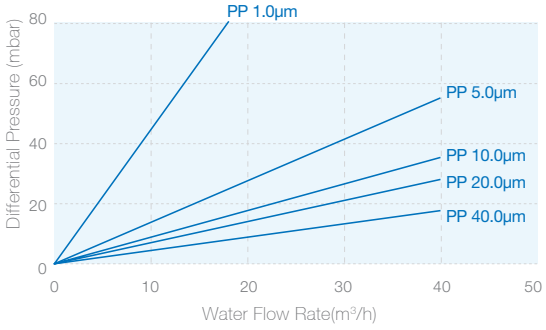
Materials of Contruction

Filter Media	Pleated/Meltblown Polypropylene Glass Fiber
Support/ Drainage	Polypropylene
End Caps	Glass-Filled Polypropylene
Core	Polypropylene
Outside Material	PP Cage
Maximum Temperature	PP: 80°C GF: 130°C
Max. Differential Pressure	4.0bar@21°C 1.5bar@80°C

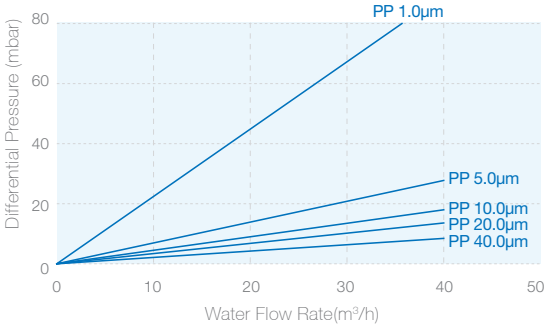
Operating Conditions II

Dimension	Design Flow	Max. Flow Rate
6" *20"	15 m^3/h	30 m^3/h
6" *40"	30 m^3/h	60 m^3/h
6" *60"	45 m^3/h	90 m^3/h
6" *80"	60 m^3/h	120 m^3/h

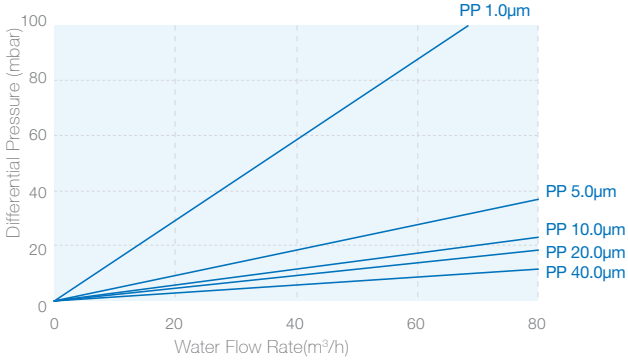
Flow Rate Characteristics



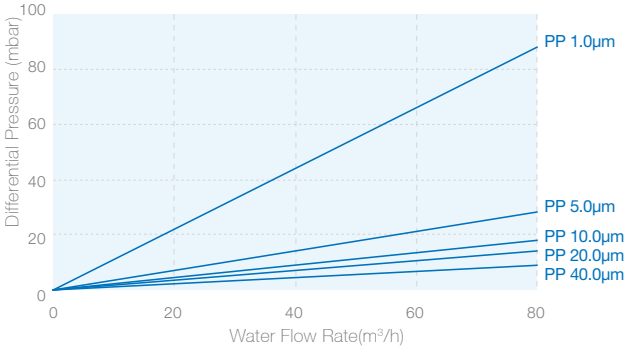
Test Criteria: Single filter (20inch length) cartridge, water at 20°C,1.005cP



Test Criteria: Single filter (40inch length) cartridge, water at 20°C,1.005cP



Test Criteria: Single filter (60inch length) cartridge, water at 20°C,1.005cP



Test Criteria: Single filter (80inch length) cartridge, water at 20°C,1.005cP

Ordering Information

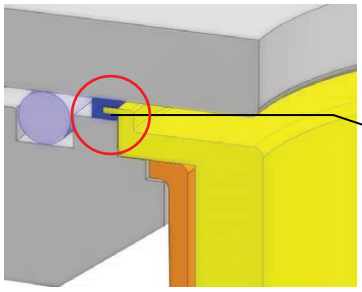
BCHF
BCHFM
BCDSHF
150MBCY

Filter Media	Removal Ratings		Nominal Length	Seal Material	-F
PP	**0045**=0.45μm	**0500**=5.0μm	**20**=20"(528mm)	**S**=Silicone	
GF	**0050**=0.5μm	**1000**=10μm	**40**=40"(1028mm)	**E**=EPDM	
	0065=0.65μm	**1500**=15μm	**60**=60"(1540mm)	**V**=Viton	
	0080=0.8μm	**2000**=20μm	**80**=80"(2032mm)		
	0100=1.0μm	**4000**=40μm			
	0200=2.0μm	**7000**=70μm			
	0300=3.0μm	**9000**=90μm			

BevClear HFB Filter Cartridge

Perfect Replacement of Filter Bags

Cobetter **BevClear HFB** Filter Cartridges are designed to replace filter bags. The outside diameter is equal to standard filter bags with cartridge body outside diameter of 160mm and endcap outside diameter of 180mm.



In addition, the filtration area is 8x times greater than the filtration area of filter bags. They can fit most Size 1 and Size 2 bag housings without an adaptor to enhance your filtration.

Features and Benefits

- Fits most Size 1 and Size 2 bag housings with no hardware adaptors.
- Unique sealing design (“O” O-Ring + “U” O-Ring) ensures no leakage and adjusts to fit most bag filter housings.
- Large filtration area and gradient pore structure ensure high flow rates and longer life time.
- Outside Net Structure of PET improves construction stability
- Quick and easy change-out.

Applications

- Food & Beverage
- Water Treatment

Materials of Construction

Filter Media	Polypropylene
Support/Drainage	Polypropylene
Endcap	Glass Filled Polypropylene
Endcap O.D.	184mm
Filter O.D.	160mm
Length	Size 1 (330mm); Size 2 (660mm)

Operating Conditions

Length	Design Flow Rate	Maximum Flow Rate	Filtration Area
Size 1	10m³/hr	25m³/hr	1.8m²
Size 2	20m³/hr	50m³/hr	3.65m²

Recommended Change-out Differential Pressure	1.0bar @ 21°C (from inside to out)
Max. Operating Differential Pressure	3.5bar @ 21°C (from inside to out)
Max. Operating Temperature	80 °C/176°F(Hot Water Sanitization/Sterlization: 77-80 °C/20min)

Ordering Information

BCHFB	Endcap Style	Filter Media	Removal Ratings	Nominal Length	Seal Material	-F
	Blank= Standard **F**= Extendable Neck	**PP** **GF**	**0150**=1.5μm **0200**=2μm **0500**=5μm **1000**=10μm **2000**=20μm **4000**=40μm **7000**=70μm **9000**=90μm	**01**=Size1 (330mm) **02**=Size 2(660mm)	**E**=EPDM	

Active Carbon Filter Cartridges

ACF Series Filter

Cobetter ACF series-filter cartridges is made from active carbon fiber rolled by polypropylene non-woven. It combines the performance of depth filtration and the adsorption of activated carbon fiber .The outside deep fiber media can remove particles, and the activated carbon can wiping off chlorine, bad taste and organic matter effectively.

Features and Benefits

- High flow rates with good absorption
- Wide chemical capability
- High resist to acid and alkali
- Strong absorption ability to clorine, pigment and peculiar smell
- No fiber release

Applications

- Water De-chlorination
- Electroplating bath
- Drinking water and R.O pure water treatment
- Remove smell, odor, organic pigment

Material of Construction

Filter Medium	Active Carbon Fiber
Support	Polypropylene
Core	Polypropylene
Nominal O.D.	2.50" (64mm)
Nominal I.D.	1.18" (30mm)
Mean Pore Size	5μm

Operating Conditions

Maximum Temperature	158°F(70°C)
Maximum Pressure	43.5psi (3bar)/70°F(21°C) 17.6psi (1.2bar)/158°F(70°C)

Adsorption of Chlorine

Chlorine of Outlet Water（ppm）									
25t	30t	32t	34t	35t	36t	37t	38t	39t	40t
0	≤0.05	<0.1	<0.2	<0.2	0.2	>0.2	>0.2	0.3	≥0.05

Notice： chlorine of inlet water: 2ppm, flow rate 20L/min

Ordering Information

ACF	Adsorption of Lodine (mg/g)	End Cap	Nominal Length	Seal Material	**-F**
[Φ64]	**R16** =1600 **R10** =1000 **R8** =0800	**H** = PE gaskets, Double open **TF** =222 o-ring/fin **SF** =226 o-ring/fin	**10** =10"(N:254mm H:254mm) **20** =20"(N:510mm H:509mm) **30** =30"(N:768mm H:764mm) **40** =40"(N:1022 mm)	**S**=Silicone **E**=EPDM	

CSD Lenticular Filter

CSD Filter Series constructed of high quality lignocellulose material and inorganic filter aid. The inner 3-D crisscrossing structure allows it to function as a depth filter while providing excellent filtration efficiency, high dirt holding capacity, and longer lifetime. Filter paper is produced automatic production lines. All raw materials are tested using strict quality control procedures to ensure filter quality and performance during use.

Operating Conditions

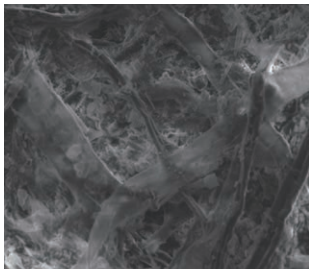
Maximum Temperature	80°C
Max. Differential Pressure	2.4bar / 25°C
Flush	Pure water 50L/m² Flow rate 10 lpm/m²
Steaming Sterilize(Autoclave)	121°C / 30min

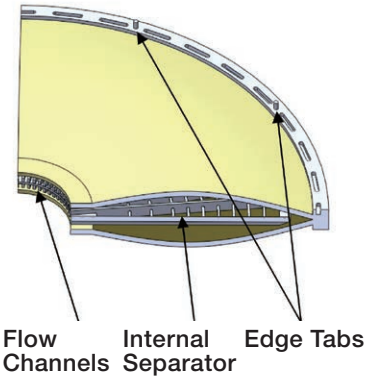
Materials of Construction

Filter Medium	Cellulose diatomite filter aid and ionic wet-strength resin
Cage	Polypropylene

Filtration Area

Number of lenses	Filtration area	
	12 " diameter	16 " diameter
9	0.9 m²	2.1 m²
12	1.1 m²	2.8 m²
15	1.4 m²	3.5 m²
16	1.5 m²	3.7 m²





Ordering Information

CSD

Removal Ratings	Grade	End Cap	Diameter	Number of Lenses	Seal Material
0004 =0.04-0.2 μm **0020** =0.2-0.4 μm **0040** =0.4-0.6 μm **0060** =0.6-0.8 μm **0100** =0.8-1.5 μm **0150** =1.5-3.0 μm	**SA**=Standard **PB**=Pharmaceutical	**DOE**= Double open end	**12**=12" **16**=16"	**S** =7 Layers **N** =9 Layers **T** =12 Layers **M**=14 Layers **F** =15 Layers **D** =16 Layers	**S** =Silicone **E** =EPDM **V** =Viton **T** =Soft PTFE **F** =Hard PTFE

GasClean GF Filter Cartridges

Super-Fine Glass Microfiber · Pre-Filtration

Cobetter **GasClean GF** Filter Cartridges composed of super-fine glass microfiber with a dirt holding capacity of over 90%. They are highly recommended for the pre-filtration of gas for effective protection of sterilizing grade membrane filters to significantly increase service life. They are recommended for use in food and beverage applications with aseptic requirements.

Features and Benefits

- High porosity for high flow rates and low pressure drops
- High retention efficiency and process safety
- Protect final sterilizing grade air filters for long service life

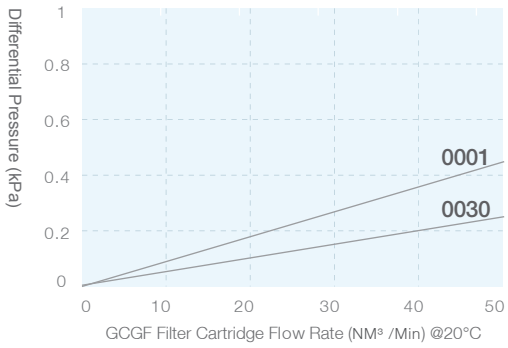
Materials of Construction

Filter Media	Super-fine Glass Fiber
Cage/Support	Polypropylene
Core	304 Stainless Steel/Polypropylene
End Caps	Reinforced Polypropylene

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Maximum Operating Pressure	Forward 6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Sterilization	Inline Steam Sterilization:40 cycles for 30 min at 121 °C (Differential Pressure<30kPa) Hot Water Sterilization: 50 cycles for 30 min at 85 °C
Effective Filtration Area	0.34m² / Φ71-10 inch

Flow Rate Characteristics



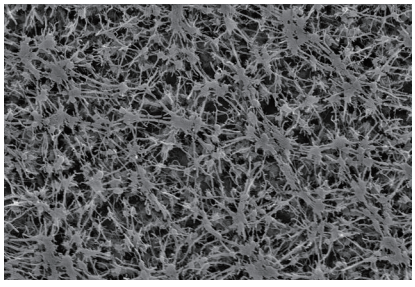
Ordering Information

GCGF	Removal	End Cap	Nominal Length	Seal Material	-F
[Φ71]	**0001** =0.01μm **0030** =0.3μm **0050** =0.5μm	**DOE** =Double Open End **HTC** =222 O-ring/Flat (PBT Insert) **HTF** =222 O-ring/Fin (PBT Insert) **HSF** =226 O-ring/Fin (PBT Insert) **SSF** =226 O-ring/Fin (SS Insert) **SSC** =226 O-ring/Flat (SS Insert) **STF** =222 O-ring/Fin (SS Insert, 3 Tabs)	**05** = 5" **10** =10" **20** =20" **30** =30" **40** =40"	**S** =Silicone **E** =EPDM **V** =Viton	

TefloGas Filter Cartridges

Hydrophobic PTFE Membrane · Sterilizing Grade

Cobetter **TefloGas** Filter Cartridges are composed of a hydrophobic PTFE membrane and a specially designed unique thermal-resistant polypropylene core. They are characterized by a high filtration area, non-metallic ion release, and are easy to clean. Each filter is individually Integrity Tested to ensure microbiological safety. They are highly recommended for all air and gas sterilizing grade applications in food and beverage, e.g. fermentation processes.



Features and Benefits

- Inherent hydrophobic PTFE membrane
- Exceptionally high flow rates with low pressure drops
- Large Filtration Area
- Each filter is individually Integrity Tested including Water Intrusion Test
- Complies with Food Contact Regulations: FDA 21CFR177-182 and 1935/2004 EC

Materials of Construction

Filter Media	Hydrophobic PTFE
Cage/Support	Polypropylene
Core/End Caps	Reinforced Polypropylene

Operating Conditions

Maximum Operating Pressure	6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C
Max. Differential Pressure	Forward 6.9 bar (100 psi) at 25 °C 4.0 bar (58 psi) at 60 °C 2.4 bar (35 psi) at 80 °C Reverse 3.0 bar (44 psi) at 25 °C 1.0 bar (15 psi) at 80 °C
Bubble Point	≥ 0.11 MPa，60% IPA 40% water wetted test/air
Diffusion Flow	≤ 16 ml/min @ 0.08 MPa，60%/40% IPA/ Water at 20 °C
Water Flow Test	≤ 0.38 ml/min @ 0.25 MPa at 20 °C

Sterilization

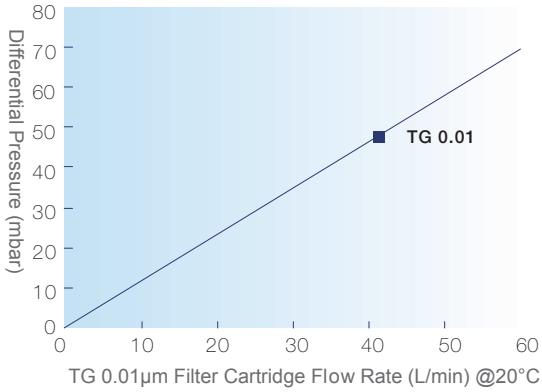
Inline Steam Sterilization: 100 cycles for 30 min at 145 °C forward（Differential pressure< 30 kPa）+ 50 cycles reverse（Differential pressure<10 kPa)

Autoclave: 400 cycles for 30 min at 130 °C

Hot Water Sterilization: 150 cycles for 30 min at 121 °C

Effective Filtration Area: 0.85m2/φ68-10 inch

Flow Rate Characteristics



Air Flow Rate(m³/h)	Differential Pressure (mbar)
	TG 0.01
10	9.5
20	19.8
30	30.9
40	42.8
50	55.5
60	69.0

Test Criteria:Single length (254mm) Cartridge,air @20°C.

Ordering Information

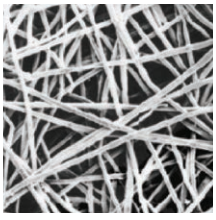
TG	Core Material	Removal	End Cap	Nominal Length	Seal Material	-F
[Φ68]	**P**=Polypropylene	**0001** =0.01 μm	**DOE**=Double Open End	**05**= 5"	**S**=Slilicone	
[Φ71]	**None**=SS304	**0022** =0.22 μm	**HTC** =222 O-ring/Flat (PBT Insert)	**10**=10"	**E**=EPDM	
			HTF =222 O-ring/Fin (PBT Insert)	**20**=20"	**V**=Viton	
			HSF =226 O-ring/Fin (PBT Insert)	**30**=30"		
			SSF =226 O-ring/Fin (SS Insert)	**40**=40"		
			SSC =226 O-ring/Flat (SS Insert)			
			STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

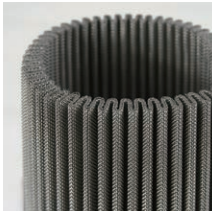
PSSF Pleated Stainless Steel Felt Cartridges

Cobetter **PSSF**® Stainless Steel Pleated Felt Filter Cartridges are composed of stainless steel sintered felt shaped during the pleating process. These filters have a large filtration area with high flow rates and low pressure drops.

The unique stainless steel sintered felt is made from stainless steel fibers which have been sintered to form a high porous depth filtration material.

PSSF Filter Cartridges features include a graded pore size from coarse (upstream) to fine (downstream), which results in a higher dirt holding capacity with excellent filtration efficiency and longer service life. These filters are widely used in steam filtration or liquids with high viscosities, e.g. sugars and syrups.





Features and Benefits

- Absolute-rated
- All stainless steel construction excellent chemical compatibility
- Excellent chemical compatibility and high temperature resistance
- Specialized alloy for high corrosion and oxidation resistance
- Corrosive and oxidation resistant
- High dirt holding capacity and long service life

Materials of Construction

Filter Media	316L Stainless Steel Felt
Cage/Support	316L Stainless Steel
Core/End Caps	316L Stainless Steel

Operating Conditions

Recommended Continuous Operating Temperature Range	-75°C to +200°C Note: Temperature dependant on o-ring compound
Max. Differential Pressure	5.0 bar / 21°C (forward flow) 2.0 bar / 21°C (reverse flow)
Hot Water Sterilization	85°C/30min @ Max. Differential Pressure of 2bar
Cleaning Solution	Reverse Rinse by Pure Water/Compressed Air @ ≤2bar; Ultrasonic Rinsing
Effective Filtration Area	0.12m² / 10inch

Retention Rates: PSSF v. TIC Titanium Filter

	PSSF	TIC Titanium Filter
Material	SS Sintered Felt (no fiber releasing)	Metal Powder Metal Powder (will release after long term use)
Strength	Pleated Structure High Temperature & Pressure Resistance	High Temperature (Sintered) Unstable Pressure
Retention Rates	Absolute-Rated EFA: up to 0.12m²	Depth Filter EFA: 0.056m²

Parameters

Code	Removal Rating in liquid(μm)	Removal Rating in gas(μm)	Pore Efficiency	Dirt Holding Capacity (mg/cm²)	Average Air Permeability (L/dm²min)❶	Flow Rate (m³/h)❷
1	3.0❸	0.5	70%	7.9	10	0.8
2	5.0	1	75%	5.0	47	1.3
3	7	1.5	76%	6.5	63	1.6
4	10	2	75%	7.8	105	2.0
5	25	16	80%	19.0	355	2.5
6	40	25	-	-	-	-
7	60	45	-	-	-	-

❶ Testing Performed According to GB/T5453; Testing DP is 200Pa; Testing Medium is Air
❷ Testing Liquid Viscosity is 1CP.S; Filter Tested with 60mm diameter and 300mm length; Testing Pressure is 1.5 bar
❸ Bekaert Filtration Media

Ordering Information

PSSF | Removal | End Cap | Nominal Length | Diameter | Seal Material | **-F**

Removal	End Cap	Nominal Length	Diameter	Seal Material
0300=3.0 μm	**DOE** =Double open end	**05** = 5"	**D25** =25mm	**S** =Silicone
0500=5.0 μm	**TC** =222/Flat	**10** =10"	**D30** =30mm	**E** =EPDM
0700=7.0 μm	**SC** =226/Flat	**20** =20"	**D50** =50mm	**V** =Viton
1000=10 μm	**L** =Screw	**30** =30"	**D65** =65mm	**F** =PTFE
2500=25 μm		**40** =40"	**D70** =70mm	
4000=40 μm				
6000=60 μm				

Notes on Cleaning

Ultrasonic cleaning is recommended rather than back flush cleaning due to its depth and porous filtration media construction

PSSC Pleated Stainless Steel Wire Cloth

Cobetter **PSSC** Pleated Stainless Steel Wire Cloth Filter Cartridges are composed of 316 stainless steel wire cloth. The pleated structure provides a large filtration area, which results in longer service life and high flow rates.
PSSC Filter Cartridge has superior strength and thermal resistance, which makes it the ideal filter for high pressure and temperature applications.

Features and Benefits

- ALL-Stainless Steel Construction
- Pleated Wire Cloth
- Inside Support Layer
- Outside Protection Net Available
- Homogenous Pore Sizes
- High Temperature; Corrosive and Oxidation Resistant
- High Pressure Back-Flushing Available
- Able to be Cleaned and Reused
- No Fiber Releasing

Materials of Construction(Five Layers)

Inside Support Layer	316 stainless steel
Filtration Medium	316 stainless steel
End Cap	316 stainless steel
Outside Protection Net(Optional)	Outside protection net recommended when the operating pressure is up to 0.2 MPa

Nominal Dimensions ❶

Diameters	65mm

❶ **Additional Diameter Specifications Available Upon Request**

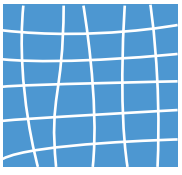
Configurations

Double Open-End (DOE)

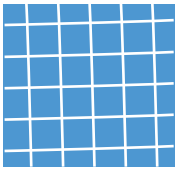
Single Open-End (SOE)

Operating Conditions

Max. Differential Pressure	8.6 bar / 21°C (forward flow) 2.0 bar / 21°C (reverse flow)
Recommended Continuous Operating Temperature Range	-75°C to +200°C Note: Temperature dependant on o-ring compound

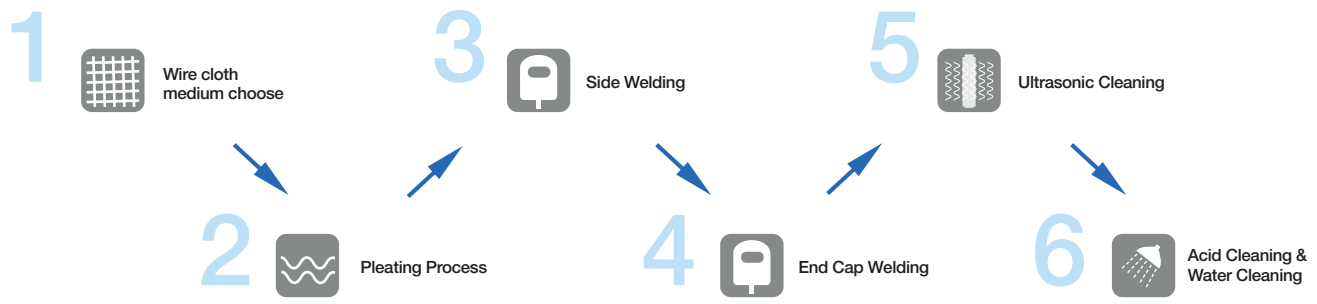


A traditional filter mesh may deform under high pressure and temperature, thus affecting the removal ratings.



The Sintered Wire Cloth has a solid internal structure ensuring that the components of the filter will not shift and affect the removal ratings

Production Process of PSSC Pleated Stainless Steel Wire Cloth Filter Cartridge



Parameters

Code	Liquid Pore Size (μm)	Removal Ratings(μm)	Pore Efficiency	Absolute Removal Rating (μm) ❷	Average Air Permeability	Flow Rate (m³/h) ❹
1	2.0	0.8	38%	8-9	2.35	1.8
2	5.0	1		12-14	2.42	2.0
3	10	3		16-18	3.00	2.1
4	20	15		28-32	4.50	2.5
5	40	25		58-63	7.10	3.5
6	100	85		125-130	16.20	5.0

❷ Bubble Point Testing
❸ Tested according to GB/T8786; Differential Pressure of 200Pa (in air)
❹ Liquid Viscosity of 1 CP·S; diameter of 65mm; length of 10inches; pressure of 1.0bar

Length and Area❺

Length	Filtration Area ❻
5 in. (127 mm)	0.096m²
10 in. (254 mm)	0.19m²
20 in. (508 mm)	0.38m²
30 in. (762 mm)	0.57m²
40 in. (1016 mm)	0.76m²

❺ Length and Other Sizes Are Customizable
❻ Tested Filter Diameter is 65mm

Ordering Information

PSSC | Removal Ratings | End Cap | Nominal Length | Diameter | Seal Material | **-F**

Removal Ratings	End Cap	Nominal Length	Diameter	Seal Material
0200 =2.0 μm	**DOE** =Double open end	**05** = 5"	**D25** =25mm	**S** =Silicone
0500 =5.0 μm	**TC** =222/Flat	**10** =10"	**D30** =30mm	**E** =EPDM
1000 =10 μm	**SC** =226/Flat	**20** =20"	**D50** =50mm	**V** =Viton
2000 =20 μm	**L** =Screw	**30** =30"	**D65** =65mm	**F** =PTFE
4000 =40 μm		**40** =40"	**D70** =70mm	
100H =100 μm				

Cleaning and Washing

Contaminants	Methods
Metal/rigid particles	Ultrasonic cleaning with frequent vibrations to remove particles
	High pressure spray prior to reusing
Flocculents (hair/strips/etc.)	high temperature baking, carbonizing, and vaporizing
Colloids	Soaking in a solvent to dissolve colloid

CSSC Cylidrical Stainless Steel Wire Cloth Sintered Filter Cartridge

Cobetter **CSSC** Cylindrical Stainless Steel Wire Cloth Sintered Filters with multiple layers of 316 sintered stainless steel wire cloth that result in superior strength and corrosion and thermal resistance.

Even under high pressure, the pores remain homogeneous while providing stability throughout the filter. This type of filter is ideally suited for solid/liquid solution separation where there are rigid particles.

A long lifespan with excellent re-using properties.

Features and Benefits

- Pure stainless steel structure
- 5 layers of 316 stainless steel wire cloth
- Reinforcing layer
- Homogenous pore sizes
- Superior strength and corrosion and thermal resistance
- Cartridge can be cleaned and re-used
- Excellent re-using properties
- No fiber releasing

Materials of Construction(Five Layers)

Protective Layer	316 stainless steel
Filter Layer	316 stainless steel
Dispersion Layer	316 stainless steel
First Reinforcing Layers	316 stainless steel
Second Reinforcing Layers	316 stainless steel

Nominal Dimensions ❶

Diameters	60mm

❶ Additional Diameter Specifications Available Upon Request

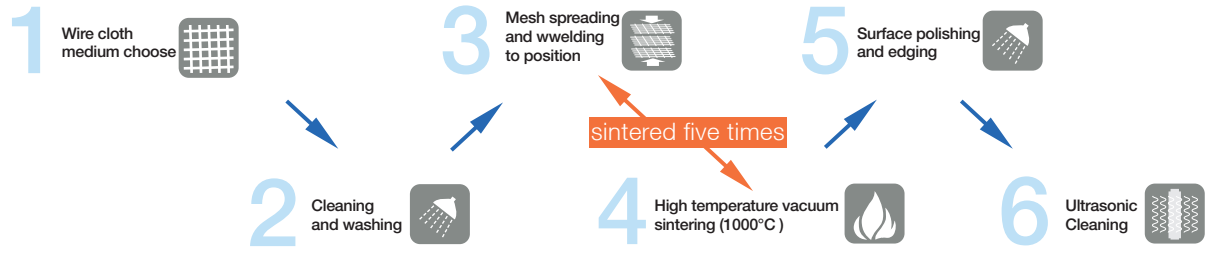
Configurations

Double Open-End (DOE)
Single Open-End (SOE)

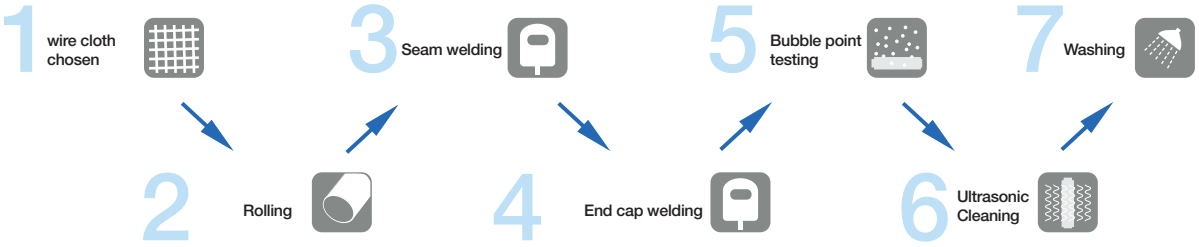
Operating Conditions

Max. Differential Pressure	3.0 bar / 21°C (forward flow)
Recommended Continuous Operating Temperature Range	-75°C to +200°C Note: Temperature dependant on o-ring compound

Manufacturing Process for 5-Layer Stainless Steel Wire Cloth Sintered Filter



Manufacturing Process for Cobetter CSSC 5-Layer Stainless Steel Wire Cloth Sintered Filter



Parameters

Code	Liquid Pore Size (μm)	Removal Ratings(μm)	Pore Efficiency	Absolute Removal Rating (μm) ❷	Average Air Permeability (L/dm²min)❸	Flow Rate (m³/h) ❹
1	2.0	0.8	38%	8-9	2.35	0.25
2	5.0	1		12-14	2.42	0.43
3	10	3		16-18	3.00	0.50
4	20	15		28-32	4.50	0.58
5	40	25		58-63	7.10	0.67
6	100	85		125-130	16.20	0.8

❷ Bubble Point Testing
❸ Tested according to GB/T8786; Differential Pressure of 200Pa (in air)
❹ Liquid Viscosity of 1 CP·S; diameter of 65mm; length of 10inches; pressure of 1.0bar

Length and Area❺

Length	Filtration Area ❻
5 in. (127 mm)	0.025m²
10 in. (254 mm)	0.05m²
20 in. (508 mm)	0.10m²
30 in. (762 mm)	0.15m²
40 in. (1016 mm)	0.20m²

❺ Length and Other Sizes Are Customizable
❻ Tested Filter Diameter is 65mm

Ordering Information

CSSC	Removal Ratings	End Cap	Nominal Length	Diameter	Seal Material	-F
	0200 =2.0 μm	**DOE** =Double open end	**05** = 5"	**D25** =25mm	**S** =Silicone	
	0500 =5.0 μm	**TC** =222/Flat	**10** =10"	**D30** =30mm	**E** =EPDM	
	1000 =10 μm	**SC** =226/Flat	**20** =20"	**D50** =50mm	**V** =Viton	
	2000 =20 μm	**L** =Screw	**30** =30"	**D65** =65mm	**F** =PTFE	
	4000 =40 μm		**40** =40"	**D70** =70mm		
	100H =100 μm					

Cleaning and Washing

Contaminants	Methods
Metal/rigid particles	Ultrasonic cleaning with frequent vibrations to remove particles
	High pressure spray prior to reusing
Flocculents (hair/strips/etc.)	high temperature baking, carbonizing, and vaporizing
Colloids	Soaking in a solvent to dissolve colloid

SSPS Powder Sintered Filter Cartridge

Cobetter **SSPS** Powder Sintered Filter Cartridges are constructed with stainless steel powder. First shaped with pressure and then sintered under high temperature by applying unique technology and strict production process. Features include high mechanical strength, high temperature resistance, even pore distribution, and cleanable.

Features and Benefits

- ALL-Stainless Steel Construction
- Free Particle Release
- High Temperature and Oxidative and Corrosive Resistant
- High Voids, Lower Filtration Resistance, and Excellent
- Permeability
- Even Construction, Narrow Pore Distribution, and High
- Separation Efficiency
- Fixed and Controlled Shape to Withstand High
- Reverse-Flow

Materials of Construction

Filtration Medium	316 stainless steel
End Cap	316 stainless steel

Nominal Dimensions ❶

Diameters	60mm

❶ Additional Diameter Specifications Available Upon Request

Configurations

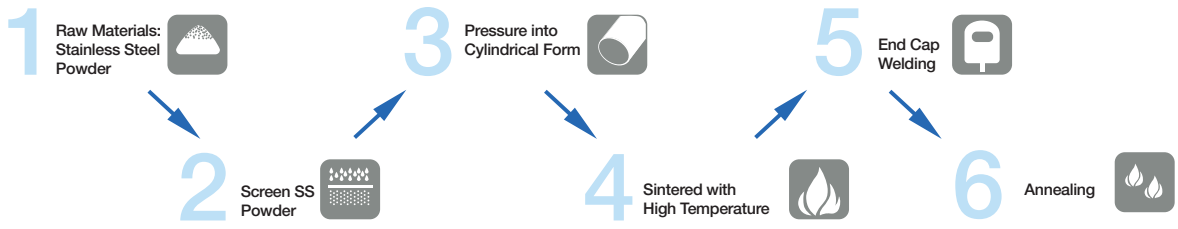
Double Open-End (DOE)

Single Open-End (SOE)

Operating Conditions

Max. Differential Pressure	4.0 bar / 21°C (forward flow)
Recommended Continuous Operating Temperature Range	-75°C to +200°C Note: Temperature dependant on o-ring compound

Production Process of SSPS Series Powder Sintered Filter Cartridges



Parameters

Code	Removal Ratings(μm)	Pore Efficiency%	Initial Differential Pressure (KPa)	Absolute Removal Rating (μm) ❷	Average Air Permeability (L/dm²min)❸	Flow Rate (m³/h) ❹
1	0.45	30-50	28	5	0.12	0.16
2	1.0		21	10	0.97	0.23
3	3.0		5.8	17	1.6	0.31
4	5.0		3.0	30	2.27	1.28
5	10		2.6	50	5.50	3.8
6	20		2.1	70	10.87	5.1
7	30		2.0	90	15.10	5.8
8	50		1.9	120	14.50	6.2
9	80	-	-	-	-	-
10	100	-	-	-	-	-
11	120	-	-	-	-	-

❷ Testing Method: Bubble Point Method ❸ Testing Performed According to GB/T5453; Testing DP is 200Pa; Testing Medium is Air
❹ Testing Liquid Viscosity is 1CP.S; Filter Tested with 60mm diameter and 300mm length; Testing Pressure is 1.5 bar

Length and Area❺

Length	Filtration Area❻
5 in. (125 mm)	0.024 m²
10 in. (300 mm)	0.047m²
20 in. (500 mm)	0.094 m²
30 in. (750 mm)	0.141 m²
40 in. (1000 mm)	0.188m²

❺ Length and Other Sizes Are Customizable
❻ Tested Filter Diameter is 65mm

Ordering information

SSPS | Removal Ratings | End Cap | Nominal Length | Diameter | Seal Material | **-F**

Removal Ratings

0045=0.45μm **3000**=30μm
0100=1.0μm **5000**=50μm
0300=3.0μm **8000**=80μm
0500=5.0μm **100H**=100μm
1000=10μm **120H**=120μm
2000=20μm

End Cap

DOE =Double open end
TC =222/Flat
SC =226/Flat
L =Threaded Coupling

Nominal Length

05= 5"
10=10"
20=20"
30=30"
40=40"

Diameter

D50 =50mm
D60 =60mm
D70 =70mm
D75 =75mm
D80 =80mm
D120 =120mm

Seal Material

S =Silicone
E =EPDM
V =Viton
F =PTFE

Cleaning Methods

Physical Cleaning Methods: Reverse-Flow by Clean Water; Reverse-Blow by Clear Air and Ultrasonic Wave
Chemical Cleaning Methods: Use Cleaning Agent Such As Diluted Acid, Diluted Alkalis, Oxidizer, and Surfactant

Contamination Materials	General Cleaning Method Procedures
Decarburization in Pharmaceutical and Chemical Industries	Reverse-blow and reverse-flow used more frequently; ultrasonic wave cleaning used when necessary
Non -Water Soluble Salts and Oxides in the Pharmaceutical Industry	Soak in 5% Concentration of Nitric Acid Solution
Original Liquid Filtration	Choose the correct cleaning methods as per the chemical properties of the contamination material; The Ultrasonic Wave Cleaning can be combined to use when necessary
Chemical Cleaning Methods	**Detailed Procedures**
Alkaline Cleaning	Alkaline Cleaning Soak filter in 3-5% Concentration of AR grade NaOH Solution for 30-60 minutes; solution temperature is 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns neutral , and then test its conductivity. Dry with Pure Air ≥0.4Mpa
Acid Cleaning	Soak it in the 5% Concentration of Nitric Acid Solution for at least 8 hours; solution temperature is 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns neutral, and then test its conductivity. Dry with Pure Air ≥0.4Mpa
Original Liquid Filtration	Clean filter with surfactant caused by contamination with Organic Pollution (high concentration of Citric Acid recommended for Food and Beverage Applications)

Notes

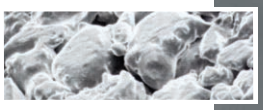
a. Avoid artificial damages such as scratches, bumps, and smashes during the cleaning, disassembling, and assembling processes. Please **DO NOT** exert force on the filter cartridge surface.
b. In general, filtration direction is from outside, in. Reverse filtration **IS NOT** recommended.
c. Increase pressure to the required operating pressure slowly while filtering. Please **DO NOT** increase pressure instantly.
d. Operating pressure **SHOULD NOT** exceed 0.6Mpa. Flush in place reversely with clean liquid or blow in place reversely with clean air in time. Pressure of reverse blow **SHOULD NOT** exceed 0.75Mpa.
e. Reverse-flush and Reverse-blow Procedures: First reverse-blow with clean air under pressure that is 1.2-1.5 times greater than operating pressure. Reverse-blow lasts for 3-5 seconds and repeat 4-6 times. Finally reverse-flush with clean liquid for 3-5 minutes and repeat 2-3 times.
f. If the pressure damage is still serious after **NOTE E**, please **DISSAMBLE** the filter cartridge to clean.

TIC Titanium Metal Powder Filter Cartridge

Cobetter **TIC** Titanium Metal Powder Filter Cartridges composed of high-purity industrial-grade titanium powder (99.4%) with all elements sintered at high temperatures. Its features include anti-chemical corrosion, oxidation and high temperature resistance, and long service life.

As it is a low viscosity liquid filter, this filter results in good solid-liquid separation efficiency.

This filter is mainly used as a chemical filter to remove ozone-depleting substance and for the removal of carbon dioxide in food, pharmaceutical, and water treatment applications.



Features and Benefits

- High-purity titanium construction
- Anti-corrosive; high temperature and oxidation resistant
- Uniform structure with narrow pore size distribution and high filtration efficiency
- No free-falling particles
- High porosity, low filtration resistance and high filtration efficiency
- Good compatibility with human tissue and blood due to its non-toxic and non-magnetic nature

Materials of Construction(Five Layers)

Filter Layer	High-purity Titanium
End Cap	High-purity Titanium
Screw Cap	304 Stainless Steel
Reinforcing Layers	304/316 Stainless Steel

Configurations

Double Open-End (DOE)
Single Open-End (SOE)

Nominal Dimensions ❶

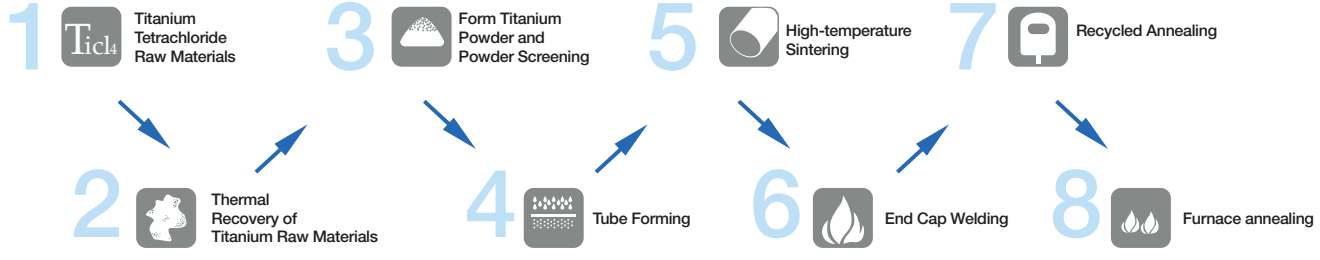
Diameters	60mm

❶ Additional Diameter Specifications Available Upon Request

Operating Conditions

Max. Differential Pressure	3.0 bar / 21°C (forward flow)
Max. Operating Temperature	280°C

Manufacturing Process of TIC Titanium Metal Powder Filter Cartridges



Parameters

Code	Liquid Pore Size (μm)	Removal Ratings(μm)	Pore Efficiency	Absolute Removal Rating (μm) ❷	Average Air Permeability (L/dm²min) ❸	Flow Rate (m³/h) ❹
1	0.45	32	30-50%	6	0.02	0.18
2	1.0	25		10	0.1	0.27
3	3.0	6.1		20	0.5	0.33
4	5.0	3.2		30	1.1	1.32
5	10	3.0		50	2.7	4.2
6	20	2.8		70	5.6	5.6
7	30	-		-	6.5	-
8	50	-		-	10.5	-
9	80	-		-	14.9	-
10	100	-		-	18	-
11	120	-		-	20	-

❷ Bubble Point Testing
❸ Tested according to GB/T8786; Differential Pressure of 200Pa (in air)
❹ Liquid Viscosity of 1 CP·S; diameter of 65mm; length of 10inches; pressure of 1.0bar

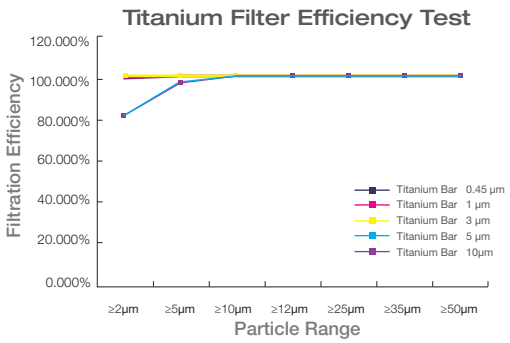
Length and Area❺

Length	Filtration Area❻
5 in. (125 mm)	0.024 m²
10 in. (300 mm)	0.056 m²
20 in. (500 mm)	0.094 m²
30 in. (750 mm)	0.141 m²
40 in. (1000 mm)	0.188 m²

❺ Length and Other Sizes Are Customizable
❻ Tested Filter Diameter is 65mm

Particle Efficiency

Particle Range	0.45μm	1 μm	3 μm	5 μm	10 μm
≥2μm	99.916%	99.895%	99.769%	82.546%	82.371%
≥5μm	99.974%	99.965%	99.910%	96.283%	96.079%
≥10μm	99.990%	99.986%	99.973%	98.875%	98.902%
≥12μm	99.987%	99.987%	99.986%	98.998%	98.982%
≥25μm	100.000%	100.000%	100.000%	99.996%	99.916%
≥35μm	100.000%	100.000%	100.000%	100.000%	99.966%
≥50μm	100.000%	100.000%	100.000%	100.000%	100.000%



Ordering Information

TIC	Removal Ratings	End Cap	Nominal Length	Diameter	Seal Material	-F

0045=0.45μm **3000** =30μm
0100=1.0μm **5000** =50μm
0300=3.0μm **8000** =80μm
0500=5.0μm **100H** =100μm
1000=10μm **120H** =120μm
2000=20μm

DOE =Double open end
TC =222/Flat
SC =226/Flat
L =Screw

05 = 5"
10 =10"
20 =20"
30 =30"
40 =40"

D22 =22mm **D70** =70mm
D30 =30mm **D75** =75mm
D40 =40mm **D80** =80mm
D50 =50mm **D120** =120mm
D60 =60mm

S =Silicone
E =EPDM
V =Viton
F =PTFE

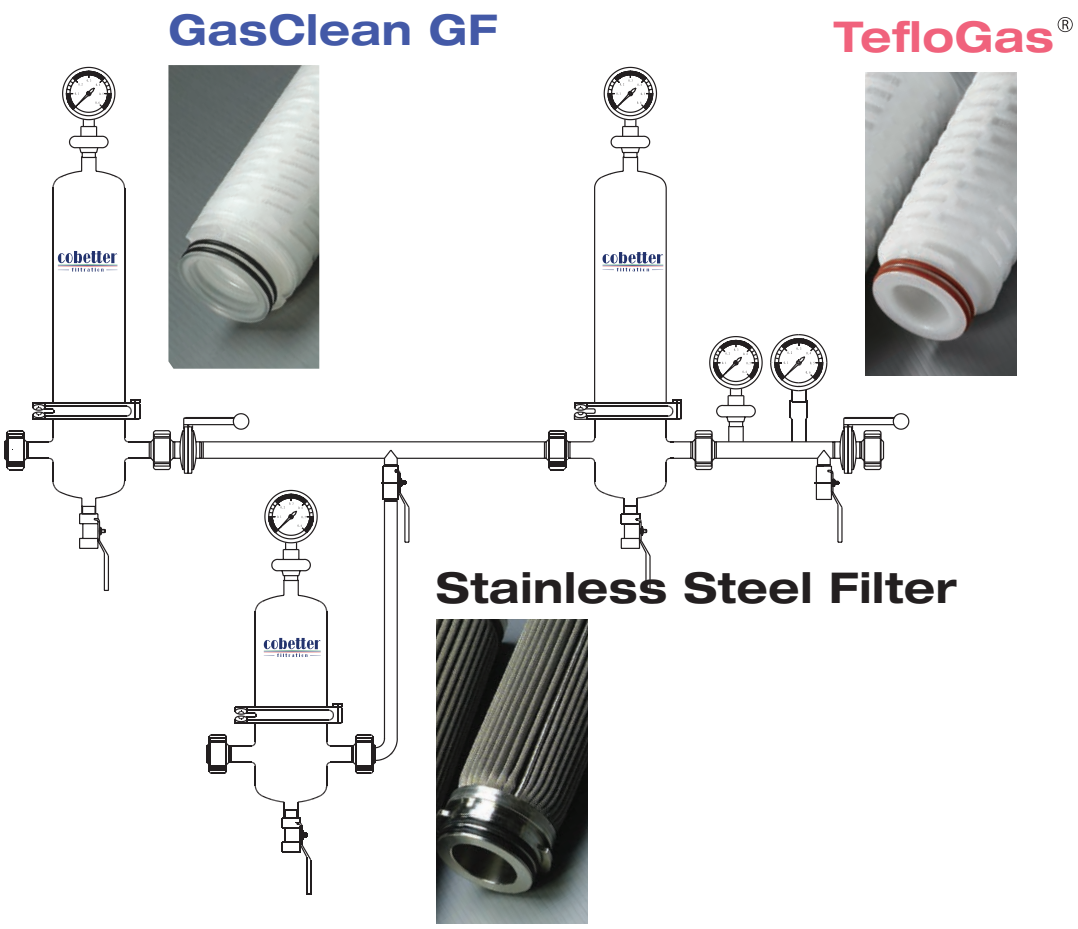
Cleaning Methods

Physical Cleaning Methods: Reverse-Flow by Clean Water; Reverse-Blow by Clear Air and Ultrasonic Wave
Chemical Cleaning Methods: Use Cleaning Agent Such As Diluted Acid, Diluted Alkalis, Oxidizer, and Surfactant

Contamination Materials	General Cleaning Method Procedures
Decarburization in Pharmaceutical and Chemical Industries	Reverse-blow and reverse-flow used more frequently; ultrasonic wave cleaning used when necessary
Non -Water Soluble Salts and Oxides in the Pharmaceutical Industry	Soak in 5% Concentration of Nitric Acid Solution
Original Liquid Filtration	Choose the correct cleaning methods as per the chemical properties of the contamination material; The Ultrasonic Wave Cleaning can be combined to use when necessary
Chemical Cleaning Methods	**Detailed Procedures**
Alkaline Cleaning	Alkaline Cleaning Soak filter in 3-5% Concentration of AR grade NaOH Solution for 30-60 minutes; solution temperature is 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns neutral , and then test its conductivity. Dry with Pure Air ≥0.4Mpa
Acid Cleaning	Soak it in the 5% Concentration of Nitric Acid Solution for at least 8 hours; solution temperature is 40°C. Flush the soaked filter inside, out with DI water or WFI water until the flushed solution turns neutral, and then test its conductivity. Dry with Pure Air ≥ 0.4Mpa
Original Liquid Filtration	Clean filter with surfactant caused by contamination with Organic Pollution (high concentration of Citric Acid recommended for Food and Beverage Applications)

2 Stage Sterile Gas Filtration System

Cobetter **SAFS** Sterile Gas System is a 2 stage sterile gas system consisting of GCGF GasClean GF Filter Cartridge as a pre-filter and TG TefloGas Filter Cartridge as a final filter. The design ensures 100% sterilization. An optional 3rd stage utilizing Stainless Steel Filter Cartridge can be used to provide a voluntary steam sterilization of sterile filters to guarantee aseptic conditions.



* SS Filter is optional only if steam sterliization is required

Typical Applications

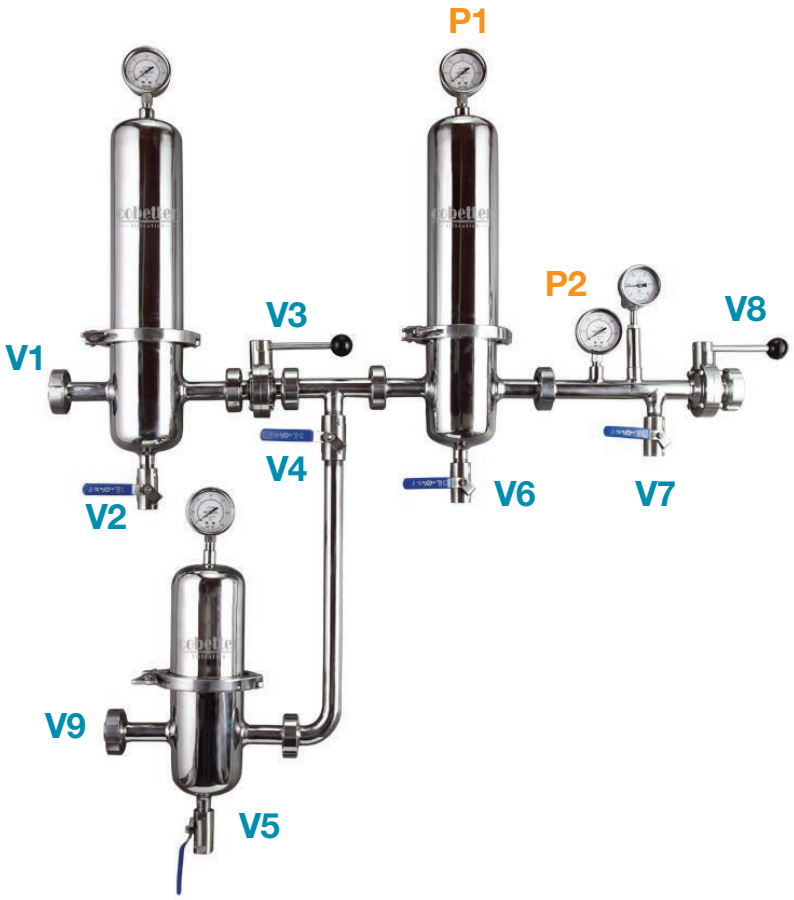
- Sterile Air Filtration
- CO_2 or N_2 multivoltage filtering

Design Features

- Complies with Dominick Hunter Valair Data II Testing Machine
- All SS design and construction
- Extremely long lifetime through cleanability
- Can be customized to meet your specific process requirements

Basic Operating Instructions for Steam Sterilization

- CLOSE V3 and V8 and OPEN V4, V5, V6, and V7. Allow steam to enter V9 SLOWLY to remove air and condensate
- After steam passes through V6 and V7, CLOSE V5, V6, and V7 in order to drain remaining condensate water
- Slowly OPEN V9 until P1 reaches 1.3bar (0.1Mpa). START the sterilization process , filter pressure drop SHOULD NOT exceed 0.3bar
- VERIFY and CONFRIM that the temperature DOES NOT exceed filter limits:
- GPFL ≤ 121°C and GGFP ≤ 121°C
- After sterilization is complete, CLOSE V4, V5, V7, and V9 and OPEN V6 (if the system design has an exhaust valve at P1, open it instead).
- Slowly OPEN V3 to allow compressed gas to chill and dry the filter. Pay attention to the system pressure
- After chilling and drying the filter, OPEN V3



Remarks

- Open and close all valves slowly to avoid pressures shocks and Δp
- Place a pressure reducing valve before V9 to ENSURE that the inlet pressure DOES NOT exceed 1.3bar
- Steam sterilization is the process sterilizing steam filters. All other filters MUST be stored away from the steam as it can be damaged under high temperatures including the presence of bacteria.

Ordering Information

SAFS	System Material	Flow Rate	End Cap	Inlet/Outlet	Design Pressure	-F
	A: SS304	**5** =0.1-1.5m³/ min	**DOE** =Double Open End	**T** =Tri-clamp	**D** =0.35MPa	
	B: SS316	**10** =1.5-3.0m³/ min	**HTC** =222 O-ring/Flat (PBT Insert)	**F** =Flange	**P** =0.6MPa	
		20 =3.0-6.0m³/ min	**HTF** =222 O-ring/Fin (PBT Insert)	**L** =NPT	**G** =1.0MPa	
		.....	**HSF** =226 O-ring/Fin (PBT Insert)	**H** =Union	**F** =1.6MPa	
			SSF =226 O-ring/Fin (SS Insert)			
			SSC =226 O-ring/Flat (SS Insert)			
			STF =222 O-ring/Fin (SS Insert, 3 Tabs)			

This is only a reference. Please contact your Cobetter Sales Engineer for detailed instructions.

cobetter®
filtration

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