PROCESS FILTRATION PRODUCT GUIDE

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Company Profile



36 Acre Campus







World Class GMP Compliant Multilocation Facilities (200,000 sq. ft.)

Advanced Microdevices (**mdi**) is a leader in innovative membrane technologies. Starting from a single person R&D operation in 1976, **mdi** has developed into a dedicated team of 1000 plus with more than 800,000 products.

The company's core competence is its ability to develop new membrane technologies and innovate existing ones to deliver advantages to the customer for high end purification and separation applications in a wide range of industries such as pharmaceuticals, biopharmaceuticals, biotechnology, food and beverage, hospitals, and immunodiagnostics.

As membranes end up being incorporated into user friendly devices, plastic design and moulding and sealing technologies become an integral part of the chain to deliver value to the customer. Realizing this, **mdi** has grown into a vertically integrated company that helps deliver prototypes rapidly for quicker conversion to products for the market.

mdi products are used for critical applications in pharmaceutical and biopharmaceutical industries, such as sterilization of injectable drugs, sterility testing, sample preparation of drugs that are tested with highly sophisticated instrumentation, and development of new drug entities and formulations. **mdi** also offers world class membranes for making reliable immunoassays for testing of diseases at patient bedside.

mdi products meet or exceed industry standards and many of these are recognized as the best available in the world.

These products are manufactured by highly trained manpower in modern GMP facilities with large ISO class 7 production areas under ISO 9001 certified quality management system and are backed by state of the art QC testing, microbiology, reliability and validation laboratories.

A strong pipeline of new products is constantly being developed in its well equipped R&D labs.

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Ordering Information

mdi Membrane Technologies

mdi offers customized solutions to enhance process efficiency, productivity, product quality, and consistency for wide range applications in biopharmaceuticals, pharmaceuticals, biotechnology, microelectronics, and immunodiagnostics.

Research and Development

A unique multidimensional research and development facility at **mdi**, involving teams specializing in critical areas of membrane technology, biotechnology, electronics, chemistry, and mechanical engineering, continuously strives with an integrated approach to develop advanced, innovative and customized products.

These filters have innovative design inputs to deliver unique performance advantages over competing products in terms of higher retention efficiencies, flow rates, throughputs, and lower filtration losses.

This unparalleled capability to develop custom products and solutions is a continuous source of pride and drives the **mdi** team to push the boundaries of technology and maximize value for the user.









mdi Quality Assurance

mdi Microfiltration products are well designed with built-in quality assurance.

The careful selection of raw materials, validated production processes and Quality Management System certified by ISO 9001:2015 ensures consistently high quality products. **mdi** products meet 21 CFR, ASTM, compendia requirements and meet global regulatory expectations.

Facilities

mdi filters are produced and packaged in facilities meeting GMP requirements such as Clean Rooms with Class 10,000 and Class 100 areas for critical processes.

Deep Characterization and Certification

Apart from retention efficiency and other functional parameters such as flowrates, temperature/hydraulic stress etc., **mdi** filters are deeply characterized for critical areas of concern such as biosafety, bioburden levels, endotoxin levels and extractables.

Quality Control

The filters go through stringent in process and final product testing and quality is ensured by in place QMS.

Traceability

Each sterilizing grade cartridge and capsule filter has unique identification number and is accompanied with individual certificate of quality.





mdi Validation Services

As per regulatory requirements, the pharmaceutical industry has to provide a high level of assurance that the sterile drug product, manufactured through aseptic processing, offers the identity, strength, quality, and purity it purports to have or is represented to posses (Ref. USFDA 21CFR 211.100(a).) Consequently it has become increasingly critical to establish/quantify the impact on the drug due to its interface with various process components under different process conditions.

Sterilizing grade filters are of critical importance in aseptic manufacturing, and it is the drug manufacturer's responsibility to show that the selected filter is able to sterilize the product under the process conditions and it does not affect the purity, quality and strength of the drug product.

Validation Services

mdi asertain Filter validation services are designed to meet customer specific needs and help achieve regulatory compliance. These include the following:

- > Studies establishing filter integrity test values specific to drug product
- > Filter fluid interaction studies
 - Physico-Chemical compatibility studies
 - Extractable/Leachable studies
 - Adsorption studies
- Microbial retention studies
- > Throughput Studies

All of these studies are executed as per pre-approved test methodologies to establish the test conditions and acceptance criteria.

mdi also offers post validation support for regulatory audits.

Validation Guides

mdi filters are validated as per global regulatory requirements. These filters, in compliance with the Regulation Title 21 Code of Federal Regulations (CFR) Part 314.420, have been registered at the U.S. Food and Drug Administration through Drug Master File No.DMF 15554.

Detailed documentation on validation of **mdi** filters for sterilization of fluids (air/gases and liquids) in form of Validation Guides is also available.









mdi Customer Support

mdi technology executives assist in problem solving and process upgradation through experience sharing and developing customized products and systems. Some of these customer support activities are:

Customized Filtration Solutions

mdi offers customized solutions for complex filtration problems. **mdi** technology executives will help you in finding solutions to filter difficult to filter fluids & minimizing filtration losses.

» Filtration System Design

Designing an efficient filtration system is an integral part of process optimization for minimizing filtration costs, increasing yields and reducing process time. **mdi** offers technical support for selection of filter materials by performing throughput studies to optimize filter train and filter sizing.



» Installation and Operational Qualification

mdi provides well documented installation, operational and performance qualification guidelines for all the equipment and systems it offers.

Regulatory Assistance

mdi provides complete regulatory assistance to it's customers. **mdi** products and validation services meet global regulatory expectations.

» Technical Seminars

Technical seminars at customer's location are organized to help the users understand the performance characterization of product in use, differentiate between various options available in the market and select the best solutions to suit their requirements. These interactions help create optimized systems and also upgrade current processes in terms of performance and cost effectiveness.

Filter Selection and Sizing

Highly regulated process industries such as pharmaceuticals and biopharmaceuticals work with a very wide variety of process streams/fluids under different process conditions. They continuously face with the challenge of achieving their process objectives efficiently and cost effectively.

Microfiltration is a key process step to achieve critical process objectives that range from sterilization of process fluids to bioburden reduction, polishing and clarification.

These process streams can range from easy to filter water for injection to difficult to filter colloidal solutions, emulsions, liposomal drug delivery systems or large molecule high value therapeutic proteins and vaccine concentrates. Such a wide spectrum of process streams, coupled with different process objectives, is quite a challenge for the process owner.

Selection of the right filters and their sizing to meet various process needs is thus critical to successfully achieve the desired objectives.

For establishing filter type, the following important questions need to be answered with respect to the process:

- 1. What is the objective of filtration?
 - Sterilization
 - Bioburden reduction
 - > Particle removal
 - Clarification
- 2. What is the fluid to be filtered?
 - Liquid or gases
 - What are the fluid properties such as pH, viscosity, temperature and surface tension
- 3. What will be the process conditions?
 - Will the filtration system be inline steam sterilized or autoclaved?
 - Will the system be sanitized with chemicals or hot water?
 - > What are the sterilization/sanitization conditions?
 - Are the filters going to be used once or multiple times?
 - How many times the system will be sterilized /sanitized?
 - What is the maximum operating temperature?
 - What is the allowable maximum allowable differential pressure?

- 4. Is it going to be a continuous process or batch filtration?
- 5. What will be the batch volume for full scale process filtration?
- 6. What is the maximum allowable filtration time or the minimum desired flow rate?

Once the filter type with respect to MOC, pore size etc. has been established the next step is to establish the filter size.

Filter sizing, although to some extent is dependent on factors such as minimum desired flow rate, fluid viscosity as well as temperature, a critical parameter is the contamination profile of the fluid to be filtered. The nature and quantum of contaminants defines their interaction with the filter, which in turn defines the throughput one can achieve from a given filtration area for the fluid in question. An understanding of this behavior will help define not only the right sized filtration system but also the right combination of pre-filters and final filters to achieve desired/optimum throughput.

mdi offers filter sizing services to product development labs and process owners in full scale manufacturing. These involve small scale throughout studies to establish suitable and cost effective filtration system. Different lab scale filter and pre-filter combinations are used to maximize throughputs. The selected combination is, based on desired batch volumes or throughputs, linearly extrapolated to establish filter size.

For more information please contact our local technology executive or write to us at info@mdimembrane.com

Filter Sizing: Linear Upscaling from R&D to Production Process

Researchers in NDDS and formulation development are concerned about the impact of filter fluid interaction on stability, purity, strength etc. of the drug product. They take a keen interest in filter selection at the formulation development stage itself.

Although preliminary compatibility data support initial filter selection, for stability studies, detailed filter validations are required to provide enough documented evidence to justify specific filter use.

A critical requirement that needs to be addressed at this stage is of scalability from R&D to pilot scale to full scale production processes. Any change in filter MOC for full scale processes will require additional validation.

mdi offers a wide range of filters to provide linear scale up from lab scale to production process. While scaling up the process, the appropriate filter size can be selected by increasing the effective filtration area of filter proportionate to the process fluid volumes.

All materials of construction of core, sleeve, end caps, support layers and housing as well as manufacturing process is identical for all filter devices starting from 5 cm² to 18000 cm² hence process scaling can be facilitated without triggering additional validation studies for given process conditions. **mdi** provides complete documentation for each of the filters thereby reducing the additional validation cost and time.



25 mm, 5 cm²



50 mm, 20 cm²



1", 250 cm²



2″, 500 cm²



5", 1000 cm²



8″, 2000 cm²





10", 6000 cm²

Easy Connect

Wide Range of End Connections

Pharmaceutical and Biopharmaceutical processes involve transfer of high value fluids through multiple process steps. Making high quality, reliable, flexible and functionally convenient connectivity with filters is of utmost value.

mdi Capsule filters offer a wide range of reliable end connections for functional convenience and customized connectivity.

Validated for Performance

These end connections are manufactured with tight dimension tolerance and are validated for strength and connection integrity under conditions of extreme use.



³⁄₄" Sanitary Flange



½″ **HB**



1⁄4″ SHB



3/8" Hose Barb



Male Luer Slip



11/2" Sanitary Flange



1/2" Single Stepped Hose Barb



Quick Connector



Female Luer Lock



1/4" MNPT

Customized Connectivity

mdi Capsule filters can also be customized to offer different inlet-outlet combinations to meet the unique connectivity needs in process assemblies. For example, stainless steel components with sanitary flange connections are sometimes required to be connected to single use disposable systems through quick-connectors or hose barb connections.



1¹/₂" Sanitary Flange to ¹/₂" Hose Barb

1½" Sanitary Flange to ¾" Sanitary Flange





High Security ½" Single Step Hose Barb Connection

Filters for Sterilization of Liquids: PES Membrane Filters

mdi produces a wide range of Gamma sterilizable and steam sterilizable PES membrane capsule and cartridge filters to meet filtration requirements of biopharmaceutical and pharmaceutical processing.

These filters meet key process requirements such as high retention efficiency, very high protein recoveries, extremely low extractables, high throughputs, wide chemical compatibility etc.

mdi PES filter devices are available as:

Filter Type	Single Layer	Multiple Layer		
Gamma Sterilizable Capsule	AsentiCan KI -v	AseptiCap KS -γ		
Filters	Asepticup RE Y	AseptiCap KSO -γ		
	AseptiCap KL	AseptiCap KS		
Autoclavable Capsule Filters	AseptiCap KO	AseptiCap KSO		
Steam Sterilizable Cartridge Filters	-	AseptiSure KS		
High Temperature Resistant		AseptiSure HS		
Filters	-	AseptiSure HSR		

Quality Assurance

These filter devices are manufactured in Class 10,000 clean rooms under ISO 9001 : 2015 certified quality management systems and are validated to meet compendia and regulatory requirements.

Applications

Sterile Filtration of:

- > Cell culture media
- > Cell culture media containing serum
- > Media additives
- Final product concentrates
- > Buffers
- Adjuvants
- Small Volume Parenterals
- Large Volume Parenterals
- Water for Injection

	Assurance
Toxicity	Passes Biological Reactivity Test, In Vivo, as per USP <88> for Class VI plastics
Cytotoxicity	Passes Biological Reactivity Test, In Vitro, USP <87> for Cytotoxicity
Bioburden	Bioburden level is < 1000 cfu/filter device as per ISO 11737-1: 2018
Bacterial Endotoxin	Aqueous extracts exhibit < 0.25 EU/ml as established by Limulus Amebocyte Lysate (LAL) Test as per USP <85>
Non Fiber Releasing	Passes test as per USP and comply with USFDA 21 CFR Part 211.72 for fiber release
Extractables with WFI	Passes test as per USP <661>
Oxidizable Substances	Passes test as per USP <1231>
Particle Shedding	Passes test as per USP <788> for particulate matter in injections
TOC/Conductivity at 25 °C	Meets the WFI requirements of USP <643> for Total Organic Carbon and USP <645> for Water Conductivity after a specified volume of purified water flush
Indirect Food Additive	All Polypropylene components meet the FDA Indirect Food Additive requirements cited in 21 CFR 177.1520
Good Manufacturing Practice	These products are manufactured in a facility which adheres to Good Manufacturing Practices

Filter Selection Chart

Application	Key Application		Steam Sterilizable				
Area	Requirements	Capsule Filters	Capsule Filters	Cartrid	lge Filters		
Biopharmaceutical	S						
Media preparation	- Mycoplasma removal (in case of Mammalian Cell Culture)	AseptiCap KS - γ 0.1 μm PES Membrane Capsule Filter	AseptiCap KS 0.1 μm PES Membrane Capsule Filter	AseptiSure KS 0.1 µm PES Membrane Cartridge Filter	AseptiSure HS 0.1 µm High Temperature PES Membrane Cartridge Filter		
	- Microbial retention (in case of Microbial Fermentation)	AseptiCap KS - γ 0.2 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 μm PES Membrane Capsule Filter	AseptiSure KS 0.2 μm PES Membrane Cartridge Filter	AseptiSure HS 0.2 μm High Temperature PES Membrane Cartridge Filter		
Sterile filtration of growth regulators	 Absolute retention Low protein binding 	AseptiCap KS - γ 0.2 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 μm PES Membrane Capsule Filter	AseptiSure KS 0.2 µm PES Membrane Cartridge Filter	AseptiSure HS 0.2 µm High Temperature PES Membrane Cartridge Filter		
Sterile filtration of alkaline/acidic solutions for pH control	- Absolute retention - Compatible with 1-14 pH	AseptiCap KSO- γ 0.2 μm PES Membrane Capsule Filter	AseptiCap KO/KSO 0.2 μm PES Membrane Capsule Filter	-	AseptiSure HSR 0.2 μm High Temperature PES Membrane Cartridge Filter		
Cell Harvesting	- Bioburden reduction	AseptiCap KS - γ 0.2 μm or 0.45 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 μm or 0.45 μm PES Membrane Capsule Filter	AseptiSure KS 0.2 μm or 0.45 μm PES Membrane Cartridge Filter	AseptiSure HS 0.2 μm or 0.45 μm High Temperature PES Membrane Cartridge Filter		
Buffer filtration	- Bioburden reduction - Absolute retention	AseptiCap KS - γ 0.2 μm or 0.45 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 μm or 0.45 μm PES Membrane Capsule Filter	AseptiSure KS 0.2 μm or 0.45 μm PES Membrane Cartridge Filter	AseptiSure HS 0.2 μm or 0.45 μm High Temperature PES Membrane Cartridge Filter		
Sterile filtration of vaccines and therapeutic proteins	 Absolute retention Low protein binding Low holdup volume 	AseptiCap KS - γ 0.2 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 μm PES Membrane Capsule Filter	-	-		
Pharmaceuticals							
Large Volume Parenterals	Absolute retentionHigh throughputs	-	-	AseptiSure KS 0.2 µm PES Membrane Cartridge Filter	AseptiSure HS 0.2 µm High Temperature PES Membrane Cartridge Filter		
Small Volume Parenterals	 Absolute retention Low Protein Binding Wide Chemical Compatiblity 	AseptiCap KS - γ 0.2 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 μm PES Membrane Capsule Filter	AseptiSure KS 0.2 µm PES Membrane Cartridge Filter	AseptiSure HS 0.2 µm High Temperature PES Membrane Cartridge Filter		
WFI	- Absolute retention	AseptiCap KS - γ 0.2 μm PES Membrane Capsule Filter	AseptiCap KS 0.2 µm PES Membrane Capsule Filter	AseptiSure KS 0.2 µm PES Membrane Cartridge Filter	AseptiSure HS 0.2 µm High Temperature PES Membrane Cartridge Filter		

AseptiCap KL/KS Inline Capsule Filters (25mm and 50mm)

Specially designed filters for process development and formulation development labs with identical materials of construction for easy scale up to large capsule and cartridge filters.

50mm is a specially vented device, for use with peristaltic pump, to ensure easy removal of entrapped air in the upstream.

Radiation Sterilizable:	AseptiCap KL/KS -γ
Autoclavable:	AseptiCap KL/KS



	Construction										
Membrane			Hydrophilic PES								
Plastic Parts			Polypropylene								
Final Filter Pore Si	ze	0.1 μm	0.2 μm	0.45 μm							
Prefilter Pore Size (In case of AseptiC	Cap KS)	0.2 μm, 0.45 μm	0.8 μm, 0.65 μm, 0.45 μm	0.8 μm, 0.65 μm							
		Integrity Test	ing/Retention								
Bubble Point		\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	\geq 50 psi (3.52 Kg/cm ²) with Water	\geq 30 psi (2.11 Kg/cm ²) with Water							
Microbial Retentio	on	LRV >7 for Acholeplasma laidlawii (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	LRV >7 for <i>Serratia marcescens</i> (ATCC 14756) per cm ²							
		Si	ze								
Size		25 mm		50 mm							
Effective Filtratior	n Area (Nominal)	5 cm ²		20 cm ²							
	Operational										
Max. Operating Te	emperature	55 ℃		60 °C							
Max. Differential F	Pressure	75 Psi (5 Kg/cm²) @ 25	5 ℃ 42 P	42 Psi (3 Kg/cm²) @ 30 °C							
Hold-up Volume(with air purge)	<50 μL		<200 µL							
Burst Pressure		> 14 Kg/cm ²		> 8 Kg/cm ²							
	By Irradiation	AseptiCap KL/KS - γ: Gamma Irradiata sterilized.	AseptiCap KL/KS -γ: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.								
Sterilization	By Gas	AseptiCap KL/KS: Sterilizable by Ethy	/lene Oxide								
	By Autoclave	AseptiCap KL/KS: Autoclavable at 12	25°C for 30 minutes, 25 cycles								
		These cannot be In-line steam steri	ilized								
Shelf Life		3	2 years after gamma sterilization 3 years after Ethylene Oxide sterilization								
pH Compatibility			Compatible with pH range of 1-10								

Water Flow Rates

AseptiCap KL -γ 25 mm

AseptiCap KL - γ 50 mm



Ordering Information

AseptiCap KL/KS and AseptiCap KL/KS - y, 25 mm

Туре		Si	Size		Pore Size		Inlet/Outlet		Radiation Sterilizable		Sterility		Pack Size	
	Code	Dia	Code					Jterm	Labic					
AseptiCap KL	IKLX				Code		Code		Code			Code		Code
<i>AseptiCap KS</i> (0.2 μm Upstream)	IKS1	25 mm	06	0.1 µm	36	Female Luer Lock	м	Yes	R		Non Sterile	1	100	04
AseptiCap KS (0.45 μm Upstream)	IKSX			0.2 μm	01	Male Luer Slip	N H	No	Х		EO Sterile	2		
<i>AseptiCap KS</i> (0.65 μm Upstream)	IKS3			0.45 μm	02	¹ ⁄4″ Hose Barb	В				Gamma Sterile	3		
<i>AseptiCap KS</i> (0.8 μm Upstream)	IKS5													
Example														
					4					v				

|--|

AseptiCap KL/KS and AseptiCap KL/KS - y, 50 mm

Туре		Si	ze	Pore	Size	Inlet/Ou	ıtlet	Radi Steril	ation izable	x	Steril	ity	Pack	Size
	Code	Dia	Code		Code		Code		Code			Code		Code
AseptiCap KL	VKLX	50 mm	10	0.1 μm	36	1⁄4″- ¾″SHB	В	Yes	R		Non Sterile	1	10	02
<i>AseptiCap KS</i> (0.2 μm Upstream)	VKS1]		0.2 μm	01	³ 4" Sanitary	s	No	х		EO Sterile	2		
<i>AseptiCap KS</i> (0.45 μm Upstream)	VKSX			0.45 μm	02	Flange					Gamma Sterile	3		
AseptiCap KS (0.65 μm Upstream)	VKS3													
<i>AseptiCap KS</i> (0.8 μm Upstream)	VKS5]												
Example														
VKSX		1	0	3	6	BS			(x	1		0	2

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: VKSX1036BBRX102 Example for Gamma Sterile: VKSX1036BBXX302

For End Connection availability and dimensions with different sizes refer Pages 89-90.

AseptiCap KL/KS Small Capsule Filters (1", 2", 5", 8")

Polyethersulfone membrane capsule filters are self contained, ready to use, disposable filtration devices that contain a mini cartridge filter element sealed inside a polypropylene housing. These offer highest packing density of the membrane resulting in a very compact capsule offering long service life.

 Radiation Sterilizable:
 AseptiCap KL/KS - γ

Autoclavable:

AseptiCap KL/KS



Construction										
Membrane			Hydrophilic PE	S						
Support (Drainage	e) Layers		Polyester							
Plastic Parts			Polypropylene	2						
Final Filter Pore Siz	ze	0.1 μm	0.2 μm		0.45 μm					
Prefilter Pore Size (In case of <i>AseptiCo</i>	ap KS)	0.2 μm, 0.45 μm	0.8 μm, 0.65 μm, 0.4	45 μm	0.8 μm, 0.65 μm					
		Integrity Test	ing/Retention							
Bubble Point		\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	\geq 50 psi (3.52 Kg/o with Water	cm²)	\geq 30 psi (2.11 Kg/cm ²) with Water					
Microbial Retentio	n	LRV >7 for <i>Acholeplasma laidlawii</i> (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimon</i> (ATCC 19146) per	<i>as diminuta</i> cm²	LRV >7 for Serratia marcescens (ATCC 14756) per cm ²					
		Si	ze							
Size		1″	2″	5″	8″					
Effective Filtration	Area (Nominal)	250 cm ²	500 cm ²	1000 cm ²	2000 cm ²					
Vent and Drain		¼ "He	ose Barb with Platinum Cu	red Silicone 'O' r	ing					
Operational										
Max. Operating Te	mperature		80 °C @ ≤ 30 psi (2 K	g/cm²)						
Max. Differential P	ressure		60 psi (4 Kg/cm²) @	30 °C						
	By Irradiation	AseptiCap KL/KS -γ: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.								
Sterilization	By Gas	AseptiCap KL/KS: Sterilizable by Ethy	lene Oxide							
	By Autoclave	AseptiCap KL/KS: Autoclavable at 12	5°C for 30 minutes, 25 cycl	es						
	,	These cannot be In-line steam steri	lized							
Shelf Life		:	2 years after gamma sto 3 years after Ethylene Oxid	erilization e sterilization						
pH Compatibility			Compatible with pH ran	ige of 1-10						

Water Flow Rates

0.1µm AseptiCap KS, 1" Capsule Filter

0.1µm AseptiCap KS, 2" Capsule Filter



End Connection Type:

A: ¼" Stepped Hose Barb Q: Single Step ½" Hose Barb E: 1½" Sanitary Flange J: Quick Connector S: ¾" Sanitary Flange U: Female Luer Lock D: ½" Hose Barb

Water Flow Rates

0.2µm AseptiCap KS, 5" Capsule Filter

0.2µm AseptiCap KS, 8" Capsule Filter



End Connection Type:

A: ¼" Stepped Hose Barb

Q: Single Step ½" Hose Barb

E: 1½" Sanitary Flange

J: Quick Connector

S: 34" Sanitary Flange

Ordering Information

AseptiCap KL/KS and AseptiCap KL/KS - γ

Туре		Si	ze	Pore	Size	Inlet/Outlet		Radi	ation	Bell		Sterility		Pack Size	
	Code		Code		Code		Code	Stern			Code		Code		Code
AseptiCap KL	DKLX	1″	51	0.1 μm	36	1⁄4″ SHB	Α	Mari	Code	Yes	В	Non Sterile	1	1	01
(Single Layer)		2″	52	0.2 µm	01	1/4" MNPT	В	Yes	К	No Bell	Х	EO Sterile	2		
(0.2 µm Upstream)	DKS1	5″	53	0.45 μm	02	1⁄2″ MNPT	С	No	Х			Gamma	2		
AseptiCap KS	DKCV	8″	57			1/2" Hose Barb	D					Sterile	5		
(0.45 µm Upstream)	DK3A					1½" Sanitary Flange	E								
AseptiCap KS (0.65 μm Upstream)	DKS3					³ 4" Sanitary Flange	S								
AseptiCap KS	DKS5					Quick Connector	J								
(0.8 µm Upstream)	51105					Single Step ½" Hose Barb	Q								
						Female Luer Lock	U								
						Male Luer Slip	W								
						¾6″ Hose Barb	Ν								
Example:						³∕a‴ Hose Barb	I								
DKSX		5	7	3	6	DD			R	х		1			01

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: DKSX5136DDRX101 Example for Gamma Sterile: DKSX5136DDXX301

For End Connection, bell availability and dimensions with different sizes refer Pages 89-90.

AseptiCap KS Large Capsule Filters (5", 10", 20", 30")

These are large disposable Polyethersulfone membrane capsule filters for high value biopharma manufacturing processes, providing a unique combination of high throughputs and low hold up volumes. These capsule filters offer serial filtration incorporating a large pore size upstream membrane to protect the downstream membrane and do away with the time and expense associated with assembling, cleaning and validating stainless steel housings.

Radiation Sterilizable: AseptiCap KS - γ

Autoclalvable: AseptiCap KS



Microbially Validated as per ASTM F 838 Complies with USFDA 21 CFR 210.3 (b) (6)

Meets and Exceeds USFDA 21 CFR 177.1520

	Construction										
Membrane			Hydrophilic PES								
Support (Drainage	e) Layers		Polyester								
Plastic Parts			Polypropylene								
Final Filter Pore Siz	ze	0.1 μm	0.2 μm	0.45 μm							
Prefilter Pore Size		0.2 μm, 0.45 μm	0.8 μm, 0.65 μm								
		Integrity Test	ing/Retention								
Bubble Point		\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	\geq 50 psi (3.52 Kg/cm ²) with Water	\geq 30 psi (2.11 Kg/cm ²) with Water							
Max. Air Diffusion 10" Capsule Filters	Flow for	\leq 29 ml/min @ 50 psi (3.52 Kg/cm ²) with Water	≤ 30 ml/min @ 37 psi (2.6 Kg/cm with Water	2) \leq 35 ml/min @ 22 psi (1.54 Kg/cm ²) with Water							
Microbial Retentic	on	LRV >7 for Acholeplasma laidlawii (ATCC 23206) per cm²	LRV >7 for <i>Brevundimonas diminu</i> (ATCC 19146) per cm ²	ta LRV >7 for Serratia marcescens (ATCC 14756) per cm ²							
		Si	ze								
Size		5″	10" 20	" 30"							
Effective Filtration Area (Nominal)		3000 cm ²	6000 cm ² 12000	18000 cm ²							
Vent and Drain		¼″ Ho	ose Barb with platinum cured Silico	ne 'O' ring							
		Opera	tional								
Max. Operating Te	mperature		80 °C @ ≤ 30 psi (2 Kg/cm²)								
Max. Differential P	ressure	60 psi (4 Kg/cm²) @ 30 °C									
	By Irradiation	AseptiCap KL/KS -γ: Gamma Irradiata sterilized.	ble up to 50 kGy. These filters shou	ld not be autoclaved or in-line steam							
Sterilization	By Gas	AseptiCap KL/KS: Sterilizable by Ethy	lene Oxide								
	By Autoclave	AseptiCap KL/KS: Autoclavable at 12	5°C for 30 minutes, 25 cycles								
		These cannot be in-line steam steri	2 years after gamma sterilization								
Shelf Life			3 years after Ethylene Oxide steriliza	tion							
pH Compatibility			Compatible with pH range of 1-1	0							

Water Flow Rates

0.1 µm AseptiCap KS, 10" Large Capsule Filters



End Connection Type: Q: Single Step ½"Hose Barb E: 1½" Sanitary Flange

Ordering Information

AseptiCap KS and AseptiCap KS- γ

	Si	ze	Pore	Size	Inlet/Outle	t	Radi	ation	Inli (T-I	ne	Sterili	ty	Pack	< Size
Code		Code		Code		Code	Stern		/ 1-1	me		Code		Code
LKS1	5″*	53	0.1 μm	36	1½" Sanitary Flange	E		Code		Code	Non Sterile	1	1	01
	10″	54	0.2 μm	01	Single Stop 1//		Yes	R	Inline	X	EO Sterile	2		
LKSX	20″	55	0.45 μm	02	Hose Barb	Q	No	X	I-line**	I	Gamma	2		
1402	30″	56			³ ⁄ ₄ " Sanitary Flange	S					Sterile	3		
LK35					3/8" Hose Barb	1								
LKS5					1" Hose Barb	Z								
	Code LKS1 LKSX LKS3 LKS5	Code 5"* LKS1 10" LKSX 20" LKS3 10" LKS5 10"	Code Size LKS1 5"* 53 10" 54 20" 55 30" 56 LKS3 55	Size Pore Code Code 0.1 μm LKS1 5"* 53 0.1 μm 10" 54 0.2 μm LKS3 30" 56 0.45 μm	Size Pore Size Code Code Code 5"* 53 0.1 µm 36 10" 54 0.2 µm 01 LKSX 20" 55 0.45 µm 02 LKS3 30" 56 56 56	Code Code <t< td=""><td>Size Pore Size Inlet/Outlet Code Code Code Code 5"* 53 0.1 μm 36 1½" Sanitary Flange E LKS1 5" 54 0.2 μm 01 Single Step ½" Q LKS2 30" 55 0.45 μm 0.2 3/8" Hose Barb I LKS3 LKS5 1" Hose Barb 1 3/8" Hose Barb I</td><td>Size Pore Size Inlet/Outlet Radii Steril Code Code Code Inlet/Outlet Radii Steril LKS1 Code 0.1 µm 36 1½" Sanitary Flange E Yes LKSX 53" 0.1 µm 36 1½" Sanitary Flange Code Yes LKS3 53" 0.45 µm 0.2 3/4" Sanitary Flange S No LKS3 54" 54" 54" 54" 3/8" Hose Barb I LKS3 54" 54" 54" 54" 54" 54" 54" LKS5 54" 54" 54" 54" 54" 54" 54"</td><td>Code Size Pore Size Inlet/Outlet Radiation Sterilizable LKS1 Code 0.1 µm 36 1½"Sanitary Flange E 10" 54 0.1 µm 36 1½"Sanitary Flange E 20" 55 0.45 µm 02 Single Step ½" Q 1KS3 56 3/8" Hose Barb I LKS5 11" Hose Barb Z</td><td>Code Code Code Code Code Radiation (Code Inlit/(Code Inlit/(Code</td><td>CodeSizePore SizeInlet/OutletRadiationInlineCode\bigcirc code\bigcirc c</td><td>SizePore \cdotInlet/OutletRadiation SterilizableInline (T-line)SterilizableCode\circ</td><td>SizePore SizeInlet/OutletRadiation SterilizableInline /T-lineSterilizableInline $T-line$SterilizableCode\circ code\circ code\circ</td><td>Size Pore Size Inlet/Outlet Radiation Sterilizable Inline //.T-line Sterilizable Sterilizable</td></t<>	Size Pore Size Inlet/Outlet Code Code Code Code 5"* 53 0.1 μm 36 1½" Sanitary Flange E LKS1 5" 54 0.2 μm 01 Single Step ½" Q LKS2 30" 55 0.45 μm 0.2 3/8" Hose Barb I LKS3 LKS5 1" Hose Barb 1 3/8" Hose Barb I	Size Pore Size Inlet/Outlet Radii Steril Code Code Code Inlet/Outlet Radii Steril LKS1 Code 0.1 µm 36 1½" Sanitary Flange E Yes LKSX 53" 0.1 µm 36 1½" Sanitary Flange Code Yes LKS3 53" 0.45 µm 0.2 3/4" Sanitary Flange S No LKS3 54" 54" 54" 54" 3/8" Hose Barb I LKS3 54" 54" 54" 54" 54" 54" 54" LKS5 54" 54" 54" 54" 54" 54" 54"	Code Size Pore Size Inlet/Outlet Radiation Sterilizable LKS1 Code 0.1 µm 36 1½"Sanitary Flange E 10" 54 0.1 µm 36 1½"Sanitary Flange E 20" 55 0.45 µm 02 Single Step ½" Q 1KS3 56 3/8" Hose Barb I LKS5 11" Hose Barb Z	Code Code Code Code Code Radiation (Code Inlit/(Code Inlit/(Code	CodeSizePore SizeInlet/OutletRadiationInlineCode \bigcirc code \bigcirc c	SizePore \cdot Inlet/OutletRadiation SterilizableInline (T-line)SterilizableCode \circ	SizePore SizeInlet/OutletRadiation SterilizableInline /T-lineSterilizableInline $T-line$ SterilizableCode \circ code \circ	Size Pore Size Inlet/Outlet Radiation Sterilizable Inline //.T-line Sterilizable Sterilizable

Example:

	LKSX 54	02	EE	R	т	1	01	
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* Size 5" is available in In-line Capsule Filters Only

** T-line Capsule Filters are available with $1^{\prime}\!\!2''$ Sanitary Flange connections Only

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: LKSX5402EERX101 Example for Gamma Sterile: LKSX5402EEXX301

For End Connection availability and dimensions with different sizes refer Pages 89-90.

AseptiCap KO Small Capsule Filters (1", 2", 5", 8")

AseptiCap KO capsule filters incorporate a low protein binding PES membrane with polypropylene drainage layers to ensure pH compatibility from 1-14 making these ideal for alkaline fluid streams.





Specifications

		C	Construction					
Membrane			Hydrophil	ic PES				
Support (Drainage	e) Layers		Polyprop	ylene				
Plastic Parts			Polyprop	ylene				
Filter Pore Size		0.2 μr	m	0.4	5 µm			
		Integrit	y Testing/Retention					
Bubble Point		<u>></u> 50 psi (3.52 Kg/c	cm²) with Water	<u>></u> 30 psi (2.11 Kg	g/cm ²) with Water			
Microbial Retention	on	LRV >7 for Brevundimonas dim	<i>inuta</i> (ATCC 19146) per cm ²	LRV >7 for Serratia marces	scens (ATCC 14756) per cm ²			
			Size					
Size		1″	2″	5″	8″			
Effective Filtration	n Area (Nominal)	250 cm ²	500 cm ²	1000 cm ²	2000 cm ²			
Vent and Drain			Polypropylene Polypropylene 0.2 μm 0.45 μm 0.2 μm 0.45 μm Integrity Testing/Retention ≥ 50 psi (3.52 Kg/cm ²) with Water ≥ 30 psi (2.11 Kg/cm ²) with Water V >7 for Brevundimonas diminuta (ATCC 19146) per cm ² LRV >7 for Serratia marcescens (ATCC 14756) p Size 1" 2" 5" 8" 250 cm ² 500 cm ² 1000 cm ² 2000 cm ² 1/4" Hose Barb with platinum cured Silicone 'O' ring 1/4" Hose Barb with platinum cured Silicone 'O' ring 1/4" Hose Barb with platinum cured Silicone 'O' ring 80 °C @ ≤ 30 psi (2 Kg/cm ²) 60 psi (4 Kg/cm ²) @ 30 °C Sterilizable by Ethylene Oxide Autoclavable at 125 °C for 30 minutes, 25 cycles. Cannot be in-line steam sterilized 11 lpm @ 0.70 Kg/cm ² @ 27 °C 3 years after Ethylene Oxide sterilization Compatible with pH range of 1-14					
		(Operational					
Max. Operating Te	emperature		80 °C @ <u><</u> 30 ps	i (2 Kg/cm²)				
Max. Differential F	Pressure		Polypropylene $0.2 \ \mum$ $0.45 \ \mum$ Integrity Testing/Retention $\geq 50 \ psi (3.52 \ Kg/cm^2) \ with Water\geq 30 \ psi (2.11 \ Kg/cm^2) \ with WaterBrevundimonas diminuta (ATCC 19146) per cm²LRV >7 for Serratia marcescens (ATCC 14756) per descenseSize1"2"5"8"50 cm²500 cm²1000 cm²2000 cm²1/4" Hose Barb with platinum cured Silicone 'O' ring2000 cm²2000 cm²Operational80 °C @ < 30 \ psi (2 \ Kg/cm²) @ 30 °C$					
Chariliantian	By Gas		Sterilizable by Et	nylene Oxide				
Sterilization	By Autoclave	Autoclavable a	at 125 °C for 30 minutes, 25 cy	vcles. Cannot be in-line stea	m sterilized			
Typical Water Flow	v Rates (0.2 µm, 8")		11 lpm @ 0.70 Kg	/cm² @ 27 °C				
Shelf Life			3 years after Ethylene	Oxide sterilization				
pH Compatibility			Compatible with pl	H range of 1-14				

Ordering Information

Туре		Si	ize	Pore	Size	Inlet/Outlet		x	X	Sterili	ty	Pack	Size
	Code		Code		Code		Code				Code		Code
AseptiCap KO	DKLO	1″	51	0.2 μm	01	1⁄4″ SHB	A			Non Sterile	1	1	01
		2″	52	0.45 μm	02	1⁄2" Hose Barb	D			EO Sterile	2		
		5″	53			1½" Sanitary Flange	E						
		8″	57			¾" Sanitary Flange	S						
						Quick Connector	J						
						Single Step ½" Hose Barb	Q						
						Female Luer Lock	U						
						Male Luer Slip	W						
						¾6" Hose Barb	N						
Example:						³ ∕ ₈ " Hose Barb	I						
DKLC)	5	57	0	1	DD		Х	х	1		0	1

For End Connection availability and dimensions with different sizes refer Pages 89-90.

AseptiCap KSO Small Capsule Filters (1", 2", 5", 8")

mdi AseptiCap KSO are Polyethersulfone membrane capsule filters offering wide pH (1-14) compatibility. These filters are specially designed for alkaline fluid streams in bio-pharma manufacturing processes, with added advantages of high throughputs and low hold up volumes.

These capsule filters offer serial filtration incorporating a large pore size upstream membrane to protect the downstream membrane for enhanced throughputs.

AseptiCap KSO are validated for use in pharmaceutical and biopharmaceutical applications.

Radiation Sterilizable:	AseptiCap KSO -γ
Autoclavable:	AseptiCap KSO





			Construction					
Membrane			Hydrop	hilic PES				
Support (Draina	ge) Layers		Polypro	opylene				
Plastic Parts			Polypre	opylene				
Final Filter Pore	Size	0.2	μm	0.45	μm			
Pre-filter Pore Si	ze	0.8 μm,	0.45µm	0.8	μm			
		Integr	ity Testing/Retention					
Bubble Point		≥ 50 psi (3. with \	Polypropylene 0.2 μm 0.45 μm 0.8 μm, 0.45 μm 0.8 μm 0.8 μm, 0.45 μm 0.8 μm Integrity Testing/Retention 2.30 psi (2.11 Kg/cm ²) with Water 2 50 psi (3.52 Kg/cm ²) ≥ 30 psi (2.11 Kg/cm ²) with Water 7 for Brevundimonas diminuta (ATCC 19146) per cm ² LRV >7 for Serratia marcescens (ATCC 14756) per cm ² 5 Size 2" 5" 2 ² 5" 8" 3 ² 500 cm ² 1000 cm ² 2000 cm ² 3 ² 500 cm ² 1000 cm ² 2000 cm ² 3 ² 500 cm ² 1000 cm ² 2000 cm ² 3 ² 500 cm ² 1000 cm ² 2000 cm ² 50 per ational					
Microbial Retent	ion	LRV >7 for Brevund (ATCC 1914	PolypropylenePolypropylene $0.2 \ \mum$ $0.45 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $0.8 \ \mum$, $0.45 \ \mum$ $0.8 \ \mum$ $V >7$ for <i>Brevundimonas diminuta</i> $LRV >7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V >7$ for <i>Brevundimonas diminuta</i> $LRV >7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V >7$ for <i>Brevundimonas diminuta</i> $LRV >7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V >7$ for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ² $RV <7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V < 7$ for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ² $RV <7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V < 7$ for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ² $RV <7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V < 7$ for <i>Brevundimonas</i> (ATCC 19146) per cm ² $RV <7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V < 7$ for <i>Brevundimonas</i> (ATCC 19146) per cm ² $RV <7$ for <i>Serratia marcescens</i> (ATCC 19146) per cm ² $V < 7$ for <i>Brevundimonas</i> (ATCC 19146) per cm ² $RV <7$ for <i>Serratia</i> (ATCC 19146) per cm ² $SO < C < S 30 psi (2 Kg/cm2) @ 30 °CSO < SO < SO < S$					
			Size					
Size		1″	2″	5″	8″			
Effective Filtratio	on Area (Nominal)	250 cm ²	500 cm ²	1000 cm ²	2000 cm ²			
Vent and Drain			250 cm² 500 cm² 1000 cm² 2000 cm² ¼″ Hose Barb with platinum cured Silicone 'O' ring Operational Contract of the second secon					
			¹ /4" Hose Barb with platinum cured Silicone 'O' ring Operational					
Max. Operating	Temperature		80 °C @ <u><</u> 30	psi (2 Kg/cm²)				
Max. Differentia	Pressure		60 psi (4 Kg/	/cm²) @ 30 °C				
	By Irradiation	AseptiCap KSO - γ: Gamma Ir sterilized.	radiatable up to 50 kGy. The	ese filters should not be autoo	claved or in-line steam			
Sterilization	By Gas	AseptiCap KSO: Sterilizable b	0.2 μm0.45 μm0.8 μm, 0.45μm0.8 μmIntegrity Testing/Retention≥ 50 psi (3.52 Kg/cm²) with Water≥ 30 psi (2.11 Kg/cm²) with WaterLRV >7 for Brevundimonas diminuta (ATCC 19146) per cm²LRV >7 for Serratia marcescens 					
	Du Auto dava	AseptiCap KSO: Autoclavable	e at 125°C for 30 minutes, 2	5 cycles				
	By Autoclave	These cannot be In-line ste	am sterilized					
Shelf Life			Integrity Testing/Retention ≥ 50 psi (3.52 kg/cm²) with Water > 50 psi (3.52 kg/cm²) with Water >>7 for Brevundimonas diminuta (ATCC 19146) per cm² LRV >7 for Serratia marcescens (ATCC 19146) per cm² Size 2" 5" 2" 5" 2" 5" m² 500 cm² 1000 cm² 2000 cm² With Water 2000 cm² 2000 cm² 2000 cm² Water 500 cm² 1000 cm² 2000 cm² Water 500 cm² 30 °C 2000 cm² Pary: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized. 2 Pary: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam 2 Pary: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam 2					
pH Compatibilit	y		Compatible with	pH range of 1-14				

Water Flow Rates

0.2µm AseptiCap KSO, 1" Capsule Filter



0

0

0.00

12.5

End Connection Type:

0

0

A: ¼" Stepped Hose Barb Q: Single Step ½" Hose Barb

5.0

7.5

Water Flow Rate (lpm)

10

E: 1¹/₂" Sanitary Flange J: Quick Connector S: ³/₄" Sanitary Flange J: Quick Connector

7.0

10.5

Water Flow Rate (Ipm)

14

3.5

0.00

17.5

Ordering Information

AseptiCap KSO and AseptiCap KSO-γ

2.5

Туре		S	ize	Pore	Size	Inlet/Outlet		Radi	ation	х	Sterili	ty	Pack	Size
	Code		Code		Code		Code	Stern	Izable			Code		Code
AseptiCap KSO	ркох	1″	51	0.2 μm	01	¼″ SHB	A		Code		Non Sterile	1	1	01
(0.45 µm Upstream)	BROX	2″	52	0.45 μm	02	1⁄2" Hose Barb	D	Yes	R		EO Sterile	2		
AseptiCap KSO	DKO5	5″	53			1½" Sanitary Flange	E	No	Х		Gamma			
(0.8 µm Opstream)		8″	57			¾" Sanitary Flange	S				Sterile	3		
						Quick Connector	J							
						Single Step ½"Hose Barb	Q							
						Female Luer Lock	U							
						Male Luer Slip	W							
						¾6″ Hose Barb	N							
						³⁄₄" Hose Barb	I I							
Example:														
DKOX		5	52	0	1	EE		I	R	Х	1		0 1	I

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: DKOX5202EERX101 Example for Gamma Sterile: DKOX5202EEXX301

For End Connection availability and dimensions with different sizes refer Pages 89-90.

0.2µm AseptiCap KSO, 2" Capsule Filter

AseptiCap KSO Large Capsule Filters (5", 10", 20", 30")

mdi AseptiCap KSO are Polyethersulfone membrane capsule filters offering wide pH (1-14) compatibility. These filters are specially designed for alkaline fluid streams in biopharma manufacturing processes, with added advantages of high throughputs and low hold up volumes.

These capsule filters offer serial filtration incorporating a large pore size upstream membrane to protect the downstream membrane for enhanced throughputs.

AseptiCap KSO are validated for use in pharmaceutical and biopharmaceutical applications.

Radiation Sterilizable:	AseptiCap KSO -γ
Autoclalvable:	AseptiCap KSO





			Construction				
Membrane			Hydrop	hilic PES			
Support (Drainag	ge) Layers		Polypro	opylene			
Plastic Parts			Polypro	opylene			
Final Filter Pore S	ize	0.2	μm	0.45	μm		
Pre-filter Pore Siz	e	0.8 μm,	, 0.45µm	0.8	μm		
		Integ	rity Testing/Retention				
Bubble Point		<u>></u> 50 psi (3.52 Kg	J/cm²) with Water	<u>></u> 30 psi (2.11 Kg/	/cm²) with Water		
Max. Air Diffusior 10" Capsule Filter	n Flows for 's	≤ 30 ml/min @ 3 with	<u><</u> 35 ml/min @ 22 with \	psi (1.54 Kg/cm²) Vater			
Microbial Retenti	ion	LRV >7 for <i>Brevur</i> (ATCC 191	0.2 μm0.45 μm0.8 μm, 0.45μm0.8 μmIntegrity Testing/Retention \geq 50 psi (3.52 Kg/cm²) with Water \geq 30 psi (2.11 Kg/cm²) with Water \leq 30 ml/min @ 37 psi (2.6 Kg/cm²) with Water \leq 35 ml/min @ 22 psi (1.54 Kg/cm²) with WaterLRV >7 for Brevundimonas diminuta (ATCC 19146) per cm²LRV >7 for Serratia marcescens (ATCC 14756) per cm²5"10"20"5"30"3000 cm²6000 cm²12000 cm²6000 cm²12000 cm²18000 cm²Size5"10"20"5"10"20"6000 cm²12000 cm²18000 cm²6000 cm²12000 cm²18000 cm²6000 cm²30 °C18000 cm²SizeSize5"10"20"5"10"20"6000 cm²12000 cm²18000 cm²SizeSize5"10"20"30"30"30"SizeSizeSizeSize5"10"20"SizeSizeSizeSizeSizeSizeSizeSizeSizeSizeSizeSizeSizeSize				
			Size				
Size		5″	10″	20″	30″		
Effective Filtratio	n Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²		
Vent and Drain			1/4" Hose Barb with platin	num cured Silicone 'O' ring			
			Operational				
Max. Operating T	emperature		80 °C @ <u>≤</u> 30 ∣	psi (2 Kg/cm²)			
Max. Differential	Pressure		60 psi (4 Kg/	′cm²) @ 30 °C			
	By Irradiation	AseptiCap KSO - γ: Gamma l sterilized	rradiatable up to 50 kGy. The l.	ese filters should not be autoo	laved or in-line steam		
Sterilization	By Gas	AseptiCap KSO: Sterilizable	by Ethylene Oxide				
	Du Auto deve	AseptiCap KSO : Autoclavab	le at 125°C for 30 minutes, 25	5 cycles			
	By Autoclave	These cannot be In-line ste	eam sterilized				
Shelf Life			Polypropylene 0.2 μm 0.45 μm 0.8 μm, 0.45 μm 0.8 μm 0.8 μm, 0.45 μm 0.8 μm 0.8 μm, 0.45 μm 0.8 μm 1000 μm 30 μm 250 psi (3.52 Kg/cm ²) with Water ≥ 30 psi (2.11 Kg/cm ²) with Water ≤ 30 ml/min @ 37 psi (2.6 Kg/cm ²) with Water ≤ 35 ml/min @ 22 psi (1.54 Kg/cm ²) with Water ≤ 30 ml/min @ 37 psi (2.6 Kg/cm ²) with Water ≤ 35 ml/min @ 22 psi (1.54 Kg/cm ²) with Water LRV >7 for Brevundimonas diminuta (ATCC 19146) per cm ² LRV >7 for Serratia marcescens (ATCC 19146) per cm ² 5" 10" 20" 30" 30000 cm ² 6000 cm ² 12000 cm ² 18000 cm ² 5" 10" 20" 30" 30000 cm ² 6000 cm ² 12000 cm ² 18000 cm ² 5" 10" 20" 30" 20" 60 psi (4 Kg/cm ²) @ 30 °C 50 psi (2 Kg/cm ²) @ 30 °C 50 psi (2 Kg/cm ²) @ 30 °C 50 psi (2 Kg/cm ²) @ 30 °C Fap KSO - γ: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized. 54 psei Si				
pH Compatibility	,	Compatible with pH range of 1-14					

Water Flow Rates

0.2 µm AseptiCap KSO,10" Large Capsule Filters





Ordering Information

AseptiCap KSO and AseptiCap KSO-γ

Туре		Si	ze	Pore	Size	Inlet/Outle	t	Radi	ation	Inl	ine	Sterili	ty	Pac	c Size
	Code		Code		Code		Code	Sterii	Izable	/ 1-	line		Code		Code
AseptiCap KSO	ικοχ	5″*	53	0.2 μm	01	1½" Sanitary Flange	E		Code		Code	Non Sterile	1	1	01
(0.45 µm Upstream)	EROX	10″	54	0.45 μm	02	Single Stop 1/4"		Yes	R	Inline	Х	EO Sterile	2		
AseptiCap KSO	LKO5	20″	55			Hose Barb	Q	No	Х	T-line	Т	Gamma	2		
(o.o µiii opsticuiii)		30″	56			³ 4" Sanitary Flange	S					Sterile	5		
						3/8" Hose Barb	I								
						1" Hose Barb	Z								
Example:															
LKOX		5	4	0	1	FF			R	-	г	1		0	1

* Size 5" is available in In-line Capsule Filters Only

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: LKOX5402EERX101 Example for Gamma Sterile: LKOX5402EEXX301

For End Connection availability and dimensions with different sizes refer Pages 89-90.

AseptiSure HS Mini Cartridge filters

mdi Polyethersulfone (PES) membrane mini cartridge filters type *Aseptisure HS* are high temperature resistant filtration devices. These are designed to withstand high pressure steam sterilization upto 135°C.

Aseptisure HS mini cartridge filters with Polyethersulfone membrane serial layers offer enhanced throughputs, thus ensuring better economics.

These are validated for key performance parameters such as retention efficiency, chemical compatibility, extractables, heat stability and flow rates.

Specifications



	Cons	struction	
Membrane		Hydrophilic PES	
Support (Drainage) Layers		Polyester	
Plastic Parts		Polypropylene	
Final Filter Pore Size	0.1 μm	0.2 μm	0.45 µm
Prefilter Pore Size	0.2 μm, 0.45 μm	0.8 μm, 0.65 μm, 0.45 μm	0.8 μm, 0.65 μm
	Integrity Te	sting/Retention	
Bubble Point	≥ 26 psi (1.82 Kg/cm ²) with 50% IPA ≥ 65 psi (4.56 Kg/cm ²) with Water	> 50psi (3.52Kg/cm ²) with Water	> 30psi (2.11Kg/cm ²) with Water
Microbial Retention	LRV >7 for <i>Acholeplasma laidlawii</i> (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	LRV >7 for <i>Serratia marcescens</i> (ATCC 14756) per cm ²
		Size	
Size	2.5″		5″
Effective Filtration Area (Nominal)	1000 cm ²		2000 cm ²
	Оре	erational	
Water Flow Rate for 0.2µm @ 0.70kg/cm² @27°C	9 lpm		15 lpm
Max. Operating Temperature		80 °C @ <u><</u> 2 Kg/cm² (30 psi)	
Max. Differential Pressure		50 psi (3.5 Kg/cm²) @ 25 °C	
Reverse Pressure		<u><</u> 10 psi (0.7 Kg/cm²) @ 25 °C	
Sterilization	In-line steam sterilizable upto 135 °C	for 30 minutes at a maximum different	ial pressure of 5 psi (0.35 Kg/cm ²), 25 cycles
pH Compatibility		Compatible with pH range of 1-10	

Ordering Information

Туре		Si	ize	Pore	Size	Ada	pter	Elaston	ner	Sterili	ty	Pac	
	Code		Code		Code		Code		Code		Code		1
AseptiSure HS	CPH1	2.5″	50	0.1 µm	36	4463	EO	Silicone	SS	Non Sterile	1	1	Î
0.2 µm Upstream)		5″	53	0.2 um	01	4463B	H0				· · · · ·	-	1
<i>lseptiSure HS</i> 0.45 μm Upstream)	СРНХ			0.45 μm	02	4440	U0	*G0 adapto	ic not av	ailable with el	stomor	Planca m	
AseptiSure HS	СБНЗ					Seal-K	G0*	XX in place	e of elasto	omer code whil	e orderir	r lease III 1g	e
0.65 µm Upstream)	Сгпз					Seal-O	FO	-				-	
AseptiSure HS 0.8 μm Upstream)	CPH5					Seal-M	JO						
kample:													
СРНХ		5	0	0	1	E	D	SS		1		0	1

AseptiSure HS Standard Cartridge Filters

AseptiSure HS high temperature resistant, serial layer Polyethersulfone cartridge filters are designed to withstand high pressure differential upto 0.3 Kg/cm² (5 psi) at high steam sterilization temperatures of upto 135 °C.



Meets and Exceeds USFDA 21 CFR 177.1520

Specifications

	Con	struction						
Membrane			Hydrophilic PES					
Support (Drainage) Layers			Polyester					
Plastic Parts			Polypropylene					
Final Filter Pore Size	0.1 µm	0.1 μm 0.2 μm 0.45 μm						
Prefilter Pore Size	0.2 μm, 0.45 μm	0.2 μm, 0.45 μm 0.8 μm, 0.65 μm, 0.45 μm 0.8 μm, 0.65 μm						
	Integrity To	esting/Rete	ntion					
Bubble Point	\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	<u>></u> 50	psi (3.52 Kg/cm ²) with Water	\geq 30 psi (2.11 Kg/cm ²) with Water				
Air Diffusion Flow (10" Cartridge Filter)	\leq 29 ml/min @ 50 psi (3.52 Kg/cm ²) with Water	<u><</u> 30 ml/m	in @ 37 psi (2.6 Kg/cm²) with Water	\leq 35 ml/min @ 22 psi (1.54 Kg/cm ²) with Water				
Microbial Retention	LRV >7 for Acholeplasma laidlawii LRV >7 for Brevundimonas diminuta LRV >7 for Serratia marcescens (ATCC 23206) per cm ² (ATCC 19146) per cm ² (ATCC 14756) per cm ²							
		Size						
Size	5″	10″	20″	30″				
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²				
	Ор	erational						
Typical Water Flow Rates (for 0.2µm @ 0.70 Kg/cm² @ 27 °C)	25 lpm	45 lpm	81 lpm	113 lpm				
Max. Operating Temperature		80 °C	2 @ ≤ 30psi (2 Kg/cm²)					
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C							
Reverse Pressure	<u>≤</u> 10 psi (0.7 Kg/cm²) @ 25 °C							
Sterilization	In-line steam sterilizable upto 135 °C for 30 minutes at a maximum differential pressure of 5 psi (0.35 Kg/cm ²), 25 cycles							
pH Compatibility	Compatible with pH range of 1-10							

Ordering Information

Туре		Si	Size		Pore Size		Adapter		Elastomer		Sterility		Pack Size	
	Code		Code		Code	1		Code		Code		Code		Code
AseptiSure HS	CPH1	5″	53	0.1 µm	36	1	7P	A0	Silicone	SS	Non Sterile	1	1	01
(0.2 µm Upstream)		10″	54	0.2 μm	01	1	7P without fin	A1	Viton	SV				
(0.45 µm Upstream)	СРНХ	20″	55	0.45 μm	02		28 with fin	C0	EPDM	SE				
<i>AseptiSure HS</i> (0.65 μm Upstream)	СРНЗ	30″	56			-	'O'	D0	FEP Encapsulated	FV				
<i>AseptiSure HS</i> (0.8 μm Upstream)	CPH5								Viton					
Example:														
СРНХ		5	54	0	01		AO		SS		1		0	1

AseptiSure HSR Mini Cartridge Filter

mdi Polyethersulfone (PES) membrane mini cartridge filters type *AseptiSure HSR* are designed to withstand high pressure differential upto 0.3 Kg/cm² (5 psi) at high steam sterilization temperatures of up to 135 °C.

These filters with Polyethersulfone membrane and Polypropylene support layers offer pH compatibility from 1 to 14, and are thus ideal for use with acidic as well as alkaline solutions.

mdi AseptiSure HSR Mini Cartridge filters are validated for key performance parameters such as retention efficiency, chemical compatibility, extractables, heat stability and flow rates.



Specifications

	Cons	struction						
Membrane		Hydrophilic PES						
Support (Drainage) Layers		Polypropylene						
Plastic Parts		Polypropylene						
Final Filter Pore Size	0.1 µm	0.1 μm 0.2 μm 0.45 μm						
Prefilter Pore Size	0.2 μm, 0.45 μm	0.2 μm, 0.45 μm 0.8 μm, 0.65 μm, 0.45 μm 0.8 μm, 0.65 μm						
	Integrity Te	sting/Retention						
Bubble Point	\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	\geq 50 psi (3.52 Kg/cm ²) with Water	\geq 30 psi (2.11 Kg/cm ²) with Water					
Microbial Retention	LRV >7 for <i>Acholeplasma laidlawii</i> (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	LRV >7 for Serratia marcescens (ATCC 14756) per cm ²					
		Size						
Size	2.5″		5″					
Effective Filtration Area (Nominal)	1000 cm ²		2000 cm ²					
	Оре	erational						
Typical Water Flow Rates (for 0.2µm @ 0.70 Kg/cm² @ 27 °C)	9 lpm		15 lpm					
Max. Operating Temperature		80 °C @ \leq 30psi (2 Kg/cm ²)						
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 ℃							
Reverse Pressure	<u>≤</u> 10 psi (0.7 Kg/cm²) @ 25 °C							
Sterilization	In-line steam sterilizable upto 135 °C for 30 minutes at a maximum differential pressure of 5 psi (0.35 Kg/cm ²), 25 cycles							
pH Compatibility	Compatible with pH range of 1-14							

Ordering Information

Туре		Size		Pore Size			Adapter			Elastomer		Sterility		Pack Size	
	Code		Code		Code			Code			Code		Code		Code
AseptiSure HSR (0.2 μm Upstream)	CHR1	2.5″	50	0.1 µm	36		4463	EO		Silicone	SS	Non Sterile	1	1	01
AseptiSure HSR	СНВХ	5	- 22	0.2 μm	01		4463B	H0							
(0.45 µm Upstream)	CHILX			0.45 μm	02		4440	U0		*G0 adapte	r is not av	ailable with el	astomer	Please m	ention
<i>AseptiSure HS</i> R (0.65 μm Upstream)	CHR3						Seal-K	G0*		XX in place	e of elasto	omer code whi	le orderi	ng	lention
AseptiSure HSR	CHR5						Seal-O	F0							
(0.8 µm Upstream)	CIIIIS						Seal-M	JO							
Example:	Example:														
CHRX		5	53	01		EO			SS		1		0	1	

AseptiSure HSR Standard Cartridge Filters

mdi Polyethersulfone (PES) membrane cartridge filters type *AseptiSure HSR* are high temperature resistant filtration devices. These are designed to withstand high pressure differential at high steam sterilization temperature upto 135°C. These filters exhibit high mechanical stability, and wide chemical compatibility even with alkaline process fluids.

These filters come with Polyethersulfone membrane serial layers and Polypropylene support layers to offer 1-14 pH compatibility.

mdi AseptiSure HSR cartridge filters are validated for key performance parameters such as retention efficiency, chemical compatibility, extractables, heat stability and flow rates.

Microbially Validated as per ASTM F 838 Complies with USFDA 21 CFR 210.3 (b) (6) Meets and Exceeds USFDA 21 CFR 177.1520

Specifications

	Con	struction						
Membrane		Н	ydrophilic PES					
Support (Drainage) Layers		F	Polypropylene					
Body and Core		F	Polypropylene					
Final Filter Pore Size	0.1 μm	0.1 μm 0.2 μm 0.45 μm						
Prefilter Pore Size	0.2 μm, 0.45 μm	0.2 μm, 0.45 μm 0.8 μm, 0.65 μm, 0.45 μm 0.8 μm, 0.65 μm						
	Integrity Te	esting/Reten	tion					
Bubble Point	\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	<u>></u> 50 p v	si (3.52 Kg/cm²) vith Water	\geq 30 psi (2.11 Kg/cm ²) with Water				
Air Diffusion Flow (10" Cartridge Filter)	≤ 29 ml/min @ 50 psi (3.52 Kg/cm²) ≤ 30 ml/min @ 37 psi (2.6 Kg/cm²) ≤ 35 ml/min @ 22 psi (1.54 with Water with Water with Water with Water							
Microbial Retention	LRV >7 for Acholeplasma laidlawiiLRV >7 for Brevundimonas diminutaLRV >7 for Serratia marcesce(ATCC 23206) per cm2(ATCC 19146) per cm2(ATCC 14756) per cm2							
		Size						
Size	5″	10″	20″	30″				
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²				
	Ope	erational						
Typical Water Flow Rates (for 0.2µm @ 0.70 Kg/cm² @ 27 ℃)	25 lpm	45 lpm	81 lpm	113 lpm				
Max. Operating Temperature	80 °C @ ≤ 30 psi (2 Kg/cm²)							
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C							
Reverse Pressure	≤ 10 psi (0.7 Kg/cm²) @ 25 °C							
Sterilization	In-line steam sterilizable upto 135 °C	for 30 minutes	at a maximum differentia	Il pressure of 5 psi (0.35 Kg/cm²), 25 cycles				
pH Compatibility	Compatible with pH range of 1-14							

Ordering Information

Туре		Size		Pore Size		Adapte	Adapter		Elastomer		ty	Pack Size	
	Code		Code		Code		Code		Code		Code		Code
AseptiSure HSR	CHR1	5″	53	0.1 µm	36	7P	A0	Silicone	SS	Non Sterile	1	1	01
(0.2 µm Upstream)		10″	54	0.2 μm	01	7P without fin	A1	Viton	SV	-			
(0.45 µm Upstream)	CHRX	20″	55	0.45 μm	02	28 with fin	C0	EPDM	SE				
AseptiSure HSR (0.65 µm Upstream)	CHR3	30″	56			ʻ0'	D0	FEP Encapsulated	FV				
<i>AseptiSure HS</i> R (0.8 μm Upstream)	CHR5							Viton					
Example:													
CHRX		5	54	(01	A0		SS		1		0	1

AseptiSure KS Mini Cartridge filters

mdi Polyetheresulfone (PES) membrane mini cartridge filters type *AseptiSure KS* are serial filtration devices with a larger pore size upstream PES membrane layer to protect the downstream final PES membrane layer from premature clogging and to give enhanced throughputs, thus resulting in better economics.

mdi Aseptisure KS filters are validated for key performance parameters such as retention efficiency, chemical compatibility, extractables, heat stability and flow rates. These are available in a variety of pore sizes to suit specific microfiltration needs in critical and specialized process applications.

Microbially Validated as per ASTM F 838 Complies with USFDA 21 CFR 210.3 (b) (6) Meets and Exceeds USFDA 21 CFR 177.1520



Specifications

Construction										
Membrane		Hydrophilic PES								
Support (Drainage) Layers		Polyester								
Plastic Parts		Polypropylene								
Final Filter Pore Size	0.1 μm	0.2 μm	0.45 µm							
Prefilter Pore Size	0.2 μm, 0.45 μm	0.2 μm, 0.45 μm 0.8 μm, 0.65 μm, 0.45 μm 0.8 μm, 0.65 μm								
	Integrity Testing/Retention									
Bubble Point	\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	> 50 psi (3.52Kg/cm²) with Water	> 30 psi (2.11Kg/cm²) with Water							
Microbial Retention	LRV >7 for Acholeplasma laidlawii LRV >7 for Brevundimonas diminuta LRV >7 for Serratia marcescer (ATCC 23206) per cm ² (ATCC 19146) per cm ² (ATCC 14756) per cm ²									
	9	bize								
Size	2.5″		5″							
Effective Filtration Area (Nominal)	1000 cm ²		2000 cm ²							
	Оре	rational								
Water Flow Rate for 0.2µm @ 0.70kg/cm² @27°C	9 lpm		15 lpm							
Max. Operating Temperature		80 °C @ < 2 Kg/cm ² (30 psi)								
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C									
Reverse Pressure	<u>≤</u> 10 psi (0.7 Kg/cm²) @ 25 °C									
Sterilization	In-line steam sterilizable at 121°C for 30 minutes at a maximum differential pressure of 3 psi (0.21 kg/cm ²) , 25 cycles									
pH Compatibility	Compatible with pH range of 1-10									

Ordering Information

Туре		Size		Size Pore Size		Adapter		Elastomer		Sterility		Pack Siz	
	Code		Code		Code		Code		Code		Code		Co
AseptiSure KS	CPK1	2.5″	50	0.1 μm	36	4463	E0	Silicone	SS	Non Sterile	1	1	0
(0.2 µm Upstream)		5″	53	0.2 um	01	4463B	H0						
AseptiSure KS (0.45 μm Upstream)	СРКХ		·	0.45 μm	02	4440	UO						
AseptiSure KS	СРК3					Seal-K	G0*	* *G0 adapter is not available with elastomer. Please				Please m	nenti
(0.05 µm Opstream)						Seal-O	F0	XX in plac	e of elast	omer code whi	le orderi	ng	
<i>AseptiSure KS</i> (0.8 μm Upstream)	CPK5					Seal-M	JO						
Example:													
СРКХ		5	0	0	1	EC)	SS		1		0	1

AseptiSure KS Standard Cartridge Filters

AseptiSure KS serial filtration Polyethersulfone cartridge filters incorporate a large pore size upstream membrane layer to protect the downstream terminal filtration membrane layer.



Specifications

Construction										
Membrane		Hydrophili	c PES							
Support (Drainage) Layers		Polyest	er							
Plastic Parts		Polypropy	lene							
Final Filter Pore Size	0.1 μm	0.1 μm 0.2 μm 0.45 μm								
Prefilter Pore Size	0.2 μm, 0.45 μm	0.8 μm, 0.65 μm	n, 0.45 μm	0.8 μm, 0.65 μm						
Integrity Testing/Retention										
Bubble Point	\geq 26 psi (1.82 Kg/cm ²) with 50% IPA \geq 65 psi (4.56 Kg/cm ²) with Water	<u>></u> 50 psi (3.52 with Wa	Kg/cm²) ter	\geq 30 psi (2.11 Kg/cm ²) with Water						
Air Diffusion Flow (10" Cartridge Filter)	≤ 29 ml/min @ 50 psi (3.52 Kg/cm²) with Water	<u><</u> 30 ml/min @ 37 p with Wa	si (2.6 Kg/cm²) ter	≤ 35 ml/min @ 22 psi (1.54 Kg/cm²) with Water						
Microbial Retention	LRV >7 for Acholeplasma laidlawiiLRV >7 for Brevundimonas diminutaLRV >7 for Serratia marcescens(ATCC 23206) per cm²(ATCC 19146) per cm²(ATCC 14756) per cm²									
		Size								
Size	5″	10″	20″	30″						
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²						
	Оре	erational								
Typical Water Flow Rates (for 0.2μm @ 0.70 Kg/cm² @ 27 °C)	25 lpm	45 lpm	81 lpm	113 lpm						
Max. Operating Temperature		80 °C @ <u><</u> 30 psi	(2 Kg/cm²)							
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C									
Reverse Pressure	≤ 10 psi (0.7 Kg/cm²) @ 25 °C									
Sterilization	In-line steam sterilizable at 121 ° C fo	or 30 minutes at a maxi	mum differential	pressure of 3 psi (0.21 kg/cm ²) , 25 cycles						
pH Compatibility	Compatible with pH range of 1-10									

Ordering Information

Туре		Si	ze	Pore	Size	Adapt	er	Elastomer		Sterility		Pack Size	
	Code		Code		Code		Code		Code		Code		Code
AseptiSure KS	CPK1	5″	53	0.1 μm	36	7P	A0	Silicone	SS	Non Sterile	1	1	01
(0.2 µm Upstream)		10″	54	0.2 um	01	7P without fin	A1	Viton	SV		·		
AseptiSure KS (0.45 µm Upstream)	СРКХ	20″	55	0.45 μm	02	28 with fin	C0	EPDM	SE				
AseptiSure KS (0.65 μm Upstream)	СРК3	30″	56			ʻ0'	D0	FEP Encapsulated	FV				
AseptiSure KS (0.8 μm Upstream)	CPK5							Viton					

Example:

СРКХ	53	01	EO	SS	1	01
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Filters for Sterilization of Liquids: **PVDF** Membrane Filters

mdi produces a wide range of Gamma sterilizable and steam sterilizable Hydrophilic PVDF membrane capsule and cartridge filters to meet filtration requirements of biopharmaceutical and pharmaceutical processing.

These filters meet key process requirements such as high retention efficiency, very high protein recoveries, extremely low extractables, high throughputs, wide chemical compatibility etc.

Applications

Sterile Filtration of:

Antibodies	≻	Cell culture media
Protein Solutions	\triangleright	Small volume parentera

- ⊳ Buffers \triangleright

- Small volume parenterals
 - Vaccine concentrates \triangleright

Types Available

Gamma Sterilizable Capsule Filters	AseptiCap WS -γ
Autoclavable Capsule Filters	AseptiCap WS
High Temperature Resistant Steam Sterilizable Cartridge Filters	AseptiSure WS

Quality Assurance

These filter devices are manufactured in Class 10,000 clean rooms under ISO 9001 : 2015 certified quality management systems and are validated to meet compendia and regulatory requirements.

	Assurance
Toxicity	Passes Biological Reactivity Test, In Vivo, as per USP <88> for Class VI plastics
Cytotoxicity	Passes Biological Reactivity Test, In Vitro, as per USP <87> for Cytotoxicity
Bioburden	Bioburden level is < 1000 cfu/filter device as per ISO 11737-1: 2018
Bacterial Endotoxin	Aqueous extracts exhibit < 0.25 EU/ml as established by Limulus Amebocyte Lysate (LAL) Test as per USP <85>
Non Fiber Releasing	Passes test as per USP and comply with USFDA 21 CFR Part 210.3 (b)(6) for fiber release
Extractables with WFI	Passes test as per USP <661>
Oxidizable Substances	Passes test as per USP <1231>
Particle Shedding	Passes test as per USP <788> for particulate matter in injections
TOC/Conductivity at 25 °C	Meets the WFI requirements of USP <643> for Total Organic Carbon and USP <645> for Water Conductivity after a specified volume of purified water flush
Indirect Food Additive	All Polypropylene components meet the FDA Indirect Food Additive requirements cited in 21 CFR 177.1520
Good Manufacturing Practice	These products are manufactured in a facility which adheres to Good Manufacturing Practices

Filter Selection Chart

Application Key Application		Gamma Sterilizable	Steam	Sterilizable			
Area	Requirements	Capsule Filters	Capsule Filters	Cartridge Filters			
Biopharmaceutica	als						
Media preparation	- Mycoplasma removal (in case of mammalian Cell Culture)	AseptiCap WS -γ 0.1 μm PVDF Membrane Capsule Filter	AseptiCap WS 0.1 µm PVDF Membrane Capsule Filter	AseptiSure WS 0.1 μm High Temperature PVDF Membrane Cartridge Filter			
media preparation	- Microbial retention (in case of microbial Fermentation)	AseptiCap WS - γ 0.2 μm PVDF Membrane Capsule Filter	AseptiCap WS 0.2 μm PVDF Membrane Capsule Filter	AseptiSure WS 0.2 μm High Temperature PVDF Membrane Cartridge Filter			
Sterile filtration of vaccines and therapeutic proteins	 Absolute retention Low protein binding Low holdup volume 	AseptiCap WS - γ 0.2 μm PVDF Membrane Capsule Filter	AseptiCap WS 0.2 µm PVDF Membrane Capsule Filter	_			

AseptiCap WS Inline Capsule Filters (25 mm and 50 mm)

These are low protein binding hydrophilic PVDF gamma sterilizable membrane inline capsule filters, designed for sterile filtration of very small fluid volumes in formulation and process development labs.

Radiation Sterilizable:	AseptiCap WS -γ
Autoclavable:	AseptiCap WS



Microbially Validated as per ASTM F 838

Complies with USFDA 21 CFR 210.3 (b) (6)

Construction										
Membrane			Hydrophilic PVDF							
Plastic Parts Polypropylene										
Final Filter Pore S	ize	0.1 μm	0.2 µm	0.45 μm						
Prefilter Pore Size	2	$0.2~\mu m$ and $0.45~\mu m$	0.8 μm and 0.45 μm	0.8 μm						
Integrity Testing/Retention										
Bubble Point		\geq 28 psi (1.96 Kg/cm ²) with 50% IPA \geq 70 psi (4.92 Kg/cm ²) with Water	\geq 50 psi (3.52 Kg/cm ²) with Water	\geq 30 psi (2.11 Kg/cm ²) with Water						
Microbial Retenti	on	LRV >7 for <i>Acholeplasma laidlawii</i> (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	LRV >7 for Serratia marcescens (ATCC 14756) per cm ²						
Size										
Size		25 mm		50 mm						
Effective Filtration Area (Nominal)		5 cm ²	20 cm ²							
		Opera	itional							
Max. Operating T	emperature	55 ℃	60 °C							
Max. Differential	Pressure	75 Psi (5 Kg/cm²) @ 25	5 ℃ 42 F	42 Psi (3 Kg/cm²) @ 30 °C						
Hold-up Volume(with air purge)	<50 μL		<200 μL						
Burst Pressure		> 14 Kg/cm ²		> 8 Kg/cm ²						
	By Irradiation	AseptiCap WS -γ: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.								
Sterilization	By Gas	AseptiCap WS: Sterilizable by Ethyler	ne Oxide							
	By Autoclaye	AseptiCap WS: Autoclavable at 125°	C for 30 minutes, 2 cycles							
	by Autoclave	These cannot be In-line steam ster	ilized							
Shelf Life 2 years after gamma sterilization 3 years after Ethylene Oxide sterilization										

Ordering Information

AseptiCap WS and AseptiCap WS-y, 25 mm

Туре	-	Size		Size Pore Size Inlet/Outle		et	Radiation		x	Sterility		Pack Size		
AseptiCap WS	Code	Dia	Code		Code		Code	Jtern	Code			Code		Code
(0.2 µm Upstream)	10051	25 mm	06	0.1 µm	36	Female Luer Lock	м	Yes	R		Non Sterile	1	100	04
(0.45 µm Upstream)	IWSX			0.2 µm	01	Male Luer Slip	N	No	х		EO Sterile	2	·	
<i>AseptiCap WS</i> (0.8 μm Upstream)	IWS5			0.45 μm	02	¹ / ₈ " Hose Barb	н	L	I		Gamma Sterile	3		
						¼" Hose Barb	В				L			
Example														
IWSX		0	6	0	1	MN		F	2	x	1		04	4

AseptiCap WS and AseptiCap WS- γ , 50 mm

Туре		Si	ze	Pore	Size	Inlet/Ou	ıtlet	Radiation X Sterilizable			Steril	ity	Pack Size		
	Code	Dia	Code		Code		Code		Code			Code		Code	
<i>AseptiCap WS</i> (0.2 μm Upstream)	VWS1	50 mm	10	0.1 μm	36	1⁄4″ SHB	В	Yes	R		Non Sterile	1	10	02	
AseptiCap WS	VWSX			0.2 μm	01	¾″ Sanitary	S	No	Х		EO Sterile	2			
(0.45 μm Upstream) <i>AseptiCap WS</i> (0.8 μm Upstream)	VWS5			0.45 μm	02	Flange	5				Gamma Sterile	3			

Example

VWSX 10 36 BS X X 1 02								
	VWSX	10	36	BS	х	х	1	02

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: VWSX1036BBRX102 Example for Gamma Sterile: VWSX1036BBXX302

For End Connection availability and dimensions with different sizes refer Pages 89-90.

AseptiCap WS Small Capsule Filters (1", 2", 5", 8")

mdi AseptiCap WS are low protein binding hydrophilic PVDF membrane capsule filters offering serial filtration incorporating a larger pore size upstream membrane to protect the downstream membrane for enhanced throughput.

These capsule filters are validated to meet compendia and regulatory requirements and are well characterized. They meet key process requirements such as absolute retention efficiency, extremely low extractables, high throughputs, wide chemical compatibility and other important characteristics.

Radiation Sterilizable	:	AseptiCapWS-γ
Autoclavable	:	AseptiCap WS





Construction									
Membrane			Hydrophilic PVDF						
Support (Drainage	e) Layers	Polyester							
Plastic Parts		Polypropylene							
Final Filter Pore Siz	ze	0.1 μm	0.2 μm		0.45 μm				
Prefilter Pore Size		0.2 μm, 0.45 μm	0.8 μm and 0.45 μr	n	0.8 µm				
Integrity Testing/Retention									
Bubble Point		\geq 28 psi (1.96 Kg/cm ²) with 50% IPA \geq 70 psi (4.92 Kg/cm ²) with Water	≥ 50 psi (3.52 Kg/cm with Water	1 ²)	\geq 30 psi (2.11 Kg/cm ²) with Water				
Microbial Retention		LRV >7 for Acholeplasma laidlawii (ATCC 23206) per cm²	LRV >7 for <i>Brevundimonas</i> (ATCC 19146) per cr	<i>diminuta</i> n²	LRV >7 for Serratia marcescens (ATCC 14756) per cm ²				
Size									
Size		1″	2″ 5″		8″				
Effective Filtration Area (Nominal)		250 cm ²	500 cm ² 1000 cm ²		2000 cm ²				
Vent and Drain		1⁄4 ″ He	ose Barb with Platinum Cureo	d Silicone 'O' ri	ng				
		Opera	ational						
Max. Operating Te	emperature		80 °C @ <u><</u> 30 psi (2 Kg/	cm²)					
Max. Differential P	ressure		60 psi (4 Kg/cm²) @ 3	0 °C					
	By Irradiation	AseptiCap WS - ү: Gamma Irradiatable sterilized.	e up to 50 kGy. These filters s	hould not be a	autoclaved or in-line steam				
Sterilization	By Gas	AseptiCap WS: Sterilizable by Ethylene Oxide							
	By Autoclaye	AseptiCap WS: Autoclavable at 125°C for 30 minutes, 2 cycles							
	by Autoclave	These cannot be In-line steam sterilized							
Shelf Life 2 years after gamma sterilization 3 years after Ethylene Oxide sterilization									

Water Flow Rates

12

10

0.2 µm AseptiCap WS, 1" Capsule Filters

0.2 µm AseptiCap WS, 2" Capsule Filters 0.84 0.84 12 0.70 10 0.70 (isd) 0.56 8 0.42 6





0.70

0.56

0.42

0.14

0.00

Pressure

Drop

(Kg/cm²) 0.28



End Connection Type:

A: 1/4" Stepped Hose Barb **D:** ¹/₂" Hose Barb E: 11/2" Sanitary Flange J: Quick Connector U: Female Luer Lock Q: Single Step 1/2" Hose Barb S: 34" Sanitary Flange

Ordering Information

AseptiCap WS and AseptiCap WS - γ

Туре		Si	ze	Pore	Size	Inlet/Outlet R		Radiation Sterilizable		Be	I	Sterility		Pack Size	
	Code		Code		Code		Code	Sterii	Izable		Code		Code		Code
AseptiCap WS	DWS1	1″	51	0.1 μm	36	1⁄4″ SHB	А		Code	Yes	В	Non Sterile	1	1	01
(0.2 µm Upstream)		2″	52	0.2 µm	01	1⁄4″ MNPT	В	Yes	R	No Bell	Х	EO Sterile	2		· · · ·
(0.45 µm Upstream)	DWSX	5″	53	0.45 μm	02	1/2" MNPT	С	No*	X			Gamma	2		
AseptiCap WS	DWS5	8″	57			1⁄2" Hose Barb	D					Sterile	З		
(0.8 µm Upstream)	00035					1½" Sanitary Flange	E								
						¾" Sanitary Flange	S								
						Quick Connector	J								
						Single Step ½" Hose Barb	Q								
						Female Luer Lock	U								
						Male Luer Slip	W								
						¾6″ Hose Barb	Ν								
Francis						¾″ Hose Barb	I								
Example:															
DWSX		5	7	36	•	DD			R	Х		1			01

*Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: DWSX5136DDRX101 Example for Gamma Sterile: DWSX5136DDXX301

For End Connection, bell availability and dimensions with different sizes refer Pages 89-90.

AseptiCap WS Large Capsule Filters (5", 10", 20", 30")

mdi AseptiCap WS are low protein binding hydrophilic PVDF membrane capsule filters offering serial filtration incorporating a larger pore size upstream membrane to protect the downstream membrane for enhanced throughput.

These capsule filters are validated to meet compendia and regulatory requirements and are well characterized. They meet key process requirements such as absolute retention efficiency, extremely low extractables, high throughputs, wide chemical compatibility and other important characteristics.

Radiation Sterilizable	:	AseptiCap WS -γ
Autoclalvable	:	AseptiCap WS



Construction				
Membrane		Hydrophilic PVDF		
Support (Drainage) Layers		Polyester		
Plastic Parts		Polypropylene		
Final Filter Pore Size		0.1 µm	0.2 μm	0.45 μm
Prefilter Pore Size		0.2 μm, 0.45 μm	0.8 μm and 0.45 μm	0.8 μm
Integrity Testing/Retention				
Bubble Point		\geq 28 psi (1.96 Kg/cm ²) with 50% IPA \geq 70 psi (4.92 Kg/cm ²) with Water	\geq 50 psi (3.52 Kg/cm ²) with Water	\geq 30 psi (2.11 Kg/cm ²) with Water
Max. Air Diffusion Flow for 10" Capsule Filters		\leq 30 ml/min @ 50 psi (3.52 Kg/cm ²) with Water	≤ 30 ml/min @ 37 psi (2.6 Kg/cn with Water	1^2) \leq 30 ml/min @ 22 psi (1.54 Kg/cm ²) with Water
Microbial Retention		LRV >7 for <i>Acholeplasma laidlawii</i> (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimonas dimin</i> (ATCC 19146) per cm ²	uta LRV >7 for Serratia marcescens (ATCC 14756) per cm ²
Size				
Size		5″	10" 2	0″ 30″
Effective Filtration Area (Nominal)		3000 cm ²	6000 cm ² 1200	0 cm ² 18000 cm ²
Vent and Drain		1/4" Hose Barb with platinum cured Silicone 'O' ring		
Operational				
Max. Operating Temperature		80 °C @ ≤ 30 psi (2 Kg/cm²)		
Max. Differential Pressure		60 psi (4 Kg/cm²) @ 30 °C		
	By Irradiation	AseptiCap WS -γ: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.		
Sterilization	By Gas	AseptiCap WS: Sterilizable by Ethylene Oxide		
	By Autoclave	<i>AseptiCap WS</i> : Autoclavable at 125°C for 30 minutes, 2 cycles These cannot be In-line steam sterilized		
Shelf Life		2 years after gamma sterilization 3 years after Ethylene Oxide sterilization		
Water Flow Rates

0.2 µm AseptiCap WS, 5" Large Capsule Filters

0.2 µm AseptiCap WS, 10" Large Capsule Filters



0.2 µm AseptiCap WS, 20" Large Capsule Filters



End Connection Type: E: 11/2" Sanitary Flange

Ordering Information

AseptiCap WS and AseptiCap WS- γ

Туре		S	ize	Pore	Size	Inlet/Outlet		Radiation		Inline /Tline		Sterility		Pack Size	
	Code		Code		Code		Code	Stern		/ 1-	iiie		Code		Code
AseptiCap WS	LWS1	5″*	53	0.1 μm	36	1½" Sanitary Flange	E	Vee	Code	. India e	Code	Non Sterile	1	1	01
(0.2 µm Opstream)		10″	54	0.2 µm	01	Single Step ½"	_	res	ĸ	T line**	× -	EO Sterile	2		
(0.45 µm Upstream)	LWSX	20″	55	0.45 μm	02	Hose Barb	Q	NO	^	I-line***	_ '	Gamma	2		
AseptiCap WS	LWS5	30″	56			¾" Sanitary Flange	S					Sterile	د		
(0.8 µm Upstream)	2					3/8" Hose Barb	I								
						1" Hose Barb	Z								

Example:

LWSX	54	01	EE	R	т	1	01

* Size 5" is available in In-line Capsule Filters Only

** T-line Capsule Filters are available with $1^{\prime}\!/_2^{\prime\prime}$ Sanitary Flange connections Only

Note: Gamma Sterile filters cannot be Gamma Irradiated again

Example for Non Sterile: LWSX5402EERX101 Example for Gamma Sterile: LWSX5402EEXX301

30.0 2.10 25.0 1.75 Pressure Drop (Kg/cm²) 20.0 1.40 15.0 1.05 10.0 0.70 5.0 0.35 0.0 0.0 0 15 45 60 75 90 30 Water Flow Rate (lpm)

0.2 µm AseptiCap WS, 30" Large Capsule Filters



AseptiSure WS Mini Cartridge filters

AseptiSure WS are low protein binding hydrophilic PVDF membrane mini cartridge filters offering serial filtration incorporating a large pore size upstream membrane to protect the downstream membrane for enhanced throughput.

These cartridge filters are validated to meet compendia and regulatory requirements and are well characterized. They meet key process requirements such as absolute retention efficiency, extremely low extractables, high throughputs, wide chemical compatibility and other important characteristics.

Specifications

	Con	struction	
Membrane		Hydrophilic PVDF	
Support (Drainage) Layers		Polyester	
Plastic Parts		Polypropylene	
Final Filter Pore Size	0.1 µm	0.2 μm	0.45 μm
Prefilter Pore Size	0.2 μm, 0.45 μm	0.8 μm and 0.45 μm	0.8 µm
	Integrity Te	esting/Retention	
Bubble Point	\geq 28 psi (1.96 Kg/cm ²) with 50% IPA \geq 70 psi (4.92 Kg/cm ²) with Water	> 50psi (3.52Kg/cm²) with Water	> 30psi (2.11Kg/cm ²) with Water
Microbial Retention	LRV >7 for <i>Acholeplasma laidlawii</i> (ATCC 23206) per cm ²	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	LRV >7 for Serratia marcescens (ATCC 14756) per cm ²
		Size	
Size	2.5″		5″
Effective Filtration Area (Nominal)	1000 cm ²		2000 cm ²
	Ор	erational	
Typical Water Flow Rate for 0.2µm @ 0.70kg/cm ² @27°C	7.0 lpm		15.7 lpm
Max. Operating Temperature		80 °C @ <u><</u> 2 Kg/cm² (30 psi)	
Max. Differential Pressure		50 psi (3.5 Kg/cm²) @ 25 °C	
Reverse Pressure		<u>< 10 psi (0.7 Kg/cm²) @ 25 °C</u>	
Sterilization	In-line steam sterilizable upto 135 °C	C for 30 minutes at a maximum different	ial pressure of 5 psi (0.35 Kg/cm ²), 3 cycles

Ordering Information

Туре		Si	ize	Pore	Size	Ada	pter	er Elastomer Sterility			Pack	Pack Size	
	Code		Code		Code		Code		Code		Code		6
AseptiSure WS	CWH1	2.5″	50	0.1 µm	36	4463	E0	Silicone	SS	Non Sterile	1	1	Γ
(0.2 µm Upstream)	_	5″	53	0.2 μm	01	4463B	H0			•			
<i>AseptiSure WS</i> (0.45 μm Upstream)	СМНХ			0.45 μm	02	4440	U0						
AseptiSure WS	CWH5					Seal-K	G0*	*G0 adapte	r is not av	ailable with ela	stomer. I	Please m	en
(0.8 µm Upstream)	chins					Seal-O	F0	XX in plac	e of elasto	mer code whil	e orderin	g	
						Seal-M	JO						

Example:

	СМНХ	50	01	EO	SS	1	01
--	------	----	----	----	----	---	----



AseptiSure WS Standard Cartridge Filters

AseptiSure WS are low protein binding hydrophilic PVDF membrane cartridge filters offering serial filtration incorporating a large pore size upstream membrane to protect the downstream membrane for enhanced throughput.



Meets and Exceeds USFDA 21 CFR 177.1520

Specifications

	Con	struction					
Membrane		Hydrop	ohilic PVDF				
Support (Drainage) Layers		Ро	lyester				
Plastic Parts		Polyp	propylene				
Final Filter Pore Size	0.1 μm	0.1 μm 0.2 μm 0.45 μm					
Prefilter Pore Size	0.2 μm, 0.45 μm	0.8 μm					
	Integrity Te	esting/Retention	I.				
Bubble Point	\geq 28 psi (1.96 Kg/cm ²) with 50% IPA \geq 70 psi (4.92 Kg/cm ²) with Water	\geq 50 psi (3. with)	52 Kg/cm²) Water	\geq 30 psi (2.11 Kg/cm ²) with Water			
Air Diffusion Flow (10" Cartridge Filter)	\leq 30 ml/min @ 50 psi (3.52 Kg/cm ²) with Water	\leq 30 ml/min @ 37 psi (2.6 Kg/cm ²) with Water		\leq 30 ml/min @ 22 psi (1.54 Kg/cm ²) with Water			
Microbial Retention	LRV >7 for Acholeplasma laidlawii (ATCC 23206) per cm ² (ATCC 19146) per cm ²			LRV >7 for Serratia marcescens (ATCC 14756) per cm ²			
		Size					
Size	5″	10″	20″	30″			
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²			
	Оре	erational					
Typical Water Flow Rates (for 0.2µm @ 0.70 Kg/cm² @ 27 $^\circ C$)	18 lpm	33 lpm	60 lpm	84 lpm			
Max. Operating Temperature		80 °C @ <u><</u> 3	0psi (2 Kg/cm²)				
Max. Differential Pressure		50 psi (3.5 ł	Kg/cm²) @ 25 °C				
Reverse Pressure		<u><</u> 10 psi (0.7	Kg/cm²) @ 25 °C				
Sterilization	In-line steam sterilizable upto 135 °C	for 30 minutes at a	maximum differentia	al pressure of 5 psi (0.35 Kg/cm²), 3 cycles			

Ordering Information

Туре		Si	ze	Pore	Size	Adaj	oter	Elaston	ner	Sterili	ty	Pack	Size
	Code		Code		Code		Code		Code		Code		Code
AseptiSure WS	CWH1	5″	53	0.1 µm	36	7P	A0	Silicone	SS	Non Sterile	1	1	01
(0.2 µm Upstream)		10″	54	0.2 µm	01	7P without f	in A1	Viton	SV	•	· · · · ·		
AseptiSure WS (0.45 μm Upstream)	CWHX	20″	55	0.45 μm	02	28 with fir	C0	EPDM	SE				
AseptiSure WS (0.8 μm Upstream)	CWH5	30″	56			'O'	D0	FEP Encapsulated Viton	FV				

Example:

СМНХ	54	01	A0	SS	1	01

Filters for Sterilization of Liquids: Nylon 66 Membrane Filters

mdi Nylon 66 membrane filters are sterilizing grade filters offering absolute retention and wide chemical compatibility.

mdi Nylon 66 filter devices are available as:

Filter Type	Single Layer	Multiple Layer
Capsule Filters	AseptiCap NL	AseptiCap NS
Cartridge Filters	-	AseptiSure NS
Membrane Disc Filters	_	NN

Applications

- > Sterilization of compatible solvents and chemicals
- Sterilization of disinfectants in pharmaceutical process and lab areas
- > Filtration of hospital disinfectants
- Filtration of rinse water for endoscopes and other hospital equipment and surfaces
- Sterilizing filtration in pharmaceutical for aqueous and non aqueous solutions

Quality Assurance

These filter devices are manufactured in Class 10,000 clean rooms under ISO 9001:2015 certified quality management systems and are validated to meet compendia and regulatory requirements.

	Assurance
Toxicity	Passes Bioreactivity test, In Vivo, as per USP <88> for Class VI plastics
Bioburden	Bioburden level is < 1000 cfu/filter device as per ISO 11737-1: 2018
Bacterial Endotoxin	Aqueous extracts exhibit < 0.25 EU/ml as established by Limulus Amebocyte Lysate (LAL) Test as per USP < 85 >
Non Fiber Releasing	Passes test as per USP and comply with USFDA 21 CFR Part 210.3 (b)(6) for fiber release
Extractables with WFI	Passes test as per USP <661>
Oxidizable Substances	Within limits as specified in USP <1231>
Particle Shedding	Passes test as per USP <788> for particulate matter in injections
TOC/Conductivity at 25 °C	Meets the WFI requirements of USP <643> for Total Organic Carbon and USP <645> for Water Conductivity after a specified volume of purified water flush
Indirect Food Additive	All Polypropylene components meet the FDA Indirect Food Additive requirements cited in 21 CFR 177.1520
Good Manufacturing Practice	These products are manufactured in a facility which adheres to Good Manufacturing Practices

Filter Selection Chart

Application Area	Key Application Requirements	Capsule Filters	Cartridge Filters	Disc Filters
Sterilization of compatible solvents and chemicals	 Absolute retention Wide chemical compatibility 	AseptiCap NL/NS 0.2 µm Nylon 66 Membrane Capsule Filter	AseptiSure NS 0.2 µm Nylon 66 Membrane Cartridge Filter	0.2 μm Nylon 66 Membrane Disc Filters
Sterilization of disinfectants in pharmaceutical labs and process areas	 Absolute retention Wide chemical compatibility 	AseptiCap NL/NS 0.2 μm Nylon 66 Membrane Capsule Filter	AseptiSure NS 0.2 μm Nylon 66 Membrane Cartridge Filter	0.2 µm Nylon 66 Membrane Disc Filters
Filtration of hospital disinfectants	 Absolute retention Wide chemical compatibility 	AseptiCap NL/NS 0.2 µm Nylon 66 Membrane Capsule Filter	AseptiSure NS 0.2 µm Nylon 66 Membrane Cartridge Filter	0.2 µm Nylon 66 Membrane Disc Filters
Filtration of rinse water for endoscopes and other hospital equipments	- Absolute retention	AseptiCap NL/NS 0.2 µm Nylon 66 Membrane Capsule Filter	AseptiSure NS 0.2 µm Nylon 66 Membrane Cartridge Filter	-
Sterilizing filtration of aqueous and non aqueous solutions	 Absolute retention Wide chemical compatibility 	AseptiCap NL/NS 0.2 µm Nylon 66 Membrane Capsule Filter	AseptiSure NS 0.2 µm Nylon 66 Membrane Cartridge Filter	0.2 µm Nylon 66 Membrane Disc Filters

AseptiCap NL/NS Small Capsule Filters (1", 2", 5", 8")

AseptiCap NL/NS Nylon 66 membranes capsule filters are sterilizing grade filters offering absolute retention, wide chemical compatibility, and very low hold up volumes.

Single Layered: Multiple Layered: AseptiCap NL AseptiCap NS





Meets and Exceeds USFDA 21 CFR 177.1520

		Constructio	n						
Membrane			Nylon	56					
Support (Drainage) Layers			Polyester						
Plastic Parts			Polypropylene						
Final Filter Pore Size		0.:	2 µm	0.45 μm					
Prefilter Pore Size (In case of <i>AseptiCap NS)</i>		0.8 μm	n, 0.45 μm	0.8 µm					
		Integrity Testing/R	etention						
Bubble Point (with water)		≥ 50 psi (3.	52 Kg/cm²)	\geq 30 psi (2.1 Kg/cm ²)					
Microbial Retention (LRV >7 for)		Brevundimor (ATCC 1914	nas diminuta 16) per cm²	Serratia m (ATCC 1475	<i>arcescens</i> 6) per cm ²				
		Size							
Size		1″	2″	5″	8″				
Effective Filtration Area (Nominal)	AseptiCap NL	250 cm ²	900 cm ²	1800 cm²	2700 cm ²				
	AseptiCap NS	200 cm ²	700 cm ²	1400 cm ²	2100 cm ²				
Vent and Drain			1⁄4" Hose Barb with	n Silicone 'O' ring					
		Operationa	al						
Max. Operating Temperature			80 °C @ ≤ 2 Kg/c	m² (30 psi)					
Max. Differential Pressure			4 Kg/cm² (60 ps	si)@ 30 °C					
	By Gas		Sterilizable by Eth	nylene Oxide					
Sterilization	By Autoclave		Autoclavable at 125 ° Cannot be In-line si	C for 30 minutes. team sterilized					

Water Flow Rates

0.2µm AseptiCap NS, 1" Capsule Filter



0.2µm AseptiCap NS, 2" Capsule Filter





0.2µm AseptiCap NS, 8" Capsule Filter



End Connection Type:

A: ¼" Stepped Hose Barb Q: Single Step ½" Hose Barb

E: 1¹/₂" Sanitary Flange S: ³/₄" Sanitary Flange D: ¹/₂" Hose Barb

Ordering Information

Туре		Si	ze	Pore	Size	Inlet/Outlet		x	Bell Steri		Sterili	terility		Size
	Code		Code		Code		Code			Code		Code		Code
AseptiCap NL	DNLX	1″	51	0.2 μm	01	1⁄4″ SHB	А		Yes	В	Non Sterile	1	1	01
AseptiCap NS	DNSX	2″	52	0.45 μm	02	1⁄4″ MNPT	В		No Bell	Х	EO Sterile	2		
(0.45 µm Upstream)		5″	53			1⁄2″MNPT	С							
AseptiCap NS	DNS5	8″	57			½″ Hose Barb	D							
(0.0 µm opstream)						1½" Sanitary Flange	Е							
						¾" Sanitary Flange	S							
						Quick Connector	J							
						Single Step ½" Hose Barb	Q							
						Female Luer Lock	U							
						Male Luer Slip	W							
						¾₁6" Hose Barb	Ν							
Example:						¾″ Hose Barb	I							
DNSX		5	2	01	I	DD		X	х	,	1		0	1

AseptiCap NS Large Capsule Filters (5", 10", 20", 30")

AseptiCap NS Nylon 66 large membranes capsule filters are double layered sterilizing grade filters offering absolute retention, wide chemical compatibility, and serial filtration for enhanced throughputs.



In the state of th

		Constructi	on					
Membrane			Nylon	66				
Support (Drainage) Layers		Polyester						
Plastic Parts			Polypropy	lene				
Final Filter Pore Size		0.2	μm	0.4	15 μm			
Prefilter Pore Size		0.8 μm,	0.45 μm	0.	8 µm			
		Integrity Testing/I	Retention					
Bubble Point (with water)		<u>≥</u> 50 psi (3	.52 Kg/cm²)	≥ 30 psi ((2.1 Kg/cm²)			
Air Diffusion Flow for10" Cap	sule Filters (with water)	≤ 30 ml/min @ 37	7 psi (2.60 kg/cm²)	<u><</u> 30 ml/min @ 2	22 psi (1.54 kg/cm²)			
Microbial Retention (LRV >7 for)		Brevundimonas diminut	ta (ATCC 19146) per cm²	Serratia marcescens	(ATCC 14756) per cm ²			
		Size						
Size		5″	10″	20″	30″			
Effective Filtration Area (Non	ninal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²			
Vent and Drain		¼" Hose Barb with Silicone 'O' ring						
		Operation	al					
Max. Operating Temperature		80 °C @ ≤ 30 psi (2 Kg/cm²)						
Max. Differential Pressure			60 psi (4 Kg/cn	²) @ 30 °C				
Ctavilization	By Gas		Sterilizable by Eth	nylene Oxide				
Sterilization	By Autoclave	Autoclavabl	e at 125 °C for 30 minutes.	Cannot be In-line stear	n sterilized.			

Water Flow Rates

0.2 µm AseptiCap NS, 5" Large Capsule Filters



End Connection Type: Q: Single Step ½" Hose Barb **E**: 1½" Sanitary Flange

Ordering Information

Type Size		ze	Pore Size		Inlet/Outlet		x	Inline / T-line		Sterility Pack		c Size		
	Code		Code		Code		Code			Code		Code		Code
AseptiCap NS	LNSX	5″*	53	0.2 µm	01	1½" Sanitary Flange	E		Inline	Х	Non Sterile	1	1	01
(0.45 µm opstream)		10″	54	0.45 µm	02	Single Step ½" Hose Barb	0		T-line	Т	EO Sterile	2		
AseptiCap NS (0.8 um Upstream)	LNS5	20″	55			3/"Coniton Flores	~ ~				L			
(oro prin opstream)		30″	56				2							
						³⁄₀″ Hose Barb	- I							
						1″ Hose Barb	z							
Example:														
LNSX		5	4	01		QQ		X	т		1		C	1

* Size 5" is available in In-line Capsule Filters Only

AseptSure NS Mini Cartridge filters

mdi AseptiSure NS Nylon 66 membrane mini cartridge filters are sterilizing grade filters offering absolute retention and wide chemical compatibility. These filters offer serial filtration for enhanced throughput. The upstream layer is of larger pore size to protect the downstream final filtration layer.

Specifications

Construction								
Membrane	Nylor	66						
Support (Drainage) Laye	ers Polye	ster						
Plastic Parts	Polyprop	bylene						
Final Filter Pore Size	0.2 μm	0.45 μm						
Prefilter Pore Size	0.8 μm, 0.45 μm	0.8 μm						
Int	tegrity Testing/Retention	on						
Bubble Point (with water)	≥ 50 psi (3.52 Kg/cm²)	≥ 30 psi (2.1 Kg/cm²)						
Microbial Retention (LRV >7 for)	<i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	Serratia marcescens (ATCC 14756) per cm ²						
	Size							
Size	2.5″	5″						
Effective Filtration Area (Nominal)	1000 cm ²	2000 cm ²						
	Operational							
Max. Operating Temperature	80 °C @ ≤ 2 Kg	/cm² (30 psi)						
Max. Differential Pressure	< 3.5Kg/cm² (50 psi) @ 25°C							
Reverse Pressure	< 0.7 Kg/cm² (1	0 psi) @ 25 °C						
Sterilization	Autoclavable/In-line Stea for 30 minutes @ a maxim of 3psi (0.2	m Sterilizable at 121 °C um differential pressure 1 kg/cm²)						



Microbially Validated as per ASTM F 838

Complies with USFDA 21 CFR 210.3 (b) (6)

Water Flow Rates

0.2µm AseptiSure NS Mini Cartridge Filters



Ordering Information

Туре		Si	ze	Pore	Size	Adap	ter	Elastomer Sterility Pac			k Size		
	Code		Code		Code		Code		Code		Code		Code
AseptiSure NS	CPNX	2.5″	50	0.2 μm	01	4463	EO	Silicone	SS	Non Sterile	1	1	01
(0.45 µm Upstream)	CITIX	5″	53	0.45 μm	02	4463B	H0						
AseptiSure NS	CPN5					4440	U0						
(0.8 µm opstream)						Seal-K	G0*	*G0 adapter is not available with elastomer. Please mentio					
						Seal-O	FO	XX in place o	felastomer	code while o	dering		
Example:						Seal-M	JO						
CPNX		5	0	01		EO		SS		1		C)1

AseptiSure NS Standard Cartridge Filters

AseptiSure NS Nylon 66 membrane cartridge filters are sterilizing grade filters offering absolute retention and wide chemical compatibility. These filters offer serial filtration for enhanced throughput. The upstream layer is of larger pore size to protect the downstream final filtration layer.

Specifications

Construction								
Membrane		Nylo	n 66					
Support (Drainage) Laye	ers	Polye	ester					
Plastic Parts		Polypro	pylene					
Final Filter Pore Size	0.2	μm	0.45	μm				
Prefilter Pore Size	0.8 μm, 0.45 μm 0.8 μm							
Int	tegrity Test	ing/Retenti	ion					
Air Diffusion Flow (with water wetted) (10" Cartridge Filter)	≤ 30 ml/mi (2.60 k	in @ 37 psi g/cm²)	≤ 30 ml/m (1.54 k	in @ 22 psi g/cm²)				
Microbial Retention (LRV >7 for)	Brevundimor (ATCC 1914	n <i>as diminuta</i> ł6) per cm²	Serratia m (ATCC 1475	<i>arcescens</i> 56) per cm ²				
	Si	ze						
Size	5″	10″	20″	30″				
Effective Filtration Area (Nominal)	3000 cm²	6000 cm ²	12000 cm ²	18000 cm ²				
	Opera	tional						
Max. Operating Temperature	8	30 °C @ <u><</u> 30 p	osi (2 Kg/cm²)					
Max. Differential Pressure	50 psi (3.5Kg/cm²) @ 25°C							
Reverse Pressure	<	10 psi (0.7 Kg	ı/cm²) @ 25 °(2				
Sterilization	Autock at 121 °C for pr	avable/In-line 30 minutes @ essure of 3ps	e Steam Steril @ a maximum i (0.21 kg/cm	izable differential ²)				





Water Flow Rates



Туре		Si	ze	Pore	Size	Adapto	er	Elastom	er	Sterili	ty	Pac	k Size
	Code		Code		Code		Code		Code		Code		Code
AseptiSure NS	CPNX	5″	53	0.2 μm	01	7P	A0	Silicone	SS	Non Sterile	1	1	01
(0.45 μm Upstream)	CITUX	10″	54	0.45 μm	02	7P without fin	A1	Viton	SV				
AseptiSure NS	CPN5	20″	55			28 with Fin	C0	EPDM	SE				
(0.8 µm Opstream)		30″	56			'O'	D0	FEP					
								Encapsulated Viton	FV				

Example:

	CPNX	54	01	AO	SS	1	01
--	------	----	----	----	----	---	----

Nylon 66 Membrane Disc Filters - Type NN

Microbially Validated as per ASTM F 838 Complies with USFDA 21 CFR 210.3 (b) (6)

NN membrane disc filters are double layered, hydrophilic, non-media migrating, biologically inert, plain white absolute membrane filters offering wide chemical compatibility.



Specifications

			Construction					
Membrane			Nylc	on 66				
Pore Size			0.2 μm, 0.45 μm	n, 0.8 μm, 1.2 μm				
Size			90 mm, 142	mm, 293 mm				
		Integr	ity Testing/Retention					
Bubble Point	0.2 μm		<u>></u> 50 psi (3.51 Kg	/cm ²) with water				
(with Water)	0.45 μm		<u>></u> 32 psi (2.25 Kg	r/cm ²) with water				
Microbial	0.2 μm	LRV> 7 for Brevundimonas diminuta						
Retention	0.45 μm	LRV> 7 for Serratia marcescens						
			Operational					
Max. Operating Te	mperature		80 °C co	ntinuous				
Max. Differential P	ressure	5 Kg/cm ²						
Water Flow Rates		0.2 μm	0.45 μm	0.8 µm	1.2 μm			
(27 °C @ 0.70 Kg/c	m²)	14 ml/min/cm ²	37 ml/min/cm ²	120 ml/min/cm ²	180 ml/min/cm ²			
Sterilization		Autoclavable at 121 °C for 30 minutes						

Ordering Information



Filters for Sterilization of Air/Gases

PVDF Membrane Filter Devices

mdi Gamma Sterilizable *AseptiVent VF-* γ are hydrophobic PVDF membrane single use capsule filters with a wide range of end connections and different sizes for linear scalability to use with disposable single use assemblies for biopharmaceutical processes.

These filters are validated for microbial retention with liquid bacterial challenge test as per ASTM F838 to ensure reliable performance under worst case conditions.

PTFE Membrane Filter Devices

mdi produces a wide range of PTFE membrane capsule and cartridge filters to meet filtration requirements of biopharmaceutical and pharmaceutical processing.

These filters are validated for microbial retention with liquid bacterial challenge test as per ASTM F838 to provide a high degree of sterility assurance for critical applications such as bioreactor/fermentor venting etc. As they offer wide chemical compatibility with organic solvents, these are ideal for manufacture of sterile API.

Multiple Use **Filter Type Single Use** Gamma Sterilizable AseptiVent VF-γ **Capsule Filters** Autoclavable Capsule Filters AseptiVent TF _ Steam Sterilizable AseptiSure TF Cartridge Filters **High Temperature Resistant Steam Sterilizable** AseptiSure TH **Cartridge Filters**

Applications

- > Sterile air sparging in fermentors and bioreactors
- Sterile venting of cell factories, bioreactors and fermentors
- > Fermentor exhaust
- > Sterilization of environmental air in isolators
- Venting of sterile collection vessels
- Cleaning sterile surfaces
- WFI tank venting
- > Nitrogen blanketing
- > Sterile filtration of API and solvents
- Dry powder injectable filling
- Sterile air for dryers and micronizers

	Assurance
Toxicity	Passes Bioreactivity test, In Vivo, as per USP <88> for Class VI plastics
Bioburden	Bioburden level is < 1000 cfu/filter device as per ISO 11737-1: 2018
Bacterial Endotoxin	Aqueous extracts exhibit < 0.5 EU/ml as established by Limulus Amebocyte Lysate (LAL) Test as per USP <85>
Non Fiber Releasing	Passes test as per USP and comply with USFDA 21 CFR Part 210.3 (b)(6) for fiber release
Oxidizable Substances	Within limits as specified in USP <1231>
Particle Shedding	Passes test as per USP <788> for particulate matter in injections
Indirect Food Additive	All Polypropylene components meet the FDA Indirect Food Additive requirements cited in 21 CFR 177.1520
Good Manufacturing Practice	These products are manufactured in a facility which adheres to Good Manufacturing Practices

Quality Assurance

These filter devices are manufactured in Class 10,000 clean rooms under ISO 9001: 2015 certified quality management systems and are validated to meet compendia and regulatory requirements.

Filter Selection Chart

Application	Key Application	Gamma Sterilizable	Steam Ste	erilizable
Area	Requirements	Capsule Filters	Capsule Filters	Cartridge Filters
Sterile venting for fermentors and bioreactors	- Absolute retention - High hydrophobicity - High flow rates	AseptiVent VF- γ 0.2 μm PVDF Membrane Capsule Filters	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Sterile air sparging in fermentors and bioreactors	 Absolute retention High hydrophobicity High flow rates 	AseptiVent VF- γ 0.2 μm PVDF Membrane Capsule Filters	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Sterile air for cell factories	- Absolute retention - High hydrophobicity	AseptiVent VF- γ 0.2μm PVDF Membrane Capsule Filters	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	-
Venting of small bioreactors	- Absolute retention - High hydrophobicity	AseptiVent VF- γ 0.2 μm PVDF Membrane Capsule Filters	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	-
Fermentor exhaust	- Absolute retention - High hydrophobicity - High flow rates	-	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Venting of sterile collection vessels	- Absolute retention - High hydrophobicity - High flow rates	AseptiVent VF- γ 0.2 μm PVDF Membrane Capsule Filters	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Nitrogen blanketing in sterile API	- Absolute retention - High flow rates	-	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Cleaning sterile surfaces	- Absolute retention - High flow rates	_	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Dry powder injectable filling	- Absolute retention - High flow rates	-	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
WFI tank venting	- Absolute retention - High hydrophobicity - High flow rates	-	-	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Sterile filtration of API/Solvents	- Absolute retention - High flow rates	-	-	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter
Sterile air for dryers and micronizers	- Absolute retention - High flow rates	-	AseptiVent TF 0.2 μm PTFE Membrane Capsule Filter	AseptiSure TF/TH 0.2 μm PTFE Membrane Cartridge Filter

*AseptiVent VF-*γ Inline Capsule Filters (25mm, 37mm, 50mm)

 $0.2 \,\mu m$ **AseptiVent VF**- γ , Gamma Sterilizable PVDF membrane vent filters are validated for microbial retention with liquid bacterial challenge test as per ASTM F838 to provide a high degree of sterility assurance for critical applications such as small bioreactors, sterile tank venting, bottle venting, barrier filter for vacuum pump etc.





	Constru	uction	
Final Filter Pore Size		0.2 μm	
Membrane		Hydrophobic PVDF	
Plastic Parts		Polypropylene	
	Integrity Testi	ng/Retention	
Bubble Point	≥18	psi (1.27 Kg/cm²) with 50% IPA/ Wate	r Solution
Microbial Retention	LRV >7 1	for Brevundimonas diminuta (ATCC 19	146) per cm²
	Siz	ze	
Size	25 mm	37 mm	50 mm
Effective Filtration Area (Nominal)	5 cm ²	10 cm ²	20 cm ²
	Opera	tional	
Max. Operating Temperature		60 °C	
Max. Differential Pressure		1.5 Kg/cm² (21 psi) @ 30° C	
Burst Pressure	> 14 Kg/cm ²	> 8 Kg/cm ²	> 8 Kg/cm ²
Sterilization By Irradiation	Gamma Irradiatable up to 50	kGy. These filters should not be auto	oclaved or in-line steam sterilized.
Shelf Life		2 years after Gamma Sterilization	

Air Flow Rates



Ordering Information

AseptiVent VF - y, 25 mm



*Gamma Sterile filters cannot be Gamma Irradiated again

AseptiVent VF -γ, 37 mm and 50 mm



*¾" Sanitary Flange connection is available only in 50 mm filter

**Gamma Sterile filters cannot be Gamma Irradiated again

*AseptiVent VF-*γ Small Capsule Filters (1", 2", 5", 8")

AseptiVent VF- γ PVDF membrane vent capsule filters are validated for Microbial Retention with liquid bacterial challenge test as per ASTM F838 to provide a high degree of sterility assurance for critical applications.





Construction										
Pore Size		0.2	μm							
Membrane		Hydropho	obic PVDF							
Support (Drainage) Layers		Polyester								
Plastic Parts		Polypropylene								
	Integr	ity Testing/Retention								
Bubble Point		\geq 18 psi (1.26 Kg/cm ²) with 50% IPA/Water Solution								
Microbial Retention	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²									
	Size									
Size	1″	2″	5″	8″						
Effective Filtration Area (Nominal)	250 cm ²	500 cm ²	1000 cm ²	2000 cm ²						
Vent and Drain		1⁄4" Hose Barb wit	h Silicone 'O' ring							
		Operational								
Max. Operating Temperature		80 °C @ ≤ 30	osi (2 Kg/cm²)							
Max. Differential Pressure	60 psi (4 Kg/cm²) @ 30 °C									
Sterilization By Irradiation	Gamma Irradiatable u	Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.								
Shelf Life		2 years after Gar	nma Sterilization							

Air Flow Rates

0.2 μm AseptiVent VF -γ, 1" Capsule Filters, EE Connection



0.2 µm AseptiVent VF - γ , 5" Capsule Filters, EE Connection



End Connection Type E: 1¹/₂" Sanitary Flange



Ordering Information

* Gamma Sterile filters cannot be Gamma Irradiated again

For End Connection availability and dimensions with different sizes refer Pages 89-90.

0.2 μm AseptiVent VF -γ, 2" Capsule Filters, EE Connection



0.2 μm AseptiVent VF-γ, 8" Capsule Filters, EE Connection



*AseptiVent VF-*γ Large Capsule Filters (5", 10", 20", 30")

AseptiVent VF- γ PVDF membrane vent filters are validated for microbial retention with liquid bacterial challenge test as per ASTM F838 to provide a high degree of sterility assurance for critical applications.





	Construct	ion								
Pore Size		0.2	μm							
Membrane		Hydroph	obic PVDF							
Support (Drainage) Layers		Poly	ester							
	Integrity Testing,	/Retention								
Bubble Point	\geq 18 psi (1.26 Kg/cm ²) with 50% IPA/Water Solution									
Microbial Retention	LRV >7 for <i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²									
	Size									
Size	5″	10″	20″	30″						
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm²						
Vent and Drain		1⁄4" Hose Barb wit	h Silicone 'O' ring							
	Operatio	nal								
Typical Air Flow Rate		67 Nm³/h @ ∆P =	2 psi (15 psi inlet)							
Max. Operating Temperature		80° C @ 2Kg	/cm² (30psi)							
Max. Differential Pressure		4Kg/cm ² (60	0psi) @ 30° C							
Minimum Acceptable Bubble Point (with 50% IPA)	≥ 1.26 Kg/cm ² (18 psi)									
Sterilization By Irradiation	Gamma Irradiatable up	to 50 kGy. These filters sł	nould not be autoclaved o	r in-line steam sterilized.						

Air Flow Rates



0.2 µm AseptiVent VF - γ, 5" Capsule Filters, EE Connection

0.2 μm *AseptiVent VF*-γ, 10"Capsule Filters, EE Connection



End Connection Type: E: 11/2" Sanitary Flange

Ordering Information

Туре		Si	Size Pore Size Inlet/Outlet Radiation Sterilizable		Inlet/Outlet		Inlet/Outlet Radiation Sterilizable Inline / T-line Steri		Inline / T-line		Inline / T-line Sterility		Pack Size		
	Code		Code		Code				Code		Code		Code		Code
AseptiVent VF	LVLX	5″**	53	0.2 μm	01	1½" Sanitary Flange	Е	Yes	R	Inline	Х	Non Sterile	1	1	01
		10″	54			Single Step ½" Hose		No*	Х	T-line	Т	Gamma	3		
		20″	55			Barb	Q		·			Sterile	5		
		30″	56			¾" Sanitary Flange	S								
						³∕₃" Hose Barb	I.								
Evample						1" Hose Barb	Z								
Litampie.															
LVLX		5	4	0′	I	EE		R		Х		1			01

* Gamma Sterile filters cannot be Gamma Irradiated again

**Size 5" is available in In-line Capsule Filters Only

AseptiVent TF Inline Capsule Filters (25 mm, 37 mm, 50 mm)

AseptiVent TF Disposable Inline PTFE gas filters are convenient pre-fabricated devices used for sterilization of gases and as a bacterial air vent in various pharmaceutical and biopharmaceutical processes.





		Construct	tion							
Membrane			Hydrophol	bic PTFE						
Plastic Parts			Polyprop	bylene						
Final Filter Pore Siz	ze	0.2 μm	0.2 μm 0.45 μm							
Integrity Testing/Retention										
Bubble Point		\geq 22 psi (1.54 Kg/cm ²) with 70% IPA/W	ater Solution	<u>></u> 10 psi (0.7 Kg/d	cm ²) with 70% IPA/Water Solution					
Microbial Bacteria	l Retention	LRV >7 for <i>Brevundimonas dim</i> (ATCC 19146) per cm ²	inuta	LRV >7 AT	r for <i>Serratia marcescens</i> TCC 14756) per cm ²					
		Size								
Size		25 mm	37 mm		50 mm					
Effective Filtration	Area (Nominal)	5 cm ²	10 cm ²		20 cm ²					
		Operatio	nal							
Max. Operating Te	mperature		60 °0	С						
Max. Differential P	ressure		42 psi (3 Kg/cr	m²) @ 30 °C						
Burst Pressure		> 14 Kg/cm ²	> 8 Kg/	/cm²	> 8 Kg/cm ²					
Chaullinghing	By Gas	Sterilizable by Ethylene Oxide								
Sterilization	By Autoclave	Autoclavable at 125 °C for 30 minutes, 30 cycles. Cannot be In-line steam sterilized								
Shelf Life	Shelf Life 3 years after Ethylene Oxide Sterilization									

Air Flow Rates

0.2 µm AseptiVent TF, 25 mm Capsule Filters



0.2 µm AseptiVent TF, 50 mm Capsule Filters



0.2 µm AseptiVent TF, 37 mm Capsule Filters



End Connection Type:

B: 1/4" Stepped Hose Barb

C: 1/8" MNPT S: ¾" Sanitary Flange

Ordering Information

AseptiVent TF- 25 mm

Туре		Size Pore Size		Size	Inlet/Outlet	Inlet/Outlet		Sterility		P	ack Size	
Co	ode		Code		Code		Code			Code		Code
AseptiVent TF IT	TFX	25 mm	06	0.2 μm	01	Female Luer Lock	М		Non Sterile	1	10	0 04
1		1		0.45 μm	02	Male Luer Slip	N		EO Sterile	2		
				1		1∕8″ Hose Barb	Н					
						¼" Hose Barb	В					
Example:			1	↓	r	+		↓	\checkmark			\checkmark
ITFX		0	6	0.	1	MN		ХХ	1			04

AseptiVent TF- 37 mm, 50 mm



* Note: AseptiVent TF- 37 mm is available with BB connection only

AseptiVent TF Small Capsule Filters (1", 2", 5", 8")

AseptiVent TF capsule filters employ hydrophobic PTFE membrane offering absolute retention and very wide chemical compatibility making these useful for sterile filtration of air/gases as well as aggressive solvents.





Construction											
Membrane			Hydrophob	ic PTFE							
Support (Drainage) Layers			Polypropy	lene							
Plastic Parts			Polypropy	lene							
Final Filter Pore Size		0.	0.2 μm 0.45								
Integrity Testing/Retention											
Bubble Point (with 70% IPA	Wetted)	≥ 22 psi (1.55	5 Kg/cm²)	<u>></u> 10 psi (0	0.7 Kg/cm²)						
Microbial Retention (LRV >	7 for)	Brevundimonas diminuta	(ATCC 19146) per cm²	Serratia marcescens	(ATCC 14756) per cm²						
Size											
Size		1″	2″	5″	8″						
Effective Filtration Area (No	ominal)	250 cm ² 500 cm ²		1000 cm ²	2000 cm ²						
Vent and Drain			¼" Hose Barb with S	Silicone 'O' ring							
		Operation	nal								
Max. Operating Temperatu	re		80 <u>°C @</u> ≤30 psi	(2 Kg/cm²)							
Max. Differential Pressure			60 psi (4 Kg/cm	°) @ 30 ℃							
	By Gas		Sterilizable by Eth	ylene Oxide							
Sterilization	By Autoclave	Autoclavable at 125 °C for 30 minutes, 50 cycles. Cannot be In-line steam sterilized									
Shelf Life			3 years after Ethylene (Dxide sterilization							

Air Flow Rates

0.2µm AseptiVent TF, 1" Capsule Filter

0.2µm AseptiVent TF, 2" Capsule Filter

0.07

0.03

0.00

250





End Connection Type

A: ¼″ Stepped Hose Barb

E: 1½" Sanitary Flange Q: Single Step ½" Hose Barb

Ordering Information

Туре		Si	ze	Pore	Size	Inlet/Outlet		X	X	Sterili	ty	Pac	k Size
	Code		Code		Code		Code				Code		Code
AseptiVent TF	DTLX	1″	51	0.2 μm	01	1⁄4″ SHB	А			Non Sterile	1	1	01
		2″	52	0.45 μm	02	1⁄4″ MNPT	В			EO Sterile	2		
		5″	53			½″MNPT	С						
		8″	57			1⁄2" Hose Barb	D						
						1½" Sanitary Flange	E						
						¾" Sanitary Flange	S						
						Quick Connector	J						
						Single Step ½" Hose Barb	Q						
						Female Luer Lock	U						
						Male Luer Slip	W						
						¾6″ Hose Barb	Ν						
Example:						³∕₀" Hose Barb	I						
DTLX	(5	3	0	1	DD		Х	х	1			01

AseptiVent TF Large Capsule Filters (5", 10", 20", 30")

AseptiVent TF PTFE large capsule filters offer absolute retention and wide chemical compatibility for sterile filtration of air/gases as well as aggressive solvents in large volume.





		Constructi	ion				
Membrane			Hydroph	obic PTFE			
Support (Drainage) Layer	rs		Polypro	pylene			
Plastic Parts			Polypro	pylene			
Pore Size		0.2	2 µm	0.4	l5 μm		
		Integrity Testing/	Retention				
Bubble Point (with 70% I	PA Wetted)	<u>≥</u> 22psi(1	.55Kg/cm²)	≥ 10 psi ((0.7 Kg/cm²)		
Microbial Retention (LRV >7 for)		Brevundimo (ATCC 191	on <i>as diminuta</i> 146) per cm²	Serratia (ATCC 147	<i>marcescens</i> 756) per cm ²		
		Size					
Size		5″	10″	20″	30″		
Effective Filtration Area (I	Nominal)	3000 cm ²	6000 cm ²	12000 cm ² 18000 cm ²			
Vent and Drain			1⁄4" Hose Barb wit	h Silicone 'O' ring			
		Operatior	nal				
Max. Operating Tempera	ture		80 °C @ ≤ 30	psi (2 Kg/cm²)			
Max. Differential Pressure	2		60 psi (4 Kg/	cm²) @ 30 °C			
By Gas			Sterilizable by	Ethylene Oxide			
Sterilization	By Autoclave	Autoclavable at 125 °C for 30 minutes, 30 cycles. Cannot be In-line steam sterilized					
Shelf Life		3 years after Ethylene Oxide sterilization					

Air Flow Rates

0.2 µm AseptiVent TF, 10" Large Capsule Filters



End Connection Type E: 1¹/₂" Sanitary Flange

Ordering Information

Туре	•	s	ize	Pore	Size	Inlet/Outlet	Inlet/Outlet X Inline / T-line Sterility Pack		k Size					
	Code		Code		Code		Code			Code		Code		Code
AseptiVent TF	LTLX	5″*	53	0.2 μm	01	1½″ Sanitary Flange	E		Inline	х	Non Sterile	1	1	01
		10″	54	0.45 μm	02				T-line	Т	EO Sterile	2		
		20″	55		·	Barb	Q		L	<u> </u>				
		30″	56			¾" Sanitary Flange	s							
						³∕₃" Hose Barb	I							
						1″ Hose Barb	Z							
Example:														
LTL>	(!	54	01		EE		x	х		1		(01

* Size 5" is available in In-line Capsule Filters Only

AseptiSure TH Mini Cartridge filters

mdi AseptiSure TH PTFE membrane mini cartridge filters are specially designed high temperature resistant PTFE filters which are steam sterilizable at upto 135°C. These filters are validated with liquid microbial challenge test as per ASTM F 838 to offer absolute retention even under high moisture conditions.

These are also validated for other key performance parameters such as chemical compatibility, extractables, heat stability, flow rates, blow through and ability to withstand accidental reverse pressure. These are available in a variety of pore sizes to suit specific microfiltration needs in critical and specialized process applications for air as well as liquid.

Specifications

		Construction				
Pore Size		0.2 μm	0.45 μm			
Membrane		Hydrophol	pic PTFE			
Support (Draina	ge) Layers	Polyprop	ylene			
Plastic Parts		Polyprop	ylene			
	Integ	grity Testing/Retention				
Bubble Point (70% IPA/Water)		22psi (1.54 kg/cm²)	10psi (0.7 kg/cm²)			
Water Intrusion	2.5″	\leq 0.3 ml/min @ 2.0kg/cm ²	_			
Rate	5″	\leq 0.6 ml/min @ 2.0kg/cm ² -				
Microbial Bacter (LRV >7 for)	ial Retention	<i>Brevundimonas diminuta</i> (ATCC 19146) per cm ²	<i>Serratia marcescens</i> (ATCC 14756) per cm ²			
		Size				
Size		2.5″	5″			
Effective Filtratic (Nominal)	n Area	1000 cm ²	2000 cm ²			
		Operational				
Max. Operating	[emperature	95 °C @ <u><</u> 2 Kg/	′cm² (30 psi)			
Max. Differential	Pressure	3.5 Kg/cm² (50	psi) @ 25 °C			
Reverse Pressure)	\leq 0.7 Kg/cm ² (10) psi) @ 25 °C			
Sterilization		Autoclavable/In-line steam sterilizable at 135 ° C @ maximum differential pressure of 5 psi (0.35 kg/cm ²) for 30 minutes, 80 cycles				



Microbially Validated as per ASTM F 838

Complies with USFDA 21 CFR 210.3 (b) (6)

Meets and Exceeds USFDA 21 CFR 177.1520

Air Flow Rates

0.2 µm AseptiSure TH Mini Cartridge Filters



Ordering Information

Туре		Size Por		Pore Size		Ada	apter Elastomer		Sterili	Sterility P		(Size	
	Code		Code		Code		Code		Code		Code		Code
AseptiSure TH	CPTH	2.5″	50	0.2 μm	01	4463	E0	Silicone	SS	Non Sterile	1	1	01
		5″	53	0.45 μm	02	4463B	HO						
						4440	UO	-					
						Seal-K	G0*	*G0 adapte	r is not av	vailable with el	astomer.	Please m	nention
						Seal-O	F0		e of elast	omer code whi	le orderi	ng	
						Seal-M	JO						
Example:													
СРТН		5	0	0	1	EC)	SS 1			0	1	

AseptiSure TH Standard Cartridge Filters

AseptiSure TH are high temperature resistant PTFE membrane cartridge filters which are steam sterilizable at 135°C. These filters are validated with liquid microbial challenge test as per ASTM F 838 to offer absolute retention even under high moisture conditions.

Specifications

Construction										
Final Filter Pore Size	0.2	! μm	0.45	5μm						
Membrane	Hydrophobic PTFE									
Support (Drainage) Layers	Polypropylene									
Plastic Parts	Polypropylene									
Integrity Testing/Retention										
Air Diffusion Flow (with 70% IPA Wetted) (10″ Cartridge Filter)	<u>≤</u> 45 ml/m (1.12 ł	nin @ 16 psi (g/cm²)	≤ 45 ml/min @ 8 psi (0.56 Kg/cm²)							
Microbial Retention (LRV >7 for)	Brevundimo (ATCC 191	<i>nas diminuta</i> 46) per cm²	<i>Serratia marcescens</i> (ATCC 14756) per cm ²							
	Size	ł								
Size	5″	10″	20″	30″						
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²						
	Operati	onal								
Max. Operating Temperature	•	95 °C @ <u><</u> 30 p	osi (2 Kg/cm²)							
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C									
Reverse Pressure	<u><</u> 10 psi (0.7 Kg/cm²) @ 25 °C									
Sterilization	Autoclavable/In-line steam sterilizable at 135 °C @ maximum differential pressure of 5 psi (0.35 Kg/cm²) for 30minutes, 80 cycles .									



Air Flow Rates



Ordering Information

Туре		S	ize	Pore	Size	e Adapter		Elastomer		Sterility		Pack Size	
	Code		Code		Code		Code		Code		Code		Code
AseptiSure TH	CPTH	5″	53	0.2 μm	01	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	0.45 μm	02	7P without fin	A1	Viton	SV				
		20″	55			28 with fin	C0	EPDM	SE				
		30″	56			'O'	D0	FEP					
								Encapsulated	FV				
Example:	Example:												
СРТН	CPTH 56 01 A0			SS		1		(01				

AseptiSure TF Mini Cartridge filters

mdi AseptiSure TF PTFE membrane mini cartridge filters are hydrophobic filters offering absolute retention. These filters are designed for sterilizing filtration of gases. The high quality of membrane and design of cartridge assures long life and ability to withstand adverse process conditions experienced during use.

mdi AseptiSure TF filters are validated for key performance parameters such as retention efficiency, chemical compatibility, extractables, heat stability, flow rates and blow through.

Specifications

Construction									
Final Filter Pore	Size	0.2 µm	0.45 μm						
Membrane		Hydropho	bic PTFE						
Support (Drainag	ge) Layers	Polyproj	pylene						
Plastic Parts		Polyproj	pylene						
Integrity Testing/Retention									
Bubble Point		22psi (1.52 Bar) with 70% IPA/Water Solution	10psi (0.69 Bar) with 70% IPA/Water Solution						
Water Intrusion	2.5″	\leq 0.3 ml/min @ 2.0kg/cm ²	-						
Rate	5″	\leq 0.6 ml/min @ 2.0kg/cm ²	-						
Microbial Bacter (LRV >7 for)	ial Retention	<i>Brevundimonas diminuta</i> Serratia marcesce (ATCC 19146) per cm ² (ATCC 14756) per							
		Size							
Size		2.5″	5″						
Effective Filtratic (Nominal)	on Area	1000 cm ²	2000 cm ²						
		Operational							
Max. Operating	Femperature	80 °C @ <u><</u> 2 Kg	/cm² (30 psi)						
Max. Differential	Pressure	3.5 Kg/cm² (50) psi) @ 25 °C						
Reverse Pressure	2	≤ 0.7 Kg/cm² (10 psi) @ 25 °C							
Sterilization		Autoclavable/In-line steam sterilizable at 121°C @maximum differential pressure of 3 psi (0.21 kg/cm ²) for 30 minutes 100 cycles							





Air Flow Rates

0.2 µm AseptiSure TF Mini Cartridge Filters



Ordering Information

Туре		Size		Pore	Size	Adapter		Elastomer		Sterility		Pack Size		
	Code		Code		Code		Code		Code		Code		Code	
AseptiSure TF	CPTF	2.5″	50	0.2 μm	01	4463	E0	Silicone	SS	Non Sterile	1	1	01	
5″ 53 0.45 μm 02						4463B	H0							
						4440	U0							
						Seal-K	G0*	*G0 adapter is not available with elastomer. Please mention XX in place of elastomer code while ordering						
						Seal-O	F0							
Example:						Seal-M	JO]						
CPTF		5	0	0	1	EO		SS		1		0	1	

AseptiSure TF Standard Cartridge Filters

AseptiSure TF cartridge filters employ hydrophobic PTFE membrane offering absolute retention, wide chemical compatibility, and are validated with liquid bacterial challenge test.





Specifications

	Construc	tion						
Final Filter Pore Size	0.2	μm	0.45	0.45 μm				
Membrane	Hydrophobic PTFE							
Support (Drainage) Layers Polypropylene								
Body and Core		Polypro	pylene					
Integrity Testing/Retention								
Air Diffusion Flow (with 70% IPA Wetted) (10″ Cartridge Filter)	<u>≤</u> 45 ml/m (1.12 K	in @ 16 psi g/cm²)	≤45 ml/min @ 8 psi (0.56 Kg/cm²)					
Microbial Retention (LRV >7 for)	Brevundimo (ATCC 1914	n <i>as diminuta</i> 16) per cm²	Serratia m (ATCC 147	<i>arcescens</i> 56) per cm²				
	Size							
Size	5″	10″	20″	30″				
Effective Filtration Area (Nominal)	3000 cm ²	6000 cm ²	12000 cm ²	18000 cm ²				
	Operatio	onal						
Max. Operating Temperature	8	30 °C @ <u><</u> 30 µ	osi (2 Kg/cm²)					
Max. Differential Pressure	5	50 psi (3.5 Kg/	′cm²) @ 25 °C					
Reverse Pressure	<u> </u>	10 psi (0.7 Ko	g/cm²) @ 25 °(C				
Sterilization (0.21 kg/cm ²) for 30 minutes 100 cycle								

Air Flow Rates





Ordering Information

Туре		S	Size		Size	Adapter Elastomer Sterility		ty	Pack Size				
	Code		Code		Code		Code		Code		Code		Code
AseptiSure TF	CPTF	5″	53	0.2 μm	01	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	0.45 μm	02	7P without fin	A1	Viton	SV				
		20″	55			28 with fin	C0	EPDM	SE				
		30″	56			'O'	D0	FEP					
								Encapsulated Viton	FV				
Example:									·				
CPTF	CPTF 54 01 A0			FV		1		0	1				

Filters for Clarification and Pre-filtration

mdi offers a range of pre-filters designed to protect the terminal sterilizing grade membrane filters and maximize throughputs.

These are biologically inert filters with wide chemical compatibility, offering very high retention efficiency and are available in cartridge filter and capsule filter formats, in different sizes, pore sizes and end connections to suit different needs.

These filter devices are available as:

Filter Type	Product Name
Polyethersulfone Membrane Capsule Filters with Microglassfiber Upstream	ClariPro GK
Polyethersulfone Membrane Cartridge Filters with Microglassfiber Upstream	ClariSure GK
Microglassfiber Capsule Filter	ClariCap GS
Microalacefiber Cartridge Filters	ClariSure GS
microglassiber Cartridge Filters	ClariSure GP
Polypropylene Capsule Filters	ClariCap PP
Polypropylene Cartridge Filters	ClariSure PA

Applications

- > Precipitate removal post viral inactivation
- > Pre-filtration of cell culture media
- > Pre-filtration of serum and other viscous biologicals
- > Pre-filtration of serum solutions
- > Clarification of cell harvest supernatant
- > Pre-filtration of protein solutions
- Pre-filtration of high value difficult to filter drug solutions
- > Pre-filtration of large volume parenterals
- > Pre-filtration of difficult to filter SVP
- > Polishing of turbid solutions
- > Pre-filtration of fermentor air

Quality Assurance

These filter devices are manufactured in Class 10,000 clean rooms under ISO 9001:2015 certified quality management systems and are deeply validated to meet compendia and regulatory requirements.

	Assurance
Toxicity	Passes Bioreactivity test, In Vivo, as per USP <88> for Class VI plastics
Non Fiber Releasing	Passes test as per USP and comply with USFDA 21 CFR Part 210.3 (b)(6) for fiber release
Extractables with WFI	Passes test as per USP <661>
Oxidizable Substances	Within limits as specified in USP <1231>
Particle Shedding	Passes test as per USP <788> for particulate matter in injection
Indirect Food Additive	All Polypropylene components meet the FDA Indirect Food Additive requirements cited in 21 CFR 177.1520
Good Manufacturing Practice	These products are manufactured in a facility which adheres to Good Manufacturing Practices

Filter Selection Chart

Application Key Application Area Requirements		Capsule Fi	lters	Cartridge Filters			
Biopharmaceuticals							
Precipitate removal post viral inactivation	- High retention efficiency - High throughput	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	<i>ClariCap GS</i> Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		
Pre-filtration of cell culture media	 High retention efficiency High throughput 	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap GS Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		
Prefiltration of serum and other viscous biologicals	 High retention efficiency High throughput 	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap GS Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		
Pre-filtration of serum solutions	 High retention efficiency High throughput 	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap GS Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		
Clarification of cell harvest supernatants	High retention efficiencyHigh throughput	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap GS Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		
Pre-filtration of fermentor air	- High retention efficiency	-	ClariCap PP Polypropylene Capaule Filters	ClariSure PA Pleated Polypropylene Cartridge Filters	-		
Pre-filtration of proteinaceous liquids	- Low hold up volume - High throughput	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap PP Polypropylene Capaule Filters	-	-		
Pharmaceuticals							
Pre-filtration of high value difficult to filter drug solutions	High retentionefficiencyHigh throughput	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap GS Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		
Pre-filtration of large volume parenterals	 High retention efficiency High throughput 	-	-	ClariSure PA Pleated Polypropylene Cartridge Filters	ClariSure GP Microglassfiber Cartridge Filters		
Pre-filtration of difficult to filter SVP like Oxytetracycline	 High retention efficiency High throughput 	-	-	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GP Microglassfiber Cartridge Filters		
Polishing of turbid solutions	 Very high retention efficiency for colloidal particles High throughput 	ClariPro GK PES Membrane Capsule Filters with Microglassfiber upstream	ClariCap GS Microglassfiber Capsule Filters	ClariSure GK PES Membrane Cartridge Filters with Microglassfiber upstream	ClariSure GS Microglassfiber Cartridge Filters		

ClariPro GK Small Capsule Filters (1", 2", 5", 8")

ClariPro GK hydrophilic PES membrane capsule filters are ready to use, disposable filtration devices. These filters are specially designed filters incorporating a microglassfiber upstream layer and a downstream PES membrane layer and are used as pre-filters in biopharmaceuticals process development as well as manufacturing processes for difficult to filter solutions.

Radiation Sterilizable:	ClariPro GK -γ
Autoclavable:	ClariPro GK

Specifications

	Construction											
Pore Size		0.1μm, 0.2 μm, 0.5μm										
Membrane		Hydrophilic PES										
Pre-filter			Microg	lassfiber								
Support (Dr	ainage) Layers		Poly	vester								
Plastic Parts			Polypr	opylene								
Size												
Size		1″	2″	5″	8″							
Effective Filt (Nominal)	ration Area	150 cm ²	1500 cm ²									
Vent and Dr	ain	1⁄4" Hose Barb with Silicone 'O' ring										
		Opera	tional									
Max. Operat Temperature	ing e	80 °C @ <u><</u> 30 psi (2 Kg/cm ²)										
Max. Differe	ntial Pressure		60 psi (4 Kg,	/cm²) @ 30 °C								
	By Irradiation	ClariPro GK- γ: Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.										
Sterilization	By Gas	ClariPro GK	: Sterilizable b	oy Ethylene Ox	ide							
	By Autoclave	ClariPro GK : Autoclavable at 125 °C for 30 minutes, 25 cycle.										
		These cannot be In-line steam sterilized										





Water Flow Rates

0.5 µm ClariPro GK Capsule Filters



E: 1¹/₂" Sanitary Flange Connections

Ordering Information

Туре		Si	ze	Pore Size		Inlet/Outlet		Radiation		x	Sterility		Pack Size	
	Code		Code		Code		Code	Stern	Izable			Code		Code
ClariPro GK	DGKX	1″	51	0.1 μm	36	1⁄4″ SHB	A		Code		Non Sterile	1	1	01
		2″	52	0.2 μm	01	1⁄2" Hose Barb	D	Yes	R		EO Sterile	2		
		5″	53	0.5 μm	04	1½" Sanitary Flange	E	No*	Х		Gamma	2		
		8″	57			34" Sanitary Flange	S				Sterile	5		
						Quick Connector	J							
						Single Step ½" Hose Barb	Q							
						Female Luer Lock	U							
						Male Luer Slip	W							
Example:						¾₀" Hose Barb	N							
						³‰" Hose Barb	I							
DGKX	(5	7	04	4	DD			R	x	1		0	1

*Gamma Sterile capsule filters cannot be Gamma Irradiated again

ClariPro GK Large Capsule Filters (5", 10", 20", 30")

ClariPro GK hydrophilic PES membrane large capsule filters are ready to use, disposable filtration devices with a microglassfiber upstream layer and a downstream PES membrane final layer.

The microglassfiber layer offers high dirt holding capacity and efficient retention of colloidal particles to give clear downstream in case of difficult to filter turbid solutions. The downstream PES membrane offers absolute retention and low protein binding along with high flow rates.

Radiation Sterilizable:	ClariPro GK -γ
Autoclavable:	ClariPro GK

Specifications

		Construction							
Pore Size		0.1 μm, 0.2 μm, 0.5 μm							
Membrane		Hydrophilic PES							
Pre-filter			Microgla	assfiber					
Support (Dra	inage) Layers	Polyester							
Plastic Parts			Polypro	pylene					
		Siz	e						
Size		5″	10″	20″	30″				
Effective Filtr (Nominal)	ation Area	2500 cm ²	5000 cm ²	10000 cm ²	15000 cm ²				
Vent and Dra	in	1/4" Hose Barb with Silicone 'O' ring							
		Operational							
Max. Operati Temperature	ng	80 °C @ ≤ 30 psi (2 Kg/cm²)							
Max. Differen	itial Pressure	60 psi (4 Kg/cm²) @ 30 °C							
By Irradiation		ClariPro GK- γ : Gamma Irradiatable up to 50 kGy. These filters should not be autoclaved or in-line steam sterilized.							
Sterilization	By Gas	ClariPro GK: Sterilizable by Ethylene Oxide							
	By Autoclave	ClariPro GK : 25 cycles	Autoclavable	at 125 °C foi	r 30 minutes,				
	These cannot	t be In-line steam sterilized							

Complies with USFDA 21 CFR 210.3 (b)(6) Meets and Exceeds USFDA 21 CFR 177.1520



Water Flow Rates

0.5 µm ClariPro GK Large Capsule Filters



E: 1¹/₂" Sanitary Flange Connections

Ordering Information

Тур	e	Si	ze	Pore	Size	Inlet/Outlet		Radi	ation	In /T	line	Sterility	,	Pack	c Size
	Code		Code		Code		Code	Stern		/ 1-	iiiie		Code		Code
ClariProGK	LGKX	5″**	53	0.1 µm	36	1½" Sanitary Flange	E		Code		Code	Non Sterile	1	1	01
	·	10″	54	0.2 μm	01	Single Step ½" Hose Barb	Q	Yes	R	Inline	X	EO Sterile	2		
		20″	55	0.5 μm	04	34" Sanitary Flange	S	No*	Х	T-line	Т	Gamma Sterile	3		
		30″	56			³‰" Hose Barb	1								
Example:						1" Hose Barb	Z								
LGK	X	5	4	0	1	EE		F	8		Т	1		0	01
* Gamma	Sterile	e capsu	ule filt	ers can	not be	Gamma Irradiated ag	ain					2			

** Size 5" is available in In-line Capsule Filters Only

ClariSure GK Mini Cartridge Filters

ClariSure GK hydrophilic PES membrane mini cartridge filters offer a microglassfiber upstream layer with a PES membrane final filter to combine high dirt holding capacities with efficient retention of colloidal particles to give clear downstream in case of difficult to filter turbid solutions.

Complies with USFDA 21 CFR 210.3 (b)(6) Meets and Exceeds USFDA 21 CFR 177.1520



Specifications

	Construction					
Pore Size	0.1 μm, 0.2 μm, 0.5 μm					
Membrane	Hydro	ophilic PES				
Pre-filter	Micro	glassfiber				
Support (Drainage) Layers	Ро	lyester				
Plastic Parts	Polypropylene					
	Size					
Size	2.5″	5″				
Effective Filtration Area (Nominal)	1000 cm ²	1500 cm ²				
	Operational					
Max. Operating Temperature	0 psi (2 Kg/cm²)					
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C					
Sterilization	Autoclavable/In-line steam sterilizable at 121°C for 30 minutes, 25 cycles					

Water Flow Rates

0.5 µm ClariSure GK Mini Cartridge Filters



Ordering Information

Туре	2	Si	ze	Pore	Size	Ada	oter	Elaston	ner	Sterili	ty	Pack	c Size
	Code		Code		Code		Code		Code		Code		Code
ClariSure GK	CGKX	2.5″	50	0.1 µm	36	4463	EO	Silicone	SS	Non Sterile	1	1	01
		5″	53	0.2 μm	01	4463B	H0						·
				0.5 μm	04	4440	U0						
						Seal-K	G0*	*G0 adapter	is not ava	ailable with ela	stomer. F	Please me	ention
						Seal-O	F0	XX in place	of elasto	mer code while	orderin	g	
						Seal-M	JO						
								I					

Example:

CGKX 50 04 E0 SS 1 01)1
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ClariSure GK Standard Cartridge Filters

ClariSure GK hydrophilic PES membrane cartridge filters offer a microglassfiber upstream layer with a PES membrane final filter to combine high dirt holding capacities with efficient retention of colloidal particles to give clear downstream in case of difficult to filter turbid solutions.

Specifications

	Construction								
Pore Size	0.1 μm, 0.2 μm, 0.5 μm								
Membrane	Hydrophilic PES								
Pre-filter		Microg	lassfiber						
Support (Drainage) Layers	Polyester								
Plastic Parts	Polypropylene								
	Size	1							
Size	5″	10″	20″	30″					
Effective Filtration Area (Nominal)	2500 cm ²	5000 cm ²	10000 cm ²	15000 cm ²					
	Operati	onal							
Max. Operating Temperature	80 °C @ ≤ 30 psi (2 Kg/cm²)								
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C								
Sterilization	Autoclavable/In-line steam sterilizable at 121°C for 30 minutes, 25 cycles								



Complies with USFDA 21 CFR 210.3 (b)(6)

Water Flow Rates

0.5 µm ClariSure GK Cartridge Filters



Ordering Information

Туре	9	S	ize	Pore	Size	Adapt	er	Elaston	ner	Sterili	ty	Pack	c Size
	Code		Code		Code		Code		Code		Code		Code
ClariSure GK	CGKX	5″	53	0.1 μm	36	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	0.2 μm	01	7P without fin	A1	Viton	SV				
		20″	55	0.5 μm	04	28 with fin	C0	EPDM	SE				
		30″	56			'O'	D0	FEP					
						L		Encapsulated Viton	FV				

Example:

CGKX 56 36 A0 SS 1

ClariCap GS Small Capsule Filters (1", 2", 5", 8")

ClariCap GS capsule filters employ microglassfiber filter media for efficient retention of colliodal particles to give clear downstream in case of difficult to filter turbid solutions. These specially designed filtration devices are non media migrating with a heat calendered polypropylene layer in the downstream.

Specifications

	Construct	tion					
Pore Size	0.7 μm, 1 μm, 1.5 μm, 2 μm						
Filter Media		Microgl	assfiber				
Plastic Parts		Polypro	pylene				
	Size						
Size	1″	2″	5″	8″			
Effective Filtration Area (Nominal)	150 cm ²	400 cm ²	800 cm ²	1200 cm ²			
Vent and Drain	1⁄4″ Ho	ose Barb wit	h Silicone '(D' ring			
	Operatio	nal					
Max. Operating Temperature	80) °C @ <u><</u> 30 ∣	osi (2 Kg/cn	n²)			
Max. Differential Pressure	60 psi (4 Kg/cm²) @ 30 °C						
Sterilization	Autocla 30 cycles.	vable at 12 Cannot be l	5 °C for 30 r n-line stear	ninutes, n sterilized			



Water Flow Rates

0.7 µm ClariCap GS Capsule Filters



End Connection : D: 1/2" Hose Barb

Туре		Si	ze	Pore	Size	Inlet/Outlet		x	Be	I	Sterili	ity	Pack	Size
	Code		Code		Code		Code			Code		Code		Code
ClariCap GS	DGSX	1″	51	0.7 μm	41	1⁄4″ SHB	Α		Yes	В	Non Sterile	1	1	01
		2″	52	1 µm	05	1⁄2" Hose Barb	D		No Bell	Х				
		5″	53	1.5 μm	14	1½" Sanitary Flange	E							
		8″	57	2 µm	15	¾" Sanitary Flange	S							
						Quick Connector J								
						Single Step ½"Hose Barb	Q							
						Female Luer Lock	U							
						Male Luer Slip	W							
						¾6″ Hose Barb	Ν							
Example:						¾″ Hose Barb	I							
Example.														
DGS	x	5	7	0	5	DD		х	х		1		0	1

For End Connection availability, Bell and dimensions with different sizes refer Pages 89-90.

Ordering Information

Complies with USFDA 21 CFR 210.3 (b)(6) Meets and Exceeds

Meets and Exceeds USFDA 21 CFR 177.1520

ClariCap GS Large Capsule Filters (5", 10", 20", 30")

ClariCap GS large capsule filters are multilayered, high throughput filters, specially designed for difficult to filter solutions.

These are high efficiency pre-filters combining the unique abilities of microglassfiber filter media to retain colloidal particles and heat calendered polypropylene filter media to ensure non media migration.

Specifications

	Construc	tion					
Pore Size	0.7 μm, 1 μm, 1.5 μm, 2 μm						
Filter Media	Microglassfiber						
Plastic Parts		Polypr	opylene				
	Size						
Size	5″	10″	20″	30″			
Effective Filtration Area (Nominal)	1700 cm ²	3400 cm ²	6800 cm ²	10200 cm ²			
Vent and Drain	¼″ H	ose Barb w	ith Silicon '	O' ring			
	Operatio	onal					
Max. Operating Temperature	80 °C @ ≤ 30 psi (2 Kg/cm²)						
Max. Differential Pressure	60 psi (4 Kg/cm²) @ 30 °C						
Sterilization	Autocla 30 cycles.	avable at 12 Cannot be	25 °C for 30 In-line stea	minutes, m sterilized			



Water Flow Rates

0.7µm ClariCap GS Large Capsule Filters



E: 1¹/₂" Sanitary Flange Connections

Ordering Information

Туре		Si	ze	Pore	Size	inlet/Outlet		X	Inline / T-line		Sterility		Pack Size	
	Code		Code		Code		Code		/ 1-1			Code		Code
ClariCap GS	LGSX	5″*	53	0.7 μm	41	1½" Sanitary Flange	E	1		Code	Non Sterile	1	1	01
		10″	54	1 µm	05	Single Step ½" Hose Barb	Q		Inline	X			L	
		20″	55	1.5 μm	14	3/4" Sanitary Flange	s		T-line	Т				
		30″	56	2 µm	15	2/0/LL Park								
		-				3/8" Hose Barb								
						1" Hose Barb	Z							

Example:

LGSX 54 41	EE X	т	1	01
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*Size 5" is available in Inline capsule filters only

For End Connection availability and dimensions with different sizes refer Page 89-90.

ClariSure GS Mini Cartridge Filters

ClariSure GS mini cartridge filters are multilayered, high throughput filters, specially designed for difficult to filter solutions.

It is a very high efficiency pre-filter combining the unique abilities of microglassfiber filter media to retain colloidal particles and heat calendered polypropylene filter media to ensure non media migration.

Specifications

	Construction					
Pore Size	0.7 μm, 1 μm					
Filter Media	Microglassfiber					
Support (Drainage) Layers	Polyester					
Plastic Parts	Polypropylene					
	Size					
Size	2.5″	5″				
Effective Filtration Area (Nominal)	800 cm ²	1200 cm ²				
	Operational					
Max. Operating Temperature	80 °C @ <u><</u>	30 psi (2 Kg/cm²)				
Max. Differential Pressure	50 psi (3.5	Kg/cm²) @ 25 °C				
Sterilization	Autoclavable/In-line steam sterilizable at 121°C for 30 minutes, 30 cycles					

Complies with USFDA 21 CFR 210.3 (b)(6) Meets and Exceeds USFDA 21 CFR 177.1520



Water Flow Rates

0.7 µm ClariSure GS Mini Cartridge Filters



Ordering Information

Туре	2	Si	ze	Pore	Size	Adap	Adapter		Elastome		Sterili	ty	Pack	ack Size	
	Code		Code		Code		Code	1 [Code		Code		Code	
ClariSure GS	CPGS	2.5″	50	0.7 μm	41	4463	EO	1 [Silicone	SS	Non Sterile	1	1	01	
		5″	53	1 μm	05	4463B	H0	1 -						-	
						4440	U0	1							
						Seal-K	G0*	1	*G0 adapter	is not av	ailable with ela	stomer. P	lease me	ntion	
						Seal-O	F0	1	XX in place	ofelasto	omer code while	ordering	1		
						Seal-M	OC	1							

Example:

CPGS	50	41	EO	SS	1	01

ClariSure GS Standard Cartridge Filters

ClariSure GS cartridge filters are multilayered, high throughput filters, specially designed for difficult to filter solutions.

It is a very high efficiency pre-filter combining the unique abilities of microglassfiber filter media to retain colloidal particles and heat calendered polypropylene filter media to ensure non media migration.

Specifications

	Construc	tion					
Pore Size	0.7 μm, 1 μm						
Filter Media		Microgl	assfiber				
Support (Drainage) Layers		Poly	ester				
Plastic Parts		Polypro	pylene				
	Size						
Size	5″	10″	20″	30″			
Effective Filtration Area (Nominal)	1700 cm ²	3400 cm ²	6800 cm ²	10200 cm ²			
	Operatio	nal					
Max. Operating Temperature	80) °C @ <u><</u> 30 ∣	psi (2 Kg/cn	n²)			
Max. Differential Pressure	50) psi (3.5 Kg	/cm²) @ 30	°C			
Sterilization	Autocla at 121	vable/In-lin I °C for 30 n	e steam ste ninutes, 30	erilizable cycles			



Complies with USFDA 21 CFR 210.3 (b)(6)

Meets and Exceeds USFDA 21 CFR 177.1520

Water Flow Rates

0.7 µm ClariSure GS Cartridge Filters



Ordering Information

Туре	2	Si	ze	Pore	Size	Adapter		Elaston	Elastomer		ity	Pack Size	
	Code		Code		Code		Code		Code		Code		Code
ClariSure GS	CPGS	5″	53	0.7 μm	41	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	1 μm	05	7P without fin	A1	Viton	SV				
		20″	55			28 with fin	C0	EPDM	SE	•			
		30″	56			'O'	D0	FEP					
							I	Encapsulated Viton	FV				

Example:

CPGS	55	41	A0	SV	1	01
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ClariSure GP Mini Cartridge Filters

ClariSure GP mini cartridge filters are specially designed multilayered precision filtration devices. These cartridge filters act as throughput enhancers, specially in case of difficult to filter solutions.

A microglassfiber upstream layer retains very fine colloidal particles and a downstream polypropylene layer checks any kind of media migration.

Specifications

Construction							
Pore Size	0.5 μm, 1 μm, 2 μm						
Filter Media	Micr	oglassfiber					
Support (Drainage) Layers	Polypropylene						
Plastic Parts	Polypropylene						
	Size						
Size	2.5″	5″					
Effective Filtration Area (Nominal)	800 cm ²	1600 cm ²					
	Operational						
Max. Operating Temperature	80 °C @ ≤ 30 psi (2 Kg/cm²)						
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C						
Sterilization	Autoclavable/In at 121°C for 3	-line steam sterilizable 0 minutes, 30 cycles					







Ordering Information

Туре	2	Si	ze	Pore	Size	Adaj	oter	Elasto	mer	Sterili	ty	Pac	c Size		
	Code	Code			Code		Code		Code		Code		Code		
ClariSure GP	CPGP	2.5″	2.5″ 50		04	4463	EO	Silicone	SS	Non Sterile	1	1	01		
		5″	53	1 µm	05	4463B	H0			-					
				2 µm	15	4440	UO								
						Seal-K	G0*	*G0 adapter	is not avai	lable with elast	omer. Ple	ase ment	ion		
						Seal-O	F0	XX in place of elastomer code while ordering							
						Seal-M	JO								

Example:

CPGP 50 05 E0 SS	1 01
------------------	------

ClariSure GP Standard Cartridge Filters

ClariSure GP cartridge filters are specially designed multilayered precision filtration devices. These cartridge filters act as throughput enhancers, specially in case of difficult to filter solutions.

A microglassfiber upstream layer retains very fine colloidal particles and a downstream polypropylene layer checks any kind of media migration.

Specifications

	Construct	tion								
Pore Size		0.5 μm, 1	μm, 2 μm							
Filter Media	Microglassfiber									
Support (Drainage) Layers		Polypr	opylene							
Plastic Parts		Polypr	opylene							
	Size									
Size	5″	10″	20″	30″						
Effective Filtration Area (Nominal)	2500 cm ²	5000 cm ²	10000 cm ²	15000 cm ²						
	Operatio	nal								
Max. Operating Temperature	Aax. Operating $80 ^{\circ}\text{C} @ \leq 30 \text{psi} (2 \text{Kg/cm}^2)$									
Max. Differential Pressure	e 50 psi (3.5 Kg/cm²) @ 25 °C									
Sterilization	Autocla at 12	vable/In-lir 1°C for 30 r	ne steam ste ninutes, 30 d	rilizable cycles						



Water Flow Rates

ClariSure GP, 10" Cartridge Filters



Ordering Information

Туре		Si	ze	Pore	e Size	Adapt	Adapter		Elastomer		Sterility		Size
	Code		Code		Code	1	Code		Code		Code		Code
ClariSure GP	CPGP	5″	53	0.5 μm	04	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	1 μm	05	7P without fin	A1	Viton	SV				
		20″	55	2 µm	15	28 with fin	C0	EPDM	SE				
		30″	56			·(O'	D0	FEP					
								Encapsulated Viton	FV				

Example:

CPGP	55	04	AO	SS	1	01
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ClariCap PP Small Capsule Filters (1", 2", 5", 8")

ClariCap PP capsule filters employ high retention efficiency polypropylene filter media with wide chemical compatibility for pre-filtration and polishing applications.

Specifications

	Construction										
Pore Size	0.5 μm, 1	μm, 2.5 μm	, 5 μm, 10 μ	ım, 20 μm							
Filter Media		Polypro	pylene								
Support (Drainage) Layers	s Polypropylene										
Plastic Parts	Polypropylene										
	Size										
Size	1″	2″	5″	8″							
Effective Filtration Area (Nominal)	250 cm ²	500 cm ²	800 cm ²	1600 cm ²							
Vent and Drain	1⁄4″ Ho	se Barb wit	h Silicone '(D' ring							
	Operatio	nal									
Max. Operating Temperature	80) °C @ <u><</u> 30 ∣	osi (2 Kg/cn	1 ²)							
Max. Differential Pressure	e 60 psi (4 Kg/cm²) @ 30 °C										
Sterilization	Autocla 30 cycles.	vable at 12 Cannot be l	5 °C for 30 r n-line stear	ninutes, n sterilized							



Complies with USFDA 21 CFR 210.3 (b)(6)

Water Flow Rates

ClariCap PP, 5" Capsule Filters



Ordering Information

Туре		s	ize	Pore	Size	Inlet/Outlet		х	X	Sterility	Pack Size
	Code		Code		Code		Code			Code	Code
ClariCap PP	DOLX	1″	51	0.5 µm	04	1⁄4″ SHB	A			Non Sterile 1	1 01
		2″	52	1 µm	05	¼″ MNPT	В			· · · · · · · · · · · · · · · · · · ·	
		5″	53	2.5 µm	06	1⁄2″MNPT	С				
		8″	57	5 µm	07	1/2" Hose Barb	D				
				10 µm	08	1½" Sanitary Flange	E				
				20 µm	11	¾" Sanitary Flange	S				
						Quick Connector	J				
						Single Step ½"Hose Barb	Q				
						Female Luer Lock	U				
						Male Luer Slip	W				
						³⁄₁₀″ Hose Barb	N				
Example:		³ ∕ ₈ ″ Hose Barb	I								
DOL	ĸ	!	53	0	5	сс		x	X	1	01

For End Connection availability, Bell and dimensions with different sizes refer Pages 89-90.

ClariCap PP Large Capsule Filters (5", 10", 20", 30")

ClariCap PP large capsule filters employ high retention efficiency Polypropylene filter media for wide chemical compatibility, efficient pre-filtration for clarification and polishing applications.

Specifications

	Construc	tion								
Pore Size	0.5 μm, 1	μm, 2.5 μm	n, 5 μm, 10 μ	m, 20 μm						
Filter Media		Polypro	opylene							
Support (Drainage) Layers	Polypropylene									
Plastic Parts	Polypropylene									
	Size									
Size	5″	10″	20″	30″						
Effective Filtration Area (Nominal)	2500 cm ²	5000 cm ²	10000 cm ²	15000 cm ²						
Vent and Drain	1⁄4″ Ho	ose Barb wi	th Silicone 'C)' ring						
	Operatio	nal								
Max. Operating Temperature	80) °C @ <u><</u> 30	psi (2 Kg/cm	1 ²)						
Max. Differential Pressure	60 psi (4 Kg/cm²) @ 30 °C									
Sterilization	Autocla 30 cycles.	vable at 12 Cannot be	5 °C for 30 n In-line stean	ninutes, n sterilized						



Water Flow Rates

ClariCap PP 10", Large Capsule Filters



End Connection Type:

E: 11/2" Sanitary Flange

Ordering Information

Туре	Type		Size Por		Pore	Size	ze Inlet/Outlet		х	Inli /TI	ne	Sterili	Pack Size			
	Code			Code		Code		Code		/ 1-1	ine		Code		Code	
ClariCap PP	LOLX		5″*	53	0.5 μm	04	1½" Sanitary Flange	E			Code	Non Sterile	1	1	01	
			10″	10″ 54		05	Single Step ½" Hose Barb	Q		Inline	X					
			20″ 55		2.5 μm	06	³ ⁄ ₄ " Sanitary Flange	S		T-line	Т					
		L	30″ 56	30″ 56		5 µm	07	³∕₃″ Hose Barb	I							
					10 µm	08	1" Hose Barb	Z								
				20 µm	11											
Example:																

LOLX	54	06	QQ	х	т	1	01
------	----	----	----	---	---	---	----

* Size 5" is available in In-line Capsule Filters Only

For End Connection availability and dimensions with different sizes refer Pages 89-90.

ClariSure PA Mini Cartridge Filters

mdi *ClariSure PA* mini cartridge filters are 100% polypropylene, very high retention efficiency pleated cartridge filters offering large filtration area.

These filters have heat stable construction and are used as pre-filters to sterilizing membrane cartridge filters.

Specifications

	Construction					
Pore Size	0.5 μm, 1 μm, 1.2 μm, 2	2.5 μm, 5 μm, 8 μm, 10 μm				
Filter Media	Polypropylene					
Support (Drainage) Layers	Polypropylene					
Plastic Parts	Polypropylene					
	Size					
Size	2.5″	5″				
Effective Filtration Area (Nominal)	800 cm ²	1600 cm ²				
	Operational					
Max. Operating Temperature	80 °C @ <u><</u> 30) psi (2 Kg/cm²)				
Max. Differential Pressure	50 psi (3.5 K	(g/cm²) @ 25 °C				
Sterilization	Autoclavable/In-li at 121°C for 30 r	ine steam sterilizable minutes, 100 cycles				



Water Flow Rates

ClariSure PA, 2.5" Mini Cartridge Filters



ClariSure PA, 5" Mini Cartridge Filters



Ordering Information

Туре	e	Si	ze	Pore	Size	Adap	oter	Elaston	ner	Sterili	ty	Pack	Size
	Code		Code		Code		Code		Code		Code		Code
ClariSure PA	CPPA	2.5″	50	0.5 µm	04	4463	E0	Silicone	SS	Non Sterile	1	1	01
		5″	53	1 μm	05	4463B	HO						•
				1.2 µm	10	4440	UO	U0 *G0 adapter does not come with elastomer. Please r				10250 mo	ntion
				2.5 µm	06	Seal-K	G0*	XX in plac	e of elasto	omer while orde	ering	iease illei	
				5 µm	07	Seal-O	F0						
				8 µm	17	Seal-M	JO						
				10 µm	08								
Example:				-									
СРР	A	5	0	0	5	EC)	SS		1		0	1

For Adapters and Elastomers availability refer Page 91.

Complies with USFDA 21 CFR 210.3 (b)(6)

Meets and Exceeds USFDA 21 CFR 177.1520

ClariSure PA Standard Cartridge Filters

ClariSure PA cartridge filters are 100% polypropylene, very high retention efficiency pleated cartridge filters offering large filtration area.

These filters have heat stable construction and are used as pre-filters to sterilizing membrane cartridge filters.

Specifications

Construction						
Pore Size	0.5 μm, 1 μm, 1.2 μm, 2.5 μm, 5 μm, 8 μm, 10 μm					
Filter Media		Polypi	ropylene			
Support (Drainage) Layers		Polypi	ropylene			
Plastic Parts		Polypi	ropylene			
Size						
Size	5″	10″	20″	30″		
Effective Filtration Area (Nominal)	2500 cm ²	5000 cm ²	10000 cm ²	15000 cm ²		
	Operat	tional				
Max. Operating Temperature	80 °C @ \leq 30 psi (2 Kg/cm ²)					
Max. Differential Pressure	50 psi (3.5 Kg/cm²) @ 25 °C					
Sterilization	Autoc at 12	lavable/In-li 1 °C for 30 r	ne steam stei ninutes, 100	rilizable cycles		



Complies with USFDA 21 CFR 210.3 (b)(6)

Water Flow Rates

ClariSure PA, 10" Cartridge Filters



Ordering Information

	 	_	
Туре		Si	ze
	Code		
ClariSure PA	CPPA	5″	
	_	10″	
		20″	
		30″	

	Por	e Size
Code		Code
53	0.5 μm	04
54	1 µm	05
55	1.2 μm	10
56	2.5 μm	06
	5 µm	07
	8 µm	17

8 μm 10 μm

08

	Adapter				
è		Code			
	7P	A0			
	7P without fin	A1			
	28 with fin	C0			
	'O'	D0			

Elastomer				
	Code			
Silicone	SS			
Viton	SV			
EPDM	SE			
FEP Encapsulated Viton	FV			

Sterility			Pack	Size
	Code			Code
Non Sterile	1		1	01

Example:

CPPA 56 05 A0 SS 1	01	
--	----	--

Microglassfiber Disc Filters

Microglassfiber Disc Filters Type - GF2

GF2 filters are high dirt holding microglassfiber disc filters specially designed for pre-filtration of solutions with high dirt load.

Pore Size: 1.5 μm

- Special Features
- High flow rates
- High dirt holding capacity

Fine Microglassfiber Disc Filters - Type GFS

GFS filters are high retention efficiency fine microglassfiber disc filters.

Pore Size: 2 μm

Special Features

High retention efficiency

Positively Charged Microglassfiber Disc Filters- Type GFSZ

GFSZ filters are positively charged high retention efficiency microglassfiber disc filters.

Pore Size: 2 µm

Special Features

> Very high retention efficiency for negatively charged particles

Ordering Information

Тур	e	Si	ze	Pore	Size	ХХ	XX	Sterili	ity	Pack	Size
	Code		Code		Code				Code		Code
GF2	GF2X	127 mm	15	1.5 μm	14	I		Non Sterile	1	50	03
GFS	GFSX	142 mm	16	2 µm	15					L	
GFSZ	GFSZ	257 mm	17					I.			I
		279 mm	18								
		293 mm	19								
Example:				,			V			·	
GFS	5X	1	8	1	5	ХХ	xx	1		0	3

Filters for Polishing and Clarification

mdi offers a range of cartridge filters for polishing and clarification applications requiring absolute removal of particulate contaminants.

These are non media migrating, biologically and chemically inert, large area cartridge filters, offering very high (99.999%) to moderate high (99.9%) retention efficiencies to suit different applications.

Types Available

- >> ClariSure PP- Pleated Polypropylene cartridge filters
- >> ClariSure PL- Pleated Profile cartridge filters
- >> ClariSure DP- Pleated Depth cartridge filters

Applications

- > Filtration of organic solvents in non sterile API
- > Polishing filtration of Non Sterile API
- > Filtration of precipitating agents
- > Filtration of wash solvents for final non sterile API
- > Filtration of air to dryers and micronizers
- Final wash water for Ampoule/Vial washing and Bung washing
- > Bottle washing in oral formulations
- > Filtration of feed water for RO plants

Quality Assurance

These filter devices are manufactured in Class 10,000 clean rooms under ISO 9001:2015 certified quality management systems and are validated to meet compendia and regulatory requirements.

	Assurance
Toxicity	Passes Bioreactivity test, In Vivo, as per USP <88> for Class VI plastics
Non Fiber Releasing	Passes test as per USP and comply with USFDA 21 CFR Part 210.3 (b)(6) for fiber release
Extractables with WFI	Passes test as per USP <661>
Oxidizable Substances	Within limits as specified in USP <1231>
Particle Shedding	Passes test as per USP <788> for particulate matter in injections
Indirect Food Additive	All Polypropylene components meet the FDA Indirect Food Additive requirements cited in 21 CFR 177.1520
Good Manufacturing Practice	These products are manufactured in a facility which adheres to Good Manufacturing Practices

Filter Selection Chart

Application Area	Key Application Requirements		Cartridge Filters	
Filtration of organic solvents in non sterile API	 High retention efficiency Wide chemical compatibility 	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	ClariSure DP Pleated Depth Cartridge Filters
Polishing filtration of non sterile API	 Very high retention efficiency Wide chemical compatibility 	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	-
Filtration of precipitating agents	 Very high retention efficiency Wide chemical compatibility 	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	-
Filtration of wash solvents for final non sterile API	 Very high retention efficiency Wide chemical compatibility 	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	-
Filtration of air to dryers and micronizers	- Very high retention efficiency	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	-
Final wash water for ampoule/vial washing and bung washing	 Very high retention efficiency Wide chemical compatibility 	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	-
Bottle washing in oral formulations	- Very high retention efficiency - Wide chemical compatibility	ClariSure PP Pleated Polypropylene Cartridge Filters	ClariSure PL Pleated Profile Cartridge Filters	-
Filtration of feed water for RO plants	- High dirt holding capacity	_	-	ClariSure DP Pleated Depth Cartridge Filters

ClariSure PP Standard Cartridge Filters

ClariSure PP cartridge filters are 100% polypropylene construction precision filtration devices. These are very high retention efficiency **(99.999%)** pleated cartridge filters offering large filtration area.

These filters are used as terminal filters in applications requiring highly efficient particulate removal.

Specifications

Construction						
Pore Size	0.5 μm,	0.5 μm, 1μm, 1.2 μm, 2 μm, 2.5 μm, 5 μm 10 μm, 20 μm, 30 μm				
Filter Media		Polypro	opylene			
Support (Drainage) Layers	Polypropylene					
Plastic Parts	Polypropylene					
Size						
Size	5″	10″	20″	30″		
Effective Filtration Area (Nominal)	2500 cm ²	5000 cm ²	10000 cm ²	15000 cm²		
	Operat	ional				
Max. Operating Temperature	perating $80 \ ^{\circ}C @ \le 30 \ psi (2 \ Kg/cm^2)$					
Max. Differential Pressure	5	0 psi (3.5 Kg	/cm²) @ 25 °	с		

Water Flow Rates

ClariSure PP, 10" Cartridge Filters



Size Pore Size Туре Adapter Elastomer Sterility Pack Size Code Code Code Code Code Code Code ClariSure PP CPPP 5″ 53 0.5 µm 04 7P Silicone Non Sterile 01 A0 SS 1 1 10″ 54 1 µm 05 7P without fin A1 Viton SV 20″ 55 28 with fin C0 EPDM SE 1.2 µm 10 30″ 56 PTFE 2 µm 15 BEO B0 ST* FEP 2.5 µm 06 'O' D0 Encapsulated ΕV 5 µm 07 Viton 10 µm 08 20 µm 11 30 µm 19 **Example:** CPPP FV 1 01 55 04 **A0**

*PTFE (ST) gasket seals are available with Adapter Code B0 only For Adapters and Elastomers availability refer Page 91.

Ordering Information

Complies with USFDA 21 CFR 210.3 (b)(6) Meets and Exceeds USFDA 21 CFR 177.1520



ClariSure PL Standard Cartridge Filters

ClariSure PL cartridge filters are all polypropylene high retention efficiency (99.99%) pleated cartridge filters offering large filtration area.

Complies with USFDA 21 CFR 210.3 (b)(6) Meets and Exceeds USFDA 21 CFR 177.1520

Specifications

Construction						
Pore Size	1 μm, 2.5 μm, 5 μm, 10 μm					
Filter Media		Polypr	opylene			
Support (Drainage) Layers		Polypr	opylene			
Plastic Parts	Polypropylene					
Size						
Size	5″	10″	20″	30″		
Effective Filtration Area (Nominal)	2500 cm ²	5000 cm ²	10000 cm²	15000 cm ²		
	Operat	ional				
Max. Operating Temperature	80 °C @ <u>≤</u> 30 psi (2 Kg/cm²)					
Max. Differential Pressure	5	0 psi (3.5 K	g/cm²) @ 25 °	Ċ		

Water Flow Rates

ClariSure PL, 10" Cartridge Filters



Ordering Information

Туре		Si	ize	Pore	Size	Adapt	er	Elaston	ner	Sterili	ty	Pack	c Size
Ca	ode		Code		Code		Code		Code		Code		Code
ClariSure PL CI	PPL	5″	53	1 µm	05	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	2.5 μm	06	7P without fin	A1	Viton	SV				
		20″	55	5 µm	07	28 with fin	C0	EPDM	SE				
		30″	56	10 µm	08	BEO	BO	PTFE	ST*				
						'O'	D0	FEP Encapsulated Viton	FV				

Example:

CPPL	54	07	ВО	SV	1	01

*PTFE (ST) gasket seals are available with Adapter Code B0 only For Adapters and Elastomers availability refer Page 91.

ClariSure DP Standard Cartridge Filters

ClariSure DP cartridge filters are specially designed medium retention efficiency, multilayered, all polypropylene depth cartridge filters offering high dirt holding capacity as well as high flow rates due to their pleated configuration.

These filters are primarily used as pre-filters but can also be used as terminal filters for non-critical applications.

Specifications

	Constru	ction		
Pore Size	1 μm, 1.	5 μm, 3 μm, 30 μm,	5 μm, 10 μn 40 μm	n, 20 μm
Filter Media		Polypro	pylene	
Support (Drainage) Layers		Polypro	pylene	
Plastic Parts		Polypro	pylene	
	Size	2		
Size	5″	10″	20″	30″
Effective Filtration Area (Nominal)	2000 cm ²	4000 cm ²	8000 cm ²	12000 cm ²
	Operati	onal		
Max. Operating Temperature	8	0 °C @ <u><</u> 30 ∣	psi (2 Kg/cm	1 ²)
Max. Differential Pressure	5	0 psi (3.5 Kg	/cm²) @ 25 °	°C



Complies with USFDA 21 CFR 210.3 (b)(6)

Meets and Exceeds USFDA 21 CFR 177.1520

Ordering Information

Тур	e	S	ize	Pore	Size	Adapt	er	Elaston	ner	Sterili	ty	Pac	c Size
	Code		Code		Code		Code		Code		Code		Code
ClariSure DP	CPDP	5″	53	1 µm	05	7P	A0	Silicone	SS	Non Sterile	1	1	01
		10″	54	1.5 μm	14	7P without fin	A1	Viton	SV				
		20″	55	3 µm	16	28 with fin	C0	EPDM	SE				
		30″	56	5 µm	07	BEO	BO	PTFE	ST*				
				10 µm	08	'O'	D0	FEP					
				20 µm	11			Encapsulated Viton	FV				
				30 µm	19								
				40 µm	20								
Example:													
CPD	P	5	6	1	4	AO		SS		1		0	1

*PTFE (ST) gasket seals are available with Adapter Code B0 only For Adapters and Elastomers availability refer Page 91.

Chemical Compatibility

Table below shows the chemical compatibility of various process filtration products with some commonly used solvents. All products were exposed to specified chemicals for 72 hours at 25 °C. Chemical compatibility data with specific reagents is available on request.

Reagents		As Cartri	<i>eptiSu</i> idge Fi	re Iters		ClariSure 'O' Rings/Gaske Cartridge Filters					cet Seals					
	HS/KS	HSR	WS	NS	TH/TF	GK	GS	GP	PA	PP	PL	DP	Silicone	Viton	EP	FEP Encapsulated Viton
Solvents																
Acetone	N	Ν	G	G	G	N	G	G	G	G	G	G	N	Ν	G	G
Acetonitrile	G	G	G	G	G	G	G	G	G	G	G	G	G	Ν	G	G
Benzene	G	G	Ν	G	G	F	F	F	F	F	F	F	N	G	Ν	G
Benzyl Alcohol	Ν	Ν	Ν	G	G	N	G	G	G	G	G	G	G	G	G	G
Benzyl Alcohol 2%	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Diethyl Ether	G	G	G	G	G	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	G
Dimethylformamide	Ν	Ν	G	G	G	Ν	G	G	G	G	G	G	G	Ν	Ν	G
Ethanol	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Ethyl Acetate	G	G	G	G	G	G	G	G	G	G	G	G	N	Ν	G	G
Ethylene Glycol	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Hexane	F	F	Ν	F	F	F	F	F	F	F	F	F	Ν	G	Ν	G
Iso Propyl Alcohol	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Methanol	G	G	G	G	G	G	G	G	G	G	G	G	G	Ν	G	G
Methylene Chloride	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	G
n-Butanol	G	G	G	G	G	G	G	G	G	G	G	G	N	G	G	G
Peanut oil	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Tetrahydrafuran/Water (50:50)	Ν	Ν	Ν	Ν	G	Ν	Ν	Ν	Ν	Ν	Ν	Ν	N	Ν	Ν	G
Toluene	G	G	Ν	G	G	G	G	G	G	G	G	G	N	G	Ν	G
Trichloroethylene	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	G	Ν	G
Acids																
Hydrochloric Acid 37%	G	G	G	Ν	G	G	G	G	G	G	G	G	N	G	Ν	G
Hydrofluoric Acid 10%	G	G	NT	F	G	N	Ν	Ν	G	G	G	G	N	G	F	G
Nitric Acid 67%	N	Ν	Ν	Ν	G	N	G	G	G	G	G	G	N	G	Ν	G
Nitric Acid 7%	G	G	G	Ν	G	G	G	G	G	G	G	G	G	G	G	G
Sulphuric Acid 10%	G	G	G	F	G	G	G	G	G	G	G	G	G	G	G	G
Bases																
Ammonium Hydroxide 25%	N	G	Ν	Ν	G	N	Ν	G	G	G	G	G	G	G	G	G
Sodium Hydroxide 32%	N	G	Ν	Ν	G	N	Ν	G	G	G	G	G	G	G	G	G
Potassium Hydroxide 32%	Ν	G	Ν	Ν	G	Ν	Ν	G	G	G	G	G	G	G	G	G

G: Good F: Fair N: Not recommended NT : Not Tested

Chemical Compatibility

Table below shows the chemical compatibility of various process filtration products with some commonly used solvents. All products were exposed to specified chemicals for 72 hours at 25 °C. Chemical compatibility data with specific reagents is available on request.

Reagents		AseptiCap Capsule Filte		s	<i>AseptiVent</i> Capsule Filters	(Cap	<i>ClariCa</i> sule Fi	p Iters	Membrane Disc Filters	Microglassfiber Pre-filter Discs
	KL/ KS	KO/ KSO	NL/ NS	WS	TF	GK	GS	PP	NN	GF
Solvents										
Acetone	N	Ν	G	G	G	N	G	G	G	G
Acetonitrile	G	G	G	G	G	G	G	G	G	G
Benzene	G	G	G	Ν	G	F	F	F	G	G
Benzyl Alcohol	N	Ν	G	Ν	G	N	G	G	G	G
Benzyl Alcohol 2%	G	G	G	G	G	G	G	G	G	G
Diethyl Ether	G	G	G	G	G	N	Ν	Ν	G	G
Dimethylformamide	N	Ν	G	G	G	N	G	G	G	G
Ethanol	G	G	G	G	G	G	G	G	G	G
Ethyl Acetate	G	G	G	G	G	G	G	G	G	G
Ethylene Glycol	G	G	G	G	G	G	G	G	G	G
Hexane	N	Ν	Ν	Ν	N	N	Ν	Ν	G	G
Iso Propyl Alcohol	G	G	G	G	G	G	G	G	G	G
Methanol	G	G	G	G	G	G	G	G	G	G
Methylene Chloride	N	Ν	Ν	Ν	N	N	Ν	Ν	G	G
n-Butanol	G	G	G	G	G	G	G	G	G	G
Peanut oil	G	G	G	G	G	G	G	G	G	G
Tetrahydrafuran/Water (50:50)	N	Ν	Ν	Ν	G	Ν	Ν	Ν	G	G
Toluene	N	Ν	Ν	Ν	N	Ν	Ν	Ν	G	G
Trichloroethylene	N	Ν	Ν	Ν	N	N	Ν	Ν		G
Acids									N	
Hydrochloric Acid 37%	G	G	Ν	G	G	G	G	G	G	G
Hydrofluoric Acid 10%	G	G	G	NT	G	N	Ν	G	N	N
Nitric Acid 67%	N	Ν	Ν	Ν	G	N	G	G	G	G
Nitric Acid 7%	G	G	G	G	G	G	G	G	G	G
Sulphuric Acid 10%	G	G	G	G	G	G	G	G		G
Bases									G	
Ammonium Hydroxide 25%	Ν	G	Ν	Ν	G	N	G	G	G	G
Sodium Hydroxide 32%	N	G	Ν	Ν	G	N	G	G	N	F
Potassium Hydroxide 32%	Ν	G	Ν	Ν	G	N	G	G	Ν	G

G: Good F: Fair N: Not recommended NT : Not Tested

End Connection Availability Chart for Capsule Filters

Connectio	Connections Available										
Inlet/ Outlet	25mm	37mm	50mm								
1⁄4" SHB I/O	Х										
¾" Sanitary Flange I/O	Х	Х	Outlet Only								
Female Luer Lock	Inlet Only	Х	х								
Male Luer Slip	Outlet Only	Х	Х								
1/8" Hose Barb I/O	\checkmark	Х	Х								

	S	mall Ca	psule Filter	s
End Connections	1″	2″	5″	8″
½″ Hose Barb	\checkmark	\checkmark	V	V
Single Step ½" Hose Barb	х	V	V	V
¼" Stepped Hose Barb	\checkmark	V	V	V
1½" Sanitary Flange	\checkmark	\checkmark	V	\checkmark
³ ⁄ ₄ " Sanitary Flange	\checkmark	\checkmark	\checkmark	\checkmark
1⁄2″ MNPT	Х	\checkmark	V	\checkmark
¼″ MNPT	\checkmark	\checkmark	V	\checkmark
Quick Connector	\checkmark	\checkmark	\checkmark	\checkmark
Female Luer Lock	\checkmark	\checkmark	\checkmark	\checkmark
Male Luer Slip	Outlet Only	Х	х	Х
¾6″ Hose Barb	\checkmark	\checkmark	Outlet Only	Х
¾″ Hose Barb	Х	\checkmark	\checkmark	\checkmark

Bell is available with ¼" SHB outlet in 1" Capsule Filters only Bell is available with ½" Hose Barb outlet in 1", 2", 5" and 8" Capsule Filters

			Large	Capsu	le Filte	rs			
		Inline T-line							
End Connections	5″	10″	20″	30″	10″	20″	30″		
Single Step ½" Hose Barb	\checkmark	\checkmark	V	\checkmark	х	х	Х		
1½" Sanitary Flange	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		
¾" Sanitary Flange	\checkmark	\checkmark	х	х	х	х	Х		
³‰" Hose Barb	\checkmark	V	\checkmark	\checkmark	х	Х	Х		
1″ Hose Barb	х	\checkmark	\checkmark	\checkmark	х	х	х		

Dimensions: Capsule Filters

	Inlir	ne Capsule Fi	lters
Inlet/ Outlet	25mm	37mm	50mm
1⁄4" - ¾" Stepped Hose Barb I/O	-	64 mm	79 mm
¼″ Single Step Hose Barb I/O	38 mm	-	-
¾" Sanitary Flange I/O	-	-	51 mm
Female Luer Lock Inlet/ Male Luer Slip Outlet	23 mm	-	-
1/8" Hose Barb I/O	36 mm	-	-
Operational Radius	15 mm	23 mm	28 mm

		Small Caps	ule Filters	
End Connections	1″	2″	5″	8″
¼″ SHB I/O	94 mm	122 mm	172 mm	223 mm
³ 4" Sanitary Flange Inlet I/O	85 mm	104 mm	155 mm	206 mm
Quick Connector	100 mm	113 mm	164 mm	218 mm
1½" Sanitary Flange I/O	92 mm	112 mm	164 mm	216 mm
1⁄2" Hose Barb I/O	90 mm	112 mm	162 mm	214 mm
1/2" Single Step Hose Barb I/O	-	115 mm	165 mm	218 mm
1½" Sanitary Flange Inlet ½" Single Step Hose Barb Outlet	-	112 mm	165 mm	216 mm
¾″ Hose Barb I/O	-	115 mm	167 mm	217 mm
Operational Radius	40 mm	65 mm	65 mm	65 mm

	I	nline Cap	osule Filto	ers	T-line Capsule Filters					
End Connections	5″	10″	20″	30″	10″	20″	30″			
1½″ Sanitary Flange I/O	205 mm	330 mm	600 mm	855 mm	340 mm	580 mm	840 mm			
³ ⁄4" Sanitary Flange I/O	214 mm	335 mm	х	х	х	х	х			
1⁄2" Single Step Hose Barb I/O	218 mm	336 mm	630 mm	890 mm	х	х	х			
1½" Sanitary Flange Inlet ½" Hose Barb Outlet	212 mm	334 mm	620 mm	870 mm	x	х	x			
¾″ Hose Barb I/O	211 mm	332 mm	634 mm	885 mm	х	х	х			
1" Hose Barb I/O	x	405 mm	635 mm	895 mm	х	х	x			
Operational Radius	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm			

Adapter and Elastomers Availability Chart for Cartridge Filters

Mini Cartridge Filters					
Adapters	2.5″	5″			
4463	\checkmark	\checkmark			
4463B	\checkmark	\checkmark			
4440	\checkmark	\checkmark			
Seal-K	\checkmark	\checkmark			
Seal-O	Х	\checkmark			
Seal-M	\checkmark	\checkmark			

Mini Cartridge Filters				
Adapters	Elastomer			
	Silicone			
4463	\checkmark			
4463B	\checkmark			
4440	\checkmark			
Seal-K	Х			
Seal-O	\checkmark			
Seal-M	V			

Standard Cartridge Filters						
Adapters	5″	10″	20″	30″		
7P	\checkmark	\checkmark	\checkmark	\checkmark		
7P without Fin	\checkmark	\checkmark	\checkmark	\checkmark		
28 with Fin	Х	\checkmark	\checkmark	\checkmark		
'O'	Х	\checkmark	\checkmark	\checkmark		

Standard Cartridge Filters						
Adapters	Elastomers					
	Silicone	Viton	EPDM	FEP Encapsulated Viton		
7P	\checkmark	\checkmark	\checkmark	\checkmark		
7P without Fin	\checkmark	\checkmark	\checkmark	\checkmark		
28 with Fin	\checkmark	\checkmark	\checkmark	х		
'O'	\checkmark	\checkmark	\checkmark	Х		

Ordering Information

Shipment details for customers outside India

Through Federal Express, UPS, or DHL courier (specify complete street address).

By air freight for large quantities (specify airport of discharge).

Goods usually reach destination within 5-10 days from date of shipment.

Membrane products are light weight and air freight charges usually vary between 3% to 10% of the value. Any duties/taxes in the country of destination are the responsibility of the consignee.

Shipment details for customers in India

The consignments can be sent through courier. Courier charges will be borne by the customer. Please specify the preferred courier and provide any form and instructions for octroi etc. that may be required for shipment.

How to order

Orders may be placed by phone/fax/email/mail directly to Sales.

Advanced Microdevices Pvt. Ltd.

20-21, Industrial Area, Ambala Cantt - 133 006, INDIA **Tel:** +91-171-2699290, +91-9896394509 **Email:** info@mdimembrane.com

mdi Quality

Quality Policy

Quality is built into **mdi** products and services by not only adhering to well designed quality systems to consistently produce high quality, internationally acceptable products but also by striving to incorporate superior performance parameters into all our products and services and provide our customers with a unique performance advantage in their application. Our quality policy provides a glimpse of our commitment:

mdi strives to provide to its customers products and services of highest standards possible, consistently superior, and more satisfying than what is available anywhere else."



Stride Towards Excellence

At **mdi**, our mission is to constantly strive to achieve excellence in all our endeavors by establishing systems to create excellent products and services to fulfil the needs of our customers. To achieve this we

- Frequently compare our products with competing brands
- Simulate tests for functional use
- Develop easy-to-use innovative products

We are constantly working on improvements and welcome suggestions from our customers.

Guarantee

All **mdi** products are guaranteed and are backed by our

- Technical expertise and experience of over 45 years
- Validated mdi process' for consistency and repeatability
- Strict quality control and quality assurance regimen
- Certificate of Analysis accompanying all shipments







Worldwide Exports

Other Literature Available

mdi Laboratory Filtration Product Guidemdi Biotech Product Guidemdi Diagnostic Product Guide

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