



sartorius stedim  
biotech

# Sartopore<sup>®</sup>

A New Vision of Perfection.  
A New Class of Sterile Filtration.

platinum

**По вопросам продаж и поддержки обращайтесь:**

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# Features & Benefits – Designed to Create Values for You

▶ Large membrane area (1 m<sup>2</sup> per 10" cartridge) leads to **outstanding total throughput** and permeability

▶ Permanent hydrophilic PES membrane lead to **lowest flush volumes** for reliable wetting

▶ Exceptionally low protein binding for **highest product yields**

▶ Reliable integrity testing even after thermal stress **avoids cost-intensive re-testing**

▶ **High thermal resistance** allows wet & dry steaming in forward and reverse direction

▶ **Broad chemical compatibility** (pH 1-14) permits the use for most filtration applications in pharmaceutical and biotechnological processes

▶ Identical construction principle of small and large devices leads to **perfect scalability** from R&D to process scale

▶ Low extractables | leachables levels **ensures consistent product quality**



# Sterilizing-Grade Filtration

Sterilizing-grade filtration is a highly critical step within aseptic processing of biopharmaceutical products. The quality of the filters applied directly affects the safety of the final product. Furthermore, parameters like flow rate, total throughput, wettability and unspecific adsorption have a direct impact on the production costs. Therefore, care should be taken to choose the filter with highest quality and optimized performance.

Sartopore® Platinum defines the new benchmark for sterilizing-grade filtration. These filter elements contain a unique heterogeneous double layer of hydrophilized polyethersulfone membranes and are specially designed to meet the requirements for filtration of a broad range of biopharmaceutical products.

The highly uniform, porous structure of these sterilizing grade membrane filters provides superior filtration performance and assures reliable bacteria retention.

The completely new and innovative technologies which are incorporated in these filters lead to outstanding and unique performance data. Using Sartopore® Platinum, the critical step of sterilizing-grade filtration will reach a yet unmatched quality, performance and cost efficiency.



# Sartopore® Platinum

Use its unique performance for the improvement of your processes

## New Surface Modification

A new and patented membrane hydrophilization process is used to permanently modify the membrane surface. In this process, an exceptionally thermal stable and hydrophilic polymer is directly grafted to the inner and outer surface of the membrane.

This new technology provides membrane surface properties that are responsible for the outstanding wettability and low protein binding characteristics of the Sartopore® Platinum membrane.

## New Membrane Construction – TwinPleat

The new and innovative TwinPleat Technology (patent pending) is characterized by an alternating sequence of longer and shorter membrane pleatings, positioned in a specific angle. This special design maximizes the effective filtration area of cartridges (e.g. +66% compared to Sartopore® 2) without compromising the fluid dynamics during filtration. Thus, the cartridges are equipped with an outstanding total throughput creating the most cost effective sterile filtration alternative.

## Applications

Due to the broad chemical compatibility and excellent filtration performance Sartopore® Platinum cartridges are suitable for most filtration applications in pharmaceutical and biotechnological processes.

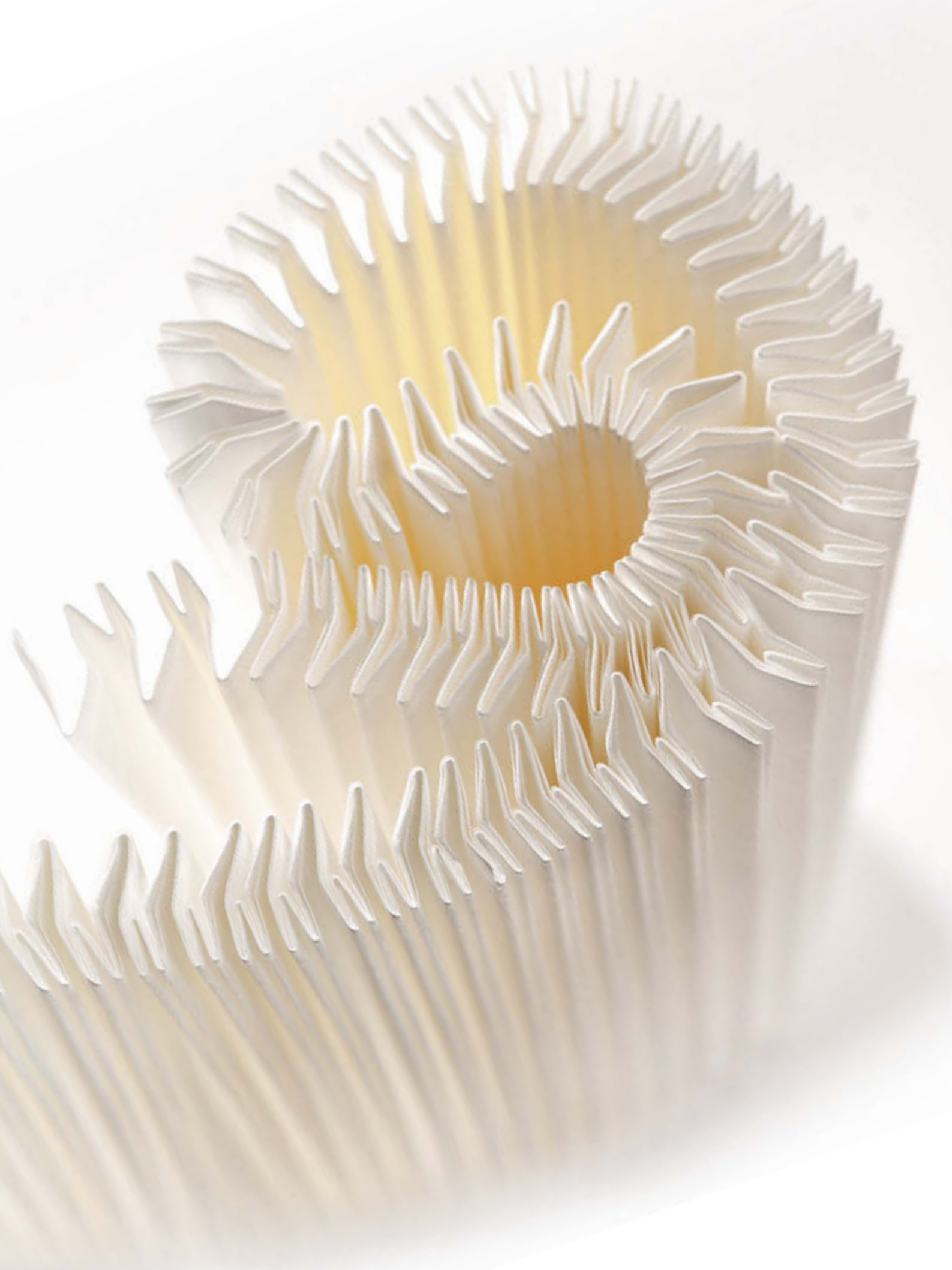


TwinPleat



Standard Pleating

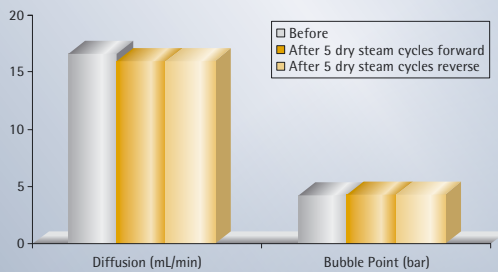




# Experience the Difference

# Sartop

## Reliable Integrity Testing



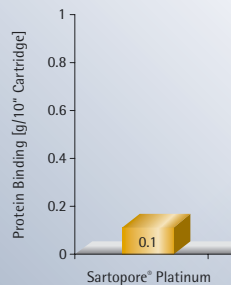
The excellent wetting behaviour of this unique PES membrane eliminates the most common reason for failed integrity tests even after extreme thermal stress (e.g. dry steaming). By using Sartopore® Platinum cost intensive re-testing will be eliminated and the risk to loose a product batch by sustained wetting issues and re-testing will be avoided.

## Less Water for Injection Consumption

Type	Filter area	Flush volume
Size 4	0.021 m <sup>2</sup>	0.1 L
Size 7	0.065 m <sup>2</sup>	0.4 L
Size 8	0.13 m <sup>2</sup>	0.5 L
Size 9	0.26 m <sup>2</sup>	1 L
Size 0	0.52 m <sup>2</sup>	3 L
10"	1.0 m <sup>2</sup>	5 L

The extremely low amount of water required to reliably wet the Sartopore® Platinum leads to drastically reduced WFI consumption. This great benefit leads to lowest running costs, especially during integrity testing. Not only flush volumes are reduced but also product dilution.

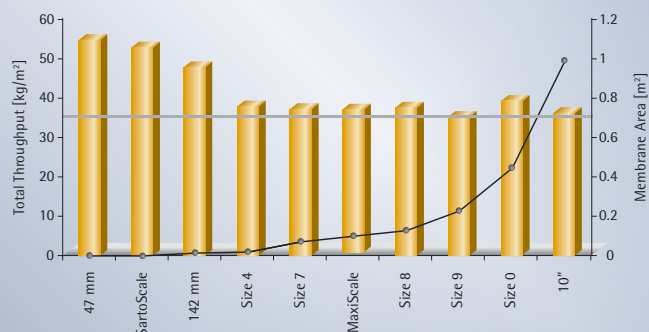
## Highest Product



Sartopore® Platinum ex binding for PES memb yields and improves pr each gram product yo

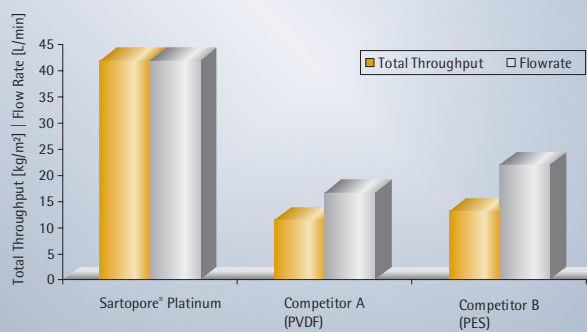


## Perfect Scalability



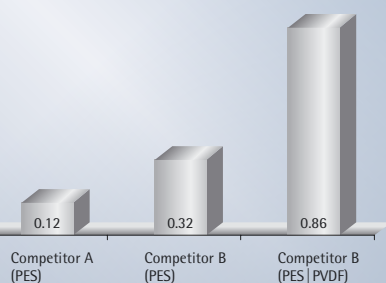
All pleated filter elements of Sartopore® Platinum show the same total throughput per square meter filtration area. This ensures perfect scalability from R&D to process scale meaning less validation efforts for you. In addition, optimized scaling will reduce costly hold-up volumes.

## Economic Filter Sizing



The large membrane area leads to unmet total throughputs. The exceptional performance data allows a very economic filter sizing, a fact which will positively affect your production costs. Sartopore® Platinum allows the most economic filter sizing for your process.

## Yield



\* Gamma Globuline in Acetate buffer @ pH 5, 3 g/l

hibits the lowest unspecific protein  
ranes. This guarantees highest product  
ocess efficacy. Just keep in mind that  
u loose will reduce your process efficacy.

# Family Overview

Sartopore® Platinum filters are available in all relevant formats. This enables its use for standard single-use applications with the necessity for gamma irradiation as well as conventional usage in stainless steel housings with the need of steam sterilization.

The identical principal design of the different formats allows the perfect scalability from R&D to process scale.

Use Sartopore® Platinum for the complete lifecycle of your product and profit from the extraordinary low cost-of ownership.

# Sartop

T-Style  
MaxiCaps®



Sterile ready-to-use large scale format suitable for sterilization by autoclaving or gamma irradiation. Filtration area of 1–3 m<sup>2</sup> per filter element.

Cartridges



Standard format for filtration applications using stainless steel filter housings. Large filtration area of 1–3 m<sup>2</sup> per cartridge.

Gamma MidiCaps®



Special MidiCaps® format for single-use applications for which sterilization by gamma irradiation is a requirement. Filtration area between 0.065 m<sup>2</sup> and 0.52 m<sup>2</sup>.



SartoScale



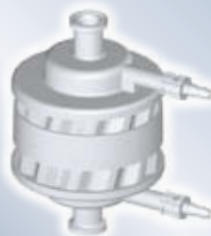
Filterability device with 17 cm<sup>2</sup> filtration area. This flat filter capsule is mainly used for filterability (indicator) trials.

Size 4 Capsules



Smallest capsule size with pleated membrane (210 cm<sup>2</sup>). Used for scale-up (verification) trials and small volume filtration applications.

MaxiScale



Smallest pleated element with TwinPleat technology. This new scale-up device is mainly used for more viscous liquids. Filtration area 0.1 m<sup>2</sup>.

MidiCaps<sup>®</sup>



Sterile ready-to-use format with polypropylene housing and cartridge incorporated. Different sizes available with filtration area between 0.065 and 0.52 m<sup>2</sup>.

# Filter Selection: Application Matrix

Process	Application	Prefilters					Bioburden Reduction		
		Sartoclean®		Sartopure®		Sartofine	Sartoguard		
		GF	CA	PP2	GF Plus	PP	PES	GF	NF
<b>Biotech</b>									
mAb, rec. Proteine Vaccines	Media Preparation				●		●	●	●
	Cell Culture   Fermentation pH adjustment			●					
	Cell Removal   Clarification	●	●		●	●		●	
	Buffer Preparation			●		●			
	Downstream Intermediates (Protection of Columns, Crossflow)	●	●		●		●	●	●
	Prefiltration prior to virus filtration						●	●	●
	Form & Fill			●					
Viral Vaccines Cell Culture	Media Preparation				●		●	●	●
	Cell Culture   Fermentation pH adjustment			●					
	Cell Removal   Clarification	●	●		●	●		●	
	Buffer Preparation			●		●			
	Downstream Intermediates (Protection of Columns, Crossflow)	●	●	●	●		●	●	●
	Form & Fill		●	●					
<b>Pharma</b>									
Ophthalmics	Form & Fill			●	●				
SVP   LVP	Form & Fill			●		●			
API	Form & Fill			●		●			
<b>Blood &amp; Plasma</b>									
Albumin Globulines	Intermediate Process Filtration (Protection of Columns, Crossflow)	●	●	●	●	●	●	●	●
	Prefiltration prior to virus filtration							●	●
	Form & Fill			●					
Clotting Factors	Intermediate Process Filtration (Protection of Columns, Crossflow)	●	●	●		●			
	Prefiltration prior to virus filtration								
	Form & Fill			●					
<b>Other</b>									
	Water			●					
	Oily formulations			●		●			
	Solvents			●		●			
	Venting   Gas Filtration			●					

● recommended | ● alternatively recommended



# Ordering Information

	Pore Size	Height	m <sup>2</sup>   ft <sup>2</sup>	Order Code
Cartridges	0.45 + 0.2	10"	1.0   10.8	5492507H1
		20"	2.0   21.5	5492507H2
		30"	3.0   32.3	5492507H3
T-Style MaxiCaps®	0.45 + 0.2	10"	1.0   10.8	5498307H1G-**-**
		20"	2.0   21.5	5498307H2G-**-**
		30"	3.0   32.3	5498307H3G-**-**
MidiCaps®	0.45 + 0.2	7	0.065   0.67	5495307H7---**-A
		8	0.13   1.4	5495307H8---**-A
		9	0.26   2.8	5495307H9---**-A
		0	0.52   5.6	5495307H0---**-V
Gamma MidiCaps®	0.45 + 0.2	7	0.065   0.67	5495307H7G-**-A
		8	0.13   1.4	5495307H8G-**-A
		9	0.26   2.8	5495307H9G-**-A
		0	0.52   5.6	5495307H0G-**-V
Capsule Size 4	0.45 + 0.2	4	0.021   0.226	5491307H4---**-B
SartoScale	0.45 + 0.2		0.0017 m <sup>2</sup>	5495307HS--FF--M
MaxiScale	0.45 + 0.2	1"	0.1   1.08	5491307HC---**-V

\*\* : Connector Type

## Cartridges

## T-Style MaxiCaps®



Adapter 25  
Bayonet adapter with  
226 double o-ring



Connector Type S  
TC Flange 50 mm (1 1/2")



Connector Type O  
1/2" single stepped hose barb



Connector Type Y  
1" single stepped hose barb

## MidiCaps®



Connector Type S  
TC Flange 50 mm (1 1/2")



Connector Type O  
1/2" single stepped hose barb



Connector Type F  
TC Flange 25 mm (3/4")



Connector Type H  
1/4" multiple stepped hose barb

## SartoScale

## MaxiScale

## Capsule Size 4



Connector Type F  
TC Flange 25 mm (1/2")



Connector Type O  
1/2" single stepped hose barb



Connector Type F  
TC Flange 25 mm (3/4")



Connector Type O  
multiple stepped hose barb



Connector Type S  
TC Flange 25 mm (3/4")



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