

## Flexsafe<sup>®</sup> 2D & 3D Pre-Designed Solutions for Storage and Shipping Take Your Facility Into The Future



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Flexsafe® 2D bags up to 50 L

Flexsafe® 2D bags in shell 5 L & 10 L

Flexsafe® 3D bags up to 500 L

Flexsafe® 3D bags up to 3,000 L

Go to Digital Selection Map Flexsafe® 2D

Go to Digital Selection Map Flexsafe® 3D

# Digital Selection Map Flexsafe® 2D

Please click on the box to select the right solution with the right connection for your process step

Flexsafe® 2D bags: 20 mL, 50 mL, 150 mL, 250 mL, 500 mL,  
1 L, 3 L, 5 L, 10 L, 20 L, 50 L

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<b>Media Preparation</b>	Sterile Weld to BIOSTAT STR® and RM Single-use Bioreactors	
	Sterile Connection to other Single-use Bioreactors	Sterile Connection Sterile Weld
	Steaming Connection to Stainless Steel Bioreactors	

<b>Buffer Preparation</b>	Sterile Connection to Downstream Systems	Sterile Connection Sterile Weld
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection Tri-Clamp Connection

<b>Cell Harvest &amp; Downstream Intermediates</b>	Sterile Connection to Downstream Systems	Sterile Connection Sterile Weld
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection Tri-Clamp Connection

<b>Drug Substance Purification</b>	Sterile Connection to Downstream Systems	Sterile Connection Sterile Weld
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection Tri-Clamp Connection

<b>Drug Product Formulation</b>	Sterile Connection to Final Filling	Sterile Connection Sterile Weld
---------------------------------	-------------------------------------	------------------------------------

Flexsafe® 2D bags from 20 mL to 3 L

Flexsafe® 2D bags in shell 5 L & 10 L



# Digital Selection Map Flexsafe® 3D

Please click on the box to select the right solution with the right connection for your process step

Flexsafe® 3D bags for Palletank 100 L, 200 L & 500 L  
 Flexsafe® 3D bags for drum: 50 L, 100 L, 200 L

Flexsafe® 3D bags for Palletank 1,000 L, 1,500 L,  
 2,000 L, 2,500 L & 3,000 L

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Flexsafe® 3D up to 500 L

<b>Media Preparation</b>	Sterile Weld to BIOSTAT STR® Single-use Bioreactors	Sterile Connection
	Sterile Connection to other Single-use Bioreactors	Sterile Weld
	Steaming Connection to Stainless Steel Bioreactors	
<b>Buffer Preparation</b>	Sterile Connection to Downstream Systems	Sterile Connection
		Sterile Weld
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection
		Tri-Clamp Connection
<b>Cell Harvest &amp; Downstream Intermediates</b>	Sterile Connection to Downstream Systems	Sterile Connection
		Sterile Weld
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection
		Tri-Clamp Connection
<b>Drug Substance Purification</b>	Sterile Connection to Downstream Systems	Sterile Connection
		Sterile Weld
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection
		Tri-Clamp Connection
<b>Drug Product Formulation</b>	Sterile Connection to Final Filling	Sterile Connection
		Sterile Weld
		Aseptic Transfer to an Isolator

Flexsafe® 3D up to 3,000 L (Large)

<b>Media Preparation</b>	Sterile Weld to BIOSTAT STR® Single-use Bioreactors	Sterile Connection
	Sterile Connection to other Single-use Bioreactors	Sterile Weld
	Steaming Connection to Stainless Steel Bioreactors	
<b>Buffer Preparation</b>	Sterile Connection to Downstream Systems	Sterile Connection 1/2" ID
		Sterile Weld 1/2" ID
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection 1/2" ID
		Tri-Clamp Connection 1/2" ID
<b>Buffer Preparation</b>	Sterile Connection to Downstream Systems	Sterile Connection 3/4" ID
		Sterile Weld 3/4" ID
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection 3/4" ID
		Tri-Clamp Connection 3/4" ID
<b>Cell Harvest &amp; Downstream Intermediates</b>	Sterile Connection to Downstream Systems	Sterile Connection 1/2" ID
		Sterile Weld 1/2" ID
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection 1/2" ID
		Tri-Clamp Connection 1/2" ID
<b>Cell Harvest &amp; Downstream Intermediates</b>	Sterile Connection to Downstream Systems	Sterile Connection 3/4" ID
		Sterile Weld 3/4" ID
	Sanitary or Aseptic Connection to Downstream Systems	Quick Coupler Connection 3/4" ID
		Tri-Clamp Connection 3/4" ID

# Unprecedented Performance and Assurance of Quality Supply

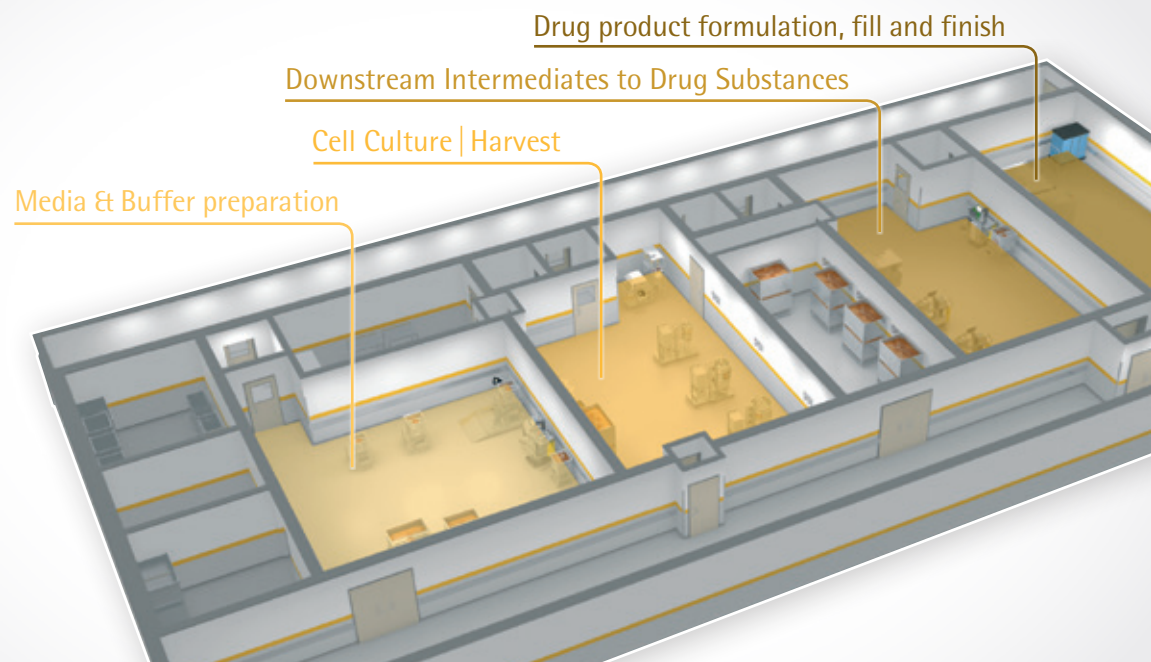
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## Flexsafe® 2D & 3D Storage & Shipping Solutions for All Process Steps

Building on more than 20 years of experience in designing Single-use Fluid Management Solutions, we have established proven Pre Designed Solutions (PDS) for every media, buffer, harvest, downstream intermediates, drug substance and drug product process steps.

The performance and assurance of supply of Flexsafe® PDS are based on the complete control of our manufacturing process for the resins, the film, the bags, the filters and the assemblies. Other fluid-contact components are secured by strategic partnerships, long term contracts and quality agreements and are available off-the-shelf to provide best delivery reliability.

When you select a Flexsafe® PDS, you get the assurance of consistent quality and robust change control for every process steps of your bioproduction. Business continuity is guaranteed at any time with at least 24 months of change notification in case of a change.



### Media

Pre-designed Solutions for media storage, shipping and feeding of bioreactors



### Cell Harvest & Downstream Intermediates

Pre-designed Solutions for harvesting cell cultures and for handling all the process intermediates before the last cross-flow step



### Sampling

Pre-designed Solutions for easy and safe sampling whatever the process step



### Buffer

Pre-designed Solutions for storage and shipping of buffers used for purification or final formulation



### Drug Substance

Pre-designed Solutions for storage and shipping of drug substance post virus filtration after the last cross-flow step



### Drug Product

Pre-designed Solutions for sterile filtration, hold and transfer of drug products

# Material Science and Film Extrusion Expertise

The S80 PE film of Flexsafe® 2D & 3D bags is the result of combining material science and film extrusion expertise in collaboration with our resin suppliers and film partner. Such partnerships ensure a full understanding of the resins formulation and the film manufacturing process.

Following the principles of QbD, we have selected the raw materials and defined the thickness of each layer of the film to achieve excellent cell growth and superior robustness.

We have established the resin specification, extrusion design space and process controls that provide consistent quality and reproducible performance of the S80 film.

The extrusion process is optimized to avoid addition of antioxidants and process aids and to limit the generation of antioxidant breakdown products such as **bis (2,4-di-tert-butylphenyl) phosphate (bDtBPP)** during extrusion and gamma irradiation.

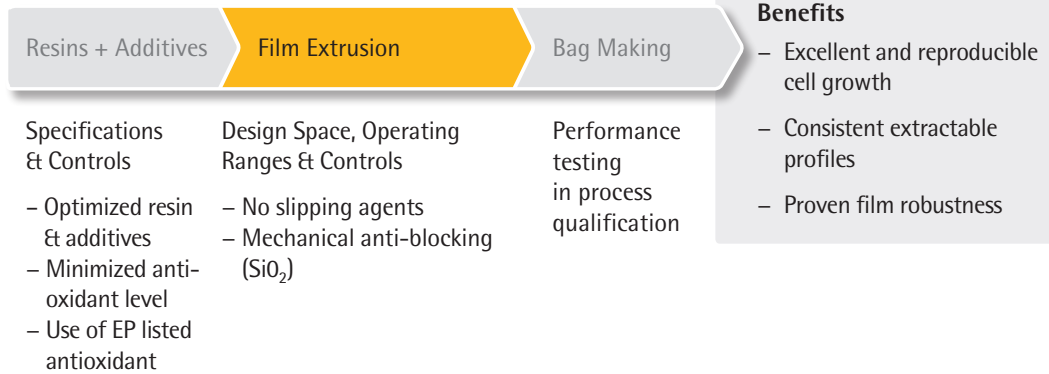
Welding and sealing parameters are optimized and are routinely controlled to ensure bag making process consistency.

## Co-extruded PE | EVOH | PE Structure

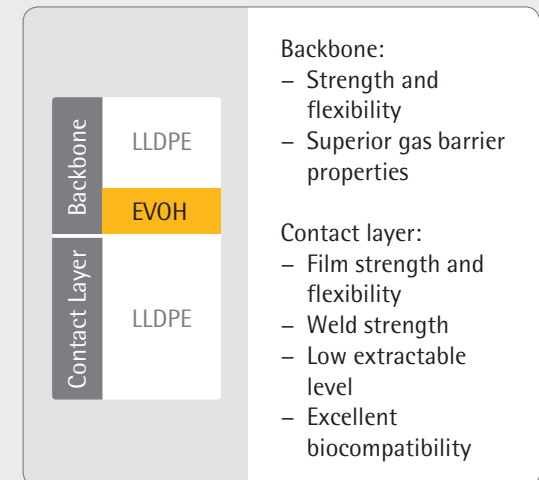
- 400 µm thickness
- Balance between strength, flexibility and gas barrier
- Large sealing window for bag robustness
- Best puncture resistance & elongation at break

## S80 Film Features & Benefits

- Superior thickness and strength: Ideal for large scale storage bags and stirred bioreactors
- Excellent biocompatibility: Ideal for media storage and cell culture
- Superior flexibility: Ideal for shipping bags and rocking motion bioreactors
- Inert PE contact layer: Suitable for non buffered solutions
- High gas and water barrier properties: Suitable for long term storage of media, buffers and drug substances
- Low extractable profile: Ideal for drug substance and drug product process steps



The lot to lot consistent performance of Flexsafe® bags is ensured by specification and controls of raw materials, the definition of the design space for the film extrusion and the control of the welding and overall bag making process.



Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Control of the Entire Manufacturing Process

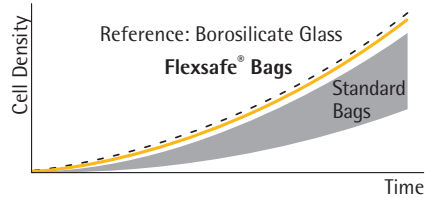
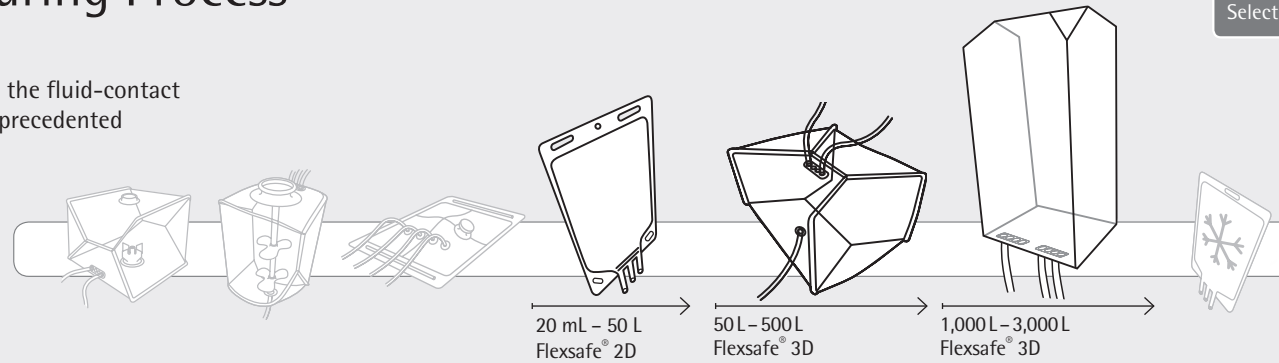
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The complete control of the process and our quality management for critical fluid-contact components ensure reliable and consistent performance of our Flexsafe® PDS.

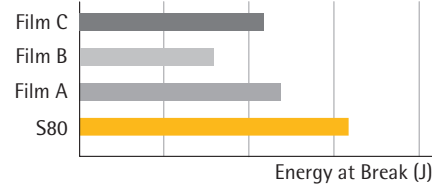
The establishment of long term supply contracts and quality agreements for

the resins, the film and the fluid-contact components ensure unprecedented assurance of supply.

One for All



Passed  
ASTM Shipping  
Test



## Resins for S80 Film

### Resin specification & process control

- Resin & additives traceability
- Lot-to-lot raw material consistency

### Long term contract

- 2 year last time buy option
- 2 year stock of resin & film

## Film - S80

### Extrusion design space & control

- Consistent cell growth & robustness
- Lot-to-lot consistent extractable

### 10 year supply & quality contract

- 2 year last time buy option
- 2 year stock of resin & film

- ▶ 4 year guarantee of unchanged film
- ▶ 2 year guarantee of unchanged components for our Pre-Designed-Solutions

## Components

### Long term supply contracts

- 2 year change notification

### Quality Agreements

- Bioburden, particle & endotoxin
- Extractable characterization

## Final PDS Assembly

### Business continuity plan

- Back up equipment & safety stocks
- Double clean room footprint by 2020

### Multiple manufacturing sites

- 7000 m<sup>2</sup> of ISO7 clean room WW
- Resin-to-bag process control



Watch Video:

▶ [www.sartorius-stedim.com/flexsafe](http://www.sartorius-stedim.com/flexsafe)

## Cell Growth

The resins and additives used for Flexsafe® bags are optimized to ensure excellent and reproducible growth. The control of our entire process guarantees consistent lot-to-lot cell growth after short and long term media storage.

## Robustness & Ease of Use

The thickness, strength and flexibility of Flexsafe® bags make them suitable for all process steps and reduce the risk of damage due to inappropriate handling. Flexsafe® 3D bags in Palletank are validated with the most stringent ASTM D4169 shipping test to offer safe transportation of critical drug substances.

The flexibility enables convenient installation and self-deployment of the bag in its container thus saving valuable operator time.

## Assurance of Quality Supply

Long-term supply contracts and quality agreements with suppliers and partners guarantee the traceability and control of the raw material and the film formulation. The control of the entire manufacturing process provides consistent quality, change control and business continuity.

## Consistent Extractable Profile

Specification and control of the resins and the film ensure well characterized and consistent extractables. Extractable data is readily available for risk assessment, thus saving end-users the time and money required for generating validation data. The validation studies and toxicological assessments remain valid and reproducible from lot-to-lot.

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Assurance of Quality Supply for Fluid-contact Components

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## Component Quality, Change Control and Business Continuity

All fluid-contact components of Flexsafe® PDS are secured by long term contracts and quality agreements and are available off-the-shelf to offer the best assurance of supply and the best delivery reliability.

Our supply contracts ensure at least a 2 year change notification thus providing robust change control and business continuity.

Components are selected to meet the most stringent quality requirements and all engagements with tubings are extensively qualified to ensure consistent robustness.

## Material Qualification

Flexsafe® PDS components are evaluated for conformity against the EP and USP standards after reviewing technical documentation and certificates of quality available from our suppliers.

Additional internal qualification tests are performed to establish extractable profiles, post gamma sterilization shelf life and consistent functional properties.

Criteria for Component Selection	Reference
Biological safety (USP Class VI)	USP<87> & USP<88>
TSE-BSE questionnaire	Compliance with EMA/410/01 and EP 5.2.8
Endotoxin	USP<85> or EP 2.6.14
Bioburden	ISO 11737
Sub visible particles	USP<788> or EP 2.9.19
Others	Bisphenol A free, REACH compliance

Our core expertise in plastics and polymers enables the selection of the cleanest and most inert materials to minimize chemical interactions with biopharmaceutical fluids, and leacheable substances and to provide consistent cell growth.

## Design Qualification

Component designs are selected to maximize tubing engagement tensile strength and tightness. All engagements with tubings are qualified for 3 year shelf life. Test samples are visually inspected for absence of defect and tested for leak, burst pressure, traction and compression.

## Flexsafe® PDS

Components	Biocompatibility USP <87> or USP<88> Class VI	Endotoxin Sub visible particles bioburden	TSE-BSE EMA/410/01 & REACH	Notification period time
Flexsafe® bags	Yes	Yes	Yes	48 months
Tuflux® tubes	Yes	Yes	Yes	24 months
Opta® sterile connectors	Yes	Yes	Yes	24 months
Sartopore® filters	Yes	Yes	Yes	24 months
Fittings	Yes	Yes	Yes	24 months
Connectors	Yes	Yes	Yes	24 months

Using a Flexsafe® Pre designed Solution in all your process steps provide you with best performance and assurance of quality supply.



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Validation and Quality Assurance

Flexsafe® PDS are qualified against extensive biological, chemical, physical, extractable and cell growth testing to provide reliable validation data applicable to a wide range of process conditions.

Sartorius Stedim Biotech Quality Systems for single-use products follow applicable ISO 9001 and FDA regulations and ISO 13485 for Medical Devices. Because single-use systems replace traditional stainless steel equipment, suppliers own a more important part of the drug manufacturing process. Design, manufacture, quality control and sterilization of Flexsafe® PDS are conducted under conditions that mirror biopharmaceutical operations and meet cGMP like requirements to ensure they are supplied clean, pure, non-pyrogenic fluid path and sterile.

Flexsafe® 2D & 3D PDS are validated and routinely controlled to provide consistent performance for:

#### Robustness

- ASTM D4169 and D7368: Standard Practice for Performance Testing of Shipping Containers and Systems for Flexsafe® bag packaging
- ASTM D882/ISO 527-3 for tensile properties
- ASTM F392 for flex durability
- ASTM D3787 for puncture resistance

#### For Flexsafe® 2D bags:

- 100% bag chamber leak test by pressure decay (ASTM F2095-07)
- 100% finished product Helium integrity test for critical process steps

#### Gas transmission

- ASTM D3985 for oxygen transmission rate
- ISO 15106-3 for water vapor transmission rate

#### Biocompatibility & chemical compatibility

- USP<87> and ISO 10993: Biological reactivity tests, in Vitro
- USP<88> and ISO 10993: Biological reactivity tests, in Vivo
- Internal standardized methods for cell growth compatibility evaluation
- USP<661> and EP 3.1.5: Containers, physico-chemical tests – Plastics
- ASTM D543-06: resistance of plastic to chemical reagents

#### Purity, extractable & leachable

- Extractable data based on knowledge and control of resins and film manufacturing process
- TSE/BSE: EP 5.2.8

#### Cleanliness, particles

- USP<788> and EP 2.9.19: Particulate Matter in Injections Endotoxin
- USP<85> and EP 2.6.14: Bacterial endotoxins Sterility
- ISO 11737 Sterilization of medical devices – Microbiological methods: Bioburden
- ISO 11137 Sterilization by irradiation of Medical Devices: Sterilization of Medical Devices
- ISO 14644: Cleanroom environmental controls
- Gamma irradiation dose mapping

Flexsafe® 2D & 3D PDS for media, buffer, harvest & downstream intermediates and drug substance process steps are released on the base of a weekly quality control for bioburden, sub-visible particulates and endotoxin performed on representative samples.

**For the most critical drug product process step bioburden, sub-visible particulates and endotoxin testing is performed on representative finished products for every production batch.**

Media, Buffer, Harvest & Downstream Intermediates	Drug Substance	Drug Product
Weekly testing of bioburden, particles and endotoxin on representative finished products		Lot release testing of bioburden, particles and endotoxin on representative finished product

## Certificate of Release

Statement	Monitoring*	100% Batch testing
<b>USP Class VI</b> USP<87> and ISO 10993: Biological reactivity tests, in Vitro	<b>Bioburden</b> ISO 11737	<b>Gamma irradiation</b> Dose mapping
USP<88> and ISO 10993: Biological reactivity tests, in Vivo	<b>Endotoxin:</b> USP<85> and E.P. 2.6.14	<b>Visual inspection</b> Film, bag, seal and packaging
<b>Physico-chemical testing</b> USP<661> and EP 3.1.5	<b>Sub-visible Particulates</b> USP<788> and EP 2.9.19	<b>Technical Drawing conformity</b> Batch record review
<b>TSE-BSE status</b> EMA/410/01 and EP 5.2.8		<b>100% Leak Testing for 2D bags:</b> Bag chamber and PE port

\* performed weekly on representative finished products for buffer, media, harvest and drug substance process step and on each batch on representative finished product for drug product process step

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

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# Assurance of Container Closure Integrity

The assurance of container closure integrity of Flexsafe® 2D and 3D bags is proven along the entire product life cycle. Quality by design principles, process qualification, process control and quality control first ensure integrity of the film, the welds and the bag chamber.

A 100% bag chamber leak test is then performed in-process before line assembly for all Flexsafe® 2D bags. In addition, we are currently developing a Supplier Integrity Test (SIT) for the complete bag and line assemblies used in critical drug substance and drug product process steps.

For those critical process steps, a 100% point-of-use leak test avoids the risk of losing high value product and enhances patient and operator safety by ensuring that no damage occurred during shipping, storage and handling of single-use single-use 2D and 3D bags at the user site.



## Process qualification at supplier

- Robustness validated in the extrusion design space
- Mechanical tests on film and weld
- Microbial immersion test
- Packaging validation
- Shipping validation

## Process control & quality control at supplier

- Control of resin, extrusion and welding process parameters
- Seal quality tests
- Visual inspections
- Microbial immersion test
- 100% bag chamber leak test for 2D bags
- Supplier integrity testing for 2D bags

## Process validation & process controls at end user

- Package integrity
- Visual inspection
- Media hold, media fill and stability test
- Microbial immersion test
- Operator training
- Point-of-use leak testing

## Flexsafe® PDS Benefits

- Full control of manufacturing processes ensure best assurance of supply
- Best assurance of integrity of high value drug substances and drug products according to ASTM F2095-07

## Sensitive Container Closure Integrity (CCI) for both process controls and at point of use

- Our BC-LT with detection limit of 20 – 90 µm for Flexsafe® 2D guarantees that no leaking bags are used to manufacture final products
- Our finished product SIT will guarantee that no defect > 2 µm occur in production of our 2D PDS
- Our PoULT with detection limit of 30 µm for Flexsafe® 2D allows end user to ensure safe use of the bags for critical process steps.

These tests in conjunction with the control of our process ensure the strongest level of CCI and safety for patients and operators.

For scale up processes, our PoU-LT of Flexsafe® 3D bags allows gross leak detection (from 100 µm to 200 µm) after installation in the appropriate container at end user site.



# Safe & Reliable Handling & Shipping Solutions from 5 L to 500 L

The superior strength and flexibility of Flexsafe® bags make them safe for critical liquid shipping applications. The robustness of Flexsafe® bags is proven by applying extensive qualification regimes that combine the most stringent standard ASTM D4169 testing and real shipping conditions. Standard shipping test data can be leveraged by end-users to support their own qualification for liquid handling & shipping in single-use systems.

## Flexsafe® 2D Bags in Shell for Liquid Handling & Shipping for 5 L & 10 L

### Complete Logistic Solution

Robust and qualified solutions for liquid shipping qualified under the most stringent international norms ASTM D4169.

In addition, our experts have established a new protocol for qualifying handling steps, covering normal, worse case and accidental handling conditions based on a mix of ASTM, ISO and EN norms.

## Flexsafe® 3D for Shipping from 100 L to 500 L Safe and Robust Solution

The Flexsafe® 3D bags in their shipping Palletank offer the most robust solution for large volume liquid transportation. The solutions have been qualified under the most stringent international norms ASTM D4169 within a range of temperature of 4°C to 40°C.



Watch Videos "Safe and Reliable Handling & Shipping Solutions" and "Robust and Safe Shipping of Your Fluids"



◀ [www.sartorius.com/en/products/fluid-management/liquid-storage-shipping#id-36296](http://www.sartorius.com/en/products/fluid-management/liquid-storage-shipping#id-36296)

# Safe, Self Deploying and Robust Solutions

## Flexsafe® 3D for Storage from 100 L to 3,000 L Self Deploying Solution

The high flexibility of Flexsafe® bags allows self-deployment of the bags during filling thus providing ease of use, saving operator time and eliminating risky bag manipulations. Thanks to the self-deploying accessory\*, the Flexsafe® 3D bags from 100 L to 500 L can be filled without further handling for Palletank for Storage and In-Process fluid handling. The new lifting system system combined with a pre-deployed bag at the manufacturing step, allows self-deploying and filling of Flexsafe® bags from 1,000 L to 3,000 L.

## Flexsafe® PDS Features & Benefits

- Full control of manufacturing processes ensure best quality and change control
- Long term contract and stocks of raw materials, films and components ensure best business continuity and delivery reliability
- Resin formulation optimized for consistent cell growth after short term and long term media storage
- Process controls provide well characterized and consistent extractable profile
- Ready to use extractable data save time and money by avoiding specific leachable studies for drug substance
- Safe storage and shipping of high value drug substances and drug products validated according to ASTM D4169
- Best assurance of integrity of high value drug substances and drug products according to ASTM F2095-01
- Film flexibility and self-deploying ability whatever the bag size provide safety, ease of use and save operator time



Self-deployment for Flexsafe® bags from 100 L to 1,000 L



Self-deployment for Flexsafe® bags from 1,000 L to 3,000 L



Watch Self Deploying Video:



▶ [www.sartorius.com/en/products/fluid-management/liquid-storage-shipping/flexsafe-liquid-storage-shipping#id-39096](http://www.sartorius.com/en/products/fluid-management/liquid-storage-shipping/flexsafe-liquid-storage-shipping#id-39096)

Watch Flexsafe® 3D Large Volume Storage Video:



▶ <https://sartorius.wistia.com/medias/ysr7cw3nxd>

\* Patents N° FR3017122B1, EP3074310B1

# Filtration & Storage for All Process Steps

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

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## Outlet Sterile Connections

- Opta® SFT male
- C-Flex® tube for sterile weld with Biowelder® TC
- Silicone TuFlux® tube or C-Flex® for sterile disconnection with Clipster®
- STC II Steamthru™ valve

## Outlet Sanitary or Aseptic Connections

- CPC Quick coupler male
- Tri-Clamp

## Filling and Draining Lines

- Clear C-Flex® tube
- Silicone TuFlux® tube



## Sampling

- Clave needleless sampling port

## Inlet Filters

- Sartopore® 2 0.45 | 0.2 µm
- Sartopore® 2 XLG 0.8 | 0.2 µm
- Sartopore® 2 XLM 0.2 | 0.1 µm
- Sartopore® Platinum 0.45 | 0.2 µm

## Inlet Sanitary or Aseptic Connection

- MPC quick coupler female

## Inlet Sterile Connections and Disconnections

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- Silicone TuFlux® tube or C-Flex® for sterile disconnection with Clipster®



The versatile range of Flexsafe® 2D PDS allows for sterile filtration, storage, shipping and transfer of all biopharmaceutical fluids in all process steps.

## Inlet Filters and Connectors

Flexsafe® 2D PDS are available with four sterilizing filtration options.

- Sartopore® 2 sterilizing-grade filter with 0.45 | 0.2 µm membranes optimized for buffer filtration
- Sartopore® 2 XLG sterilizing-grade filter with 0.8 | 0.2 µm membranes optimized for media filtration, cell harvest & downstream intermediates
- Sartopore® 2 XLM filter with advanced 0.2 | 0.1 µm pore size distribution and asymmetric prefilter membrane optimized for mycoplasma retention in media
- Sartopore® Platinum sterilizing-grade filter with 0.45 | 0.2 µm membranes optimized for drug substance and drug product filtration. The outstanding wetting properties reduce by ten times the flushing volumes required for integrity testing.

Silicone TuFlux® tube & C-Flex® enable filter sterile disconnection with Clipster® for post-use integrity testing and sterile seal of the bag. Alternatively, PDS are available with a sterile connection to another filter line to provide more flexibility. The filter line is either connected with Opta® 3/8" or welded with BioWelder® TC and subsequently disconnected for integrity using BioSealer®.

Another option is to perform an aseptic connection under Laminar Air Flow (LAF) using a CPC quick couplers.

## Outlet Connectors

- Opta® SFT Male enables sterile connections to other single-use systems
- STCII Steamthru™ valve allows for steaming and sterile transfer to stainless steel systems
- CPC quick couplers are used for either sanitary connection or aseptic connection under ISO5 laminar air flow to single-use systems
- Tri-Clamp 3/4" sanitary flange are used for either sanitary connection or aseptic connection under ISO5 laminar air flow to stainless steel systems
- Clave needleless sampling port enables for sterile sampling

## Tubes

- TuFlux® silicone or C-Flex tubing enable sterile disconnection with Clipster®
- Clear C-Flex® tubing allows for sterile weld connection with BioWelder® TC and sterile seal disconnection with BioSealer®

All fluid-contact components of Flexsafe® PDS are secured by supply contracts and quality agreements to provide:

- Best quality, change control and business continuity with at least 24 months change notification
- Best delivery reliability with available stocks
- Compliance to quality standards: USP<87> & USP<88>, TSE/BSE, REACH

# Filtration, Storage & Shipping in All Process Steps

Media	Buffer	Cell Harvest & DSP	Drug Substance	Drug Product
Flexsafe® 2D   Flexsafe® 3D	Flexsafe® 2D   Flexsafe® 3D	Flexsafe® 2D   Flexsafe® 3D	Flexsafe® 2D   Flexsafe® 3D	Flexsafe® 2D   Flexsafe® 3D
Flexsafe® ≥ 1,000 L	Flexsafe® ≥ 1,000 L	Flexsafe® ≥ 1,000 L		

[Back to Digital Selection Map](#)

## Inlet Filters

- Sartopore® 2 0.45 | 0.2 µm
- Sartopore® 2 XLG 0.8 | 0.2 µm
- Sartopore® 2 XLM 0.2 | 0.1 µm
- Sartopore® Platinum 0.45 | 0.2 µm

## Inlet Sterile Connections

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC

## Inlet Sanitary or Aseptic Connection

- MPX quick coupler female

The versatile range of Flexsafe® PDS allows for sterile filtration, storage, shipping and transfer of all biopharmaceutical fluids in all process steps.

## Inlet Filters and Connectors

Flexsafe® 3D PDS are available with four sterilizing filtration options.

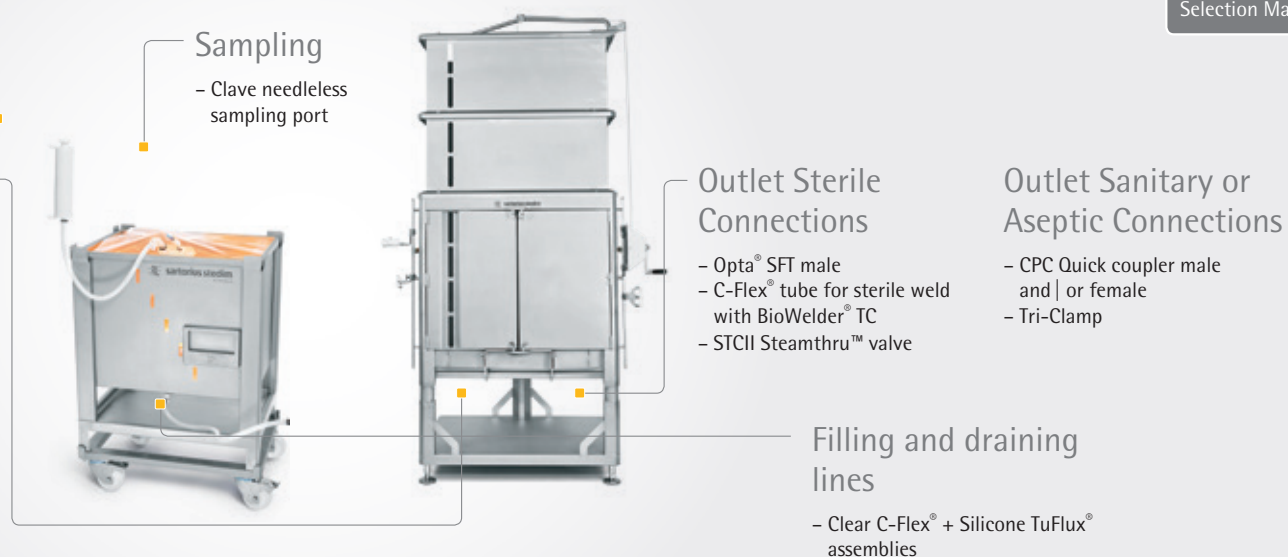
- Sartopore® 2 sterilizing-grade filter with 0.45 | 0.2 µm membranes optimized for buffer filtration
- Sartopore® 2 XLG sterilizing-grade filter with 0.8 | 0.2 µm membranes optimized for media filtration, cell harvest & downstream intermediates
- Sartopore® 2 XLM filter with advanced 0.2 | 0.1 µm pore size distribution and asymmetric prefilter membrane optimized for mycoplasma retention in media
- Sartopore® Platinum sterilizing-grade filter with 0.45 | 0.2 µm membranes optimized for drug substance and drug product filtration. The outstanding

wetting properties of the modified membrane reduce by ten times the flushing volumes required prior to integrity testing.

Clear C-Flex® tubing enable filter disconnection with BioSealer® for post-use integrity testing and sterile seal of the bag.

Alternatively, PDS are available with a sterile connection to another filter line to provide more flexibility. The filter line is either connected with Opta® 1/2" or welded with BioWelder® TC and subsequently disconnected for integrity using BioSealer®.

Another option is to perform an aseptic connection under Laminar Air Flow (LAF) using a CPC quick couplers.



## Outlet Connectors

- Opta® SFT Male enables sterile connections to other single-use systems
- STCII Steamthru™ valve allows for steaming and sterile transfer to stainless steel systems
- CPC quick couplers are used for either sanitary connection or aseptic connection under ISO5 laminar air flow to single-use systems
- Tri-Clamp 1 1/2" sanitary flange are used for either sanitary connection or aseptic connection under ISO5 laminar air flow to stainless steel systems
- Clave needleless sampling port enables for sterile sampling

## Tubes

- TuFlux® silicone tubing enables long term pumping
- Clear C-Flex® tubing allows for sterile weld connection with BioWelder® TC and sterile seal disconnection with BioSealer®

**All fluid-contact components of Flexsafe® PDS are secured by supply contracts and quality agreements to provide:**

- Best quality, change control and business continuity with at least 24 months change notification
- Best delivery reliability with available stocks
- Compliance to quality standards: USP<87> & USP<88>, TSE/BSE, REACH

# Flexsafe® 2D Pre-designed Solutions for Media Preparation

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

## Media Preparation

Sterilizing Filtration

Media Storage

Media Transfer

Sterile Weld to BIOSTAT STR® and RM Single-use Bioreactors

Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

Flexsafe® 2D solutions for media are available with two Sartopore® filter options, Sartopore® 2 XLG for sterilizing filtration or Sartopore® 2 XLM for mycoplasma retention.

Flexsafe® 2D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter line using Opta® 3/8" or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter line with MPC quick coupler

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®.

Inlet and outlet lines are made of C-Flex® or Silicone TuFlux® tubing for welding, sealing and pumping.

Flexsafe® 2D bags allow for sterile media transfer to most common single-use and stainless steel bioreactors with a variety of sterile connections.

### Outlet Line

- Sterile connection and transfer by pumping or gravity
- C-Flex® with CPC quick coupler and plug for sterile weld with BioWelder® TC to BIOSTAT® RM and BIOSTAT STR® bioreactors

- Opta® SFT male for sterile connection to other single-use bioreactors
- STCII Steamthru™ valve for steaming connection to stainless steel bioreactors



### Sampling

- Clave needleless sampling port

### Inlet Line

- Sterilizing Filtration
- Sartopore® 2 XLG 0.8 | 0.2 µm
  - Sartopore® 2 XLM 0.2 | 0.1 µm

### Connections for Alternative Filter Line

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- MPC quick coupler female

# Media Preparation

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

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Media Preparation

Sterile Weld to BIOSTAT STR® and RM Single-use Bioreactors

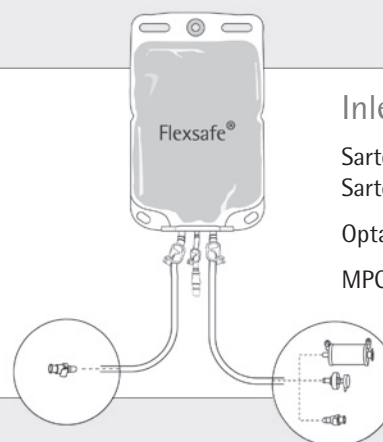
Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

**Outlet Line**  
C-Flex® tube with MPC sealing cap for sterile weld with BioWelder® TC



## Inlet Line

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPC quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC

## Sterile Weld to BIOSTAT STR® and BIOSTAT® RM Single-use Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130131	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130133	16	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130147	16	3/8" Opta® SFT female	NA		
	FLS130145	16	3/8" MPC female + sealing cap			
5 L	FLS130018	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130020	16	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130042	16	3/8" Opta® SFT female	NA		
	FLS130039	16	3/8" MPC female + sealing cap			
10 L	FLS130025	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130029	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130043	8	3/8" Opta® SFT female	NA		
	FLS130040	8	3/8" MPC female + sealing cap			
20 L	FLS130026	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130030	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130044	8	3/8" Opta® SFT female	NA		
	FLS130041	8	3/8" MPC female + sealing cap			
50 L	FLS130138	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130140	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130148	8	3/8" Opta® SFT female	NA		
	FLS130146	8	3/8" MPC female + sealing cap			

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")



# Media Preparation

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

Media Preparation

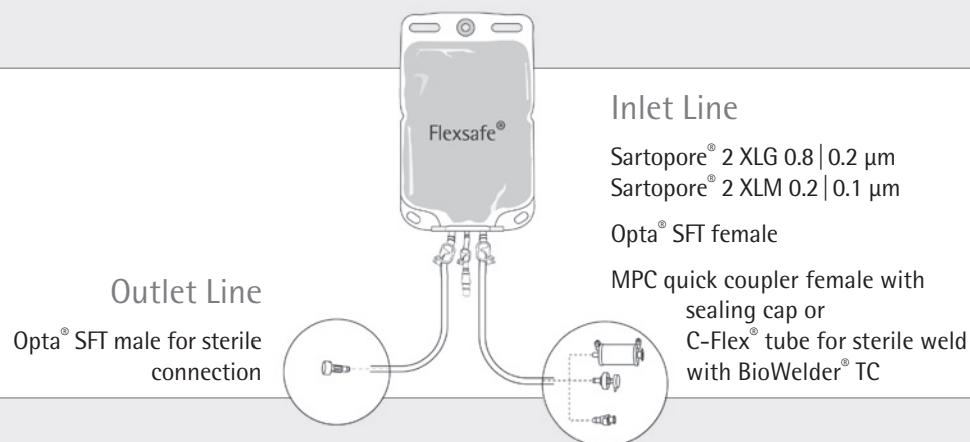
Sterile Weld to BIOSTAT STR® and RM Single-use Bioreactors

Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld



## Sterile Connection to other Single-use Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup> Distal connector on draining line	Sampling Sampling line
			Filter or distal connector on filling line	Filter type and size		
3 L	FLS130136	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" Opta® SFT male	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130137	16	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130155	16	3/8" Opta® SFT female	NA		
	FLS130153	16	3/8" MPC female + sealing cap			
5 L	FLS130023	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130024	16	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130054	16	3/8" Opta® SFT female	NA		
	FLS130051	16	3/8" MPC female + sealing cap			
10 L	FLS130035	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130037	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130055	8	3/8" Opta® SFT female	NA		
	FLS130052	8	3/8" MPC female + sealing cap			
20 L	FLS130036	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130038	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130056	8	3/8" Opta® SFT female	NA		
	FLS130053	8	3/8" MPC female + sealing cap			
50 L	FLS130143	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130144	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130156	8	3/8" Opta® SFT female	NA		
	FLS130154	8	3/8" MPC female + sealing cap			

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

# Media Preparation

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

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Media Preparation

Sterile Weld to BIOSTAT STR® and RM Single-use Bioreactors

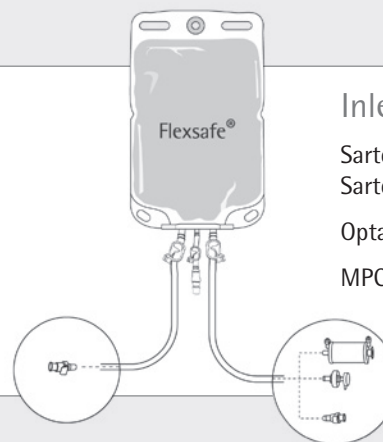
Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

**Outlet Line**  
C-Flex® tube with MPC sealing cap for sterile weld with BioWelder® TC



**Inlet Line**

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPC quick coupler female with sealing cap or  
C-Flex® tube for sterile weld with BioWelder® TC

## Sterile Weld to other Single-use Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling				
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line				
3 L	FLS130131	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector				
	FLS130133	16	Sartopore® 2 XLM 0.2   0.1 µm							
	FLS130147	16	3/8" Opta® SFT female	NA						
	FLS130145	16	3/8" MPC female + sealing cap	NA						
5 L	FLS130018	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4			3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector		
	FLS130020	16	Sartopore® 2 XLM 0.2   0.1 µm							
	FLS130042	16	3/8" Opta® SFT female	NA						
	FLS130039	16	3/8" MPC female + sealing cap	NA						
10 L	FLS130025	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7					3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130029	8	Sartopore® 2 XLM 0.2   0.1 µm							
	FLS130043	8	3/8" Opta® SFT female	NA						
	FLS130040	8	3/8" MPC female + sealing cap	NA						
20 L	FLS130026	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7	3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector				
	FLS130030	8	Sartopore® 2 XLM 0.2   0.1 µm							
	FLS130044	8	3/8" Opta® SFT female	NA						
	FLS130041	8	3/8" MPC female + sealing cap	NA						
50 L	FLS130138	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7			3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector		
	FLS130140	8	Sartopore® 2 XLM 0.2   0.1 µm							
	FLS130148	8	3/8" Opta® SFT female	NA						
	FLS130146	8	3/8" MPC female + sealing cap	NA						

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

# Media Preparation

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

Media Preparation

Sterile Weld to BIOSTAT STR® and RM Single-use Bioreactors

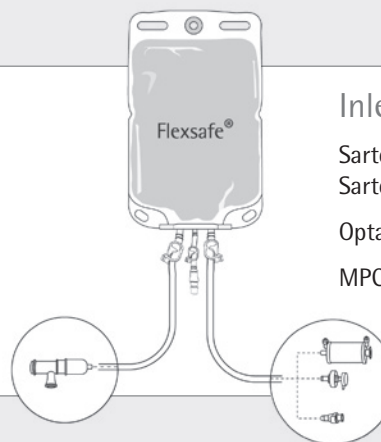
Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

**Outlet Line**  
STCII Steamthru™ valve for steaming connection



**Inlet Line**

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPC quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC

## Steaming Connection to Stainless Steel Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup> Distal connector on draining line	Sampling Sampling line
			Filter or distal connector on filling line	Filter type and size		
3 L	FLS130134	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" STCII 3/4" sanitary flange	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130135	16	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130151	16	3/8" Opta® SFT female	NA		
	FLS130149	16	3/8" MPC female + sealing cap			
5 L	FLS130021	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130022	16	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130048	16	3/8" Opta® SFT female	NA		
	FLS130045	16	3/8" MPC female + sealing cap			
10 L	FLS130031	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130033	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130049	8	3/8" Opta® SFT female	NA		
	FLS130046	8	3/8" MPC female + sealing cap			
20 L	FLS130032	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130034	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130050	8	3/8" Opta® SFT female	NA		
	FLS130047	8	3/8" MPC female + sealing cap			
50 L	FLS130141	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130142	8	Sartopore® 2 XLM 0.2   0.1 µm			
	FLS130152	8	3/8" Opta® SFT female	NA		
	FLS130150	8	3/8" MPC female + sealing cap			

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

# Media Filtration, Storage and Shipping

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Media Preparation

Sterilizing Filtration  
from Mixer

Media Storage  
and Shipping

Media Transfer

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

Flexsafe® 3D solutions for media are available with Sartopore® 2 XLG for sterilizing filtration or Sartopore® 2 XLM for mycoplasma retention

Flexsafe® 3D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter transfer set using Opta® ½" or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter transfer set with MPX quick coupler

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®.

Inlet and outlet lines are made of C-Flex® + Silicone TuFlux® tubings for welding, sealing and pumping.

Flexsafe® 3D bags allow for sterile media transfer to most common single-use and stainless steel bioreactors with a variety of sterile connections.

### Inlet line

Sterilizing filtration from mixer

- Sartopore® 2 XLG 0.8 | 0.2 µm
- Sartopore® 2 XLM 0.2 | 0.1 µm

Connection for alternative filter transfer set

- Opta® SFT female
- C-Flex® tube weld with BioWelder® TC
- MPX quick coupler female

### Sampling

– Clave needleless sampling port

### Outlet line

Sterile connection and transfer by pumping or gravity

- C-Flex® with CPC quick coupler and plug for sterile weld with BioWelder® TC to BIOSTAT® RM and BIOSTAT STR® bioreactors
- Opta® SFT male for sterile connection to other single-use bioreactors
- STCII Steamthru™ valve for steaming connection to stainless steel bioreactors



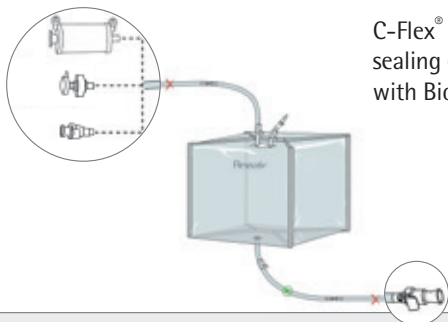
# Media Filtration, Storage and Shipping in Palletank

**Media Preparation**

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



C-Flex® tube with CPC sealing cap for sterile weld with BioWelder® TC

Sterile Weld to BIOSTAT STR® Single-use Bioreactors

Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Sterile Weld to BIOSTAT STR® and BIOSTAT® RM Single-use Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126678	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 9	3/8" x 5/8" Clear C-Flex® + 3/8" MPC male + sealing cap
	FIS126682	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126706	3	1/2" Opta® SFT female	NA	
	FIS126243	3	MPX female + sealing cap		
200 L	FIS126679	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126683	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126707	3	1/2" Opta® SFT female	NA	
	FIS126244	3	MPX female + sealing cap		
500 L	FIS126680	2	Sartopore® 2 XLG 0.8   0.2 µm	MaxiCaps® size 1 T-style	1/2" x 3/4" C-Flex® + 1/2" MPX male + sealing cap
	FIS126684	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126708	3	1/2" Opta® SFT female	NA	
	FIS126245	3	MPX female + sealing cap		

<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Outlet tubing line from bag to end line: For 100 L & 200 L 1/2" ID Silicone TuFlux® 1 m (40") + 3/8" x 5/8" Clear C-Flex® 0.5 m (20")  
For 500 L & 1,000 L: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

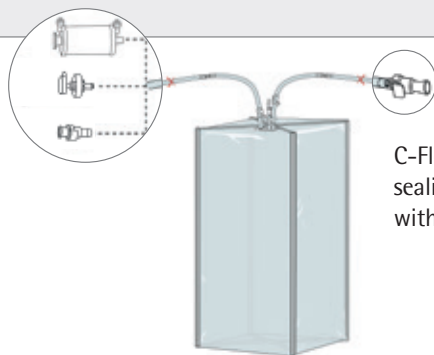
**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

## Media Filtration and Storage in Drum

Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 0.45 | 0.2 µm  
Opta SFT female  
MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with CPC  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

### Sterile Weld to BIOSTAT STR® and BIOSTAT® RM Single-use Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127861	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	3/8" × 5/8" Clear C-Flex® + 3/8" MPC male + sealing cap
	FIS127871	4	1/2" Opta® SFT female	NA	
	FIS127875	4	MPX female + sealing cap	NA	
100 L	FIS127862	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127872	4	1/2" Opta® SFT female	NA	
	FIS127876	4	MPX female + sealing cap	NA	
200 L	FIS127863	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 0	
	FIS127873	4	1/2" Opta® SFT female	NA	
	FIS127877	4	MPX female + sealing cap	NA	

<sup>1</sup>Inlet tubing line from end line to bag: 1/2" × 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 3/8" × 5/8" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Media Filtration, Storage and Shipping in Pallettank

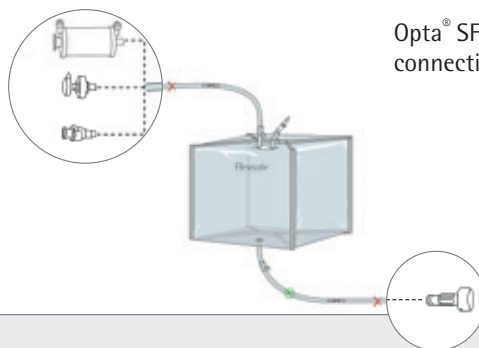
Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Sterile Connection to other Single-use Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126698	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" Opta® SFT male
	FIS126702	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126718	3	1/2" Opta® SFT female	NA	
	FIS126746	3	MPX female + sealing cap		
200 L	FIS126699	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126703	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126719	3	1/2" Opta® SFT female	NA	
	FIS126747	3	MPX female + sealing cap		
500 L	FIS126700	2	Sartopore® 2 XLG 0.8   0.2 µm	MaxiCaps® size 1	
	FIS126704	2	Sartopore® 2 XLM 0.2   0.1 µm	T-style	
	FIS126720	3	1/2" Opta® SFT female	NA	
	FIS126748	3	MPX female + sealing cap		

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Media Filtration, Storage and Shipping in Pallettank

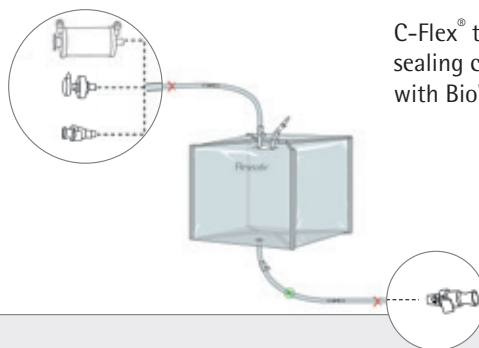
Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile  
weld with BioWelder® TC

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

### Sterile Weld to other Single-use Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS127159	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" x 3/4" C-Flex® + 1/2" MPX male + sealing cap
	FIS127161	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126722	3	1/2" Opta® SFT female	NA	
	FIS126247	3	MPX female + sealing cap		
200 L	FIS127160	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS127162	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126723	3	1/2" Opta® SFT female	NA	
	FIS126248	3	MPX female + sealing cap		
500 L	FIS126680	2	Sartopore® 2 XLG 0.8   0.2 µm	MaxiCaps® size 1	
	FIS126684	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126708	3	1/2" Opta® SFT female	NA	
	FIS126245	3	MPX female + sealing cap		

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")



**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

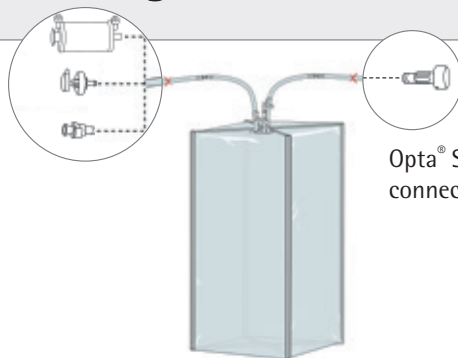
## Media Filtration and Storage in Drum

Media  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

### Sterile Connection to other Single-use Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127868	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	1/2" Opta® SFT male
	FIS127906	4	1/2" Opta® SFT female	NA	
	FIS127909	4	MPX female + sealing cap	NA	
100 L	FIS127869	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127907	4	1/2" Opta® SFT female	NA	
	FIS127910	4	MPX female + sealing cap	NA	
200 L	FIS127870	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 0	
	FIS127908	4	1/2" Opta® SFT female	NA	
	FIS127911	4	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

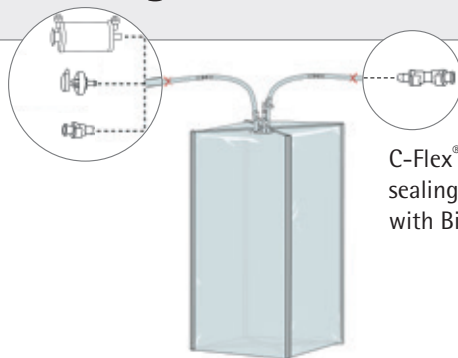
Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Media Filtration and Storage in Drum

Media  
Preparation

Sartopore® 2 0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Sterile Connection

Sterile Weld

Steaming Connection to  
Stainless Steel Bioreactors

### Sterile Weld to other Single-use Bioreactors

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127888	2	Sartopore 2 0.45   0.2 µm	MidiCaps® size 7	1/2" x 3/4" Clear C-Flex® + MPX male + MPX double female + sealing cap
	FIS127900	4	1/2" Opta® SFT female	NA	
	FIS127903	4	MPX female + sealing cap	NA	
100 L	FIS127889	2	Sartopore 2 0.45   0.2 µm	MidiCaps® size 8	
	FIS127901	4	1/2" Opta® SFT female	NA	
	FIS127904	4	MPX female + sealing cap	NA	
200 L	FIS127890	2	Sartopore 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127902	4	1/2" Opta® SFT female	NA	
	FIS127905	4	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Media Filtration, Storage and Shipping in Palletank

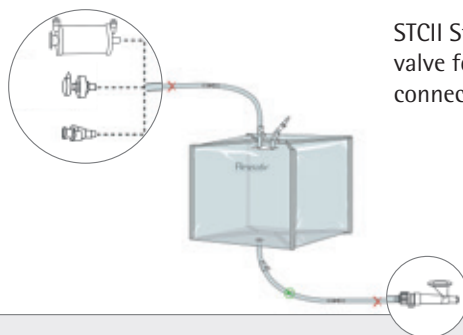
Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



STCII Steamthru™  
valve for steaming  
connection

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Steaming Connection to Stainless Steel Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126686	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" STCII 1 1/2" sanitary flange
	FIS126690	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126710	3	1/2" Opta® SFT female	NA	
	FIS126714	3	MPX female + sealing cap		
200 L	FIS126687	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126691	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126711	3	1/2" Opta® SFT female	NA	
	FIS126715	3	MPX female + sealing cap		
500 L	FIS126688	2	Sartopore® 2 XLG 0.8   0.2 µm	MaxiCaps® size 1	
	FIS126692	2	Sartopore® 2 XLM 0.2   0.1 µm		
	FIS126712	3	1/2" Opta® SFT female	NA	
	FIS126716	3	MPX female + sealing cap		

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

## Media Filtration and Storage in Drum

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

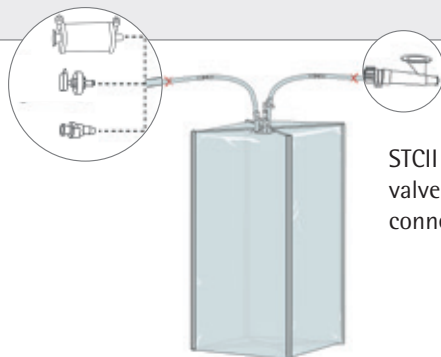
Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



STCII Steamthru™  
valve for steaming  
connection

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Steaming Connection to Stainless Steel Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127864	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	1/2" STCII 1 1/2" sanitary flange
	FIS127878	4	1/2" Opta® SFT female	NA	
	FIS127881	4	MPX female + sealing cap	NA	
100 L	FIS127865	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127879	4	1/2" Opta® SFT female	NA	
	FIS127882	4	MPX female + sealing cap	NA	
200 L	FIS127866	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 0	
	FIS127880	4	1/2" Opta® SFT female	NA	
	FIS127883	4	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Media Filtration and Storage in Pallettank

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

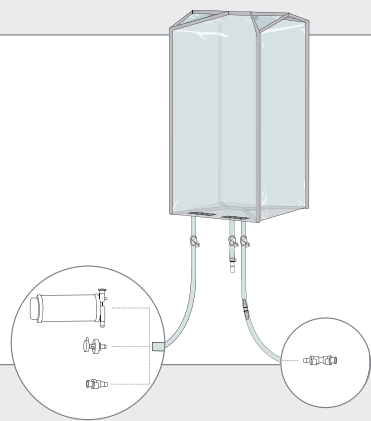
Back to Digital Selection Map

**Media Preparation**

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



C-Flex® tube with CPC sealing cap for sterile weld with BioWelder® TC and MPX quick coupler male & female with cap for sanitary or aseptic connection

Sterile Weld to BIOSTAT STR® Single-use Bioreactors

Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection  
Sterile Weld

## Sterile Weld to BIOSTAT STR® Single-use Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500360	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS500274	2	Sartopore® 2 XLM	MaxiCaps® Size 2	
	FIS500330	2	1/2" Opta® SFT female	NA	
	FIS302338	2	MPX female + sealing cap		
1,500 L	FIS500361	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500277	2	Sartopore® 2 XLM	MaxiCaps® Size 2	
	FIS500334	2	1/2" Opta® SFT female		
	FIS302339	2	MPX female + sealing cap		
2,000 L	FIS500362	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500278	1	Sartopore® 2 XLM	MaxiCaps® Size 3	
	FIS500331	2	1/2" Opta® SFT female	NA	
	FIS302340	2	MPX female + sealing cap		
2,500 L	FIS500363	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500279	1	Sartopore® 2 XLM	MaxiCaps® Size 3	
	FIS500332	1	1/2" Opta® SFT female	NA	
	FIS302341	1	MPX female + sealing cap		
3,000 L	FIS500364	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500280	1	Sartopore® 2 XLM	MaxiCaps® Size 3	
	FIS500333	1	1/2" Opta® SFT female	NA	
	FIS302342	1	MPX female + sealing cap		

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 2,5 m (98") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

## Media Filtration and Storage in Pallettank

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

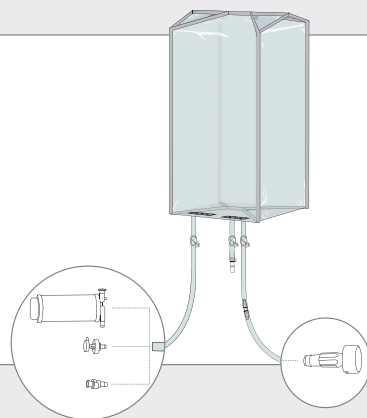
Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Sterile Connection to other Single-use Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500273	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" Opta® SFT male
	FIS500258	2	Sartopore® XLM	MaxiCaps® Size 2	
	FIS500290	2	1/2" Opta® SFT female	NA	
	FIS500300	2	MPX female + sealing cap	NA	
1,500 L	FIS500281	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500259	2	Sartopore® XLM	MaxiCaps® Size 2	
	FIS500291	2	1/2" Opta® SFT female	NA	
	FIS500301	2	MPX female + sealing cap	NA	
2,000 L	FIS500282	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500262	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500292	2	1/2" Opta® SFT female	NA	
	FIS500302	2	MPX female + sealing cap	NA	
2,500 L	FIS500283	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500263	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500293	1	1/2" Opta® SFT female	NA	
	FIS500303	1	MPX female + sealing cap	NA	
3,000 L	FIS500284	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500265	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500294	1	1/2" Opta® SFT female	NA	
	FIS500304	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

## Media Filtration and Storage in Pallettank

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

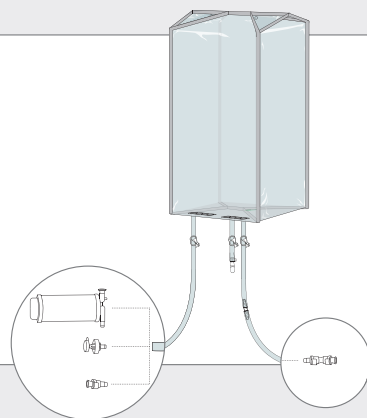
Back to Digital  
Selection Map

Media  
Preparation

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Weld to BIOSTAT STR®  
Single-use Bioreactors

Sterile Connection to other  
Single-use Bioreactors

Steaming Connection to  
Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Sterile Weld to other Single-use Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500360	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS500274	2	Sartopore® XLM	MaxiCaps® Size 2	
	FIS500330	2	1/2" Opta® SFT female	NA	
	FIS302338	2	MPX female + sealing cap		
1,500 L	FIS500361	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500277	2	Sartopore® XLM	MaxiCaps® Size 2	
	FIS500334	2	1/2" Opta® SFT female		
	FIS302339	2	MPX female + sealing cap		
2,000 L	FIS500362	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500278	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500331	2	1/2" Opta® SFT female	NA	
	FIS302340	2	MPX female + sealing cap		
2,500 L	FIS500363	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500279	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500332	1	1/2" Opta® SFT female	NA	
	FIS302341	1	MPX female + sealing cap		
3,000 L	FIS500364	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500280	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500333	1	1/2" Opta® SFT female	NA	
	FIS302342	1	MPX female + sealing cap		

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Media Filtration and Storage in Pallettank

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

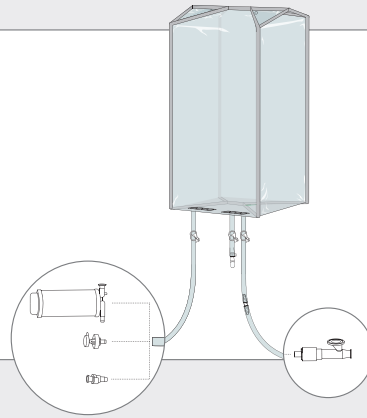
Back to Digital Selection Map

Media Preparation

Sartopore® 2 XLG 0.8 | 0.2 µm  
Sartopore® 2 XLM 0.2 | 0.1 µm

Opta® SFT female

MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



STCII Steamthru™ valve for steaming connection

Sterile Weld to BIOSTAT STR® Single-use Bioreactors

Sterile Connection to other Single-use Bioreactors

Steaming Connection to Stainless Steel Bioreactors

Sterile Connection

Sterile Weld

## Steaming Connection to Stainless Steel Bioreactors

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500266	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" STCII 1 1/2" sanitary flange
	FIS500285	2	Sartopore® XLM	MaxiCaps® Size 2	
	FIS500295	2	1/2" Opta® SFT female	NA	
	FIS500305	2	MPX female + sealing cap	NA	
1,500 L	FIS500267	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500286	2	Sartopore® XLM	MaxiCaps® Size 2	
	FIS500296	2	1/2" Opta® SFT female	NA	
	FIS500306	2	MPX female + sealing cap	NA	
2,000 L	FIS500268	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500287	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500297	2	1/2" Opta® SFT female	NA	
	FIS500307	2	MPX female + sealing cap	NA	
2,500 L	FIS500270	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500288	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500298	1	1/2" Opta® SFT female	NA	
	FIS500308	1	MPX female + sealing cap	NA	
3,000 L	FIS500272	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500289	1	Sartopore® XLM	MaxiCaps® Size 3	
	FIS500299	1	1/2" Opta® SFT female	NA	
	FIS500309	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 2,5 m (98") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")



# Flexsafe® 2D Pre-designed Solutions for Buffer Preparation

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

## Buffer Preparation

Sterilizing Filtration from Mixer

Buffer Storage and Shipping

Buffer Transfer

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Flexsafe® 2D solutions for buffer are available with Sartopore® 2 0.45 | 0.2 µm filter for high flow rate sterilizing filtration after mixing step.

Flexsafe® 2D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter line using Opta® 3/8" or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter line with MPC quick coupler

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®

Inlet and outlet lines are made of clear C-Flex® tubing for welding and sealing or with Silicone TuFlux® for the Tri-Clamp connection.

Flexsafe® 2D bags allow for sterile buffer transfer to most common single-use and stainless steel downstream purification and formulation systems with a variety of sterile and aseptic connections.

### Outlet Line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® tube for sterile weld with BioWelder® TC

- MPC quick coupler male & cap for sanitary or aseptic connection to single-use systems
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel systems



### Sampling

- Clave needleless sampling port

### Inlet Line

Sterilizing Filtration  
– Sartopore® 2 0.45 | 0.2 µm

Connections for Alternative Filter Line

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- MPC quick coupler female

# Buffer Preparation

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Buffer Preparation

Sterile Connection  
to Downstream Systems

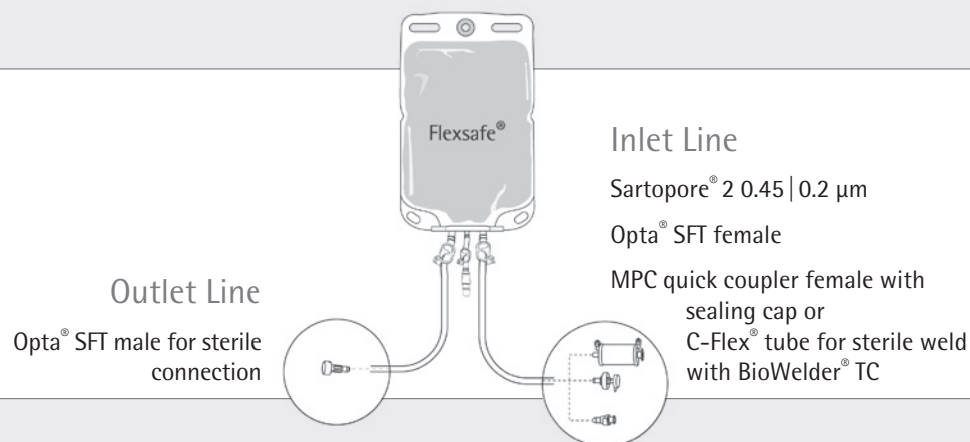
Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection



## Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130159	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4	3/8" Opta® SFT male	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130155	16	3/8" Opta® SFT female	NA		
	FLS130153	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130059	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4		
	FLS130054	16	3/8" Opta® SFT female	NA		
	FLS130051	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130064	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130055	8	3/8" Opta® SFT female	NA		
	FLS130052	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130065	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130056	8	3/8" Opta® SFT female	NA		
	FLS130053	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130162	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130156	8	3/8" Opta® SFT female	NA		
	FLS130154	8	3/8" MPC female + sealing cap	NA		

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

# Buffer Preparation

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Buffer Preparation

Sterile Connection  
to Downstream Systems

Sterile Connection

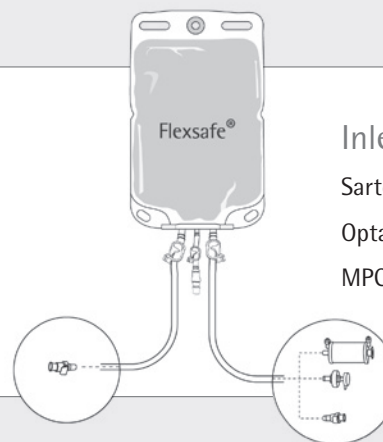
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

**Outlet Line**  
C-Flex® tube with MPC  
sealing cap for sterile weld  
with BioWelder® TC



### Inlet Line

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPC quick coupler female with  
sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC

## Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130157	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4	3/8" × 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130147	16	3/8" Opta® SFT female	NA		
	FLS130145	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130057	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4		
	FLS130042	16	3/8" Opta® SFT female	NA		
	FLS130039	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130060	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130043	8	3/8" Opta® SFT female	NA		
	FLS130040	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130061	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130044	8	3/8" Opta® SFT female	NA		
	FLS130041	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130160	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130148	8	3/8" Opta® SFT female	NA		
	FLS130146	8	3/8" MPC female + sealing cap	NA		

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" × 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" × 5/8" Clear C-Flex® 500 mm (20")

# Buffer Preparation

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Buffer Preparation

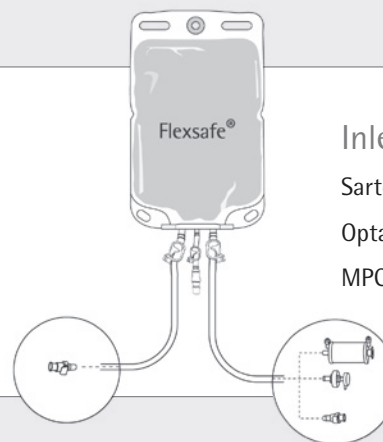
Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection

Outlet Line  
MPC quick coupler male & female with cap for sanitary or aseptic connection



### Inlet Line

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPC quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC

## Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup> Distal connector on draining line	Sampling Sampling line
			Filter or distal connector on filling line	Filter type and size		
3 L	FLS130157	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4	3/8" × 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130147	16	3/8" Opta® SFT female	NA		
	FLS130145	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130057	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4		
	FLS130042	16	3/8" Opta® SFT female	NA		
	FLS130039	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130060	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130043	8	3/8" Opta® SFT female	NA		
	FLS130040	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130061	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130044	8	3/8" Opta® SFT female	NA		
	FLS130041	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130160	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130148	8	3/8" Opta® SFT female	NA		
	FLS130146	8	3/8" MPC female + sealing cap	NA		

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" × 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" × 5/8" Clear C-Flex® 500 mm (20")

# Buffer Preparation

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Buffer Preparation

Sterile Connection  
to Downstream Systems

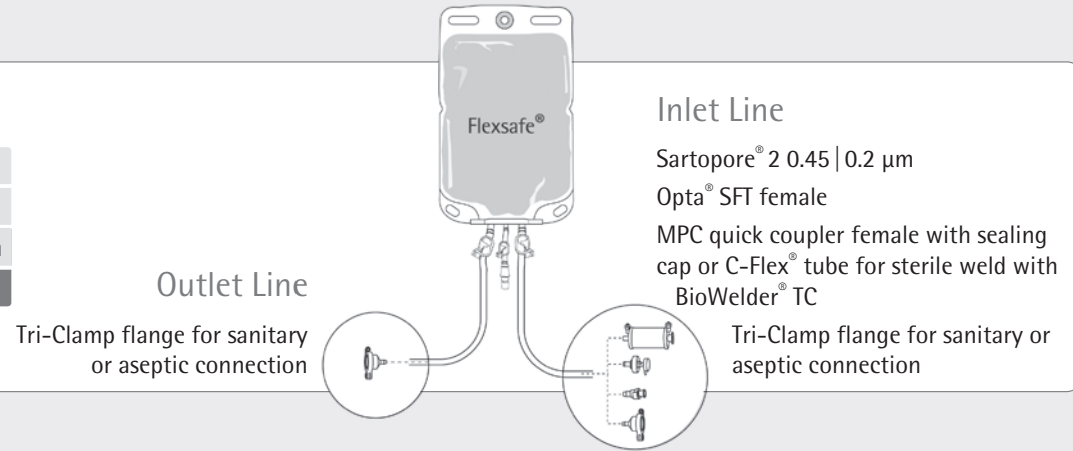
Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection



## Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup> Distal connector on draining line	Sampling Sampling line
			Filter or distal connector on filling line	Filter type and size		
3 L	FLS130158	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130165	16	3/8" Opta® SFT female			
	FLS130163	16	3/8" MPC female + sealing cap	NA		
	FLS130191	16	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
5 L	FLS130058	16	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 4		
	FLS130069	16	3/8" Opta® SFT female			
	FLS130066	16	3/8" MPC female + sealing cap	NA		
	FLS130108	16	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
10 L	FLS130062	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130070	8	3/8" Opta® SFT female			
	FLS130067	8	3/8" MPC female + sealing cap	NA		
	FLS130109	8	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
20 L	FLS130063	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130071	8	3/8" Opta® SFT female			
	FLS130068	8	3/8" MPC female + sealing cap	NA		
	FLS130110	8	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
50 L	FLS130161	8	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7		
	FLS130166	8	3/8" Opta® SFT female			
	FLS130164	8	3/8" MPC female + sealing cap	NA		
	FLS130192	8	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" TuFlux® SIL 300 mm (12")

<sup>3</sup> 3/8" TuFlux® SIL 300 mm (12") for design with two Tri-Clamps

# Buffer Filtration, Storage and Shipping

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Buffer Preparation

Sterilizing Filtration  
from Mixer

Buffer Storage  
and Shipping

Buffer Transfer

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Flexsafe® 3D solutions for buffer are available with Sartopore® 2 0.45 | 0.2 µm filter for high flowrate sterilizing filtration after mixing step.

Flexsafe® 3D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter transfer set using Opta® 1/2" or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter transfer set with MPX quick coupler

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®.

Inlet and outlet lines are made of C-Flex® + Silicone TuFlux® tubings for welding, sealing and pumping.

Flexsafe® 3D Bags allow for sterile buffer transfer to most common single-use and stainless steel downstream purification and formulation systems with a variety of sterile and aseptic connections.

### Inlet line

Sterilizing filtration from mixer

- Sartopore® 2 0.45 | 0.2 µm

Connection for alternative filter transfer set

- Opta® SFT female
- C-Flex® tube weld with BioWelder® TC
- MPX quick coupler female

### Sampling

- Needleless sampling port

### Outlet line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® tube for sterile weld with BioWelder® TC
- MPX quick coupler male & female for sanitary or aseptic connection to single-use systems
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel systems



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Buffer Filtration, Storage and Shipping in Palletank

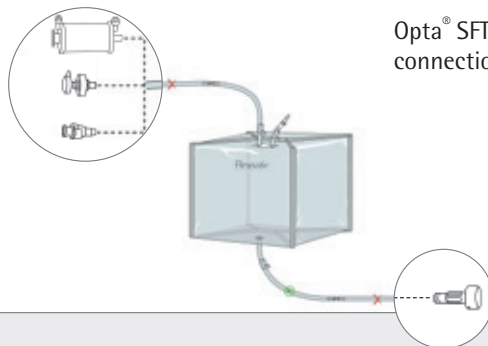
Back to Digital  
Selection Map

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

### Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126734	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	1/2" Opta® SFT male
	FIS126718	3	1/2" Opta® SFT female	NA	
	FIS126746	3	MPX female + sealing cap	NA	
200 L	FIS126735	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS126719	3	1/2" Opta® SFT female	NA	
	FIS126747	3	MPX female + sealing cap	NA	
500 L	FIS126736	2	Sartopore® 2 0.45   0.2 µm	MaxiCaps® size 0	
	FIS126720	3	1/2" Opta® SFT female	NA	
	FIS126748	3	MPX female + sealing cap	NA	

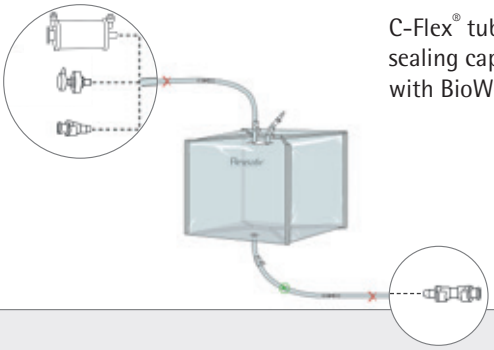
<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

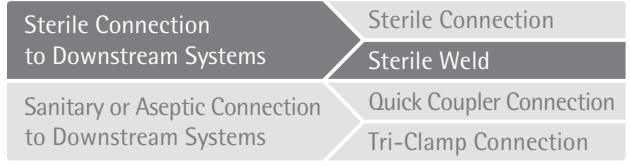
# Buffer Filtration, Storage and Shipping in Palletank

**Buffer Preparation**

Sartopore® 2 0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



C-Flex® tube with MPX sealing cap for sterile weld with BioWelder® TC



## Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126730	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS126742	3	1/2" Opta® SFT female	NA	
	FIS126489	3	MPX female + sealing cap	NA	
200 L	FIS126731	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS126743	3	1/2" Opta® SFT female	NA	
	FIS126490	3	MPX female + sealing cap	NA	
500 L	FIS126732	2	Sartopore® 2 0.45   0.2 µm	MaxiCaps® size 0	
	FIS126744	3	1/2" Opta® SFT female	NA	
	FIS126491	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")



**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

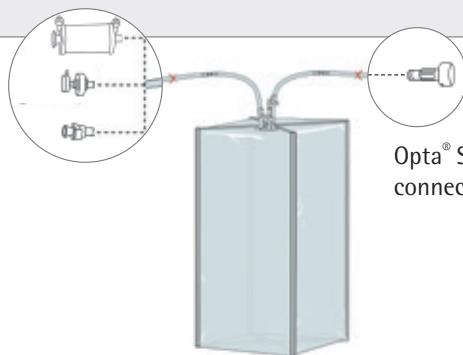
## Buffer Filtration and Storage in Drum

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

### Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127891	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7	1/2" Opta® SFT male
	FIS127906	4	1/2" Opta® SFT female	NA	
	FIS127909	4	MPX female + sealing cap	NA	
100 L	FIS127892	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	
	FIS127907	4	1/2" Opta® SFT female	NA	
	FIS127910	4	MPX female + sealing cap	NA	
200 L	FIS127893	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127908	4	1/2" Opta® SFT female	NA	
	FIS127911	4	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

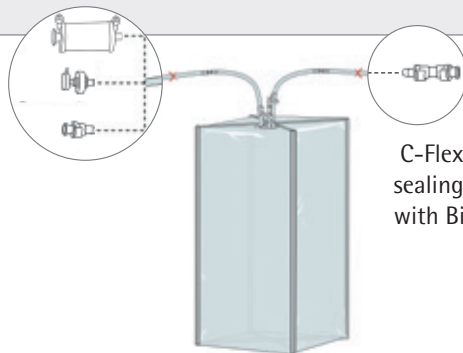
## Buffer Filtration and Storage in Drum

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

### Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127888	2	Sartopore 2 0.45   0.2 µm	MidiCaps® size 7	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS127900	4	1/2" Opta® SFT female	NA	
	FIS127903	4	MPX female + sealing cap	NA	
100 L	FIS127889	2	Sartopore 2 0.45   0.2 µm	MidiCaps® size 8	
	FIS127901	4	1/2" Opta® SFT female	NA	
	FIS127904	4	MPX female + sealing cap	NA	
200 L	FIS127890	2	Sartopore 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127902	4	1/2" Opta® SFT female	NA	
	FIS127905	4	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Buffer Filtration, Storage and Shipping in Palletank

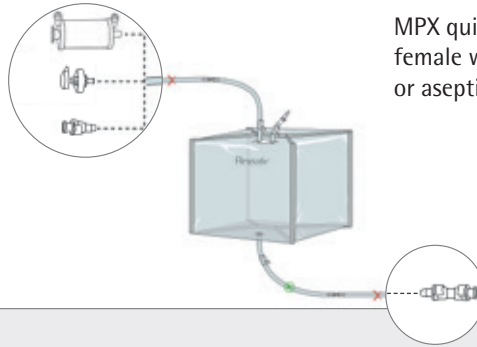
Back to Digital  
Selection Map

### Buffer Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



MPX quick coupler male &  
female with cap for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

### Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126730	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	1/2" MPX male + MPX double female + sealing cap
	FIS126742	3	1/2" Opta® SFT female	NA	
	FIS126489	3	MPX female + sealing cap	NA	
200 L	FIS126731	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS126743	3	1/2" Opta® SFT female	NA	
	FIS126490	3	MPX female + sealing cap	NA	
500 L	FIS126732	2	Sartopore® 2 0.45   0.2 µm	MaxiCaps® size 0	
	FIS126744	3	1/2" Opta® SFT female	NA	
	FIS126491	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

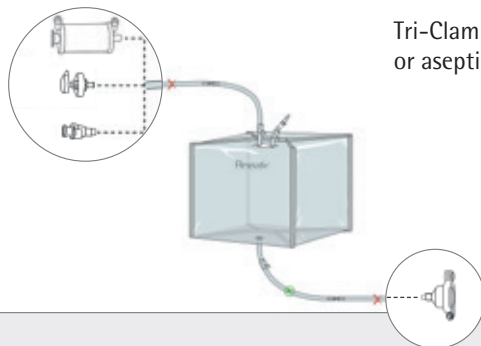
<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Buffer Filtration, Storage and Shipping in Palletank

Back to Digital Selection Map

Buffer Preparation

Sartopore® 2 0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



Tri-Clamp flange for sanitary or aseptic connection

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126251	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	1/2" Tri-Clamp 1 1/2" sanitary flange with gasket, cap & union
	FIS126738	3	1/2" Opta® SFT female	NA	
	FIS126255	3	MPX female + sealing cap	NA	
200 L	FIS126252	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS126739	3	1/2" Opta® SFT female	NA	
	FIS126256	3	MPX female + sealing cap	NA	
500 L	FIS126253	2	Sartopore® 2 0.45   0.2 µm	MaxiCaps® size 0	
	FIS126740	3	1/2" Opta® SFT female	NA	
	FIS126257	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1,5 m (60")

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

## Buffer Filtration and Storage in Drum

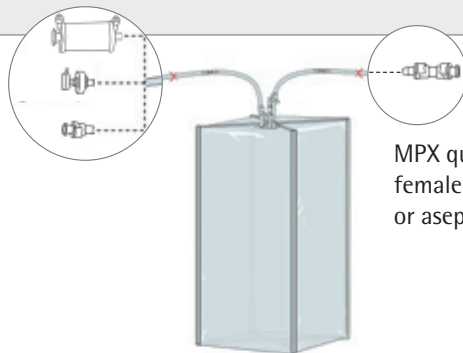
Back to Digital  
Selection Map

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



MPX quick coupler male &  
female with cap for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection

### Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127888	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7	1/2" MPX male + MPX double female + sealing cap
	FIS127900	4	1/2" Opta® SFT female	NA	
	FIS127903	4	MPX female + sealing cap	NA	
100 L	FIS127889	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	
	FIS127901	4	1/2" Opta® SFT female	NA	
	FIS127904	4	MPX female + sealing cap	NA	
200 L	FIS127890	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127902	4	1/2" Opta® SFT female	NA	
	FIS127905	4	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

**Media**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

## Buffer Filtration and Storage in Drum

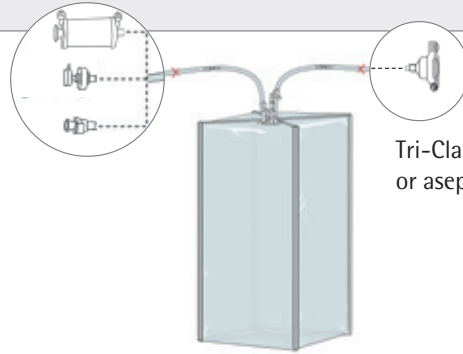
Back to Digital  
Selection Map

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Tri-Clamp flange for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

### Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on top filling line	Filter type and size	Distal connector on top draining line
50 L	FIS127885	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7	1/2" Tri-Clamp 1 1/2" sanitary flange with gasket, cap & union
	FIS127894	4	1/2" Opta® SFT female		
	FIS127897	4	MPX female + sealing cap	NA	
	FIS127912	4	1/2" Tri-Clamp 1 1/2" flange <sup>3</sup>		
100 L	FIS127886	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 8	
	FIS127895	4	1/2" Opta® SFT female		
	FIS127898	4	MPX female + sealing cap	NA	
	FIS127913	4	1/2" Tri-Clamp 1 1/2" flange <sup>3</sup>		
200 L	FIS127887	2	Sartopore® 2 0.45   0.2 µm	MidiCaps® size 9	
	FIS127896	4	1/2" Opta® SFT female		
	FIS127899	4	MPX female + sealing cap	NA	
	FIS127914	4	1/2" Tri-Clamp 1 1/2" flange <sup>3</sup>		

<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1,5 m (60")

# Buffer Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

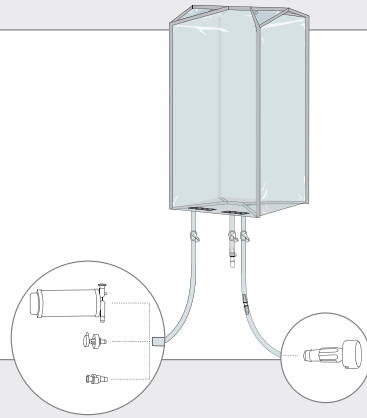
Back to Digital  
Selection Map

## Buffer Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Connection to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500325	2	Sartopore® 2	MaxiCaps® Size 1	1/2" Opta® SFT male
	FIS500290	2	1/2" Opta® SFT female	NA	
	FIS500300	2	MPX female + sealing cap	NA	
1,500 L	FIS500326	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500291	2	1/2" Opta® SFT female	NA	
	FIS500301	2	MPX female + sealing cap	NA	
2,000 L	FIS500327	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500292	2	1/2" Opta® SFT female	NA	
	FIS500302	2	MPX female + sealing cap	NA	
2,500 L	FIS500328	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500293	1	1/2" Opta® SFT female	NA	
	FIS500303	1	MPX female + sealing cap	NA	
3,000 L	FIS500329	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500294	1	1/2" Opta® SFT female	NA	
	FIS500304	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Buffer Filtration and Storage in Palletank

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

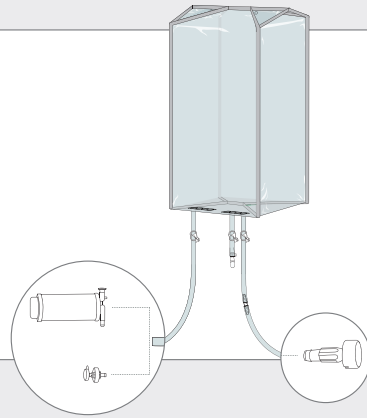
**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

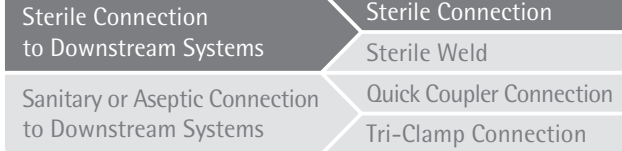
Back to Digital Selection Map

**Buffer Preparation**

Sartopore® 2 0.45 | 0.2 µm  
3/4" Opta® SFT female  
MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



Opta® SFT male for sterile connection



## Sterile Connection to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500335	2	Sartopore® 2	MaxiCaps® Size 1	3/4" Opta® SFT male
	FIS302278	2	3/4" Opta® SFT female	NA	
1,500 L	FIS500336	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS302279	2	3/4" Opta® SFT female	NA	
2,000 L	FIS500337	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500275	2	3/4" Opta® SFT female	NA	
2,500 L	FIS500338	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500276	1	3/4" Opta® SFT female	NA	
3,000 L	FIS500339	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS302282	1	3/4" Opta® SFT female	NA	

<sup>1</sup> Inlet tubing line from end line to bag with filter: 1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>1</sup> Inlet tubing line from connector Opta® to bag: 3/4" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line: 3/4" ID Silicone TuFlux® 2.5 m (98") + 3/4" x 1" Clear C-Flex® 0.5 m (20")



# Buffer Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

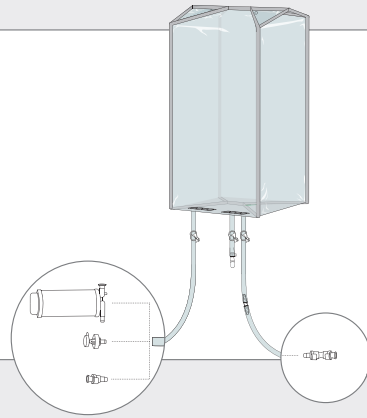
Back to Digital  
Selection Map

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Weld to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500310	2	Sartopore® 2	MaxiCaps® Size 1	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS500330	2	1/2" Opta® SFT female	NA	
	FIS302338	2	MPX female + sealing cap	NA	
1,500 L	FIS500311	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500334	2	1/2" Opta® SFT female	NA	
	FIS302339	2	MPX female + sealing cap	NA	
2,000 L	FIS500312	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500331	2	1/2" Opta® SFT female	NA	
	FIS302340	2	MPX female + sealing cap	NA	
2,500 L	FIS500313	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500332	1	1/2" Opta® SFT female	NA	
	FIS302341	1	MPX female + sealing cap	NA	
3,000 L	FIS500314	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500333	1	1/2" Opta® SFT female	NA	
	FIS302342	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Buffer Filtration and Storage in Palletank

**Media**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

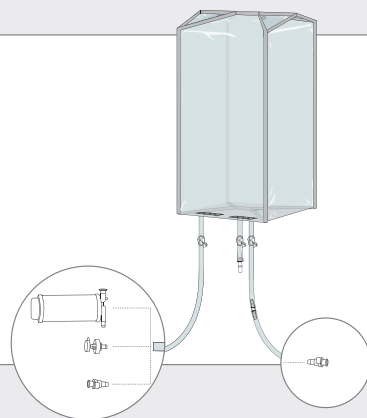
Back to Digital  
Selection Map

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPU quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



MPU male with  
sealing plug for  
quick coupling

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Weld to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500370	2	Sartopore® 2	MaxiCaps® Size 1	¾" x 1" C-Flex® + MPU male + sealing cap
	FIS500375	2	¾" Opta® SFT female	NA	
	FIS500365	2	MPX female + sealing cap	NA	
1,500 L	FIS500371	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500376	2	¾" Opta® SFT female	NA	
	FIS500366	2	MPX female + sealing cap	NA	
2,000 L	FIS500372	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500377	2	¾" Opta® SFT female	NA	
	FIS500367	2	MPX female + sealing cap	NA	
2,500 L	FIS500373	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500378	1	¾" Opta® SFT female	NA	
	FIS500368	1	MPX female + sealing cap	NA	
3,000 L	FIS500374	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500379	1	¾" Opta® SFT female	NA	
	FIS500369	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag with filter:  
½" x ¾" Clear C-Flex® 1.5 m (60")

<sup>1</sup> Inlet tubing line from connector to bag:  
¾" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
¾" ID Silicone TuFlux® 2.5 m (98") +  
¾" x 1" Clear C-Flex® 0.5 m (20")

# Buffer Filtration and Storage in Palletank

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

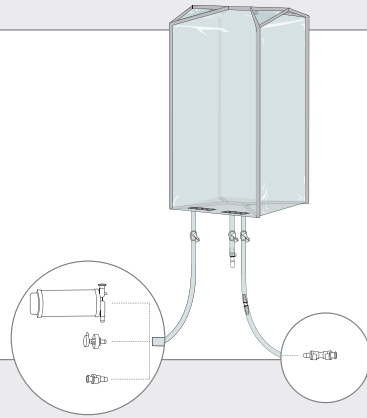
Back to Digital  
Selection Map

## Buffer Preparation

Sartopore® 2 0.45 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



MPX quick coupler male &  
female with cap for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Quick Coupler Connection to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500310	2	Sartopore® 2	MaxiCaps® Size 1	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS500330	2	1/2" Opta® SFT female	NA	
	FIS302338	2	MPU female + sealing cap	NA	
1,500 L	FIS500311	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500334	2	1/2" Opta® SFT female	NA	
	FIS302339	2	MPU female + sealing cap	NA	
2,000 L	FIS500312	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500331	2	1/2" Opta® SFT female	NA	
	FIS302340	2	MPU female + sealing cap	NA	
2,500 L	FIS500313	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500332	1	1/2" Opta® SFT female	NA	
	FIS302341	1	MPU female + sealing cap	NA	
3,000 L	FIS500314	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500333	1	1/2" Opta® SFT female	NA	
	FIS302342	1	MPU female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Buffer Filtration and Storage in Palletank

**Media**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

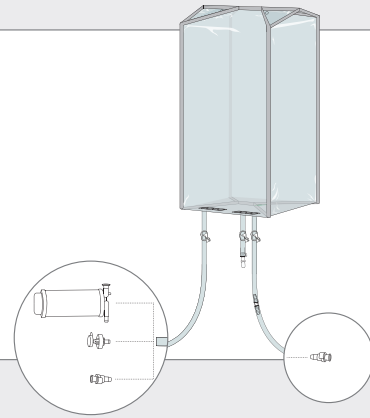
**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

Buffer Preparation

Sartopore® 2 0.45 | 0.2 µm  
Opta® SFT female  
MPU quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



MPU male with sealing plug for quick coupling

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Quick Coupler Connection to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500370	2	Sartopore® 2	MaxiCaps® Size 1	¾" x 1" C-Flex® + MPU male + sealing cap
	FIS500375	2	¾" Opta® SFT female	NA	
	FIS500365	2	MPU female + sealing cap	NA	
1,500 L	FIS500371	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500376	2	¾" Opta® SFT female	NA	
	FIS500366	2	MPU female + sealing cap	NA	
2,000 L	FIS500372	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500377	2	¾" Opta® SFT female	NA	
	FIS500367	2	MPU female + sealing cap	NA	
2,500 L	FIS500373	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500378	1	¾" Opta® SFT female	NA	
	FIS500368	1	MPU female + sealing cap	NA	
3,000 L	FIS500374	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500379	1	¾" Opta® SFT female	NA	
	FIS500369	1	MPU female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag with filter: ½" x ¾" Clear C-Flex® 1.5 m (60")

<sup>1</sup> Inlet tubing line from connector to bag: ¾" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line: ¾" ID Silicone TuFlux® 2.5 m (98") + ¾" x 1" Clear C-Flex® 0.5 m (20")

## Buffer Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

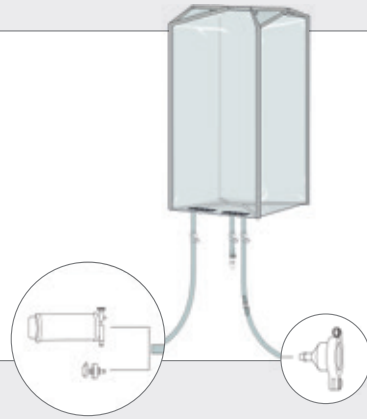
Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Buffer  
Preparation

Sartopore® 2 0.45 | 0.2 µm  
Opta® SFT female



Tri-Clamp flange  
for sanitary or aseptic  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500315	2	Sartopore® 2	MaxiCaps® Size 1	1/2" ID tubing, Tri-Clamp 1 1/2 sanitary flange with gasket, cap & union
	FIS500350	2	1/2" Opta® SFT female	NA	
1,500 L	FIS500316	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500351	2	1/2" Opta® SFT female	NA	
2,000 L	FIS500317	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500352	2	1/2" Opta® SFT female	NA	
2,500 L	FIS500318	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500353	1	1/2" Opta® SFT female	NA	
3,000 L	FIS500319	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500354	1	1/2" Opta® SFT female	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 3 m (118")

# Buffer Filtration and Storage in Pallettank

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

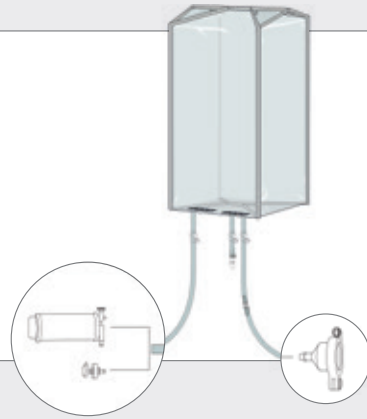
**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

Buffer Preparation

Sartopore® 2 0.45 | 0.2 µm  
Opta® SFT female



Tri-Clamp flange for sanitary or aseptic connection

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500320	2	Sartopore® 2	MaxiCaps® Size 1	3/4" ID tubing, Tri-Clamp 1 1/2 sanitary flange with gasket, cap & union
	FIS500355	2	3/4" Opta® SFT female	NA	
1,500 L	FIS500321	2	Sartopore® 2	MaxiCaps® Size 1	
	FIS500356	2	3/4" Opta® SFT female	NA	
2,000 L	FIS500322	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500357	2	3/4" Opta® SFT female	NA	
2,500 L	FIS500323	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500358	1	3/4" Opta® SFT female	NA	
3,000 L	FIS500324	1	Sartopore® 2	MaxiCaps® Size 2	
	FIS500359	1	3/4" Opta® SFT female	NA	

<sup>1</sup> Inlet tubing line from end line to bag with filter: 1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>1</sup> Inlet tubing line from connector to bag: 3/4" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line: 3/4" ID Silicone TuFlux® 3 m (118")

# Cell Harvest & Downstream Intermediates

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Cell Harvest & Downstream Intermediates

Clarification and Sterilizing Filtration from Bioreactor

Cell Harvest or Downstream Intermediates Storage and Shipping

Harvest or Downstream Intermediates Transfer

Sterile Connection to Downstream Systems

Sanitary or Aseptic Connection to Downstream Systems

Sterile Connection

Sterile Weld

Quick Coupler Connection

Tri-Clamp Connection

Flexsafe® 2D solutions for cell harvest & downstream intermediates are available with Sartopore® 2 XLG 0.8 | 0.2 µm for high throughput sterilizing filtration after cell culture clarification step and for the handling of all process intermediates before the final UDFD step.

Flexsafe® 2D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter line using Opta® or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter line with MPC quick coupler

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®. Inlet and outlet lines are made of Clear C-Flex® tubings for welding and sealing.

Flexsafe® 2D bags allow for cell harvest transfer to most common single-use and stainless steel downstream purification systems with a variety of sterile and aseptic connections

### Outlet Line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® tube for sterile weld with BioWelder® TC

- MPC quick coupler male & cap for sanitary or aseptic connection to single-use systems
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel systems



### Sampling

- Clave needleless sampling port

### Inlet Line

- Sterilizing Filtration
- Sartopore® 2 XLG 0.8 | 0.2 µm
- Connection for Alternative Filter Line
- Opta® SFT female
  - C-Flex® tube for sterile weld with BioWelder® TC
  - MPC quick coupler female

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Cell Harvest & Downstream Intermediates

Back to Digital  
Selection Map

### Cell Harvest & Downstream Intermediates

Sterile Connection  
to Downstream Systems

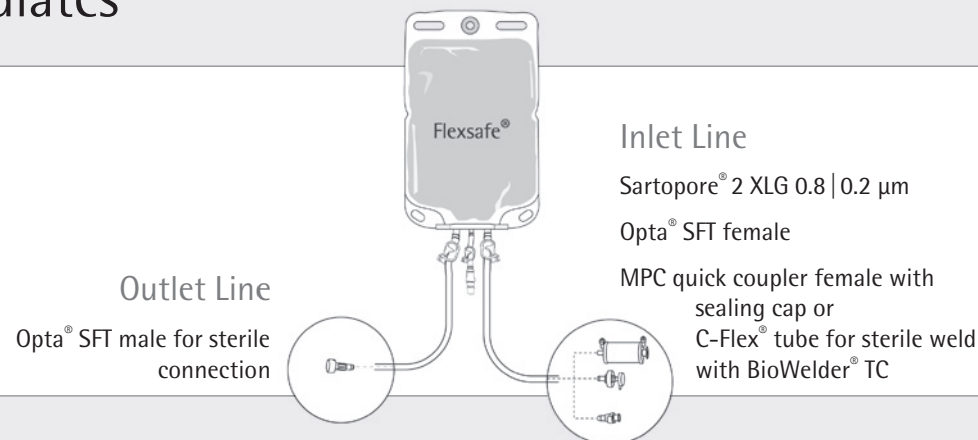
Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection



### Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130136	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" Opta® SFT male	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130155	16	3/8" Opta® SFT female	NA		
	FLS130153	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130023	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130054	16	3/8" Opta® SFT female	NA		
	FLS130051	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130035	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130055	8	3/8" Opta® SFT female	NA		
	FLS130052	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130036	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130056	8	3/8" Opta® SFT female	NA		
	FLS130053	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130143	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130156	8	3/8" Opta® SFT female	NA		
	FLS130154	8	3/8" MPC female + sealing cap	NA		

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

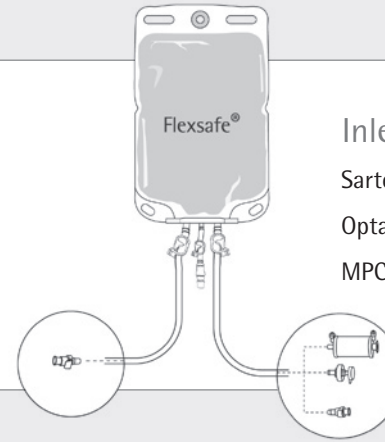
Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection

Outlet Line  
C-Flex® tube with MPC  
sealing cap for sterile weld  
with BioWelder® TC



Inlet Line

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPC quick coupler female with  
sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC

## Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130131	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130147	16	3/8" Opta® SFT female			
	FLS130145	16	3/8" MPC female + sealing cap			
5 L	FLS130018	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130042	16	3/8" Opta® SFT female	NA		
	FLS130039	16	3/8" MPC female + sealing cap			
10 L	FLS130025	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130043	8	3/8" Opta® SFT female	NA		
	FLS130040	8	3/8" MPC female + sealing cap			
20 L	FLS130026	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130044	8	3/8" Opta® SFT female	NA		
	FLS130041	8	3/8" MPC female + sealing cap			
50 L	FLS130138	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130148	8	3/8" Opta® SFT female	NA		
	FLS130146	8	3/8" MPC female + sealing cap			

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

## Cell Harvest &amp; Downstream Intermediates

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

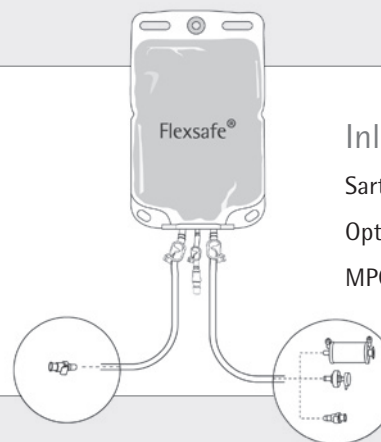
Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection

Outlet Line  
MPC quick coupler male &  
female with cap for sanitary  
or aseptic connection



Inlet Line

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPC quick coupler female with  
sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC

Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130131	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" × 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130147	16	3/8" Opta® SFT female	NA		
	FLS130145	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130018	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130042	16	3/8" Opta® SFT female	NA		
	FLS130039	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130025	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130043	8	3/8" Opta® SFT female	NA		
	FLS130040	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130026	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130044	8	3/8" Opta® SFT female	NA		
	FLS130041	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130138	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130148	8	3/8" Opta® SFT female	NA		
	FLS130146	8	3/8" MPC female + sealing cap	NA		

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" × 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" × 5/8" Clear C-Flex® 500 mm (20")

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Cell Harvest & Downstream Intermediates

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Selection Map

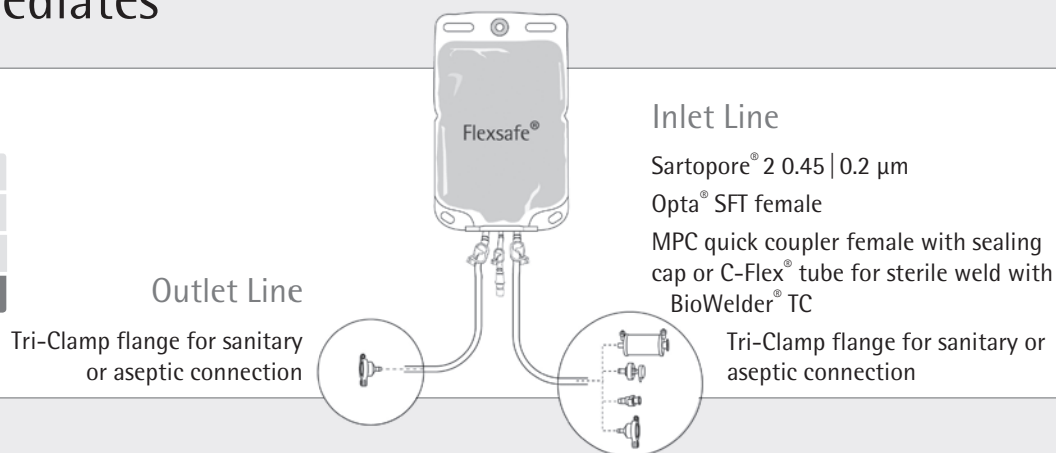
Cell Harvest  
& Downstream  
Intermediates

Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection



### Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130132	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130165	16	3/8" Opta® SFT female			
	FLS130163	16	3/8" MPC female + sealing cap	NA		
	FLS130191	16	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
5 L	FLS130019	16	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 4		
	FLS130069	16	3/8" Opta® SFT female			
	FLS130066	16	3/8" MPC female + sealing cap	NA		
	FLS130108	16	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
10 L	FLS130027	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130070	8	3/8" Opta® SFT female			
	FLS130067	8	3/8" MPC female + sealing cap	NA		
	FLS130109	8	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
20 L	FLS130028	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130071	8	3/8" Opta® SFT female			
	FLS130068	8	3/8" MPC female + sealing cap	NA		
	FLS130110	8	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			
50 L	FLS130139	8	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 7		
	FLS130166	8	3/8" Opta® SFT female			
	FLS130164	8	3/8" MPC female + sealing cap	NA		
	FLS130192	8	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union <sup>3</sup>			

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" TuFlux® SIL 300 mm (12")

<sup>3</sup> 3/8" TuFlux® SIL 300 mm (12") for design with two Tri-Clamps

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration, Storage and Shipping

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

Clarification  
and Sterilizing  
Filtration  
from Bioreactor

Cell Harvest  
or Downstream  
Intermediates  
Storage and  
Shipping

Harvest or  
Downstream  
Intermediates  
Transfer

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Flexsafe® 3D solutions for cell harvest & downstream intermediates are available with Sartopore® 2 XLG 0.8 | 0.2 µm for high throughput sterilizing filtration after cell culture clarification step and for the handling of all process intermediates before the cross-flow step.

Flexsafe® 3D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter transfer set using Opta® ½" or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter transfer set with MPX quick coupler

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®. Inlet and outlet lines are made of C-Flex® + Silicone TuFlux® tubings for welding, sealing and pumping

Flexsafe® 3D bags allow for cell harvest transfer to most common single-use and stainless steel downstream purification systems with a variety of sterile and aseptic connections

## Inlet line

Clarification and sterile filtration from bioreactor or any downstream purification step before cross-flow

- Sartopore® 2 XLG 0.8 | 0.2 µm

Connection for alternative filter transfer set

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- MPX quick coupler female

## Sampling

- Needleless sampling port

## Outlet line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® with MPX plug for sterile weld to single-use system
- MPX Quick couplers for sanitary or aseptic connection to single-use system
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel system



# Cell Harvest & Downstream Intermediates Filtration, Storage and Shipping in Palletank

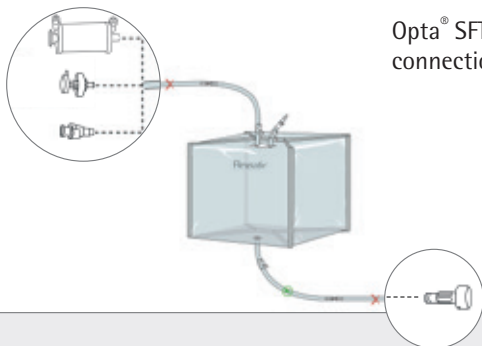
Back to Digital Selection Map

Cell Harvest & Downstream Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



Opta® SFT male for sterile connection

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on outlet line
100 L	FIS126698	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" Opta® SFT male
	FIS126718	3	1/2" Opta® SFT female	NA	
	FIS126746	3	MPX female + sealing cap	NA	
200 L	FIS126699	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126719	3	1/2" Opta® SFT female	NA	
	FIS126747	3	MPX female + sealing cap	NA	
500 L	FIS126700	2	Sartopore® 2 XLG 0.8   0.2 µm	MaxiCaps® size 1 T-style	
	FIS126720	3	1/2" Opta® SFT female	NA	
	FIS126748	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration, Storage and Shipping in Palletank

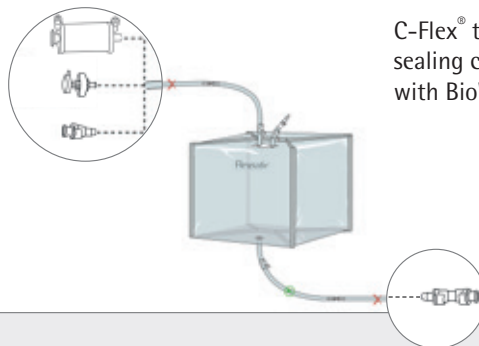
Back to Digital  
Selection Map

## Cell Harvest & Downstream Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on outlet line
100 L	FIS126767	2	Sartopore® XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" x 3/4" Clear C-Flex® + MPX male + MPX double female + sealing cap
	FIS126742	3	1/2" Opta® SFT female	NA	
	FIS126489	3	MPX female + sealing cap	NA	
200 L	FIS126768	2	Sartopore® XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126743	3	1/2" Opta® SFT female	NA	
	FIS126490	3	MPX female + sealing cap	NA	
500 L	FIS126769	2	Sartopore® XLG 0.8   0.2 µm	MaxiCaps® size 1 T-style	
	FIS126744	3	1/2" Opta® SFT female	NA	
	FIS126491	3	MPX female + sealing cap	NA	

<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration, Storage and Shipping in Palletank

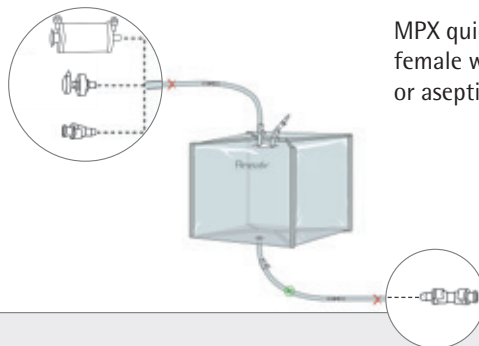
Back to Digital  
Selection Map

## Cell Harvest & Downstream Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



MPX quick coupler male &  
female with cap for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126767	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" MPX male + MPX double female + sealing cap
	FIS126742	3	1/2" Opta® SFT female	NA	
	FIS126489	3	MPX female + sealing cap	NA	
200 L	FIS126768	2	Sartopore® 2 XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126743	3	1/2" Opta® SFT female	NA	
	FIS126490	3	MPX female + sealing cap	NA	
500 L	FIS126769	2	Sartopore® 2 XLG 0.8   0.2 µm	MaxiCaps® size 1 T-style	
	FIS126744	3	1/2" Opta® SFT female	NA	
	FIS126491	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration, Storage and Shipping in Palletank

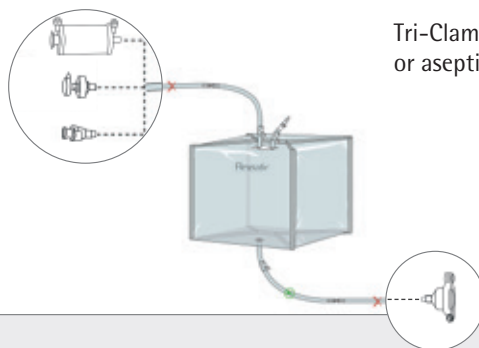
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Selection Map

Cell Harvest  
& Downstream  
Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Tri-Clamp flange for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126759	2	Sartopore® XLG 0.8   0.2 µm	MidiCaps® size 9	1/2" Tri-Clamp 1 1/2" sanitary flange with gasket, cap & union
	FIS126738	3	1/2" Opta® SFT female	NA	
	FIS126255	3	MPX female + sealing cap	NA	
200 L	FIS126760	2	Sartopore® XLG 0.8   0.2 µm	MidiCaps® size 0	
	FIS126739	3	1/2" Opta® SFT female	NA	
	FIS126256	3	MPX female + sealing cap	NA	
500 L	FIS126761	2	Sartopore® XLG 0.8   0.2 µm	MaxiCaps® size 1 T-style	
	FIS126740	3	1/2" Opta® SFT female	NA	
	FIS126257	3	MPX female + sealing cap	NA	

<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1.5 m (60")



Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration and Storage in Palletank

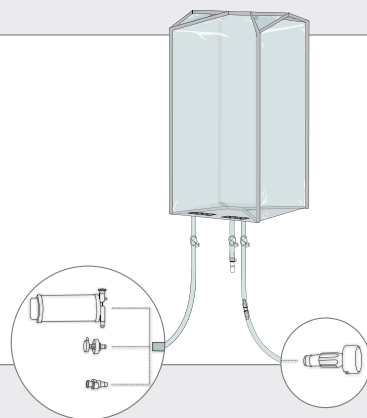
Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Opta® SFT male for sterile  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Connection to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500273	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" Opta® SFT male
	FIS500290	2	1/2" Opta® SFT female	NA	
	FIS500300	2	MPX female + sealing cap	NA	
1,500 L	FIS500281	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500291	2	1/2" Opta® SFT female	NA	
	FIS500301	2	MPX female + sealing cap	NA	
2,000 L	FIS500282	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500292	2	1/2" Opta® SFT female	NA	
	FIS500302	2	MPX female + sealing cap	NA	
2,500 L	FIS500283	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500293	1	1/2" Opta® SFT female	NA	
	FIS500303	1	MPX female + sealing cap	NA	
3,000 L	FIS500284	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500294	1	1/2" Opta® SFT female	NA	
	FIS500304	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

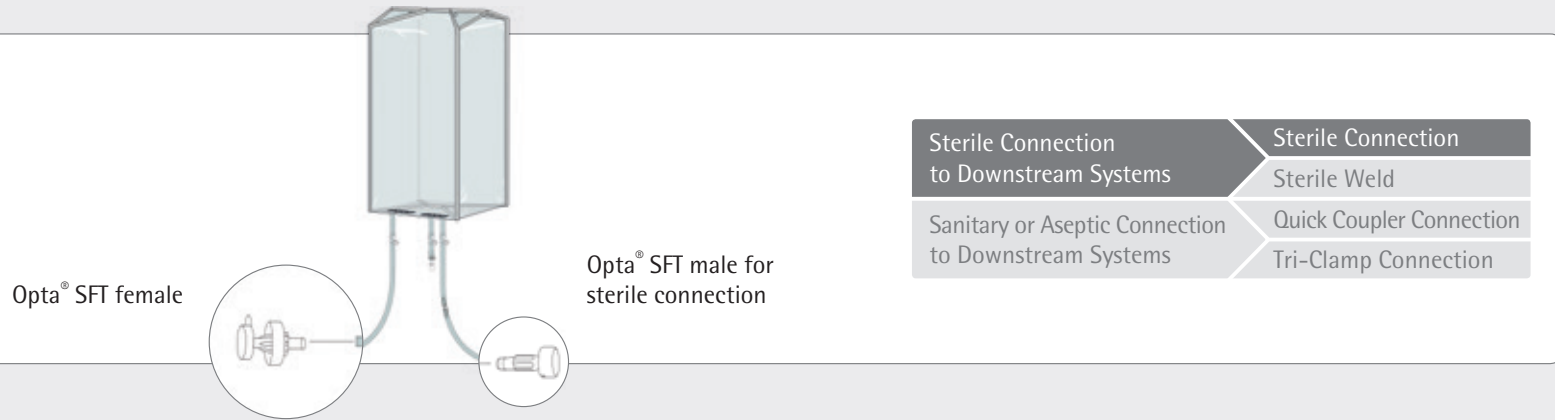
Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration and Storage in Palletank

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates



## Sterile Connection to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS302278	2	3/4" Opta® SFT female	NA	3/4" Opta® SFT male
1,500 L	FIS302279	2	3/4" Opta® SFT female	NA	
2,000 L	FIS500275	2	3/4" Opta® SFT female	NA	
2,500 L	FIS500276	1	3/4" Opta® SFT female	NA	
3,000 L	FIS302282	1	3/4" Opta® SFT female	NA	

<sup>1</sup> Inlet tubing line from connector Opta® to bag:  
3/4" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
3/4" ID Silicone TuFlux® 2.5 m (98") +  
3/4" x 1" Clear C-Flex® 0.5 m (20")

## Cell Harvest &amp; Downstream Intermediates Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

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Selection Map

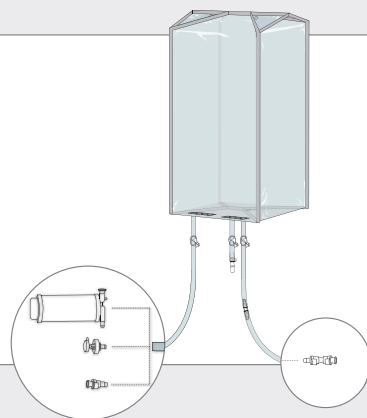
Cell Harvest  
& Downstream  
Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or

C-Flex® tube for sterile weld  
with BioWelder® TC



C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Sterile Weld to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500360	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS500330	2	1/2" Opta® SFT female	NA	
	FIS302338	2	MPX female + sealing cap	NA	
1,500 L	FIS500361	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500334	2	1/2" Opta® SFT female	NA	
	FIS302339	2	MPX female + sealing cap	NA	
2,000 L	FIS500362	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500331	2	1/2" Opta® SFT female	NA	
	FIS302340	2	MPX female + sealing cap	NA	
2,500 L	FIS500363	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500332	1	1/2" Opta® SFT female	NA	
	FIS302341	1	MPX female + sealing cap	NA	
3,000 L	FIS500364	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500333	1	1/2" Opta® SFT female	NA	
	FIS302342	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

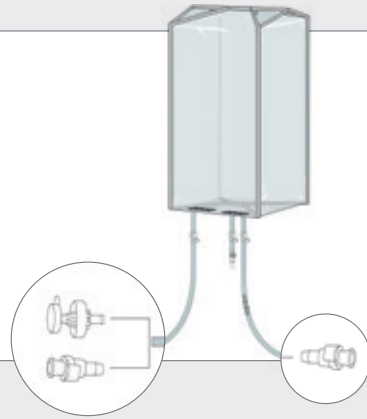
Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration and Storage in Pallettank

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

Opta® SFT female  
MPU quick coupler female



MPU male with  
sealing plug for  
quick coupling

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Weld to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500375	2	3/4" Opta® SFT female	NA	3/4" x 1" C-Flex® + MPU male + sealing cap
	FIS500365	2	MPU female + sealing cap		
1,500 L	FIS500376	2	3/4" Opta® SFT female	NA	
	FIS500366	2	MPU female + sealing cap		
2,000 L	FIS500377	2	3/4" Opta® SFT female	NA	
	FIS500367	2	MPU female + sealing cap		
2,500 L	FIS500378	1	3/4" Opta® SFT female	NA	
	FIS500368	1	MPU female + sealing cap		
3,000 L	FIS500379	1	3/4" Opta® SFT female	NA	
	FIS500369	1	MPU female + sealing cap		

<sup>1</sup> Inlet tubing line from connector to bag:  
3/4" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
3/4" ID Silicone TuFlux® 2.5 m (98") +  
3/4" x 1" Clear C-Flex® 0.5 m (20")

## Cell Harvest &amp; Downstream Intermediates Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

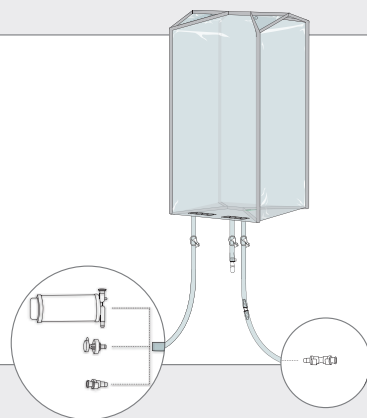
Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm

Opta® SFT female

MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



MPX quick coupler male &  
female with cap for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Quick Coupler Connection to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500360	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS500330	2	1/2" Opta® SFT female	NA	
	FIS302338	2	MPX female + sealing cap	NA	
1,500 L	FIS500361	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500334	2	1/2" Opta® SFT female	NA	
	FIS302339	2	MPX female + sealing cap	NA	
2,000 L	FIS500362	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500362	2	1/2" Opta® SFT female	NA	
	FIS302340	2	MPX female + sealing cap	NA	
2,500 L	FIS500363	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500332	1	1/2" Opta® SFT female	NA	
	FIS302341	1	MPX female + sealing cap	NA	
3,000 L	FIS500364	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500333	1	1/2" Opta® SFT female	NA	
	FIS302342	1	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

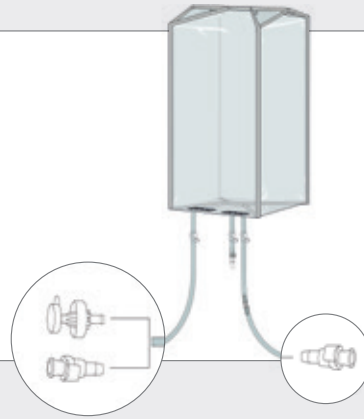
Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Cell Harvest & Downstream Intermediates Filtration and Storage in Palletank

Back to Digital  
Selection Map

## Cell Harvest & Downstream Intermediates

Opta® SFT female  
MPU quick coupler female  
with sealing cap or C-Flex®  
tube for sterile weld with  
BioWelder® TC



MPU male with  
sealing plug for  
quick coupling

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Quick Coupler Connection to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500375	2	3/4" Opta® SFT female	NA	3/4" x 1" C-Flex® + MPU male + sealing cap
	FIS500365	2	MPU female + sealing cap		
1,500 L	FIS500376	2	3/4" Opta® SFT female	NA	
	FIS500366	2	MPU female + sealing cap		
2,000 L	FIS500377	2	3/4" Opta® SFT female	NA	
	FIS500367	2	MPU female + sealing cap		
2,500 L	FIS500378	1	3/4" Opta® SFT female	NA	
	FIS500368	1	MPU female + sealing cap		
3,000 L	FIS500379	1	3/4" Opta® SFT female	NA	
	FIS500369	1	MPU female + sealing cap		

<sup>1</sup> Inlet tubing line from connector Opta® to bag:  
3/4" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
3/4" ID Silicone TuFlux® 2.5 m (98") +  
3/4" x 1" Clear C-Flex® 0.5 m (20")

## Cell Harvest &amp; Downstream Intermediates Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

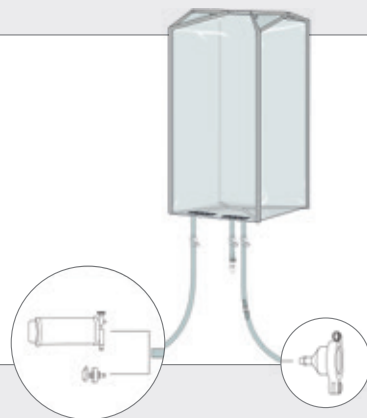
Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm  
Opta® SFT female



Tri-Clamp flange  
for sanitary or aseptic  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500340	2	Sartopore® 2 XLG	MaxiCaps® Size 2	1/2" ID tubing, Tri-Clamp 1 1/2 sanitary flange with gasket, cap & union
	FIS500350	2	1/2" Opta® SFT female	NA	
1,500 L	FIS500341	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500351	2	1/2" Opta® SFT female	NA	
2,000 L	FIS500342	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500352	2	1/2" Opta® SFT female	NA	
2,500 L	FIS500343	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500353	1	1/2" Opta® SFT female	NA	
3,000 L	FIS500344	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500354	1	1/2" Opta® SFT female	NA	

<sup>1</sup> Inlet tubing line from end line to bag:  
1/2" x 3/4" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
1/2" ID Silicone TuFlux® 2,5 m (98") +  
1/2" x 3/4" Clear C-Flex® 0.5 m (20")

## Cell Harvest &amp; Downstream Intermediates Filtration and Storage in Palletank

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

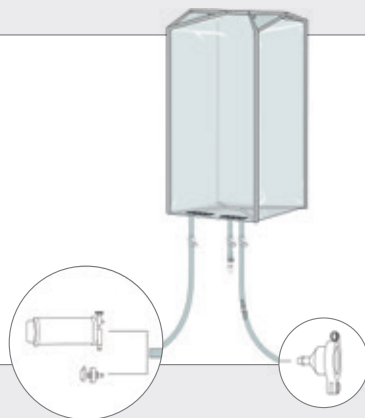
Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Cell Harvest  
& Downstream  
Intermediates

Sartopore® 2 XLG 0.8 | 0.2 µm  
Opta® SFT female



Tri-Clamp flange  
for sanitary or aseptic  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems – High Flow Rate

Bag Volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
1,000 L	FIS500345	2	Sartopore® 2 XLG	MaxiCaps® Size 2	¾" ID tubing, Tri-Clamp 1 ½ sanitary flange with gasket, cap & union
	FIS500355	2	¾" Opta® SFT female	NA	
1,500 L	FIS500346	2	Sartopore® 2 XLG	MaxiCaps® Size 2	
	FIS500356	2	¾" Opta® SFT female	NA	
2,000 L	FIS500347	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500357	2	¾" Opta® SFT female	NA	
2,500 L	FIS500348	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500358	1	¾" Opta® SFT female	NA	
3,000 L	FIS500349	1	Sartopore® 2 XLG	MaxiCaps® Size 3	
	FIS500359	1	¾" Opta® SFT female	NA	

<sup>1</sup> Inlet tubing line from end line to bag with filter:  
½" x ¾" Clear C-Flex® 1.5 m (60")

<sup>1</sup> Inlet tubing line from connector to bag:  
¾" x 1" Clear C-Flex® 1.5 m (60")

<sup>2</sup> Outlet tubing line from bag to end line:  
¾" ID Silicone TuFlux® 3 m (118")



# Flexsafe® 2D Pre-designed Solutions for Drug Substances

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

## Drug Substance Purification

Sterilizing Filtration between Purification Steps

Drug Substance Storage and Shipping

Drug Substance Transfer

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Flexsafe® 2D solutions for drug substances purification are available with Sartopore® Platinum 0.45 | 0.2 µm. The outstanding wetting properties of the modified membrane reduce by ten times the flushing volumes and facilitate pre-use filter integrity testing.

Flexsafe® 2D bags without filters are also available for:

- Sterile connection to alternative Sartopore® filter line using Opta® or welding with BioWelder® TC
- Aseptic connection to alternative Sartopore® filter line with MPC quick coupler

Test line with Midisart® BV 0.2 µm filter is installed on the inlet line to allow sterile point of use leak testing using the FlexAct® BT.

Sartopore® filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®. Inlet and outlet lines are made of Clear C-Flex® tubings for welding and sealing.

Flexsafe® 2D bags allow for cell harvest transfer to most common single-use and stainless steel downstream purification systems with a variety of sterile and aseptic connections.

## Sampling

- Clave needleless sampling port

## Outlet Line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® tube for sterile weld with BioWelder® TC

- MPC quick coupler male & cap for sanitary or aseptic connection to single-use systems
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel systems



## Test Line for FlexAct® BT

- Test line with Midisart® BV 0.2 µm filter and ¼" Tri-Clamp for point of use leak test with FlexAct® BT
- C-Flex® tube for sterile weld with BioWelder® TC

## Inlet Line

Sterilizing Filtration

- Sartopore® Platinum 0.45 | 0.2 µm

Connection for Alternative Filter Line

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- MPC quick coupler female

**Media**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

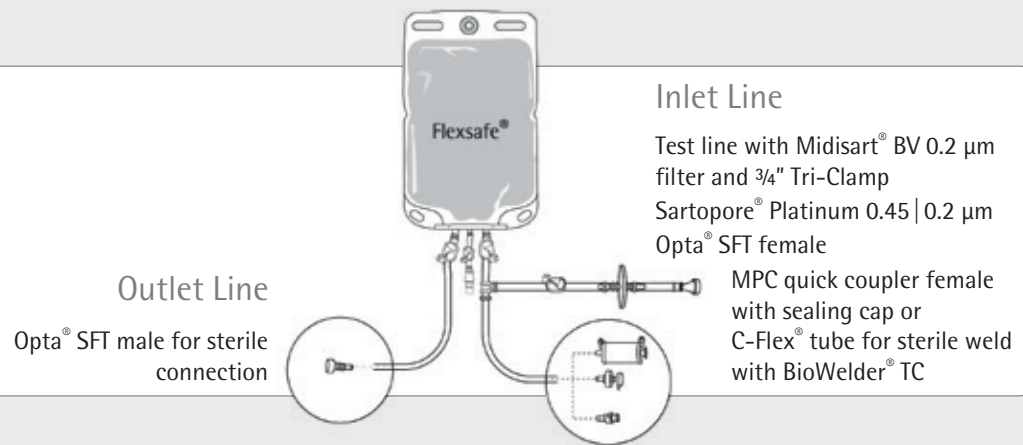
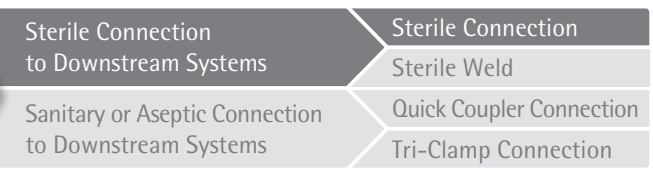
**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D | Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D | Flexsafe® 3D

Back to Digital Selection Map

**Drug Substance Purification**



**Inlet Line**  
Test line with Midisart® BV 0.2 µm filter and 3/4" Tri-Clamp  
Sartopore® Platinum 0.45 | 0.2 µm  
Opta® SFT female  
MPC quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC

**Outlet Line**  
Opta® SFT male for sterile connection

## Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130169	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4	3/8" Opta® SFT male	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130183	16	3/8" Opta® SFT female	NA		
	FLS130181	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130074	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4		
	FLS130096	16	3/8" Opta® SFT female	NA		
	FLS130093	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130079	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130097	8	3/8" Opta® SFT female	NA		
	FLS130094	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130080	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130098	8	3/8" Opta® SFT female	NA		
	FLS130095	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130172	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130184	8	3/8" Opta® SFT female	NA		
	FLS130182	8	3/8" MPC female + sealing cap	NA		

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

## Drug Substances

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Drug  
Substance  
Purification

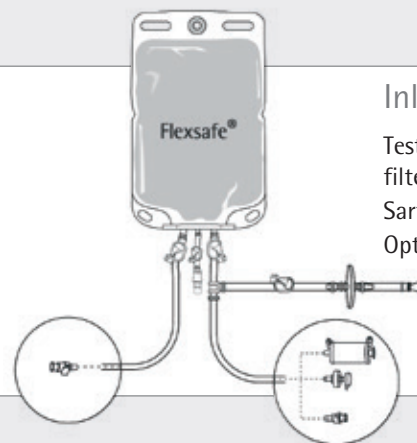
Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection

Outlet Line  
C-Flex® tube with MPC  
sealing cap for sterile weld  
with BioWelder® TC



## Inlet Line

Test line with Midisart® BV 0.2 µm  
filter and 3/4" Tri-Clamp  
Sartopore® Platinum 0.45 | 0.2 µm  
Opta® SFT female

MPC quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC

## Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130167	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4	3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130179	16	3/8" Opta® SFT female	NA		
	FLS130177	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130072	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4		
	FLS130090	16	3/8" Opta® SFT female	NA		
	FLS130087	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130075	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130091	8	3/8" Opta® SFT female	NA		
	FLS130088	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130076	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130092	8	3/8" Opta® SFT female	NA		
	FLS130089	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130170	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130180	8	3/8" Opta® SFT female	NA		
	FLS130178	8	3/8" MPC female + sealing cap	NA		

## Leak Test Line

– 1/4" x 3/8" Clear C-Flex® 300 mm (12") +  
Midisart® BV 0.2 µm + 1/4" ID Silicone TuFlux®  
100 mm (4") + 3/4" Tri-Clamp with gasket,  
cap & union

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

## Drug Substances

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Drug  
Substance  
Purification

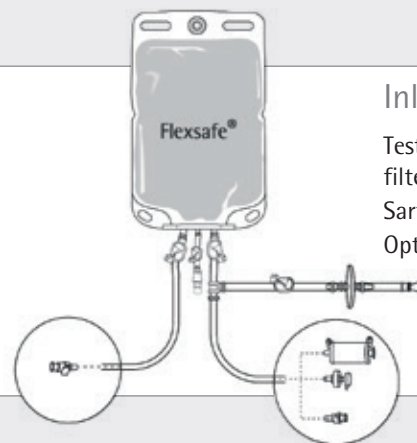
Sterile Connection  
to Downstream Systems

Sterile Connection  
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection  
Tri-Clamp Connection

Outlet Line  
MPC quick coupler male & female with cap for sanitary or aseptic connection



### Inlet Line

Test line with Midisart® BV 0.2 µm filter and 3/4" Tri-Clamp  
Sartopore® Platinum 0.45 | 0.2 µm  
Opta® SFT female

MPC quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC

### Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130167	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4	3/8" x 5/8" C-Flex® + 3/8" MPC male + sealing cap	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130179	16	3/8" Opta® SFT female	NA		
	FLS130177	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130072	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4		
	FLS130090	16	3/8" Opta® SFT female	NA		
	FLS130087	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130075	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130091	8	3/8" Opta® SFT female	NA		
	FLS130088	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130076	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130092	8	3/8" Opta® SFT female	NA		
	FLS130089	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130170	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130180	8	3/8" Opta® SFT female	NA		
	FLS130178	8	3/8" MPC female + sealing cap	NA		

### Leak Test Line

– 1/4" x 3/8" Clear C-Flex® 300 mm (12") + Midisart® BV 0.2 µm + 1/4" ID Silicone TuFlux® 100 mm (4") + 3/4" Tri-Clamp with gasket, cap & union

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

## Drug Substances

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Drug  
Substance  
Purification

Sterile Connection  
to Downstream Systems

Sterile Connection

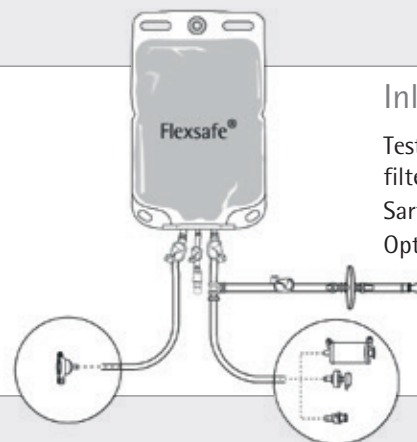
Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

Outlet Line  
Tri-Clamp flange for sanitary  
or aseptic connection



### Inlet Line

Test line with Midisart® BV 0.2 µm  
filter and 3/4" Tri-Clamp  
Sartopore® Platinum 0.45 | 0.2 µm  
Opta® SFT female

MPC quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC

### Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup> Distal connector on draining line	Sampling line
			Filter or distal connector on filling line	Filter type and size		
3 L	FLS130168	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4	3/8" Tri-Clamp 3/4" sanitary flange with gasket, cap & union	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130175	16	3/8" Opta® SFT female	NA		
	FLS130173	16	3/8" MPC female + sealing cap	NA		
5 L	FLS130073	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4		
	FLS130084	16	3/8" Opta® SFT female	NA		
	FLS130081	16	3/8" MPC female + sealing cap	NA		
10 L	FLS130077	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130085	8	3/8" Opta® SFT female	NA		
	FLS130082	8	3/8" MPC female + sealing cap	NA		
20 L	FLS130078	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130086	8	3/8" Opta® SFT female	NA		
	FLS130083	8	3/8" MPC female + sealing cap	NA		
50 L	FLS130171	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130176	8	3/8" Opta® SFT female	NA		
	FLS130174	8	3/8" MPC female + sealing cap	NA		

### Leak Test Line

– 1/4" × 3/8" Clear C-Flex® 300 mm (12") +  
Midisart® BV 0.2 µm + 1/4" ID Silicone TuFlux®  
100 mm (4") + 3/4" Tri-Clamp with gasket,  
cap & union

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" × 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" × 5/8" TuFlux® SIL 300 mm (12")

# Drug Substance Filtration, Storage and Shipping

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Drug  
Substance  
Purification

Sterilizing  
Filtration between  
Purification Steps

Drug Substance  
Storage and  
Shipping

Drug Substance  
Transfer

Sterile Connection  
to Downstream Systems

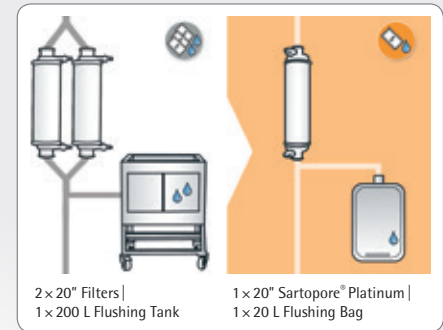
Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection



2 × 20" Filters |  
1 × 200 L Flushing Tank

1 × 20" Sartopore® Platinum |  
1 × 20 L Flushing Bag

Sartopore® Platinum reduce by ten times the wetting volumes  
for integrity testing

Flexsafe® PDS for drug substance feature the Sartopore® Platinum 0.45 | 0.2 µm with exceptional throughput, flowrate and wetting performances for a cheaper and faster filtration process. The outstanding wetting properties of the modified membrane reduce by ten times the flushing volumes required prior to integrity testing and eliminate retesting due to insufficient wetting.

Flexsafe® 3D bags without filters are also available for sterile connection to alternative Sartopore filter transfer set using Opta® ½" or welding with BioWelder® TC.

Sartopore filters can be disconnected for post-use integrity testing with sterile seal using BioSealer®.

Inlet and outlet lines are made of C-Flex® + Silicone TuFlux® for welding, sealing and pumping.

Flexsafe® 3D Bags allow for sterile drug substance transfer to most common single-use and stainless steel downstream purification systems after the cross-flow step with a variety of sterile connections.

Inlet line

Sterilizing-grade filtration between purification steps

- Sartopore® Platinum 0.45 | 0.2 µm for efficient wetting and integrity testing

Connection for alternative filter transfer set

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- MPX quick coupler female

Sampling

– Needleless sampling port

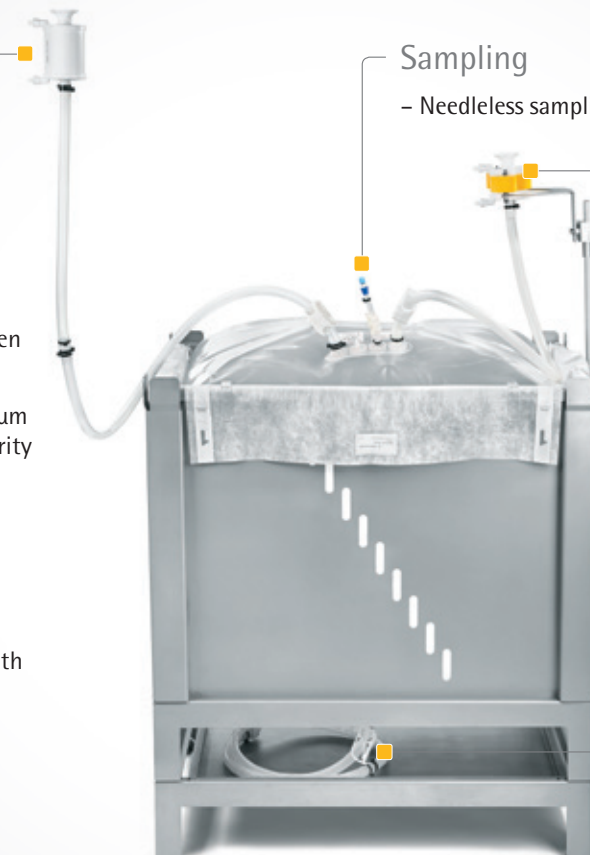
Test line for Point of use leak test

- C-Flex® for sterile weld with BioWelder® TC
- Sartopore® Air Filter size 7 keeps the sterility of the 3D bag during testing and filling

Outlet line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® with MPX plug for sterile weld to single-use system
- MPX Quick couplers for sanitary or aseptic connection to single-use system
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel system

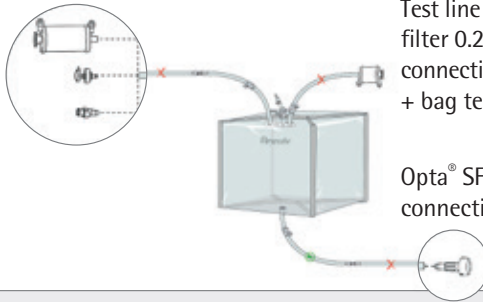


# Drug Substance Filtration, Storage and Shipping in Palletank

Back to Digital Selection Map

Drug Substance Purification

Sartopore® Platinum  
0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Test line with Sartopore® Air  
filter 0.2 µm allowing the  
connection to the Sartocheck® 4  
+ bag tester up to 500 L

Opta® SFT male for sterile  
connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126792	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" Opta® SFT male
	FIS301530	3	1/2" Opta® SFT female	NA	
	FIS301531	3	MPX female + sealing cap	NA	
200 L	FIS126793	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS301535	3	1/2" Opta® SFT female	NA	
	FIS301536	3	MPX female + sealing cap	NA	
500 L	FIS126794	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 9	
	FIS301542	3	1/2" Opta® SFT female	NA	
	FIS301543	3	MPX female + sealing cap	NA	

## Leak Test Line

- 1/2" x 3/4" Clear C-Flex® 1,500 mm (59") +  
Sartopore® Air filter 0.2 µm size 7  
(Inlet 1 1/2" tri-clamp) up to 500 L



<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

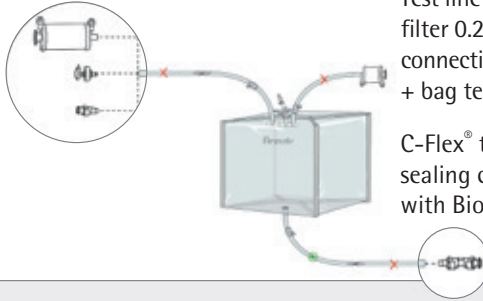
<sup>2</sup>Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

# Drug Substance Filtration, Storage and Shipping in Palletank

Back to Digital Selection Map

Drug Substance Purification

Sartopore® Platinum  
0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Test line with Sartopore® Air  
filter 0.2 µm allowing the  
connection to the Sartocheck® 4  
+ bag tester up to 500 L  
C-Flex® tube with MPX  
sealing cap for sterile weld  
with BioWelder® TC

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Sterile Weld to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126788	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS301532	3	1/2" Opta® SFT female	NA	
	FIS300131	3	MPX female + sealing cap	NA	
200 L	FIS126789	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS301537	3	1/2" Opta® SFT female	NA	
	FIS300132	3	MPX female + sealing cap	NA	
500 L	FIS126790	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 9	
	FIS301544	3	1/2" Opta® SFT female	NA	
	FIS300133	3	MPX female + sealing cap	NA	

<sup>1</sup>Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup>Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")





Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

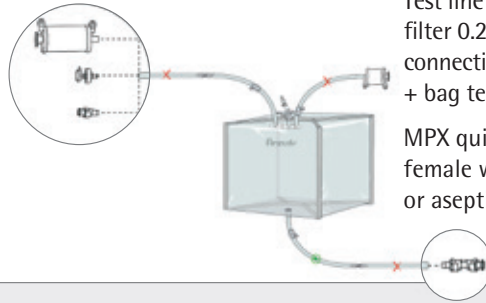
Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Drug Substance Filtration, Storage and Shipping in Palletank

Back to Digital  
Selection Map

Drug  
Substance  
Purification

Sartopore® Platinum  
0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female  
with sealing cap or  
C-Flex® tube for sterile weld  
with BioWelder® TC



Test line with Sartopore® Air  
filter 0.2 µm allowing the  
connection to the Sartocheck® 4  
+ bag tester up to 500 L

MPX quick coupler male &  
female with cap for sanitary  
or aseptic connection

Sterile Connection  
to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection  
to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Quick Coupler Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126788	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" x 3/4" C-Flex® + MPX male + MPX double female + sealing cap
	FIS301532	3	1/2" Opta® SFT female	NA	
	FIS300131	3	MPX female + sealing cap	NA	
200 L	FIS126789	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS301537	3	1/2" Opta® SFT female	NA	
	FIS300132	3	MPX female + sealing cap	NA	
500 L	FIS126790	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 9	
	FIS301544	3	1/2" Opta® SFT female	NA	
	FIS300133	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")

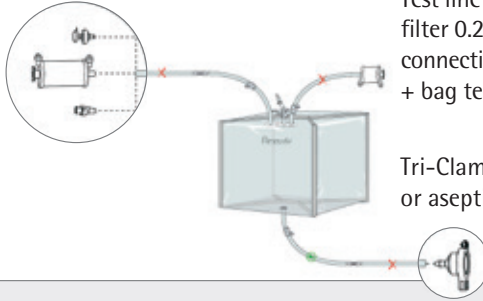


# Drug Substance Filtration, Storage and Shipping in Palletank

Back to Digital Selection Map

Drug Substance Purification

Sartopore® Platinum 0.45 | 0.2 µm  
Opta® SFT female  
MPX quick coupler female with sealing cap or C-Flex® tube for sterile weld with BioWelder® TC



Test line with Sartopore® Air filter 0.2 µm allowing the connection to the Sartocheck® 4 + bag tester up to 500 L

Tri-Clamp flange for sanitary or aseptic connection

Sterile Connection to Downstream Systems

Sterile Connection

Sterile Weld

Sanitary or Aseptic Connection to Downstream Systems

Quick Coupler Connection

Tri-Clamp Connection

## Tri-Clamp Connection to Downstream Systems

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line
100 L	FIS126780	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" Tri-Clamp 1 1/2" sanitary flange with gasket, cap & union
	FIS301533	3	1/2" Opta® SFT female	NA	
	FIS301534	3	MPX female + sealing cap	NA	
200 L	FIS126781	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS301538	3	1/2" Opta® SFT female	NA	
	FIS301539	3	MPX female + sealing cap	NA	
500 L	FIS126782	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 9	
	FIS301545	3	1/2" Opta® SFT female	NA	
	FIS301546	3	MPX female + sealing cap	NA	

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1.5 m (60")



# Flexsafe® 2D Pre-designed Solutions for Drug Product Formulation

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

## Drug Product Formulation

Sterilizing Filtration

Drug Product Storage

Drug Product Transfer

Sterile Connection to Final Filling

Sterile Connection  
Sterile Weld

Flexsafe® 2D advanced solutions for drug product feature the Sartopore® Platinum 0.45 | 0.2 µm. The outstanding wetting properties of the modified membrane reduce by ten times the flushing volumes and facilitate pre-use filter integrity testing.

Flexsafe® 2D bags without filters are also available for sterile connection to alternative Sartopore filter line using Opta® or welding with BioWelder® TC.

Sartopore® filters can be disconnected for post-use integrity testing using BioSealer®.

Inlet and outlet lines are made of Silicone TuFlux® or C-Flex® tubings for welding and sealing.

Test line with Midisart® BV 0.2 µm filter is installed on the inlet line to allow sterile point of use leak testing using the FlexAct® BT.

Test line with Midisart® BV 0.2 µm filter are installed on the inlet line to allow sterile point of use leak testing using the FlexAct® BT.

Flexsafe® 2D bags allow for sterile drug product transfer to most common single-use and stainless steel final filling systems.

Opta® SFT allows for sterile connection to our Biosafe® Raft products for liquid transfer to the final filling area.

### Outlet Line

Connection and transfer by pumping or gravity

- Opta® SFT male for sterile connection
- C-Flex® tube for sterile weld with BioWelder® TC

### Sampling

- Clave needleless sampling port
- MPC quick coupler male & cap for sanitary or aseptic connection to single-use systems
- Tri-Clamp flange for sanitary or aseptic connection to stainless steel systems



### Test Line for FlexAct® BT

- Test line with Midisart® BV 0.2 µm filter and 1/4" Tri-Clamp for point of use leak test with FlexAct® BT
- C-Flex® tube for sterile weld with BioWelder® TC

### Inlet Line

Sterilizing Filtration

- Sartopore® Platinum 0.45 | 0.2 µm

Connection for Alternative Filter Line

- Opta® SFT female
- C-Flex® tube for sterile weld with BioWelder® TC
- MPC quick coupler female

# Flexsafe® 2D Pre-designed Solutions for Drug Product Formulation

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

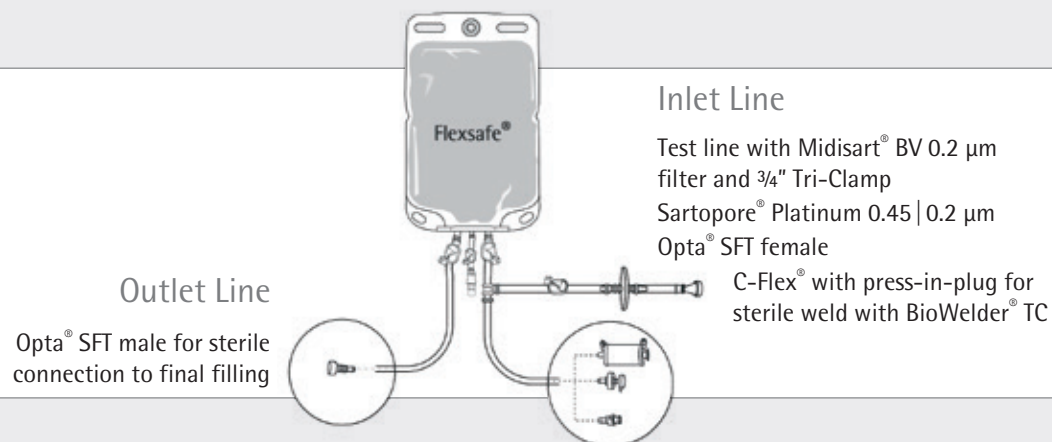
**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

Drug Product Formulation

Sterile Connection to Final Filling

Sterile Connection  
Sterile Weld



## Sterile Connection to Final Formulation & Filling

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>	Sampling
			Filter or distal connector on filling line	Filter type and size	Distal connector on draining line	Sampling line
3 L	FLS130185	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4	3/8" Opta® SFT male	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
	FLS130187	16	3/8" Opta® SFT female	NA		
5 L	FLS130099	16	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 4		
	FLS130102	16	3/8" Opta® SFT female	NA		
10 L	FLS130100	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130103	8	3/8" Opta® SFT female	NA		
20 L	FLS130101	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130104	8	3/8" Opta® SFT female	NA		
50 L	FLS130186	8	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7		
	FLS130188	8	3/8" Opta® SFT female	NA		

### Leak Test Line

- 1/4" x 3/8" Clear C-Flex® 300 mm (12") + Midisart® BV 0.2 µm + 1/4" ID Silicone TuFlux® 100 mm (4") + 3/4" Tri-Clamp with gasket, cap & union

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" x 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" x 5/8" Clear C-Flex® 500 mm (20")

# Flexsafe® 2D Pre-designed Solutions for Drug Product Formulation

**Media**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

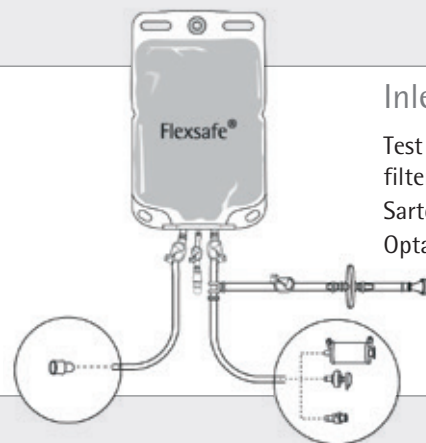
Drug Product Formulation

Sterile Connection to Final Filling

Sterile Connection

Sterile Weld

**Outlet Line**  
C-Flex® with press-in-plug for sterile weld with BioWelder® TC



**Inlet Line**

Test line with Midisart® BV 0.2 µm filter and 3/4" Tri-Clamp  
Sartopore® Platinum 0.45 | 0.2 µm  
Opta® SFT female

C-Flex® with press-in-plug for sterile weld with BioWelder® TC

## Sterile Weld to Final Formulation & Filling

Bag volume	Part number	Units per box	Inlet <sup>1</sup>	Outlet <sup>2</sup>	Sampling
			Distal connector on filling line	Distal connector on draining line	Sampling line
3 L	FLS130189	16	3/8" ID C-Flex® + 3/8" press-in-plug	3/8" ID C-Flex® + 3/8" press-in-plug	1/4" ID Silicone TuFlux® 100 mm (4") + Luer Lock female + Clave connector
5 L	FLS130105	16	3/8" ID C-Flex® + 3/8" press-in-plug		
10 L	FLS130106	8	3/8" ID C-Flex® + 3/8" press-in-plug		
20 L	FLS130107	8	3/8" ID C-Flex® + 3/8" press-in-plug		
50 L	FLS130190	8	3/8" ID C-Flex® + 3/8" press-in-plug		

### Leak Test Line

- 1/4" × 3/8" Clear C-Flex® 300 mm (12") +  
Midisart® BV 0.2 µm + 1/4" ID Silicone TuFlux®  
100 mm (4") + 3/4" Tri-Clamp with gasket,  
cap & union

<sup>1</sup> Inlet tubing line from end line to bag: 3/8" × 5/8" Clear C-Flex® 500 mm (20") + Clipster® in a separate pouch

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" × 5/8" Clear C-Flex® 500 mm (20")

## Drug Product Filtration, Storage and Filling

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

Drug Product  
Formulation

Sterilizing  
Filtration

Drug Product  
Storage

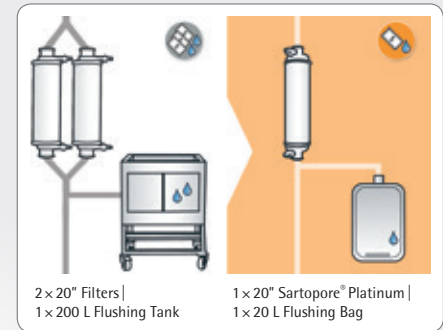
Drug Product  
Transfer

Sterile Connection to  
Final Filling

Sterile Connection

Sterile Weld

Aseptic Transfer to  
an Isolator



2 × 20" Filters |  
1 × 200 L Flushing Tank

1 × 20" Sartopore® Platinum |  
1 × 20 L Flushing Bag

Sartopore® Platinum reduce by ten times the wetting volumes for integrity testing

Flexsafe® 3D advanced solutions for drug product feature the Sartopore® Platinum 0.45 | 0.2 µm. The outstanding wetting properties of the modified membrane reduce by ten times the flushing volumes and facilitate pre-use filter integrity testing.

Flexsafe® 3D bags without filters are also available for sterile connection to alternative Sartopore filter transfer set using Opta® ½" or welding with BioWelder® TC.

Sartopore® filters can be disconnected for post-use integrity testing using BioSealer®.

Inlet and outlet lines are made of C-Flex® + Silicone TuFlux® for welding, sealing and pumping.

Flexsafe® 3D Bags allow for sterile drug product transfer to most common single-use and stainless steel final filling systems.

Opta® SFT allows for sterile connection to our Biosafe® Raft products for liquid transfer to the final filling area.

Inlet line

Sterilizing-grade filtration from formulation mixer

– Sartopore® Platinum 0.45 | 0.2 µm for efficient wetting and integrity testing

Connection for alternative filter transfer set

– Opta® SFT female  
– C-Flex® tube weld with BioWelder® TC

Sampling

– Needleless sampling port

Test line for Point of use leak test

– C-Flex® for sterile weld with BioWelder® TC  
– Sartopore® Air Filter size 7 keeps the sterility of the 3D bag during testing and filling.

Outlet line

Connection and transfer by pumping

– Opta® SFT male for sterile connection  
– C-Flex® with quick coupler and plug for sterile welding to single-use system

**Every production batch of Flexsafe® 3D Bags for drug product are tested for bioburden, particles and endotoxins.**

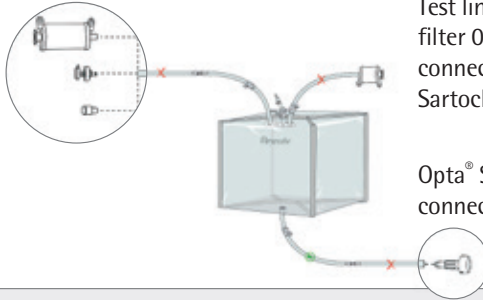


# Drug Product Filtration and Storage in Pallettank

Back to Digital Selection Map

Drug Product Formulation

Sartopore® Platinum  
0.45 | 0.2 µm  
Opta® SFT female  
C-Flex® with press-in-plug  
for sterile weld with  
BioWelder® TC



Test line with Sartopore® Air filter 0.2 µm allowing the connection to the Sartocheck® 4+ bag tester

Opta® SFT male for sterile connection to final filling

Sterile Connection to Final Filling

Sterile Connection

Sterile Weld

Aseptic Transfer to an Isolator

## Sterile Connection to Final Filling

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on outlet line
100 L	FIS127157	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" Opta® SFT male
	FIS126819	3	1/2" Opta® SFT female	NA	
	FIS126821	3	Press in plug	NA	
200 L	FIS127158	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS301540	3	1/2" Opta® SFT female	NA	
	FIS126822	3	Press in plug	NA	

### Leak Test Line

- 1/2" x 3/4" Clear C-Flex® 1,500 mm (59") + Sartopore® Air filter 0.2 µm size 7 (Inlet 1 1/2" tri-clamp)

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")



# Drug Product Filtration and Storage in Pallettank

**Media**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

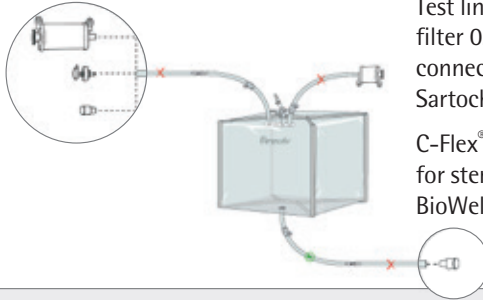
**Drug Substance**  
Flexsafe® 2D |  
Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital Selection Map

Drug Product Formulation

Sartopore® Platinum  
0.45 | 0.2 µm  
Opta® SFT female  
C-Flex® with press-in-plug  
for sterile weld with  
BioWelder® TC



Test line with Sartopore® Air filter 0.2 µm allowing the connection to the Sartocheck® 4+ bag tester  
C-Flex® with press-in-plug for sterile weld with BioWelder® TC

Sterile Connection to Final Filling

Sterile Connection

Sterile Weld

Aseptic Transfer to an Isolator

## Sterile Weld to Final Filling

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on outlet line
100 L	FIS126879	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" x 3/4" C-Flex® + Press-in-plug
	FIS126823	3	1/2" Opta® SFT female	NA	
	FIS126825	3	Press in plug	NA	
200 L	FIS126880	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS126824	3	1/2" Opta® SFT female	NA	
	FIS126826	3	Press in plug	NA	

## Leak Test Line

- 1/2" x 3/4" Clear C-Flex® 1,500 mm (59") + Sartopore® Air filter 0.2 µm size 7 (Inlet 1 1/2" tri-clamp)



<sup>1</sup> Inlet tubing line from end line to bag: 1/2" x 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 1/2" ID Silicone TuFlux® 1 m (40") + 1/2" x 3/4" Clear C-Flex® 0.5 m (20")



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

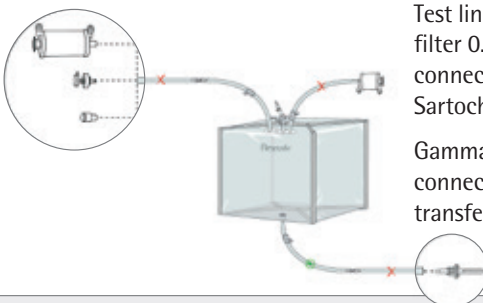
Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Drug Product Filtration and Storage in Palletank

Back to Digital  
Selection Map

Drug Product  
Formulation

Sartopore® Platinum  
0.45 | 0.2 µm  
Opta® SFT female  
C-Flex® with press-in-plug  
for sterile weld with  
BioWelder® TC



Test line with Sartopore® Air  
filter 0.2 µm allowing the  
connection to the  
Sartocheck® 4+ bag tester

GammaSart® sterile  
connection for aseptic  
transfer to an isolator

Sterile Connection to  
Final Filling

Sterile Connection

Sterile Weld

Aseptic Transfer to  
an Isolator

### Sterile Connection to an Isolator for Final Filling

Bag volume	Part number	Units per box	Inlet <sup>1</sup>		Outlet <sup>2</sup>
			Filter or distal connector on filling line	Filter type and size	Distal connector on outlet line
100 L	FIS126817	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	3/8" GammaSart® for aseptic transfer in isolator
	FIS126827	3	1/2" Opta® SFT female	NA	
	FIS126829	3	Press in plug	NA	
200 L	FIS126818	2	Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 8	
	FIS126828	3	1/2" Opta® SFT female	NA	
	FIS301541	3	Press in plug	NA	

### Leak Test Line

– 1/2" × 3/4" Clear C-Flex® 1,500 mm (59") +  
Sartopore® Air filter 0.2 µm size 7  
(Inlet 1 1/2" tri-clamp)

<sup>1</sup> Inlet tubing line from end line to bag: 1/2" × 3/4" Clear C-Flex® 0.5 m (20") + 1/2" ID Silicone TuFlux® 1 m (40")

<sup>2</sup> Outlet tubing line from bag to end line: 3/8" ID Clear C-Flex® 0.5 m (20") + 1/2" × 3/4" Silicone TuFlux® 2 m (80")



# Sampling in Flexsafe® 2D Bags

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

[Back to Digital Selection Map](#)

Bag Volume	Part Number	Units per box	Inlet <sup>1</sup>		Outlet <sup>1</sup>	
			Distal Connector on Filling Line		Distal Connector on Draining Line	
20 mL	FLS130111	20	1/4" MPC male + sealing cap		1/4" MPC male + sealing cap	
50 mL	FLS130112	20				
150 mL	FLS130000	20				
250 mL	FLS130001	20				
500 mL	FLS130002	20				
1,000 mL <sup>2</sup>	FLS130123	20				
3,000 mL <sup>2</sup>	FLS130124	16				
20 mL	FLS130113	20	1/4" MPC female + sealing cap		1/4" MPC male + sealing cap	
50 mL	FLS130114	20				
150 mL	FLS130003	20				
250 mL	FLS130004	20				
500 mL	FLS130005	20				
1,000 mL <sup>2</sup>	FLS130125	20				
3,000 mL <sup>2</sup>	FLS130126	16				
20 mL	FLS130115	20	1/4" MPC female + sealing cap		Luer Lock female + Clave connector	
50 mL	FLS130116	20				
150 mL	FLS130006	20				
250 mL	FLS130007	20				
500 mL	FLS130008	20				
20 mL	FLS130117	20	Luer Lock female + cap		Luer Lock female + Clave connector	
50 mL	FLS130118	20				
150 mL	FLS130009	20				
250 mL	FLS130010	20				
500 mL	FLS130011	20				

<sup>1</sup> Inlet and outlet tubing: 1/4" × 3/8" Silicone 150 mm (6")

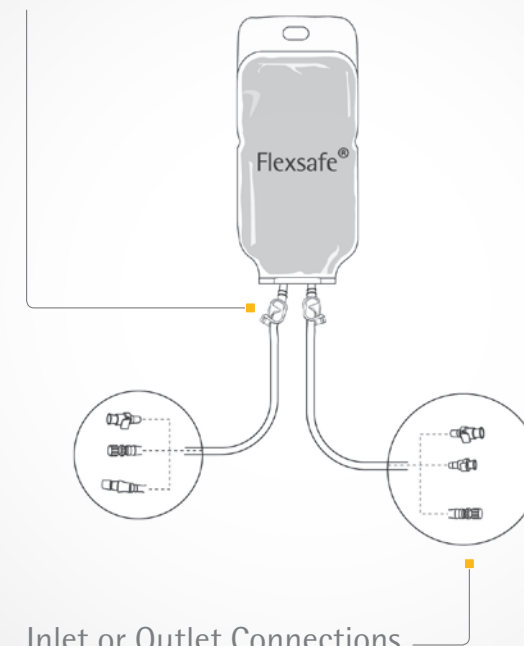
<sup>2</sup> Third line with Silicone tubing and needleless Clave connector for 1 L and 3 L bags

Flexsafe® 2D pre-designed solutions for sampling are designed to easily take samples across all your process steps.

Flexsafe® 2D pre-designed solutions allow for sanitary sampling through usual connectors or aseptic sampling when the connection is performed under laminar air flow conditions.

## Filling or Draining Lines

- Silicone TuFlux® tube
- Clear C-Flex® tube



## Inlet or Outlet Connections

- MPC quick coupler male or female
- Luer lock male or female
- Luer lock and needleless sampling port

# Flexsafe® 2D Pre-designed Solutions for Sampling in Flexsafe® 2D Bags

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

[Back to Digital Selection Map](#)

Bag Volume	Part Number	Units per box	Inlet <sup>1</sup>		Outlet <sup>1</sup>	
			Distal Connector on Filling Line		Distal Connector on Draining Line	
20 mL	FLS130119	20	Luer Lock female + cap		Luer Lock male + cap	
50 mL	FLS130120	20				
150 mL	FLS130012	20				
250 mL	FLS130013	20				
500 mL	FLS130014	20				
1,000 mL <sup>2</sup>	FLS130127	20				
3,000 mL <sup>2</sup>	FLS130128	16				

<sup>1</sup> Inlet and outlet tubing: ¼" × ⅜" Silicone 150 mm (6")

<sup>2</sup> Third line with Silicone tubing and needleless Clave connecteur for 1L and 3L bags

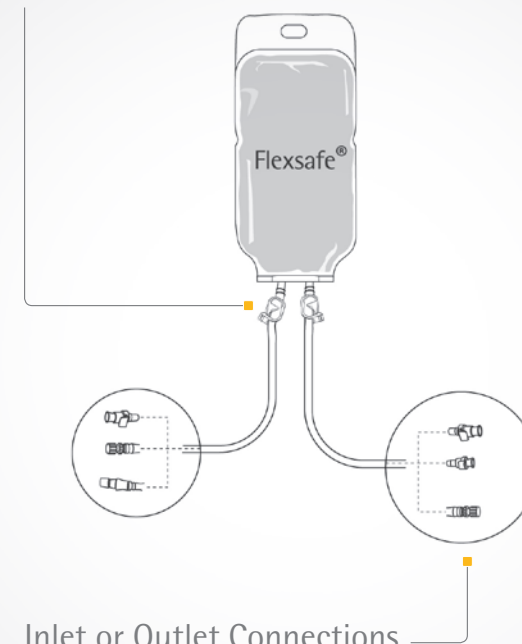
Bag Volume	Part Number	Units per box	Inlet <sup>2</sup>		Outlet <sup>2</sup>	
			Distal Connector on Filling Line		Distal Connector on Draining Line	
20 mL	FLS130121	10	¼" MPC female + sealing cap		¼" MPC male + sealing cap	
50 mL	FLS130122	10				
150 mL	FLS130015	10				
250 mL	FLS130016	10				
500 mL	FLS130017	10				
1,000 mL <sup>3</sup>	FLS130129	10				
3,000 mL <sup>3</sup>	FLS130130	16				

<sup>2</sup> Inlet and outlet tubing: ¼" × ⅜" Clear C-Flex® 500 mm (20")

<sup>3</sup> Third line with Silicone tubing and needleless Clave connecteur for 1L and 3L bags

## Filling or Draining Lines

- Silicone TuFlux® tube
- Clear C-Flex® tube



## Inlet or Outlet Connections

- MPC quick coupler male or female
- Luer lock male or female
- Luer lock and needleless sampling port

Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D | Flexsafe® 3D

Drug Product  
Flexsafe® 2D | Flexsafe® 3D

# Flexsafe® 2D Bags in Shell for Robust Liquid Handling and Shipping

Back to Digital Selection Map

The Outstanding Strength & Flexibility of Flexsafe® Bags Provide Safe & Reliable Liquid Handling & Shipping



Bag Volume	Part Number	Units per box	Description	Inlet <sup>1</sup>	Outlet
5 L	FLS303106	2	Flexsafe® 5 L (Shell, MPC, TC)	3/8" MPC female + sealing cap	Tri-clamp 3/4" flange with gasket, union & cap <sup>2</sup>
5 L	FLS303107	2	Flexsafe® 5 L (Shell, MPC, LT/MPC) <sup>3</sup>		3/8" MPC male + sealing cap <sup>1</sup>
10 L	FLS303108	1	Flexsafe® 10 L (Shell, MPC, TC)		Tri-clamp 3/4" flange with gasket, union & cap <sup>2</sup>
10 L	FLS303109	1	Flexsafe® 10 L (Shell, MPC, LT/MPC) <sup>3</sup>		3/8" MPC male + sealing cap <sup>1</sup>



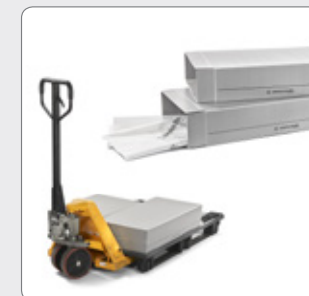
<sup>1</sup> Inlet & outlet tubing: 3/8" Clear C-Flex® 500 mm (20"). Third line with Silicon tubing & needlelessclave connector.

<sup>2</sup> Outlet tubing: 3/8" Silicone TuFlux® 500 mm (20")

<sup>3</sup> Leak Test Line: 1/4" x 3/8" Clear C-Flex® 300 mm (12") + Midisart® BV 0.2 µm + 1/4" ID Silicone TuFlux® 100 mm (4") + 3/4" Tri-Clamp with gasket, cap & union

## Shippers & Standalone Shells

Bag Volume	Part Number	Units per box	Description
5 L	FLA302721	10 units shippers 20 units PE overpouches	Standard Shipper for 5 L shell with double PE overpouches per shipper
10 L	FLA300318	10 units shippers 20 units PE overpouches	Standard Shipper for 10 L shell with double PE overpouches per shipper
5 L	FLA302701	5 top + 5 bottom	Standard Shell 5 L 2D bag handling
10 L	FLA300213	5 top + 5 bottom	Standard Shell 10 L 2D bag handling



# Point-of-Use Leak Test for Flexsafe® 2D and 3D Bags

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Watch FlexAct® BT Video:



<https://www.youtube.com/watch?v=enmMhorDjHQ>

## Safe

- The precision of Sartochek 4 + bag tester allows adequate integrity testing just before filling the 2D or 3D bags
- The test is performed through a sterilizing vent filter (Midisart® BV or Sartopore® Air) to maintain the bag sterility therefore ensuring patient safety

## Reliable

- For the Flexsafe® 2D bags, the restraining plates reduce heat transfers, maintain a small inflation volume and allow a high test pressure for a sensitivity of 30 µm
- For Flexsafe® 3D bags, the test performed in the Palletank provides a sensitivity of 100 to 200 µm.
- The porous spacers between plates avoid any potential masking effect
- The leak detection is validated thanks to validation study done with extensive tests, a differentiation of defective bags based on with 6 sigma confidence interval

## Fast & Easy to Use

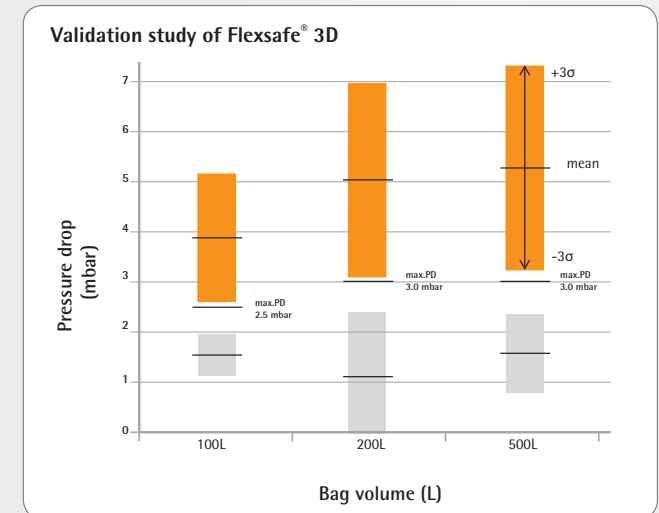
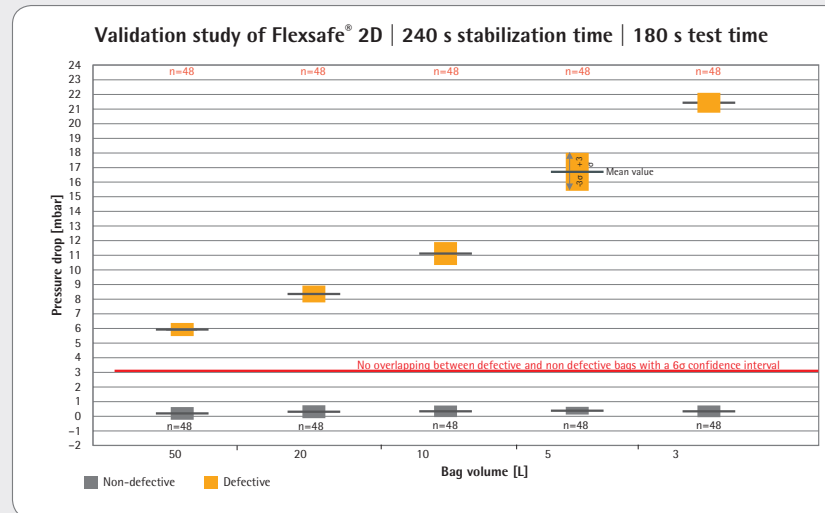
- The well-known ASTM F2095-07 standard pressure decay leak test at point of use and the well-established Sartochek® technology make it easy to implement - The restraining plates allow a small inflation volume thus reduce the total test time to less than 10 minutes
- The 3D bags are tested in their container, avoiding any further handling before filling
- The MultiUnit tester option increases test productivity by testing two 2D bags simultaneously and allows filter integrity testing

## Easy to Validate

- A robust validation of the test parameters and specifications makes the validation approach at user site easy
- A strong on-site IQ, OQ, PQ, SOP development and operator training ease the validation documentation process at user site



Watch video: Point-of-Use Leak Test for Flexsafe® 3D bags



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Standard Hardware for Storage and Shipping: The Perfect Fit

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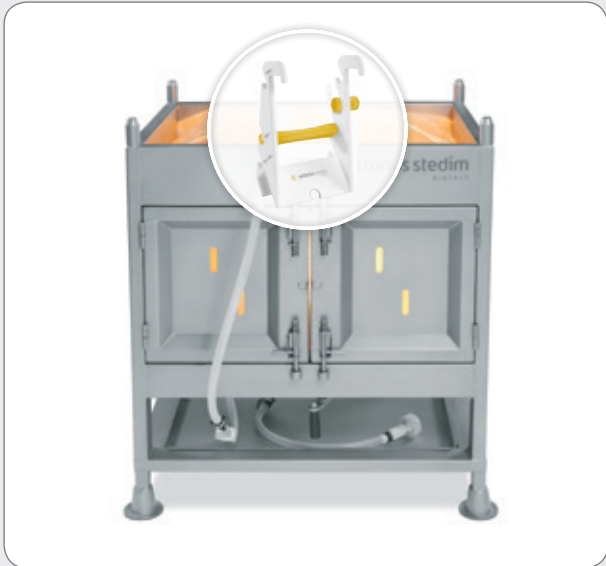
Palletank for Storage



Palletank for Large Volume Storage



Plastic Pallettank for Storage



Palletank for In-process Fluid Handling



Palletank for Shipping



Plastic Drum for Storage

# Pallettank for Storage

Pallettank for storage are stainless steel containers designed for the safe and robust storage of biopharmaceutical fluids contained in Flexsafe® 3D Bags. They are available in volumes of 200 L and 500 L. The Flexsafe® 3D Bags are manufactured according to a qualified design that precisely fits the Pallettank.

## Features & Benefits

### Qualified System

Perfect fit and protection of the Flexsafe® 3D Bag in its Pallettank

### Stackable Version

Space saving containment system

### Optimal Bag Unfolding

without operator manipulation with the self-deploying accessory



Media  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

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## Pallettank for storage

Description	Pallettank 200 L for storage	Pallettank 500 L for storage
Part Number	FXC110888	FXC110889
Bag Volume(s)	100 L or 200 L	500 L
Construction Material	304 L Stainless Steel	304 L Stainless Steel
Surface Finishing	Bead Blasted	Bead Blasted
Dimensions (W × D × H)	792 × 592 × 892 mm (31 × 23 × 35 in)	1192 × 792 × 1008 mm (46 × 31 × 39 in)
Weight	48 kg (106 lb)	100 kg (220 lb)
Bottom Gate	1	1
Stackability	No	No

## Pallettank for storage stackable

Description	Pallettank 200 L for storage stackable	Pallettank 500 L for storage stackable
Part Number	FXC110733	FXC110734
Bag Volume(s)	100 L or 200 L	500 L
Construction Material	304 L Stainless Steel	304 L Stainless Steel
Surface Finishing	Bead Blasted	Bead Blasted
Dimensions (W × D × H)	792 × 592 × 929 mm (31 × 23 × 36 in)	1135 × 792 × 1044 mm (44 × 31 × 41 in)
Weight	70 kg (154.3 lb)	110 kg (242 lb)
Bottom Gate   Sliding Gate	1	1
Stackability (Static)	3 high	2 high

## Dolly

Description	Dolly for Pallettank 200 L for Storage and Shipping	Dolly for Pallettank 500 L for Storage and Shipping
Part Number	FXS102254	FXS102256
Construction Material	304L and polyamide (wheels)	304L and polyamide (wheels)
Surface Finishing	Glass Bead blasted	Glass Bead blasted
Dimensions (W × D × H)	815 × 615 × 188 mm (32.1 × 24.2 × 6.4 in)	1215 × 815 × 161 mm (47.8 × 32.1 × 6.4 in)
Weight (approx.)	10 kg (22 lb)	18 kg (39.7 lb)

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

Back to Digital  
Selection Map

## Pallettank for Large Volume Storage

Large volume storage are designed with ergonomic features and design to limit operator manipulations and overall simplify operations. This results in increased process safety by minimizing risks for product, operator and process. True ease of use also leads to fast set up, filling and draining for maximized process efficiency.

### Features & Benefits

#### Easy

Large doors at ergonomic height for easy bag installation and front access to lines

#### Fast

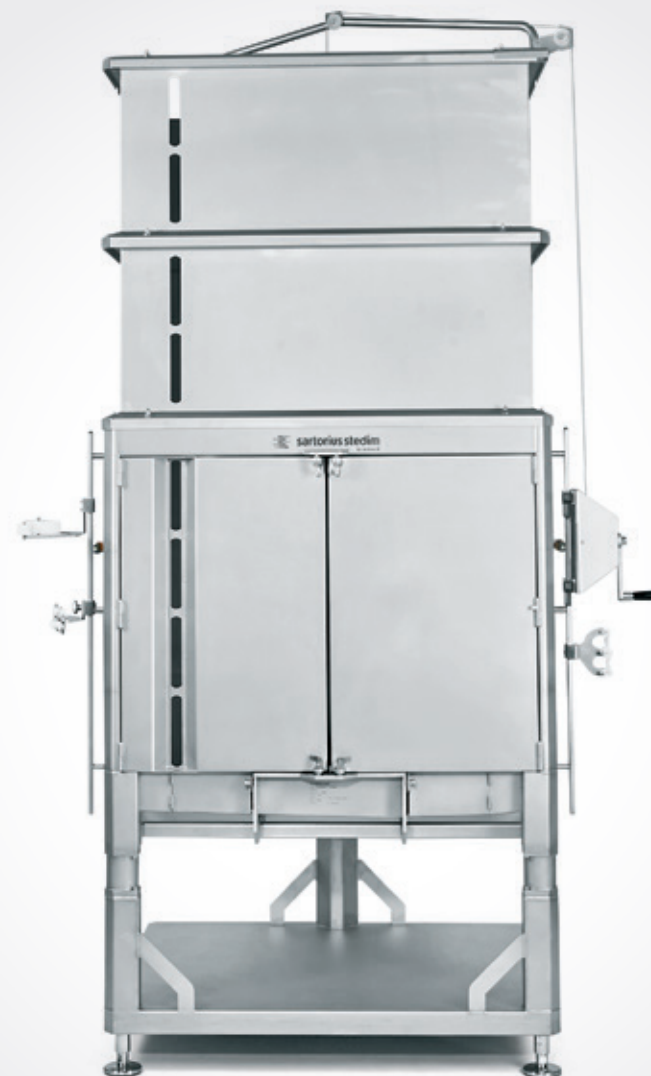
Set-up is done in less than 2 minutes. The pre-deployed bags avoids further bag handling during filling. The high flow pre-designed solutions speed-up filling and draining operations.

#### Safe operations

No operator manipulation, the bag self-fills and self-drains. The sloped bottom increase fluid recovery.



Tubing and filters holders





Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

# Palletank for Large Volume Storage

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Selection Map

## Palletank for Large Volume Storage

Description	Palletank Storage 1,000 L	Palletank Storage 1,500 L	Palletank Storage 2,000 L
Bag Volume	1,000L	1,500L	2,000L
Construction Material	304 L Stainless Steel	304 L Stainless Steel	304 L Stainless Steel
Surface Finishing	Bead Blasted, pickled & passivated	Bead Blasted, pickled & passivated	Bead Blasted, pickled & passivated
External Dimensions (W × D × H) w/ ergonomic module	1603 × 1076 × 2011 mm (63 × 42 × 79 in)	1603 × 1076 × 2511 mm (63 × 42 × 99 in)	1603 × 1076 × 3012 mm (63 × 42 × 118 in)
w/o ergonomic module	1603 × 1076 × 1700 mm (63 × 42 × 67 in)	1603 × 1076 × 2200 mm (63 × 42 × 87 in)	1603 × 1076 × 2701 mm (63 × 42 × 106 in)
Built on wheels	1603 × 1076 × 1790 mm (63 × 42 × 70 in)	N   A	N   A
Bottom gate   Sliding gate	2	2	2
Stackability	No	No	No

Description	Palletank Storage 2,500 L	Palletank Storage 3,000 L
Bag Volume	2,500L	3,000L
Construction Material	304 L Stainless Steel	304 L Stainless Steel
Surface Finishing	Bead Blasted, pickled & passivated	Bead Blasted, pickled & passivated
External Dimensions (W × D × H) w/ ergonomic module	1603 × 1076 × 3512 mm (63 × 42 × 138 in)	1603 × 1076 × 4013 mm (63 × 42 × 158 in)
w/o ergonomic module	1603 × 1076 × 3201 mm (63 × 42 × 126 in)	1603 × 1076 × 3702 mm (63 × 42 × 146 in)
Built on wheels	N   A	N   A
Bottom gate   Sliding gate	2	2
Stackability	No	No

Volume	Max net Weighing Capacity in kg	Resolution in g	Accuracy in g
50 L	60	20	60
100 L	110	20	60
200 L	220	20	60
400 L	450	50	150
650 L	750	50	150
1,000 L	1100	100	300
1,500 L	1750	100	300
2,000 L	2200	200	600
2,500 L	2750	200	600
3,000 L	3300	200	600

# Pallettank for Large Volume Storage

**Media**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Buffer**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

**Cell Harvest & DSP**  
Flexsafe® 2D | Flexsafe® 3D  
Flexsafe® ≥ 1,000 L

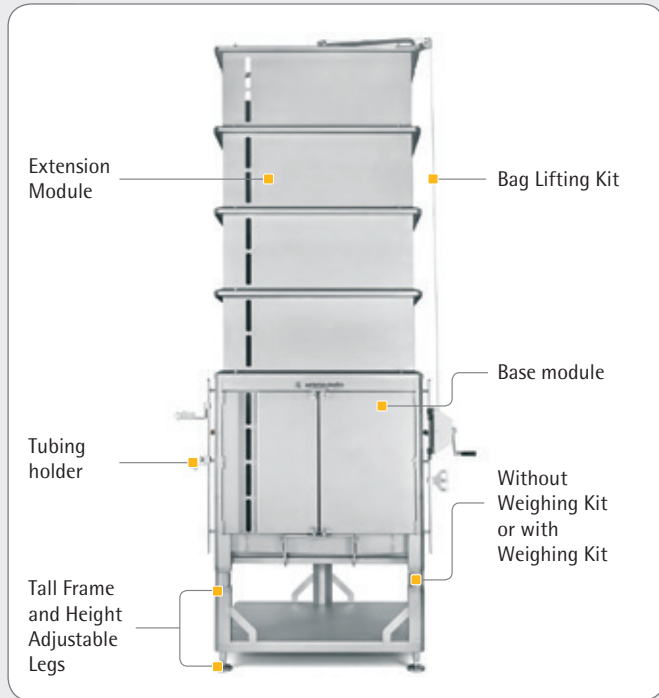
**Drug Substance**  
Flexsafe® 2D | Flexsafe® 3D

**Drug Product**  
Flexsafe® 2D | Flexsafe® 3D

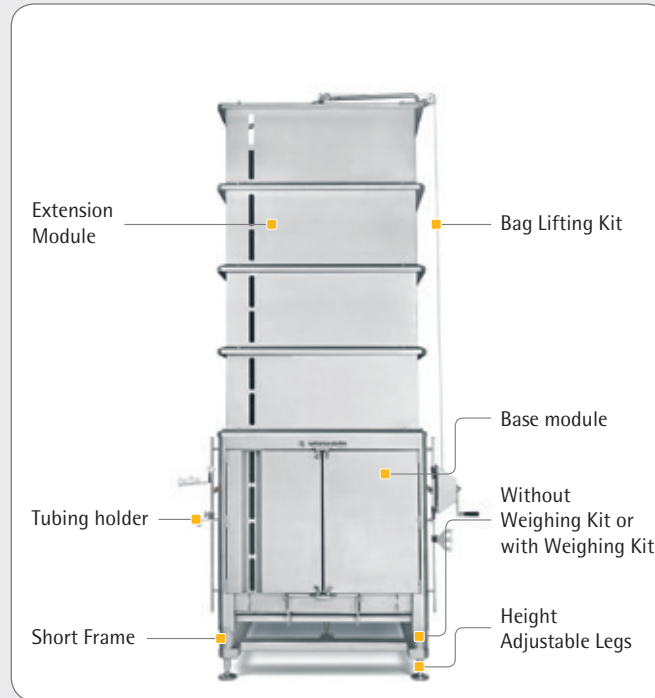
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## Pallettank for Large Volume Storage

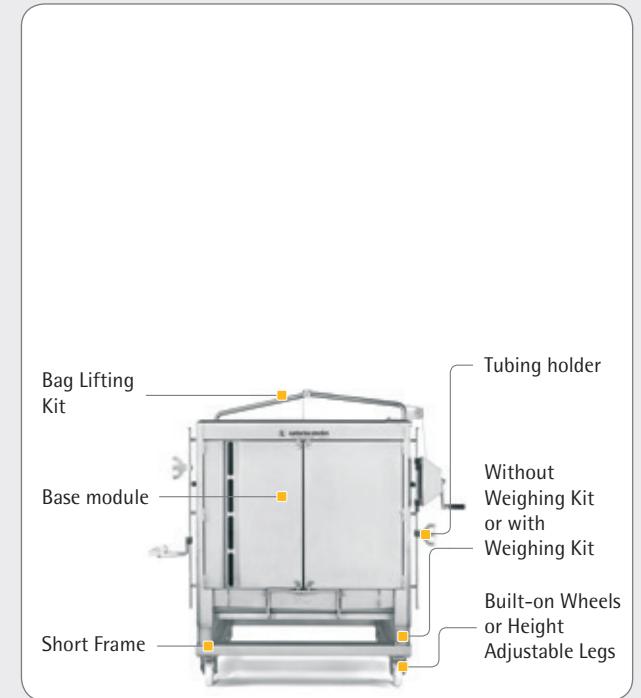
Description	Part Number				
	Pallettank Storage 1,000L	Pallettank Storage 1,500L	Pallettank Storage 2,000L	Pallettank Storage 2,500L	Pallettank Storage 3,000L
w/ ergonomic module	FXC302072	FXC302073	FXC302074	FXC302075	FXC302076
w/ ergonomic module and w/ weighing	FXC304053	FXC304054	FXC304055	FXC304056	FXC304057
w/o ergonomic module	FXC304027	FXC301928	FXC301929	FXC302070	FXC302071
w/o ergonomic module and w/ weighing	FXC304028	FXC304029	FXC304050	FXC304051	FXC304052
Built on wheels	FXC302077	N/A	N/A	N/A	N/A
Built on wheels and w/ weighing	FXC301927	N/A	N/A	N/A	N/A



Pallettank Storage 1,000L – 3,000L at ergonomic height



Pallettank Storage 1,000L – 3,000L at low height



Pallettank Storage 1,000L Built-on wheels

# Palletank for Large Volume Storage

Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

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## Tubing and filters holders

Part Number	Description
FXC301562	STD tubing holder single 5/8"
FXC301563	STD tubing holder twin 5/8"
FXC301564	STD tubing holder triple 5/8"
FXC301565	STD tubing holder quattro 5/8"
FXC301566	STD tubing holder single 3/4"
FXC301567	STD tubing holder twin 3/4"
FXC301568	STD tubing holder triple 3/4"
FXC301569	STD tubing holder quattro 3/4"
FXC301570	STD tubing holder single 1"
FXC301571	STD tubing holder twin 1"
FXC301572	STD tubing holder triple 1"
FXC301573	STD tubing holder quattro 1"
FXC301574	STD tubing holder single 1-1/8"
FXC301575	STD tubing holder twin 1-1/8"
FXC301576	STD tubing holder triple 1-1/8"
FXC301577	STD tubing holder quattro 1-1/8"
FXC301578	STD tubing holder single 1-3/8"
FXC301579	STD tubing holder twin 1-3/8"
FXC301580	STD tubing holder triple 1-3/8"
FXC301586	STD filter holder short 100 mm



# Plastic Palletank for Storage

**Plastic Palletank for Storage in 200 L and 500 L** represents a cost-effective containment solution for the storage and processing of biopharmaceutical fluids contained in Flexsafe® 3D Bags. Their flat, smooth surfaces and rounded corners facilitate cleaning and sanitization for clean room operations. The Plastic Palletank for storage are foldable for minimal storage space when empty. They are also stackable for optimal floor space utilization when filled with biopharmaceutical solutions.

## Features & Benefits

**PP and ABS containers**  
Low cost and robust storage solution

**Stackable when full and collapsible when empty**  
Minimize storage volume

**Smooth scratch-resistant plastic surface**  
Clean room compatible

**Optimal bag unfolding** without operator manipulation with the self-deploying accessory



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

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## Palletank for storage

Description	STD Plastic Palletank 200 L for storage	STD Plastic Palletank 500 L for storage
Part Number	FXC116215	FXC116216
Bag Volume(s)	100 L   200 L	500 L <sup>1</sup>
Main Construction Material	PP	ABS
Dimensions (W × D × H) Approx.		
Unfolded	805 × 607 × 969 mm 32 × 24 × 38 in.	1215 × 805 × 1086 mm 48 × 31 × 43 in.
Folded	805 × 607 × 510 mm 32 × 24 × 20 in.	1215 × 805 × 572 mm 48 × 31 × 22 in.
Bottom Gate	1	1
Stackability – Static		
Folded	5	3
Unfolded and Full	3	2

## Dolly

Description	Dolly for STD Palletank 200 L	Dolly for STD Palletank 500 L
Part Number	FXA116630	FXA116631
Construction Material	304L and polyamide (wheels)	304L and polyamide (wheels)
Surface Finishing	Glass Bead blasted	Glass Bead blasted
Dimensions (W × D × H)	807 × 607 × 214 mm 32 × 24 × 8 in.	1207 × 807 × 214 mm 47 × 32 × 8 in.
Weight (approx.)	10 kg (22 lb)	20 kg (44 lb)

<sup>1</sup> The maximum filling volume of the Flexel® 3D Bag in the 500 L Plastic Palletank for storage is 490 L.

# Palletank for In-process Fluid Handling

**Palletank for in-process fluid handling** are specifically developed for users who wish to leave the containers in close proximity to process equipment. Palletank for in-process fluid handling are available in 200 L, 500 L for use with Flexsafe® 3D bags. The double hinged front doors allow bag replacement, installation and manipulation whilst Palletank are stacked up in the process area thus enabling continuous processing without movement of the containers. As a result a forklift is not routinely required in the manufacturing area.

## Features & Benefits

**Easy operation** due to continuous processing without movement of the containers

**Easy access** through double hinged front doors with safety latches

**Optimal bag unfolding** without operator manipulation with the self-deploying accessory

## Palletank for in-process fluid handling

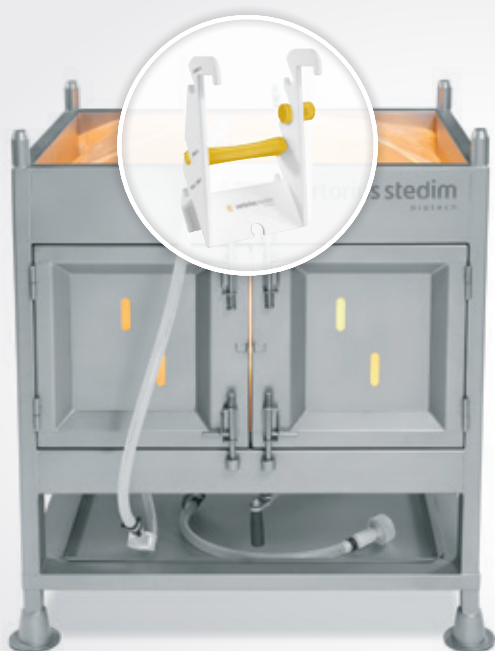
Description	Palletank 200 L for in-process fluid handling	Palletank 500 L for in-process fluid handling
Part Number	FXC106230	FXC106235
Bag Volume(s)	100 L or 200 L	500 L
Construction Material	304L Stainless Steel	304L Stainless Steel
Surface Finishing	Glass Bead Blasted	Glass Bead Blasted
Dimensions (W x D x H)	860 x 660 x 929 mm (33.9 x 26 x 36.6 in)	1260 x 860 x 989 mm (49.6 x 33.9 x 38.9 in)
Weight (approx.)	50 kg (110.2 lb)	89 kg (196.2 lb)
Bottom Gate	1	1
Stackability	3 high	3 high
Total Weight (approx.)	68 kg (150.2 lb)	111 kg (244.7 lb)

## Dolly

Description	Dolly for Palletank 200 L for in-process fluid handling	Dolly for Palletank 500 L for in-process fluid handling
Part Number	FXS102255	FXS102257
Weight	18 kg (40 lb)	22 kg (48.5 lb)

## Accessories

Description	Self-Deploying accessory for Palletank storage and in-process fluid handling
Part Number	FXA127314



# Standard Palletank for Storage, Processing and Shipping

Palletank for shipping is specifically developed for secure and convenient shipment of sterile media, buffers and high value drug substances. They are available in volumes of 100 L, 200 L and 500 L to fit with 100 L | 200 L and 500 L Flexsafe® 3D Bags. The system is composed of the Palletank container and the associated shipping kit. The extensive qualification according to ASTM Standard ensures safe & robust liquid shipping for Flexsafe® for Palletank.

## Features & Benefits

**ASTM qualification** of Flexsafe® 3D Bags with the Palletank for shipping ensures safe and robust liquid shipping applications.

**Immobilisation** of Flexsafe® | Flexel® 3D Bag by compression assures system integrity

**Dismountable construction** improves space utilization on site before and after usage



## Palletank for in-process fluid handling

Description	Palletank 100 L for shipping	Palletank 200 L for shipping	Palletank 500 L for shipping
Part Number	FXC106362	FXC103133	FXC106609
Bag Volume(s)	100 L	200 L	500 L
Construction Material	304L Stainless Steel	304L Stainless Steel	304L Stainless Steel
Dimensions (W x D x H)			
Unfolded	800 x 600 x 688 mm (31.5 x 23.6 x 27.1 in)	800 x 600 x 935 mm (31.5 x 23.6 x 36.8 in)	1206 x 806 x 1050 mm (47.5 x 31.7 x 41.33 in)
Folded	800 x 600 x 510 mm (31.5 x 23.6 x 20.1 in)	800 x 600 x 510 mm (31.5 x 23.6 x 20.1 in)	1206 x 806 x 540 mm (47.5 x 31.7 x 21.26 in)
Weight (incl. Lid)	63.5 kg (140 lb)	84 kg (185.18 lb)	129 kg (284.4 lb)
Bottom Gate	1	1	1
Unfolded	3	3	2
Folded	5	5	3

## Accessories

Description	Shipping kit 100 L	Shipping kit 200 L	Shipping kit 500 L
Part Number	FXC102475	FXC102477	FXC102478
Weight	16 kg (35.27 lb)	16 kg (35.27 lb)	28 kg (61.8 lb)

# Standard Drum for Storage and Processing

The plastic drum containers offer a cost-effective containment solution for the storage and processing of media and buffer in Flexsafe® 3D Bags for drum. Their flat, smooth surfaces facilitate cleaning and sanitization for clean room operations. They are available with volumes of 50 L, 100 L and 200 L to fit with Flexsafe® 3D Bags for drum of the same volumes.

The drums are available with a lid and a bottom gate for use with Flexsafe® 3D Bag for drum fitted or not with a bottom drain line.

The drum and filled Flexsafe® 3D Bags can be moved safely with a stainless steel dolly available in two sizes 50 L | 100 L and 200 L.

## Drum

Description	STD Drum		
	50 L	100 L	200 L
Part Number	FBC125627	FBC125628	FBC125629
Construction Material	HDPE		
Internal Diameter (Approx.)	346 mm (13.6 in)	467 mm (18.4 in)	559 mm (22 in)
Internal Height (Approx.)	702 mm (27.6 in)	759 mm (29.8 in)	918 (36.6 in)
Weight	4.3 kg (9.46 lb.)	6.25 kg (13.75 lb.)	10.3 kg (22.7 lb.)
Bottom Hole	1		



## Dolly

Description	STD Drum Accessory Dolly	
	50 L   100 L	200 L
Part Number	FXA126305	FXA126306
Construction Material	Stainless steel 304 L and polyamide (wheels)	
Surface Finish	Brushed and passivated	
Max. External Dimensions W x D x H (Approx.)	502 x 502 x 168 mm (19.7 x 19.7 x 6.6 in)	594 x 594 x 168 mm (23.4 x 23.4 x 6.6 in)
Wheels	2 with brakes and 2 without brakes	
Weight	8.4 kg (19.5 lb.)	10.4 kg (22.9 lb.)
Max. Dynamic Load	200 kg	400 kg



## Features & Benefits

- HDPE drum:  
Low cost storage solution for media and buffer
- Bottom gate:  
Allows for bottom drain option
- Smooth scratch-resistant plastic surface:  
Clean room compatible
- Standard product:  
Available from stock

# Sterilizing-Grade Filtration for all Process Steps

Sartopore® single-use sterilizing-grade filter transfer sets are pre-assembled, gamma irradiated and ready-to-use for particle removal, bioburden reduction and sterilizing filtration in all process steps.

They are designed with Opta® SFT connectors and C-Flex® tubing to allow either a sterile connection or a sterile weld to other single systems such as Flexsafe® PDS.

Alternatively, MPX quick coupler connectors are available for a sanitary or aseptic connection under laminar air flow

Our Sartopore® family of sterilizing-grade filtration transfer sets offer a large variety of filter types and sizes that can be easily and securely connected to most of SSB single-use solutions

## Features & Benefits

- Pre-assembled and gamma sterilized:  
Ready-to-use as standalone filter transfer sets or for connection to single use bag to save time compared to traditional assembly and autoclaving operations
- Qualified C-Flex® tube and Opta® connector engagement:  
Robust design  
Allow secured sterile connection or sterile weld to other single use systems
- Large variety of filter types and sizes  
Flexible design  
Solution for every process step
- Highest Safety Standards  
These products are designed with Oetiker® clamp engagements instead of cable ties ensuring highest safety for single-use connections. A comprehensive transport validation in accordance to ASTM D4169-09 has been performed for safe transportation

## Media, Buffer and Harvest & Downstream Intermediates Sterilizing Filtration

Filter Type	Filter	Tubing & Outlet Connector	Part Number	Lot size
Sartopore® 2 0.45   0.2 µm	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm Opta® male 1/2"	FFU500214	8
	MidiCaps® size 8		FFU500215	8
	MidiCaps® size 9		FFU500216	8
	MidiCaps® size 0		FFU500217	8
	MaxiCaps® T-style size 1		FFU500249	4
	MaxiCaps® T-style size 2		FFU500250	4
	MaxiCaps® T-style size 3		FFU500251	4
	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm MPX male + sealing cap	FFU500252	8
	MidiCaps® size 8		FFU500253	8
	MidiCaps® size 9		FFU500254	8
	MidiCaps® size 0		FFU500255	8
	MaxiCaps® T-style size 1		FFU500256	4
	MaxiCaps® T-style size 2		FFU500257	4
	MaxiCaps® T-style size 3		FFU500258	4
Sartopore® 2 XLM 0.8   0.2 µm	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm Opta® male 1/2"	FFU500268	8
	MidiCaps® size 8		FFU500269	8
	MidiCaps® size 9		FFU500270	8
	MidiCaps® size 0		FFU500271	8
	MaxiCaps® T-style size 1		FFU500272	4
	MaxiCaps® T-style size 2		FFU500273	4
	MaxiCaps® T-style size 3	FFU500274	4	
	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm MPX male + sealing cap	FFU500275	8
	MidiCaps® size 8		FFU500276	8
	MidiCaps® size 9		FFU500277	8
	MidiCaps® size 0		FFU500278	8
	MaxiCaps® T-style size 1		FFU500226	4
	MaxiCaps® T-style size 2		FFU500279	4
	MaxiCaps® T-style size 3	FFU500225	4	



# Sterilizing-Grade Filtration for all Process Steps

## Media Sterilizing Filtration for Mycoplasma Removal

Filter Type	Filter	Tubing & Outlet Connector	Part Number	Lot size
Sartopore® 2 XLM 0.2   0.1 µm	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm Opta® male 1/2"	FFU500235	8
	MidiCaps® size 8		FFU500236	8
	MidiCaps® size 9		FFU500237	8
	MidiCaps® size 0		FFU500238	8
	MaxiCaps® T-style size 1		FFU500239	4
	MaxiCaps® T-style size 2		FFU500240	4
	MaxiCaps® T-style size 3		FFU500241	4
	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm MPX male + sealing cap	FFU500242	8
	MidiCaps® size 8		FFU500243	8
	MidiCaps® size 9		FFU500244	8
	MidiCaps® size 0		FFU500245	8
	MaxiCaps® T-style size 1		FFU500246	4
	MaxiCaps® T-style size 2		FFU500247	4
	MaxiCaps® T-style size 3		FFU500248	4

## Drug Substance and Drug Product Sterilizing Filtration

Filter Type	Filter	Tubing & Outlet Connector	Part Number	Lot size
Sartopore® Platinum 0.45   0.2 µm	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm Opta® male 1/2"	FFU500220	8
	MidiCaps® size 8		FFU500221	8
	MidiCaps® size 9		FFU500222	8
	MidiCaps® size 0		FFU500223	8
	MaxiCaps® T-style size 1		FFU500259	4
	MaxiCaps® T-style size 2		FFU500260	4
	MaxiCaps® T-style size 3		FFU500261	4
	MidiCaps® size 7	1/2" ID Clear C-Flex® 500 mm MPX male + sealing cap	FFU500262	8
	MidiCaps® size 8		FFU500263	8
	MidiCaps® size 9		FFU500264	8
	MidiCaps® size 0		FFU500172	8
	MaxiCaps® T-style size 1		FFU500265	4
	MaxiCaps® T-style size 2		FFU500266	4
	MaxiCaps® T-style size 3		FFU500267	4



Media  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Buffer  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Cell Harvest & DSP  
Flexsafe® 2D | Flexsafe® 3D |  
Flexsafe® ≥ 1,000 L

Drug Substance  
Flexsafe® 2D |  
Flexsafe® 3D

Drug Product  
Flexsafe® 2D |  
Flexsafe® 3D

## Design, Application Development and Validation Services

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Selection Map

### Configure to Order (CTO) Options

All Flexsafe® 3D Pre-designed Solutions are available in our Sartorius Corporate Configurator for easy selection of the right solution for your process and application requirements.

Should our Pre-designed Solutions need to be adjusted to more specific requirements, they can serve as a base for designing your specific best design.

Our CTO configurator then allows the selection of a larger variety of solutions with added features, lines, manifolds, filters, connectors and sampling systems.

Please contact our sales representatives and application specialist to support you with the selection and design of your best solution for your specific process and application.

### Application Support

Our expert FMT Application Specialists provide global support for:

- Single-use process URS definitions and application development
- Process design with standard and custom solutions
- Filter selection and sizing optimization study
- SOP development, process validation and operator training
- Technology transfer and process optimization

### Validation Service

Our global validation services network offers:

- Installation start up, FAT, IQ & OQ, calibration and maintenance
- Consultancy service and process specific validation studies including
- Extractables | leachables,
- Chemical compatibility
- Integrity testing
- Bacterial challenge test
- Particle shedding
- Shipping test

Please contact

[www.sartorius-stedim.com](http://www.sartorius-stedim.com)

or your local sales representative for more information.



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