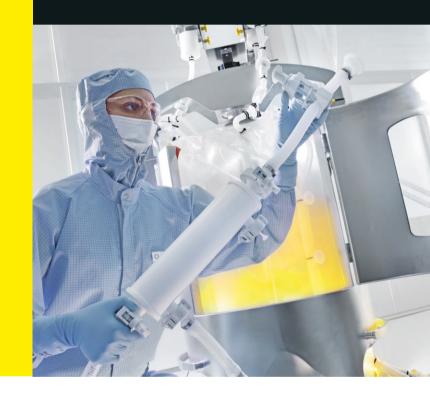
SARTURIUS

Virus Filter Transfer Units

Pre-Assembled,
Sterile & Ready to Use,
Single-use
Virosart® Filtration Units



Product Information

Virus Filter Transfer Units are pre-assembled, pre-sterilized and fully pre-qualified ready to use filtration units for connection to single-use processing solutions. The smart Virosart® capsule design with low footprint, minimal flushing volumes and sterile delivery secures ease of use as well as fast installation of the filtration units.

What?

Virus Filter Transfer Units allow an easy integration of any gamma-stable Sartorius virus filter (Virosart® HF and Virosart® Media) into a single-use setup.

A secure connection of the Virus Filter Transfer Unit can be achieved in the following ways:

- Sterile connection using sterile connectors, such as Opta® and AseptiQuik®*
- Aseptic connection (under laminar flow) using a TriClamp

How?

With years of experience in single-use technologies, Sartorius has qualified a diverse array of components and connections frequently used in Virus Filter Transfer Units. This extensive portfolio (refer to pages 3 and 4 for details) allows our team to easily configure a Virus Filter Transfer Unit. For an instant quote and technical drawing of a customizable Virus Filter Transfer Unit, please contact your local sales representative or application specialist.

Why?

Flexibility and Ease of Use

Whether designing a new single-use process facility or integrating disposable technology step-by-step into your existing equipment Sterile Virus Filter Transfer Sets provide:

- Various tubing diameters & lengths
- Broad choice of connectors
- Sterilization by gamma-irradiation
- Ready to use solutions

Modularity

By splitting your assemblies into modules, e.g. Filter Transfer Sets, bags, Sensor Transfer Sets you can:

- Produce several products with the same pool of equipment
- Reduce the total amount of part numbers
- Optimize the warehousing footprint

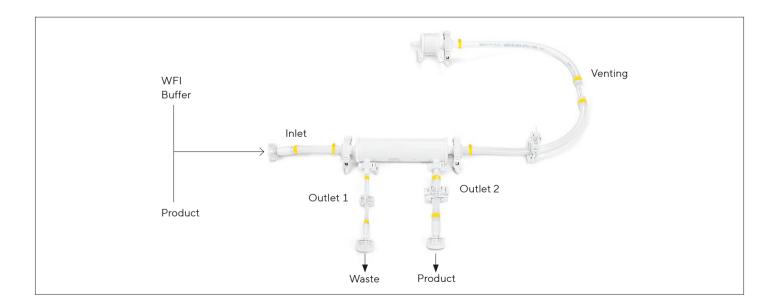
Safety

- Sartorius follows strict regulatory compliance standards.
- The filter elements are 100% integrity tested.
- 100% visual inspection and batch record review.
- All connections are pre-qualified according to Sartorius quality standards.

Technical Data

Virosart® HF – Downstream Virus Filter

Available virus filter 2.4 m² | 25.8 ft² 0.8 m² | 8.6 ft² $0.2 \text{ m}^2 \mid 2.15 \text{ ft}^2$ **Tubing types** Sani-Tech® STHT®-R** (reinforced) **Tubing diameters** (ID × OD) Inlet ½" × %" 3/8" × 5/8" $\frac{1}{4}$ " × $\frac{1}{2}$ " Outlet 1 1/4" × 1/2" 1/4" × 1/2"* 1/4" × 1/2" ½" × ½" $\frac{1}{4}$ " × $\frac{1}{2}$ " Outlet 2 ½" × ½" ½" × ½" ½" × ½" Venting **Tubing lengths** 150 mm, 300 mm, 500 mm, 1000 mm Connectors TriClamp Technical parameters ■ Max. allowable operating pressure: 3.0 bar | 43.5 psi • Sterilization method: Gamma irradiation. Re-sterilization is not permitted!



Virosart® Media – Upstream Virus Filter

Available virus filter



	$1 \text{m}^2 10.8 \text{ft}^2$	$0.3 \text{m}^2 3.2 \text{ft}^2$	
Tubing types	Sani-Tech® STHT® -R** (reinforced)		
Tubing diameters (ID × OD)			
Inlet	½" × ½"	3/8" × 5/8"	
Outlet 1	½" × ½"	$\frac{1}{4}$ " × $\frac{1}{2}$ "	
Outlet 2	½" × ½"	$\frac{1}{4}$ " × $\frac{1}{2}$ "	
Venting	½" × ½"	3/8" × 5/8"	
Tubing lengths	150 mm, 300 mm, 500 mm, 1000 mm		

Connectors



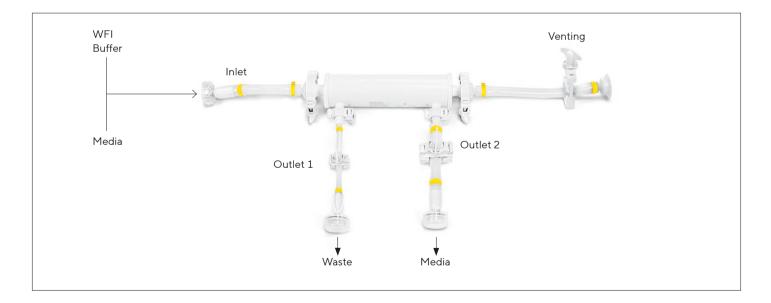


Opta®

AseptiQuik®

Technical parameters

- Max. allowable operating pressure: 3.0 bar| 43.5 psi
- $\blacksquare \ \, \text{Sterilization method: Gamma irradiation. Re-sterilization is not permitted!}$



Materials

Component	Material		
Product Contact			
Connectors:	A		
Opta®	Acrylate/PC/PP/PSU/TPV		
AseptiQuik®* TriClamp	PC/SI/PES/PTFE PEHD		
Tube:			
Sani-Tech® STHT® -R**	Silicon (Reinforced)		
Connecting pieces:			
Flow Reducer	PP		
Sight glass	PET		
N. D. I. (0. I. I.			
Non-Product Contact			
Oetiker® clamp	Stainless Steel		
Gasket	Silicon		
Clamp	PA GLASS REINFORCED		
Valve	PSU		

- Outlet 1 & 2 have the same tubing length.
- Configuration of the venting line is pre-defined.
- Identical connector is used for one configuration.
- IT Wetting Kit for Virosart® HF process modules is integrated to ensure a defined back pressure without the need for manual or automated valve control and thus optimal wetting conditions

Regulatory Compliance

- All filters and tubing meet the requirements of the current USP Biological Reactivity tests <88> and all other product contact materials have passed USP <87> or ISO 10993 as a minimum requirement.
- The Virus Filter Transfer Sets are in compliance with the European guidance on minimizing the risk of transmitting animal spongiform encephalopathy agents via human and veterinary products (EMA/410/01).
- The Virus Filter Transfer Sets are subject to bioburden, endotoxin and particulate matter control on a regular basis.
- Meet or exceed the requirements for WFI quality standards set by the current USP.
- USP Plastic Class Test VI.
- Designed, developed and manufactured in accordance with an ISO 9001 certified Quality Management System.
- The Virus Filter Transfer sets are produced in a cleanroom class ISO 7.
- The Virus Filter Transfer Sets (Gamma) are sterilized using a validated process in accordance with DIN EN ISO 11137 regulations.
- 100% of the products undergo visual inspection and are subject to batch record.

Technical References

Validation Guide Filter Transfer Set	2630981-000
Validation Guide Virosart® HF	2841203-000
Validation Guide Virosart® Media	2827073-000
Extractable Guide Virosart® HF Extractable Guide Virosart® Media	2641986-000 2494649-000

^{*}AseptiQuik® is a registered trademark of the Colder Product Company.

** Sani-Tech® STHT®-R is a registered trademark of Saint-Gobain

Performance Plastics Corporation

Accessories & Services

Adsoptive Pre-Filtration

Ready-to use Filter Transfer Sets

Simplify your daily routine work by

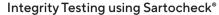
using modular filter assembly.

Virosart® Max ensures the protection of the final virus filter in all process conditions. It enhances process efficiency of the virus filter, ultimately lowering overall virus filtration costs. Virosart® Max is available as ready-to-use filter transfer set as well as standalone capsules and cartridges.



Single-use Systems

Flexible processing with Flexact® VR system for production from pilot plants up to commercial processing.

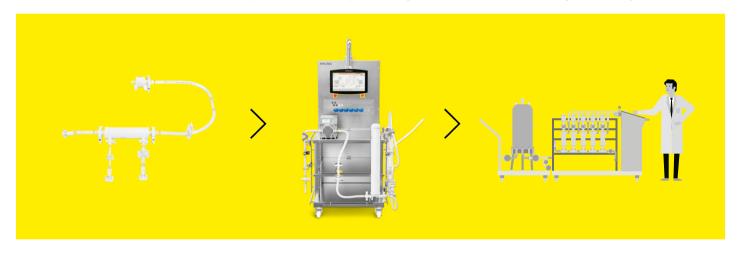


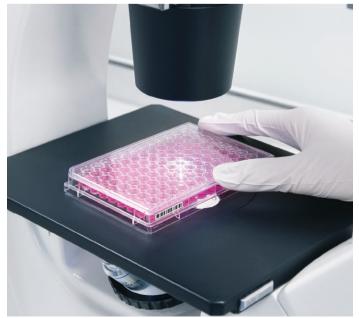
Fully automated Virosart® integrity testing to guarantee intactness of the Virosart® filter applying pre- and post-use diffusion tests.



Customized Systems

High level of automation and individual requirements can be realized by customized single-use or hybrid solutions.





Sartorius Confidence® Virus Clearance Services

Our virus clearance service is the perfect complement to Virosart® Virus Filter Transfer Units (Gamma), providing:

- GLP virus clearance studies
- Process feasibility studies
- Regulatory guidance

We use a variety of different relevant and model viruses including MVM, MuLV, Reo-3 and PRV. The combination of product and services provides you with a comprehensive virus clearance solution that gives you the confidence you need to proceed.

Sartorius Biologics Testing Services

Your partner to assure an effective virus clearance strategy for your process by MCB | WCB characterization, bulk harvest testing and lot release testing.

Germany

Sartorius Stedim Biotech GmbH August-Spindler-Strasse 11 37079 Goettingen Phone +49 551 308 0

USA

Sartorius Stedim North America Inc. 565 Johnson Avenue Bohemia, NY 11716 Toll-Free +1 800 368 7178

For further contacts, visit sartorius.com