What?

Virus Filter Transfer Units (Gamma) 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 realized in the following ways:
- Sterile connection using sterile connectors, such as Opta® and AseptiQuik®
- Aseptic connection (under laminar flow) using a TriClamp
How?
Through years of experience with single-use technologies, Sartorius Stedim Biotech has qualified a wide range of components and connections commonly used for Virus Filter Transfer Units. With this portfolio (see details on p. 3 and 4) a Virus Filter Transfer Unit can be configured easily by our team. Contact your local sales representative or application specialist for an instant quote and technical drawing of a configurable Virus Filter Transfer Unit.

Why?

**Flexibility and Ease of Use**
Whether designing a new single-use process facility or integrating disposable technology step-by-step to 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 Stedim Biotech 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 Stedim Biotech quality standards.
Technical Data
Virosart® HF – Downstream Virus Filter

Available virus filter

<table>
<thead>
<tr>
<th>Size</th>
<th>2.4 m²</th>
<th>25.8 ft²</th>
<th>0.8 m²</th>
<th>8.6 ft²</th>
<th>0.2 m²</th>
<th>2.15 ft²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubing types</td>
<td>Sani-Tech® STHT® -R (reinforced)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubing diameters (ID × OD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet</td>
<td>½&quot; × ⅞&quot;</td>
<td>⅝&quot; × ⅞&quot;</td>
<td>⅛&quot; × ⅞&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet 1</td>
<td>¼&quot; × ⅞&quot;</td>
<td>⅝&quot; × ⅞&quot;</td>
<td>⅛&quot; × ⅞&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet 2</td>
<td>⅝&quot; × ⅞&quot;</td>
<td>⅚&quot; × ⅞&quot;</td>
<td>⅛&quot; × ⅞&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venting</td>
<td>⅛&quot; × ⅞&quot;</td>
<td>⅞&quot; × ⅞&quot;</td>
<td>⅛&quot; × ⅞&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubing lengths**</td>
<td>150 mm, 300 mm, 500 mm, 1000 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectors***</td>
<td>Opta®</td>
<td>AseptiQuik®</td>
<td>TriClamp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Technical parameters
- Max. allowable operating pressure: 3.0 bar | 43.5 psi
- Sterilization method: Gamma irradiation. Re-sterilization is not permitted!

* 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.
** Outlet 1 & 2 have the same tubing length
*** Venting line is fixed
**** Identical connector is used for one configuration
Virosart® Media – Upstream Virus Filter

**Available virus filter**

| 1 m² | 10.8 ft² | 0.3 m² | 3.2 ft² |

**Tubing types**
- Sani-Tech® STHT®-R (reinforced)

**Tubing diameters (ID × OD)**
- **Inlet**: ½” × ⅞”
- **Outlet 1**: ⅜” × ⅝”
- **Outlet 2**: ¼” × ½”
- **Venting**: ½” × ⅞”

**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
- Sterilization method: Gamma irradiation. Re-sterilization is not permitted!

**Diagram**

- WFI Buffer
- Inlet
- Media
- Outlet 1
- Outlet 2
- Venting
- Waste
- Media

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**Notes**
- Outlet 1 & 2 have the same tubing length
- Venting line is fixed
- Identical connector is used for one configuration
**Materials**

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Contact</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Connectors:</strong></td>
<td></td>
</tr>
<tr>
<td>Opta®</td>
<td>Acrylate/PC/PP/PSU/TPV</td>
</tr>
<tr>
<td>AseptiQuik®</td>
<td>PC/Si/PES/PTFE</td>
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<tr>
<td>TriClamp</td>
<td>PEHD</td>
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<tr>
<td><strong>Tube:</strong></td>
<td></td>
</tr>
<tr>
<td>Sani-Tech® STHT®-R</td>
<td>Silicon (Reinforced)</td>
</tr>
<tr>
<td><strong>Connecting pieces:</strong></td>
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<tr>
<td>Flow Reducer</td>
<td>PP</td>
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<tr>
<td>Sight glass</td>
<td>PET</td>
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<tr>
<td><strong>Non-Product Contact</strong></td>
<td></td>
</tr>
<tr>
<td>Oetiker® clamp</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Gasket</td>
<td>Silicon</td>
</tr>
<tr>
<td>Clamp</td>
<td>PA GLASS REINFORCED</td>
</tr>
<tr>
<td>Valve</td>
<td>PSU</td>
</tr>
</tbody>
</table>

**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 ISO10993 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 2641986-000
- Extractable Guide Virosart® Media 2494649-000

AseptiQuik® is a registered trademark of the Colder Product Company.
Accessories & Services

Adsoptive Pre-Filtration
Virosart® Max protects your virus filter irrespective of the process conditions. Virosart® Max will downsize your process and reduce your total virus filtration costs. Virosart® Max is available as ready-to-use filter transfer set as well as stand-alone capsules and cartridges.

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

Sartorius Confidence® Virus Clearance Services are the perfect complement to Virosart® filters. Our services provide:

- Virus clearance studies
- Process design support
- Optimization support

We use a variety of different relevant and model viruses including MVM, MuLV, Reo-3 and HSV-1. The combination of product and services provides you with a comprehensive virus clearance solution that gives you the confidence you need to proceed.

BioOutsource Testing Services
Your partner to assure an effective virus clearance strategy for your process by MCB | WCB characterization and bulk harvest testing.

Ready-to use Filter Transfer Sets
Simplify your daily routine work by using modular filter assembly.

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

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