**Spectra/Por® Dialysis Recirculation Tank** (for R&D to Pilot/Process)

**Presentation Benefits | Specification**

**Process Dialysis – Applications & Tip**

Product | Large volume Dynamic Buffer Flow | Membranes | Custom

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### **Spectra/Por® Dialysis Recirculation Tank**  
**Large Volume Dynamic Dialysis & Easy Management of Large Buffer Volumes**

The Spectra/Por® Dialysis Recirculation Tank makes dialysis of larger sample volumes ranging from 100 ml to 2 liters faster and more efficient. Since the 5 liter, 7 liter, and 10 liter Dialysis Recirculation Tank are equipped with flow-through inlet/outlet ports, the buffer source can be located remotely in a much larger reservoir (20 - 1000 liters) and continuously pumped via flexible tubing at a rate of 100-200 ml/min around the outside of the dialysis membrane tubing. This large volume dynamic dialysis with either buffer recirculation or single-pass (direct to drain) maintains a higher concentration gradient and rate of dialysis as compared to static buffer changes (4 - 10 volume changes). This increased efficiency often reduces the total buffer volume required for sample purification and saves time.

See the [video presentation](#).

**Benefits**

- Connects to remote buffer source
- Increases dialysis efficiency
- Ideal for dialysis of 100 ml to 2 liter samples
- Eliminates the need to change large buffer volumes
- Reduces duration of dialysis
- Small foot-print conserves space
- Reduces the volume of buffer required

**Ordering information:**  
[www.interchim.com](http://www.interchim.com)  
Recirculation tang 5L 163009  
Recirculation tang 7L 163010  
Recirculation tang 10L 163011

Go to Specifications (Dimensions | Modes of operation | Contents)  
[see Presentation of KR1&Jr Pumps](#)
Specifications

<table>
<thead>
<tr>
<th>Tank Dimensions (assembled)</th>
<th>Volume Size</th>
<th>5 Liter</th>
<th>7 Liter</th>
<th>10 Liter</th>
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</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>163009</td>
<td>163010</td>
<td>163011</td>
<td></td>
</tr>
<tr>
<td>Total Height</td>
<td>63.0 cm</td>
<td>81.0 cm</td>
<td>121 cm</td>
<td></td>
</tr>
<tr>
<td>Base Width (with clamp)</td>
<td>23.5 cm</td>
<td>23.5 cm</td>
<td>23.5 cm</td>
<td></td>
</tr>
<tr>
<td>Top Outer Diameter</td>
<td>16.5 cm</td>
<td>16.5 cm</td>
<td>16.5 cm</td>
<td></td>
</tr>
<tr>
<td>Internal Diameter</td>
<td>10.5 cm</td>
<td>10.5 cm</td>
<td>10.5 cm</td>
<td></td>
</tr>
</tbody>
</table>

Modes of Operation
Recirculation Mode: Buffer flow returned to remote source
Single-pass Mode: Buffer flow directly to discharge/drain

Contents

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<th>Description</th>
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<td>1. Tank Body, (5, 7 or 10 L)</td>
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<tr>
<td>2. Sanitary Base Plate, 6 in.</td>
</tr>
<tr>
<td>3. Adaptor, 1.5 in. San x 1/4 in. HB</td>
</tr>
<tr>
<td>4. Adaptor, 1.5 in. San x 1/2 in. HB</td>
</tr>
<tr>
<td>5. Sanitary Gasket, 6 in.</td>
</tr>
<tr>
<td>6. Sanitary Gasket, 1.5 in.</td>
</tr>
<tr>
<td>7. Sanitary Clamp, 6 in.</td>
</tr>
<tr>
<td>8. Sanitary Clamp, 1.5 in.</td>
</tr>
<tr>
<td>9. Instructions for Use</td>
</tr>
</tbody>
</table>

Material
- polysulfone
- 316 SS
- polypropylene
- silicone Pt cured
- nylon

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<th>Qty</th>
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<tr>
<td>1. Tank Body, (5, 7 or 10 L)</td>
<td>polysulfone</td>
<td>1</td>
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<td>polypropylene</td>
<td>1</td>
</tr>
<tr>
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<td>silicone Pt cured</td>
<td>1</td>
</tr>
<tr>
<td>6. Sanitary Gasket, 1.5 in.</td>
<td>silicone Pt cured</td>
<td>2</td>
</tr>
<tr>
<td>7. Sanitary Clamp, 6 in.</td>
<td>nylon</td>
<td>1</td>
</tr>
<tr>
<td>8. Sanitary Clamp, 1.5 in.</td>
<td>nylon</td>
<td>2</td>
</tr>
<tr>
<td>9. Instructions for Use</td>
<td>NA</td>
<td>1</td>
</tr>
</tbody>
</table>

More information
Please ask at interbiotech@interchim.com for:
- Dialysis Recirculation Tank Instructions for Use Fundamentals of Dialysis
- Membrane Selection Guide
- Lab Dialysis Facts
- Lab Dialysis Applications
- Chemical Compatibility Chart
- Pore Size Chart
Réservoir de recirculation pour dialyse Spectra/Por®

Dialyse dynamique pour des volumes importants et une gestion aînée des volumes de tampons

Le réservoir de recirculation pour dialyse Spectra/Por® permet d'accélérer et d'améliorer l'efficacité de la dialyse de volumes d'échantillons de 100 ml à 2 litres. Comme les réservoirs de recirculation pour dialyse de 5, 7 et 10 litres sont dotés de ports d'entrée/sortie d'écoulement, il est possible d'éloigner la source du tampon, de la placer dans un réservoir beaucoup plus grand (20 à 1000 litres) et de la pomper en continu grâce à des tuyaux flexibles à un débit de 100 à 200 ml/min aux environs de l'extérieur du tube de la membrane. Cette dialyse dynamique de volume important par recirculation du tampon ou en passe unique (directement vers le drainage) permet de maintenir un gradient de concentration et une vitesse de dialyse plus élevés par rapport à des changements de tampons statiques (4 à 10 changements de volume). Cet accroissement de l'efficacité permet souvent de réduire le volume total du tampon pour la purification de l'échantillon et de gagner du temps.

Avantages

- Se connecte à une source tampon à distance
- Augmente l'efficacité de la dialyse
- Idéal pour une dialyse d'échantillons de 100 ml à 2 litres
- Élimine le recours à des volumes importants de tampon
- Réduit la durée de la dialyse
- Faible encombrement qui permet de gagner de la place
- Réduit le volume de tampon nécessaire

Voir la video presentation, les spécification(s)
Process Dialysis – Applications & Tips

Large-volume Process Dialysis is an efficient and economic technology driven by the increasing demand for gentle and consistent multi-batch purification at the production scale. While Laboratory Dialysis for research and analytical testing typically involves static stirring of small volumes for sample prep or solute release studies, **process dialysis facilitates dynamic buffer flow** around the membrane-encased sample to increase purification efficiency and improve large buffer handling for the production of purified or synthetic compounds or particules. Dialysis is notably a nice choice for **fragile proteins, viscous fluids and polymer gels**, such as hyaluronic acid.

Spectra/Por® Products Designed for Process Dialysis

Our large offer of dialysis membranes and large volume dynamic flow equipments are designed specifically for process dialysis, as well as small volume devices to make sample analysis easy.

<table>
<thead>
<tr>
<th>Buffer Flow</th>
<th>Membrane Selection</th>
<th>Customization</th>
<th>Sample Analysis</th>
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**Large Volume Dynamic Buffer Flow**

**Dialysis Recirculation Tanks** consist of processing flow-path components that quickly and easily assemble into a complete dynamic-dialysis system for handling buffer volumes up to 500 liters. Each component is specifically designed to optimize gentle buffer flow and efficiency dialysis.

**Dialysis Recirculation Tanks**
5, 7 & 10 cylindrical tanks with sanitary flow-through ports for increased dialysis efficiency of 0.2 - 2 L samples.

**4-Port Processing Reservoirs**
20 - 500 L PP reservoirs with 4-port cap and dip tubes for low shear flow and bottom port for easy drainage.

**KR1 Peristaltic Pump**
600 RPM digital pump drive with adjustable pump-head for continuous buffer/dialysate flow.

**Processing Pump Tubing**
Pump tubing is available in extended-life silicone and PharmaPure materials.

=> see the technical notice for dialysis ([Dialysis])
Largest Membrane Selection *Smart Dialysis*

*Smart Dialysis* is using the right membrane to achieve optimal separation, increase efficiency, improve recovery and save time. SpectrumLabs.com offers the largest selection of dialysis membranes with 3 membrane types, 3 membrane treatments, MWCO's ranging from 100 to 1,000,000 Daltons and tubing flat-widths ranging from 10 to 140 mm.

Options for Membrane Selection
- Spectra/Por 1-5 Dry Standard RC Dialysis Tubing
- Spectra/Por 6 Pre-wetted Standard RC Dialysis Tubing
- Spectra/Por 7 Pre-treated Standard RC Dialysis Tubing
- Biotech Grade CE Dialysis Tubing
- Biotech Grade RC Dialysis Tubing

See section *Choosing the right membrane*.

Customized Dialysis Tubing & Membrane

Contact interbiotech@interchim.com for unique capability to customize the right membrane to fit specific application requirements. Ideal for multi-batch Processing Dialysis that requires consistent production, the dialysis tubing or membrane sheets can be customized for the product sample and conditions to save time, minimize handling and reduce costs.

Options for Customization
- Pre-cut & individually packaged pieces
- Tubing pre-assembled with closures
- 1-ply membrane rolls, sheets or discs
- Pre-wetted or pre-treated membrane
- Irradiated for sterility
- Bulk packaged

Applications, tips

Ask for Application Note:

Determining the most Effective Dialysis MWCO for Protein Purification
**Assembly Instructions:**

1. Remove the contents from the packaging and check to make sure nothing is missing. If a part is missing, contact Spectrum for a replacement.

2. Clean all fluid contact parts (1-6) with appropriate lab detergent prior to assembly.

3. Standing the Tank Body (1) upright, place the 6 in. Sanitary Gasket (5) on the upper 6 in. sanitary opening of the Tank Body with the Gasket’s outer lip facing downward. Make sure the Gasket’s circular ridge rests completely in the circular groove of the tank’s open end.

4. Place the 6 in. SS Base Plate (2) with the circular groove facing downward over the 6 in. Sanitary Gasket. Make sure the Gasket's circular ridge rests completely in the circular groove of the Base Plate.

5. Open the 6 in. Sanitary Clamp (7) by first loosening the hinge wing nut and then loosening and pulling sideways the locking wing nut. Secure the 6 in. Sanitary Clamp around the perimeter of the SS Base Plate, Gasket and Tank upper opening by hand-tightening first the hinge wing nut and then the locking wing nut. (Note: make sure the “wings” end-up parallel to the ground).

6. Invert the Tank so that the SS Base Plate is now on the bottom. This is the tank orientation during operation. (Note: Make sure the wing nuts do not cause wobbling. A slight wobble due to clamp distortion is okay.)

7. Secure the 1.5 in. Sanitary to 1/4 in. HB Adaptor (3) to the Tank lower side-port using a 1.5 in. Sanitary Gasket (6) and a 1.5 in. Sanitary Clamp (8). Secure the 1.5 in. Sanitary to ½ in. HB Adaptor (4) to the Tank upper side-port using a 1.5 in. Sanitary Gasket (6) and a 1.5 in. Sanitary Clamp (8). Make sure to hand tighten the clamp enough to prevent leaks.

8. Connect one end of 1/4 in. ID flexible tubing (not included) to the 1/4 in. HB on the lower side-port. Thread this tubing through the pump-head on a peristaltic pump (not included) and connect the other end to the buffer source reservoir. This will be the feed line for the Dialysis Recirculation Tank.

9. Connect one end of ½ in. ID flexible tubing (not included) to the ½ in. HB on the upper side-port. Connect the other end to the buffer source reservoir or direct to drain. This will be the return or drain line. (Note: it is important that the HB and flexible tubing connected to the upper side-port is larger than HB and flexible tubing on the lower side-port to avoid over-flowing the Dialysis Recirculation Tank. Also, the return/drain line should be oriented downward to allow proper draining.)

**Operating Instructions:**

1. Fill the Tank by turning on the pump and adjusting the flow rate to 1-2 L/min. This can take 5-10 min. When the buffer level is about 4 inch (10 cm) below the upper side-port, place the dialysis sample in the Dialysis Tank. (Note: sample volumes larger than 1 L should be placed in the Tank sooner.) When the buffer starts pouring out the return/drain line, reduce the pump flow rate to 100-200 ml/min.

2. Continue to dialyze at the recommended flow rate of 100-200 ml/min. (Note: flow rate may need to be optimized for the application). If desired, loosely cover (not included) the tank opening. (Note: DO NOT seal the upper end closed since this may allow pressure to increase and adversely affect dialysis.)

3. Single Pass Mode: since the buffer volume is not maintained by recirculation, the level in the source reservoir will diminish over time. Make sure that the buffer source does not run out by periodically replenishing the volume level.

4. When done, remove dialysis sample from the Dialysis Recirculation Tank. To empty the Tank back into the buffer source; turn the pump off, reverse the flow direction, turn the pump back on and adjust the flow rate to 2 L/min. To empty the Tank to drain; turn the pump off, disconnect the feed line from the buffer source, direct feed line to drain, reverse the pump flow direction, turn the pump back on and adjust the flow rate to 2 L/min.

5. When the pump starts pulling air, lift and tilt the Dialysis Tank to allow remaining buffer to drain out the lower side port. When the tank is empty, turn off the pump.

**Related products/documents**

KR1&Jr Peristaltic Pumps
Products Highlights Overview, including:
- Other dialysis tools: CelluSep tubings, SpectraPor tubings, GebaFlex, FloatALyser, SlideALyser, DispoDialyser...
- Other desalting tools: gelfiltration columns, ProteoCon
- Lab Microfiltration, Lab Macrofiltration
- MicroFiber filtration

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Information inquire

Reply by Fax: +33 (0) 4 70 03 82 60 or email at interbiotech@interchim.com

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Company/Institute: __________________________  Service, Lab: __________________________

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