Kontes Brand Microfiltration Glassware with Fritted Glass Supports

Function
Kontes Brand Filtration Assemblies with Fritted Glass Supports are designed as membrane filter supports for vacuum filtration analysis of liquids from particulate or biological contamination. Required accessories are a side arm filtration flask or filtration manifold, a vacuum source and ¼” ID vacuum tubing. These assemblies are not recommended for producing ultra-clean filtrates since the fritted glass of the filter support base is difficult to clean thoroughly and may contribute contaminates from previous filtrations.

Specifications
Materials:
Support Base: Type I, Class A Borosilicate Glass (ASTM E438; DIN-ISO 3585)
Funnel: Type I, Class A Borosilicate Glass (ASTM E438; DIN-ISO 3585)
Clamp: Anodized Aluminum
Stopper: Silicone
Pressure: Vacuum only
Frit Porosity: nominal 40-60 micron maximum

<table>
<thead>
<tr>
<th>Filter Size</th>
<th>Filter Area</th>
<th>Prefilter</th>
<th>Funnel Cap</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 mm</td>
<td>2.5 cm²</td>
<td>16 mm</td>
<td>25 mL</td>
<td>No. 5 stopper</td>
</tr>
<tr>
<td>47 mm</td>
<td>9.6 cm²</td>
<td>35 mm</td>
<td>300 mL</td>
<td>No. 8 stopper</td>
</tr>
<tr>
<td>47 mm</td>
<td>9.6 cm²</td>
<td>35 mm</td>
<td>300 mL</td>
<td>No. 8 stopper</td>
</tr>
<tr>
<td>90 mm</td>
<td>8.5 cm²</td>
<td>70 mm</td>
<td>1100 mL</td>
<td>No. 8 stopper</td>
</tr>
</tbody>
</table>

* 953780-000 has a PTFE coating on the flange area of both the support base and the funnel.

Suggested Flask Set-up for Vacuum Filtration
Assembly
1. Slide stopper onto stem of support base. Water can be used as a lubricant. If a filtration flask will be used, the tip of the stem should be below the side arm of the flask to prevent filtrate droplets from entering the vacuum line.
2. Firmly seat the stopper with support base into a filtration flask or manifold.
3. Center a 47 mm diameter membrane filter on the surface of the support base. If a gridded membrane is used, the grid should be facing up.
4. Carefully center the flange of the funnel onto the membrane filter and support base. Be careful not to disturb the filter.
5. Lock funnel and support base together with the clamp. Be sure the clamp is properly seated on both the support base and the funnel, or leakage may occur.
6. If a filtration manifold is being used, repeat the above steps with additional filtration assemblies for all manifold positions are required.

CAUTION: Fritted glass support bases are designed for vacuum filtration only.

Operation
• Connect the filtration flask or manifold to an appropriate vacuum source. If a dry air vacuum pump is used, a second filtration flask should be installed between the sample filtration flask or manifold to prevent liquids from accidentally entering the vacuum pump inlet (see figure 1).
• Pour the sample into the funnel and apply vacuum to filter the sample. When the sample level reaches the neck of the funnel, rinse the funnel walls with water or another appropriate solvent to flush any residue from the walls and secure uniform contaminate distribution on the filter surface.
• After all sample and flushing liquids have passed through the membrane filter, shut off the vacuum and gently rock the filtration assembly to break the vacuum seal and vent the vacuum flask. Release the clamp, lift off the funnel and carefully remove the membrane filter for further study or analysis.

Cleaning
• A new fritted glass support base should be washed with hydrochloric acid and then rinsed several times with distilled water. The acid wash and water rinses should be pulled through the fritted disk with a good vacuum. Each successive water rinse should only be started after the preceding one has been completely pulled through. This procedure will remove loose foreign matter such as dust.
• Immediately after each use, the filtration assembly should be disassembled and the components cleaned with hot water and an appropriate laboratory glass cleanser. There is a wide variety of cleaning agents available to remove surface contaminates that may interfere with trace analysis. These cleaners are available in biodegradable, phosphate-free and chromium-free formulations if desired and can be obtained from most laboratory supply houses.

CAUTION: Before using any cleaning solution, refer to its Material Safety Data Sheet for any precautions that may be observed during use.

CAUTION: Do not use any abrasive materials to clean glassware. The use of abrasive materials may scratch the glass surface, degrading its inherent strength.
• Many precipitates can be removed from the fritted disk of the support base by back flushing with warm tap water. Connect the stem of the support base to water tap using rubber tubing and allow the water to run backwards through the fritted disk. WARNING: the water pressure must not exceed 15 lbs./in.² (1 kg/cm²). After back flushing, the support base should be soaked overnight in an appropriate laboratory glassware cleanser, followed by a second tap water back flushing.
• After cleaning, the filtration assembly components should be rinsed with either distilled or high quality deionized water and allowed to air dry. Do not use paper or cloth to facilitate drying as this may leave traces of fiber or lint on the glassware. The funnel and support base may then be wrapped separately, autoclaved if required, and stored for later use.
**Autoclaving & Thermal Limitations**

Either the 953755-0000 or the 953780-0000 Filtration Assemblies can be used for bacteriological analysis of liquids. The filtration assembly components can be pre-sterilized in an autoclave and then aseptically assembled with a sterile membrane filter. If sterilization with the membrane filter is desired, then the 953780-0000 Filtration Assembly with PTFE-Faced support must be used.

**CAUTION:** Fitted glass support bases should not be subjected to excessive temperature changes or to a direct flame. If a filtration base needs to be dried or sterilized, it should be placed in a cold oven or autoclave. The heating rate should not exceed 20 °C/minute. This procedure prevents internal strain from developing in the glassware. The strain is caused by excessive temperature differences between the fritted disk and the surrounding glass, and can lead to fracturing of the filtration base.

**Replacement Components**

Fits assembly: 953705-0000 953755-0000 953780-0000 953755-0090
Glass Funnel 953701-0000 953751-0000 953776-0000 953781-0090
Clamp 953703-0000 953753-0000 953753-0000 953752-0090
Support Base 953702-0000 953752-0001 953777-0001 953752-0090
Stoppers (5/pack) 953715-0000 953763-0000 953763-0000 953763-0000

**Optional Accessories**

953761-0000 Glass Funnel, 47 mm, 100 mL capacity
953771-0000 Glass Funnel, 47 mm, 500 mL capacity
953781-0000 Glass Funnel, 47 mm, 1000 mL capacity
953710-0000 Filtration Flask, 125 mL capacity, No. 5 stopper joint
953760-0000 Filtration Flask, 1000 mL capacity, No. 8 stopper joint
953870-1000 Filter Dome, Small
953870-2000 Filter Dome, Large
953715-0801 No. 8 Silicone Stopper