INSTRUCTIONS

Slide-A-Lyzer™ Dialysis Flask

87760 87761 87762 87763 87759 2405.0

Number	Description
87760	**Slide-A-Lyzer Dialysis Flask, 2K MWCO, 150-250mL, 4 each, 1 float**
87761	**Slide-A-Lyzer Dialysis Flask, 3.5K MWCO, 150-230mL, 4 each, 1 float**
87762	**Slide-A-Lyzer Dialysis Flask, 10K MWCO, 150-250mL, 4 each, 1 float**
87763	**Slide-A-Lyzer Dialysis Flask, 20K MWCO, 150-250mL, 4 each, 1 float**
87759	**Slide-A-Lyzer Flotation Disk, 6 each**

Storage: Upon receipt store product at room temperature. Product shipped at ambient temperature.

Introduction

The Thermo Scientific Slide-A-Lyzer Dialysis Flask provides a convenient method for exchanging buffers or removing low molecular-weight contaminants and salts from samples with volumes up to 250mL. Samples can be easily added and removed by pipette or by directly pouring the sample through a wide screw cap opening at the top of the flask. A float is provided that, when attached to the neck of the flask, allows it to readily float in a vertical position for simple and safe handling. Slide-A-Lyzer Dialysis Flasks are manufactured using clean room conditions and contain low protein-binding regenerated cellulose membranes in a range of molecular-weight cutoffs for maximum sample recovery while maintaining maximum sample purity.

Additional Materials Required

- 3-15L of desired dialysis buffer
- 3-5L dialysis container

Procedure for Using the Slide-A-Lyzer Dialysis Flask

Note: Although quality assurance standards are stringent, there is always a slight chance of leakage. Before dialyzing valuable samples, fill unit with sterile, ultrapure water and check the flask for leaks. Pour out water immediately before beginning procedure.

Note: Perform flask manipulations over a clean, dry work surface. Use absorptive pads or paper towels on work surface as appropriate.

A. Hydrate Membrane

1. Prepare dialysis buffer of choice and equilibrate to appropriate temperature before starting.
2. Fill appropriately sized vessel with a volume of dialysis buffer at least 10-20X the sample volume.
3. Remove the flask from its protective pouch. To prevent contamination, handle the flask by the plastic frame using gloved hands. To improve handling, the flask may be placed upright on its bottom end on a flat clean surface.
4. Place the included float ring around the neck of the flask (Figure 1). Using the slit cut through the float, slide the float under the ring on the neck of the flask. Additional floats are available separately (Product No. 87759).

Figure 1. Install float ring.

5. Remove cap. Holding the flask at the top of the neck, immerse the flask completely in dialysis buffer for 2 minutes to hydrate the membrane (Figure 2).

   Note: Hydration increases membrane flexibility and allows it to adjust more readily to pressures created as the sample is added. Pre-wetting membranes is required for the device to hold the sample volume ranges indicated in the product descriptions above.

6. Remove flask from buffer and gently tap the flask edge on a paper towel to remove excess liquid. **Do not blot the membrane. Once wet, do not allow membrane to dry or damage to the membrane may occur.**


Figure 2. Hydrate membrane.

B. Add Sample

1. Pour or pipette in a sample volume within the range indicated in the product description (i.e., 150-250mL) (Figure 3). If the sample has a density ≥ 1.1g/mL or is of high molar concentration such as protein in 2M NaCl, 2M $(NH_4)_2SO_4$, 20% glycerol, 20% sucrose or 8M guanidine, add only up to 150mL of sample to the device. This is essential to allow for the influx of water during dialysis and ensures the unit does not swell excessively. **Failure to do so may cause a membrane to dislodge from the device resulting in sample loss.**

   Note: Do not use device with ammonium sulfate solutions > 2M. Do not use device with samples containing organic solvents.

2. Remove excess air using one of the following methods (A or B):

   A. With gloved hands, press gently on both sides of the membrane to remove sufficient air so the sample level is even with the bottom of the flask neck (Figure 4). While holding the membrane at this level, tightly screw the cap back on to the flask.

   B. Gently place and float flask in dialysis solution of choice. Dialysis solution will apply pressure to collapse the membrane and remove air. While unit is floating, hold the plastic frame and tightly screw the cap back on to the flask.


Figure 3. Pour in sample.

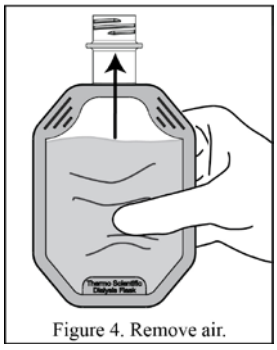
Figure 4. Remove air.

C. Dialyze Sample

1. Float sealed flask in the dialysis solution of choice and stir gently to avoid creating a vortex that might pull the flask down in contact with the stir bar.

2. Dialyze for the amount of time sufficient to remove low molecular-weight compounds for the specific downstream application (Figure 5). Use a volume at least 10-20X the sample volume of new dialysis buffer at each change. A typical dialysis procedure is as follows: Dialyze for 2-3 hours at room temperature or 4°C. Change the dialysis buffer and dialyze for another 2-3 hours. Change the dialysis buffer and dialyze overnight. For devices containing a 2K MWCO membrane, perform this full dialysis procedure one additional time.

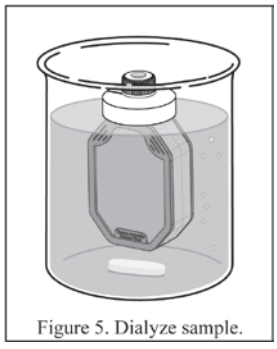
Figure 5. Dialyze sample.

D. Remove Sample

Note: Gently handle the flask with gloved hands along the plastic frame to prevent puncturing or rupturing the membrane.

1. Remove flask from buffer and place on a paper towel to remove excess buffer. Do not blot the membrane.

2. Inspect device to determine if water influx during dialysis has caused swelling and subsequent pressure on the membranes. **If swelling occurs, do not remove the cap because overflow and sample loss may occur.** If unit has swollen, use a needle and syringe to remove enough sample to relieve the pressure on the membranes before proceeding to Step 3 (Figure 6).


Figure 6. If needed, use syringe to remove pressure.

3. Remove cap. Remove sample using a serological pipette or pour sample into a clean container (Figure 7).
4. Dispose of used dialysis flask and dialysis buffer as appropriate.

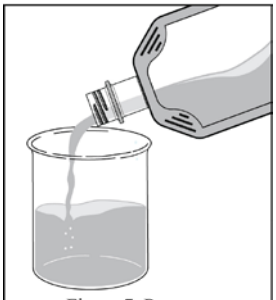

Figure 7. Pour out dialyzed sample.

Troubleshooting

Problem	Possible Cause	Solution
Filled flask does not float in dialysis solution	Exceeded recommended flask capacity (see Steps B1 and C1 in the procedure)	Reduce volume of dense liquid added
	Floatation ring was not attached	Use the floatation device provided in the 4-pack of flasks. Additional flotation devices are available separately (Product No. 87759)
Contaminants not removed completely	All molecules have different diffusion rates across membranes and may not have acted as other compounds of similar molecular weight	Increase dialysis time
		Use a device containing a higher molecular weight cut-off membrane

Additional Information

A. Slide-A-Lyzer Dialysis Flask Chemical Compatibility

- For optimal results, use the Slide-A-Lyzer Dialysis Flask at 4-25°C with standard laboratory solutions or samples within a pH range of 5-9 and a molar concentration of $\leq$ 2M. Additional chemical compatibilities are listed in Table 1.
- Do not use the Slide-A-Lyzer Dialysis Flask with samples or buffers containing alcohols, aromatic chlorinated hydrocarbons or strong acids and bases; the plastic flask frame may leach, dissolve, deform or otherwise fail. Test compatibility with solvents or questionable solutions before attempting to dialyze valuable samples.
- Do not use the Slide-A-Lyzer Dialysis Flask with samples or buffers with very high density, viscosity or molarity; an excessive influx of water may occur during dialysis which may cause a membrane to dislodge from the device resulting in sample loss (see instructions above and Table 1 for guidelines).
- Do not use device with ammonium sulfate solutions > 2M.

Table 1. Additional chemical compatibilities for the Thermo Scientific Slide-A-Lyzer Dialysis Flask.

Chemical	Compatible Volume
Sucrose, 20%	150mL
Glycerol, 20%	150mL
Ammonium sulfate, 2M	150mL
Sodium chloride, 2M	150mL
Guanidine•HCl, 8M	150mL
Glycine, 0.1M, pH 2	Maximum
DMSO, 2%	Maximum
Ethanol, 20% (5 minute rinse)	Maximum

Note: Chemical compatibilities vary throughout the Slide-A-Lyzer Dialysis product line. Confirm compatibilities of individual chemicals with the appropriate product.

B. Slide-A-Lyzer Membrane Specifications

MWCO	Glycerol Content	Sulfur Content	Heavy Metals Content
2K	None	0.169%	Trace
3.5K	None	0.10-0.15%	Trace
10K	~21%	0.10-0.15%	Trace
20K	None	0.04%	Trace

C. Information Available from Our Website

- Tech Tip #20: Dialysis: an overview
- Tech Tip #43: Protein stability and storage
- Tech Tip #6: Extinction coefficients guide
- Tech Tip #19: Remove detergent from protein samples

Related Thermo Scientific Products

87717-38	**Slide-A-Lyzer G2 Dialysis Cassettes**
88245	**SnakeSkin™ Dialysis Tubing, 10K MWCO, 35mm I.D.**
23225	**Pierce™ BCA Protein Assay Kit**
89889-94	**Zeba™ Spin Desalting Columns, 7K MWCO**
89884-7	**Pierce Concentrators**
88305	**HiPPR Detergent Removal Spin Columns**
87780	**Pierce Detergent Removal Resin**

Current product instructions are available at *www.thermoscientific.com/pierce*. For a faxed copy, call 800-874-3723 or contact your local distributor.