

Slide-A-Lyzer[®] Dialysis Products

0729

CAUTION: Certain Slide-A-Lyzer[®] Dialysis Cassettes must be hydrated before use and/or before low-volume use.* This includes:

- All Slide-A-Lyzer[®] Dialysis Products that have the word "Hydrate" on the Cassette pouch.
- All Cassettes used with low volumes, i.e., 100-200 μ l in the 0.1-0.5 ml Cassettes, 0.5-1 ml in the 0.5-3 ml Cassettes and 3-4 ml in the 3-15 ml Cassettes.

Figure 1.

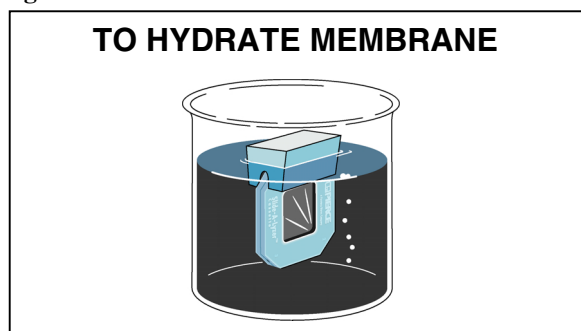


Figure 2.

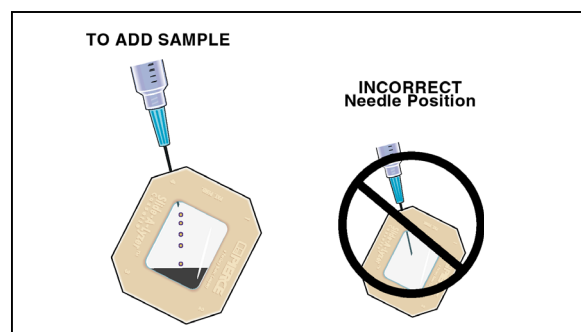
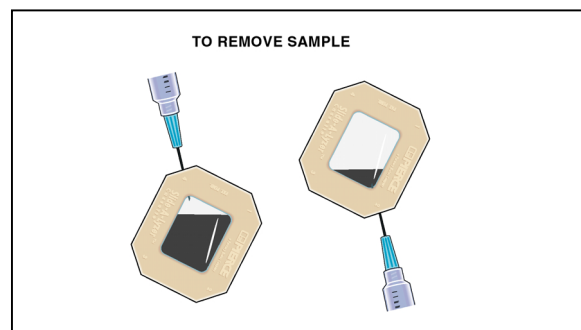


Figure 3.



* To Hydrate Membrane

For Slide-A-Lyzer[®] Dialysis Cassettes requiring hydration and for all Cassettes used with low volumes
Remove Slide-A-Lyzer[®] Cassette from its pouch and slip into the groove of an appropriate size buoy.

Before use, immerse Cassette in dialysis buffer for 30 seconds for all Slide-A-Lyzer[®] Dialysis Cassettes requiring hydration.

Remove Cassette from buffer and remove excess liquid by tapping the edge of the Cassette gently on paper towels. **DO NOT BLOT MEMBRANE.**

To Add Sample

Do not allow the needle to contact the membrane.

Fill the syringe with your sample, leaving a small amount of air in the syringe.

With the bevel sideways, insert the tip of the needle through one of the syringe ports located at a top corner of the Cassette.

Inject sample slowly. Withdraw air by pulling up on the syringe piston.

Remove the syringe needle from the Cassette while retaining air in the syringe.

To Remove Sample

Use caution to avoid having the needle contact the membrane.

Fill the syringe with a volume of air equal to the sample size and, with the bevel sideways, insert the tip of the needle through another one of the syringe ports located at a top corner of the Cassette.

Inject air slowly into the Cassette to separate the membranes.

Turn the unit so that needle is on the bottom and allow the sample to collect near the port. Withdraw the sample into the syringe.

Introduction The Pierce Slide-A-Lyzer® Dialysis Cassette

Pierce has developed the Slide-A-Lyzer® Dialysis Cassette as a convenient means for dialyzing samples. Low molecular weight contaminant removal, buffer exchange, desalting and concentration can be accomplished with this device. The Slide-A-Lyzer® Dialysis Cassette is made of low-binding regenerated cellulose and features a hermetically sealed sample chamber to maintain the highest possible sample integrity. Also, the Slide-A-Lyzer® Dialysis Cassette is manufactured under clean room conditions to ensure that the unit is free of contaminants. Sample introduction and removal are easily accomplished by penetrating the gasket with a hypodermic needle attached to a syringe. The gasket imparts resealability to the needle puncture, ensuring that no sample is lost from the Cassette during dialysis.

Slide-A-Lyzer® Dialysis Cassette Product Descriptions

MWCO	Capacity	10 (8) Pack	50 (40) Pack	Kit*	Sample Kit	g-Irradiated
3,500	0.1-0.5 ml	66333	66334	66335	NA	NA
3,500	0.5-3 ml	66330	66331	66332	NA	NA
3,500	3-12 ml	66110 (8 pack)	66111 (40 pack)	66107 (8 Pack)	NA	NA
7,000	0.1-0.5 ml	66373	66374	66375	NA	NA
7,000	0.5-3 ml	66370	66371	66372	NA	NA
7,000	3-12 ml	66710 (8 pack)	66711 (40 Pack)	66707 (8 pack)	NA	NA
10,000**	0.1-0.5 ml	66415	66416	66408	NA	66452
10,000	0.5-3 ml	66425	66426	66406	66405	66450
10,000	3-15 ml	66410	66411	66407	NA	66451
10,000***	0.1-0.5 ml	66383	66384	66385	NA	NA
10,000	0.5-3 ml	66380	66381	66382	NA	NA
10,000	3-12 ml	66810 (8 pack)	66811 (40 pack)	66807 (8 pack)	NA	NA

* Most kits include 10 Dialysis Cassettes, 10 Buoys and 10 Syringe and 18-Gauge Needle Accessories. Kits for 3-12 ml volumes include only 8 Dialysis Cassettes and 8 Buoys.

** Original membrane: 0.45 mil thick, 10,000 MWCO

*** Extra-strength membrane: 1.2 mil thick, 10,000 MWCO

NA – Not Available. See your Pierce Products Catalog, the Pierce Web Site or call for availability of new MWCOs and volume sizes.

Membrane Specifications

MWCO	Hydration Before Use Required	Glycerol Content	Sulfur Content	Heavy Metals Content
3,500	All volumes (1-2 min. hydration)	None	0.1-0.15%	Trace
7,000	Low volumes (30 sec. hydration)	~ 13%	0.1-0.15%	Trace
10,000**	Low volumes (30 sec. hydration)	~ 12%	~ 0.01%	Trace
10,000***	All volumes (1-2 min. hydration)	~ 21%	0.1-0.15%	Trace

Slide-A-Lyzer® Accessories

Number	Description
66494	Slide-A-Lyzer® Syringe (1 ml) and 18-Gauge Needles, 10 each
66490	Slide-A-Lyzer® Syringe (5 ml) and 18-Gauge Needles, 10 each
66493	Slide-A-Lyzer® Syringe (20 ml) and 18-Gauge Needles, 10 each
Buoys: Select proper Buoy based on fill-volume of Slide-A-Lyzer® Cassette chosen	
66430	Slide-A-Lyzer® Buoys (White) for 0.1-0.5, 0.5-3, 1-3 and 3-15 ml Cassettes (10 pack)
66432	Slide-A-Lyzer® Buoys (Grey) for 3-12 ml Cassettes only (8 pack)
66431	Slide-A-Lyzer® Carousel Buoy for 0.1-0.5, 0.5-3 and 1-3 ml Cassettes (1 each)

Procedure

Note: Although our quality assurance standards are very stringent, there is always a slight chance of leakage. Some common precautions are recommended when dialyzing precious samples. The Slide-A-Lyzer® Dialysis Cassette can be checked for leaks by injecting and removing sterile distilled water immediately prior to the addition of the sample. Cassette manipulations should be performed over a clean, dry work surface.

Note: Use **White** Slide-A-Lyzer® Buoys (Prod. No. 66430) for 0.1-0.5, 0.5-3, 1-3 and 3-15 ml Cassettes. Use **Grey** Slide-A-Lyzer® Buoys (Prod. No. 66432) for 3-12 ml Cassettes.

1. Remove the Slide-A-Lyzer® Dialysis Cassette from its protective pouch by cutting along the dotted line.

Note: To prevent contamination, handle the Slide-A-Lyzer® Dialysis Cassette by the plastic frame. Do not touch the membrane with ungloved hands. The Slide-A-Lyzer® Dialysis Cassette can be slipped into the groove of a buoy, with the buoy then being used as a Cassette stand.

2. For Cassettes requiring hydration, see Caution (top of Page 1) and Figure 1. Hydration increases the flexibility of the membrane and allows it to adjust more easily to the positive pressure created as the sample is added (Figure 2 & 4) and to the vacuum created when air is removed (Figure 5).

3. Attach the hub of the hypodermic needle to the Luer-Lok® fitting of the syringe by firmly screwing it into place.

Note: Do not remove the plastic sheath from the needle until you are ready to fill the syringe with your sample. Use caution when working with the hypodermic needle to avoid injury. The Slide-A-Lyzer® Dialysis Cassette is designed to be used with 18-gauge, 1-inch beveled needles (21-gauge, 1-inch beveled needles can also be used).

4. Remove the protective sheath from the hypodermic needle and fill the syringe with your sample by first immersing the needle in your sample and then slowly drawing back on the syringe piston.

Note: When working with small volumes, significant sample loss can occur in the syringe's dead volume, or by binding to the syringe surfaces. The loss can be minimized by drawing a small volume of air into the syringe prior to the uptake of your sample and using the air to void the syringe's dead volume. Syringes with low binding potential, such as airtight plastic syringes without rubber or silicon plungers, can also reduce sample loss.

5. Remove the Slide-A-Lyzer® Dialysis Cassette from the buoy. Penetrate the gasket with the needle through one of the syringe ports at a top corner of the Cassette. Inject sample (if sample contains $(\text{NH}_4)_2\text{SO}_4$, reduce volume to 80% of total volume). Mark corner of Cassette with permanent marker or record number of port injected.

Caution: The beveled portion of the needle should penetrate the gaskets to a minimal extent. Overextending the needle into the cavity may puncture the membrane. Figures 2 and 4 illustrate the proper method for filling the Slide-A-Lyzer® Dialysis Cassette. If you have a sample with high protein concentration (such as 10 mg/ml), fill the Cassette slowly to avoid foaming.

6. With the syringe needle still inserted in the Cassette cavity, draw up on the syringe piston to remove air from the Cassette cavity (Figure 5). This will compress the membrane windows so that the sample solution contacts the greatest window surface area. Use caution to prevent the needle from contacting the membrane. Leaving some air inside of the Cassette at low sample volumes should not significantly affect dialysis.

7. Remove the syringe needle from the Cassette while retaining the air in the syringe. The gasket will reseal and the membrane cavity will have no (or minimal) air in direct contact with the sample.

8. Slip the Slide-A-Lyzer® Dialysis Cassette into the groove of the buoy and float this assembly in the dialysis solution of choice (Figure 6).

9. To remove sample after dialysis, fill the syringe with a volume of air at least equal to the sample size and penetrate the gasket with the needle through a top, unused syringe guide port. Discharge air into Cassette cavity. Air is used to further separate membrane so penetration of membrane by needle is unlikely (Figures 3 and 7).

Note: Avoid penetrating the guide ports more than once because this may lead to coring of the gasket and subsequent loss of the sample.

Caution: During dialysis, the dialysis membrane becomes more flexible. Use caution to prevent the needle from contacting the membrane. With the needle bevel sideways, insert only the tip of the needle through the syringe port (Figure 3).

10. Rotate the Cassette until the port with the syringe is on the bottom and slowly draw back on the syringe piston to capture the dialyzed sample (Figure 8). Remove the syringe needle from the Cassette. Discard the Slide-A-Lyzer® Dialysis Cassette.

Figure 4.

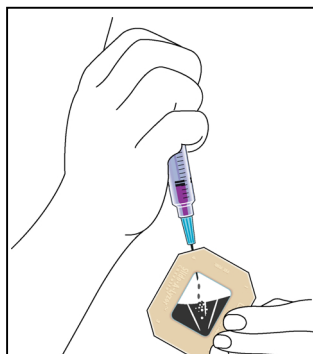


Figure 5.

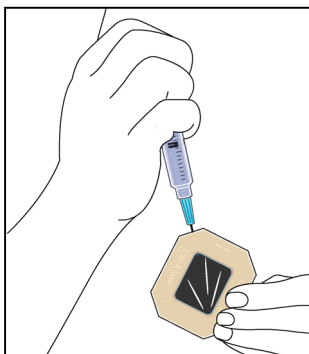


Figure 6.

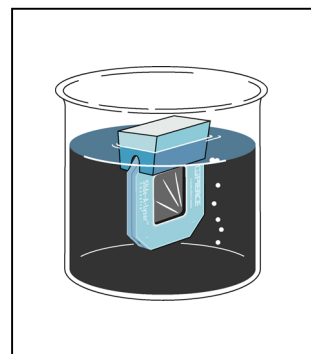


Figure 7.

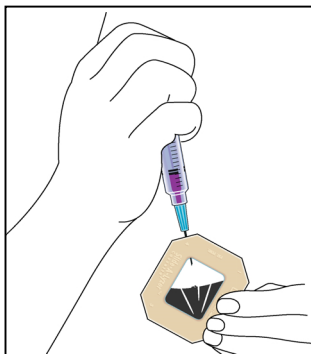
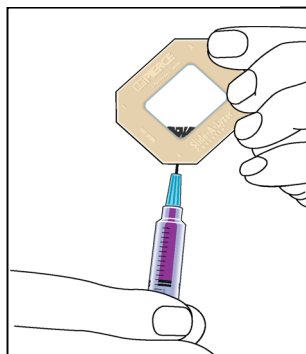


Figure 8.



Luer-Lok® is a registered trademark of Becton-Dickinson.

Slide-A-Lyzer® Dialysis Cassette is covered by U.S. Patent No. 5,503,741.

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Slide-A-Lyzer® Chemical Compatibility List

Legend

G= Good chemical resistance

F= Fair chemical resistance (pore swelling may occur in membrane or polypropylene may be effected by short-term exposure)

N= Not recommended

Reagent		Reagent	
Acetic Acid, 25%	G	Hydrofluoric acid, 25%	F
Acetone	G	Hydrogen peroxide, 30%	G
Ammonium hydroxide, 1N	F	Isopropanol	G
Ammonium hydroxide, 25%	F	Methanol, 98%	G
Amyl acetate	G	Methyl acetate	G
Benzene	N	Methyl ethyl ketone	G
Benzyl alcohol	N	Methylene chloride	G
Butanol	G	Nitric acid, 25%	N
Butyl acetate	G	Nitric acid, 65%	N
Carbon tetrachloride	G	Perchloric acid, 25%	N
Chloroform	N	Phosphoric acid, 25%	F
Dimethyl formamide	F	Potassium hydroxide, 1N	N
Dioxane	G	Propylene glycol	G
Ethanol, 70%	G	Sodium hydroxide, 1N	F
Ethanol, 95%	G	Sulfuric Acid, 25%	F
Ethyl Acetate	G	Sulfuric Acid, 96%	N
Ethylene Glycol	G	Tetrahydrofuran	G
Formaldehyde solution, 30%	G	Toluene	G
Formic acid, 100%	G	Trichloroacetic acid, 10%	F
Formic acid, 25%	G	Trichloroacetic acid, 25%	N
Hexane	G	Trichloroethylene	N
Hydrochloric acid, 25%	N	Xylene	F
Hydrochloric acid, 30%	N		