INSTRUCTIONS

Slide-A-Lyzer® MINI Dialysis Devices

88400 88401 88402 88403 88404 88405 2292.1

Number	Description
88400	**Slide-A-Lyzer MINI Dialysis Devices,** 3.5K MWCO, 0.5mL, 25 each
88403	**Slide-A-Lyzer MINI Dialysis Devices,** 3.5K MWCO, 2mL, 25 each
88401	**Slide-A-Lyzer MINI Dialysis Devices,** 10K MWCO, 0.5mL, 25 each
88404	**Slide-A-Lyzer MINI Dialysis Devices,** 10K MWCO, 2mL, 25 each
88402	**Slide-A-Lyzer MINI Dialysis Devices,** 20K MWCO, 0.5mL, 25 each
88405	**Slide-A-Lyzer MINI Dialysis Devices,** 20K MWCO, 2mL, 25 each

Storage: Store at room temperature. Products shipped at ambient temperature.

Introduction

The Thermo Scientific Slide-A-Lyzer MINI Dialysis Devices enable rapid and efficient dialysis of 50-500µL or 200-2000µL samples directly in the supplied 15mL or 50mL conical tubes. These single-use devices require no centrifuge, beakers or multiple laborious steps to perform. Futhermore, sample addition and removal is easily accomplished using standard laboratory pipettes, eliminating the need for syringes. The Slide-A-Lyzer MINI Dialysis Device has a regenerated cellulose membrane, which is compatible with common chemicals and buffers. These devices can be used to simultaneously process multiple samples while minimizing the amount of dialysis buffer required and generating less waste than conventional dialysis.

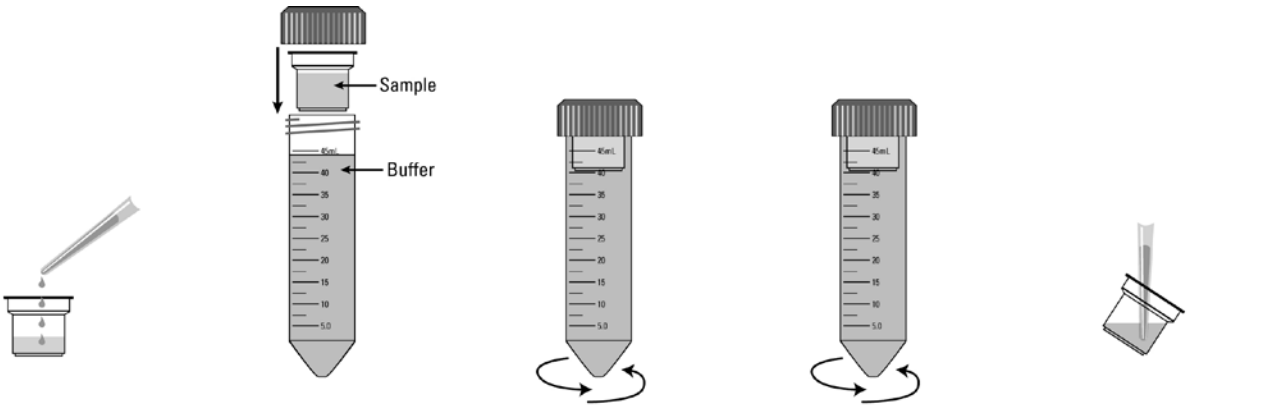
Important Product Information

- To prevent contamination, do not touch the membrane with ungloved hands.
- Avoid contact with the membrane.
- Once wet, do not let the membrane become dry.
- For dialysis, gently agitate the device on an orbital shaker.
- Determine the appropriate sample volume. If the sample density is ≥ 1.150g/mL, such as protein in saturated 4.1M $(NH_4)_2SO_4$, 45% sucrose or 8M GuHCl, use ≤ 50% of the maximum sample volume indicated for the specific device, which allows for the influx of water during dialysis and ensures the device does not fill over the 2mL maximum. Performing serial dialysis using buffers with decreasing concentrations of solutes (salt) will prevent the osmotic pressure from overfilling the device (e.g., dialyze a 5M NaCl sample against a buffer with 0.5M NaCl).

Additional Materials Required

- Orbital shaker (optional)
- Pipette for sample recovery

Procedure Summary



1. Add sample into the device.
2. Place the device into the conical tube containing the buffer and cap the tube.
3. Shake gently on an orbital shaker.
4. Replace dialysis buffer after 2-3 hours and shake for an additional 2-4 hours or overnight.
5. Remove the device from the conical tube and recover the sample.

Procedure for using the Dialysis Devices

Note: Despite stringent quality assurance standards, device leakage can occur. To ensure device integrity before dialyzing valuable samples, check for leaks by loading ultrapure water and observing for several minutes. If droplets form across the membrane, then do not use the device. Perform device manipulations over a clean, dry work surface.

1. Remove the Slide-A-Lyzer MINI Dialysis Device from the conical tube. To prevent membrane contamination, use gloves and handle the device only on the sides.
2. Add dialysis buffer to the conical tube and set aside (~14mL for the 0.5mL device or ~44.5mL for the 2mL device.)
3. Add buffer into the device (1mL for 0.5mL device or 4mL for 2mL device). Decant the buffer and shake the device to remove buffer. Do not let the membrane become dry.
4. Immediately add sample into the device (50-500µL for 0.5mL device and 0.2-2mL for 2mL device.)
5. Place the device slowly into the conical tube containing the buffer. Make sure the membrane is in contact with the buffer and does not introduce any air bubbles.
6. Cap the conical tube securely and shake gently on an orbital shaker (i.e., 100-300 rpm).
7. Dialyze for a time sufficient to remove low-molecular weight compounds for the specific downstream application. The rate of dialysis is affected by a number of factors including sample volume, size and shape of the molecule being dialyzed, and dialysis agitation and temperature. A typical dialysis procedure is as follows: dialyze for 2 hours at room temperature (RT) or 4ºC; change the dialysis buffer and dialyze for another 2 hours to overnight (see Figure 1 and 2). Dialysis times may be shorter when using less than maximum sample volumes.
8. Remove the device from the conical tube and collect the sample from the corner of the device using a pipette.

Troubleshooting

Problem	Possible Cause	Solution
Sample leaked from the device	The membrane was compromised	Before loading the sample, test the membrane using ultrapure water
Small molecule is not removed completely	Buffer was not changed	Dialyze for two hours at RT or 4ºC; change the dialysis buffer and dialyze for another two hours; change the dialysis buffer and dialyze overnight
Moisture seen on cap	Condensation or splashing caused by over agitation	Reduce agitation rate (shaker rpm)

Additional Information

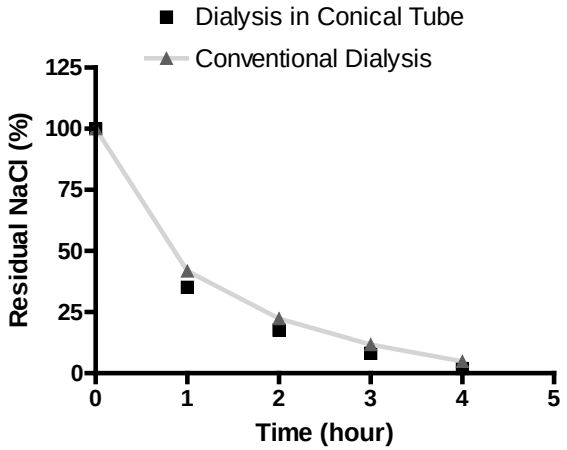


Figure 1. Rate of removal of NaCl in a Thermo Scientific Slide-A-Lyzer MINI Dialysis Device, 10K MWCO, 2mL. Samples (2mL, 0.25mg/mL BSA containing 1M NaCl) were dialyzed against 45mL of water in 50mL disposable conical tubes on an orbital shaker (300 rpm) at RT. The rate of removal of NaCl was determined by measuring the conductivity of the retentate at the indicated times. Greater than 95% of NaCl was removed within 4 hours.

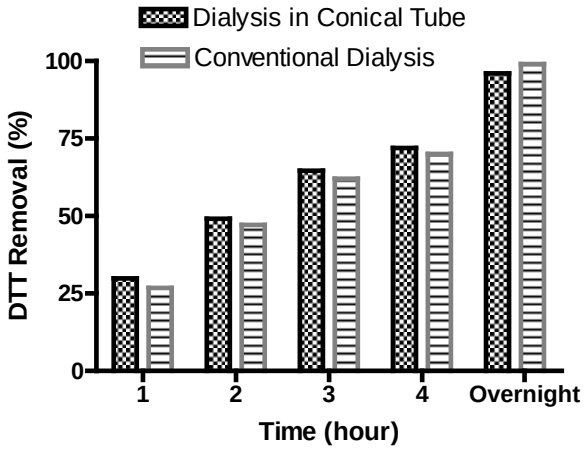


Figure 2. Rate of removal of DTT in a Thermo Scientific Slide-A-Lyzer MINI Dialysis Device, 10K MWCO, 2mL. Samples (2mL, 100mM DTT in 50mM sodium phosphate, 75mM NaCl, pH 7.2) were dialyzed against 45mL of 50mM sodium phosphate, 75mM NaCl, pH 7.2 in 50mL disposable conical tubes on an orbital shaker (300 rpm) at RT. The rate of removal of DTT was determined using Ellman's Reagent at 412nm at the indicated times. Overnight dialysis resulted in > 95% of DTT removal.

Note: The buffer was changed after 2 hours in all experiments. Similar results were obtained with 0.5mL Slide-A-Lyzer MINI Dialysis Devices. For conventional dialysis, the samples were dialyzed against 2L of buffer in a beaker with stirring.

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

Legend
G = Good chemical resistance
F = Fair chemical resistance (pore swelling might occur)
N = Not recommended

Related Thermo Scientific Products

69580	**Slide-A-Lyzer MINI Dialysis Unit,** 2K MWCO, 50 each
69550	**Slide-A-Lyzer MINI Dialysis Unit,** 3.5K MWCO, 50 each
69560	**Slide-A-Lyzer MINI Dialysis Unit,** 7K MWCO, 50 each
69570	**Slide-A-Lyzer MINI Dialysis Unit,** 10K MWCO, 50 each
69590	**Slide-A-Lyzer MINI Dialysis Unit,** 20K MWCO, 50 each
28372	**BupH™ Phosphate Buffered Saline Packs,** 40 packs
28376	**BupH Tris Buffered Saline Packs,** 40 packs

This product ("Product") is warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Product documentation, specifications and/or accompanying package inserts ("Documentation") and to be free from defects in material and workmanship. Unless otherwise expressly authorized in writing, Products are supplied for research use only. No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the original purchaser of the Product ("Buyer").

No other warranties, express or implied, are granted, including without limitation, implied warranties of merchantability, fitness for any particular purpose, or non infringement. Buyer's exclusive remedy for non-conforming Products during the warranty period is limited to replacement of or refund for the non-conforming Product(s).

There is no obligation to replace Products as the result of (i) accident, disaster or event of force majeure, (ii) misuse, fault or negligence of or by Buyer, (iii) use of the Products in a manner for which they were not designed, or (iv) improper storage and handling of the Products.

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