

*Spectra/Por*<sup>®</sup>

# Micro Float-A-Lyzer<sup>®</sup>

READY-TO-USE MICRODIALYSIS DEVICES



**Product Information & Operating Instructions**



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## Introduction

Designed to maximize convenience and efficiency, Spectrum's ready-to-use Micro Float-A-Lyzer is ideal for the dialysis of very small sample volumes. Available in two volume sizes, 100-200 µl and 400-500 µl, the Micro Float-A-Lyzer features Spectrum's proprietary Biotech Grade Cellulose Ester (CE) membrane incorporated into a pre-assembled, leak-proof microdialysis device.

Available in 7 concise MWCO's with color-coded caps, Spectrum's Biotech CE is a synthetic, low-protein binding membrane with no heavy metal and sulfide contaminants. The pre-formed tubular geometry also limits volume increase and sample dilution.

The self-standing and self-floating device is designed with a Luer-lok® sample port to provide quick and easy access for loading, in-process testing and total sample recovery using a 1 ml syringe (included). Sold 12/pkg, individual units can interlock to form a "flotilla" for the simultaneous dialysis of multiple samples.

Only Spectrum's Micro Float-A-Lyzer and Float-A-Lyzer G2 assure a 95-98% sample recovery, 98% sample purity and <10% sample dilution; all in an easy-to-use, convenient dialysis device.

## Applications

The Micro Float-A-Lyzer Microdialysis devices can be used for a variety of small volume applications, such as:

- Buffer change and desalting
- Sample preparation prior to electrophoresis, HPLC: removing salts such as sodium chloride, detergents, ammonium sulfate, cesium chloride, surfactants, etc.
- Separation and purifications of substances such as DNA, proteins, viruses, antibodies, peptides, polymers, etc., from low molecular weight contaminants.
- Sample concentration when using a solvent absorbent powder such as Spectra/Gel® Absorbent
- Measure the diffusion rates for ions
- Binding studies

**Specifications**

Luer-lok® Cap:	Open & close for in-process sampling Color-coded for MWCO Leak proof & re-sealable Polypropylene
Body Piece:	Self-standing & self-buoyant, Seals top/bottom ends of membrane Polycarbonate
Membrane:	Biotech Grade Cellulose Ester (CE)
Potting:	Polyurethane
7 MWCO's:	0.1-0.5 kD, 0.5-1.0 kD, 3.5-5 kD, 8-10 kD, 20 kD, 50 kD & 100 kD
2 Volume Sizes:	100-200 µl & 400-500 µl
Pkg & Qty:	Dry with glycerin, 12/pkg
Sample Loading:	Disposable 1 ml syringe (included)

**Dimensions**

2 Volume Sizes:	100-200 µl	400-500 µl
Height:	4.4 cm	6.3 cm
Width:	4.5 cm	4.5 cm
Depth:	1.9 cm	1.9 cm
Membrane Flat Width:	10 mm	10 mm
Membrane Diameter:	6.4 mm	6.4 mm

**Instructions for Fluid Loading and Removal**

Follow these simple steps whenever loading or retrieving any fluid from the sample chamber.

1. Fluid Loading: Since the sample chamber is very small, it is important to remove the air before loading the fluid.
  - a. Fill the provided 1ml syringe with 200 µl or 500 µl of fluid (depending on device size) and expel air from syringe.
  - b. Remove device cap, firmly connect fluid-filled syringe (air tight) and aspirate air out of device (flattening the membrane).
  - c. Firmly hold the connected device and syringe in a vertical orientation (with syringe on top) and give two jarring, lateral shakes to force all air to the top and all fluid to the bottom inside syringe barrel. Repeat as needed.
  - d. Now with all air above fluid in syringe, load fluid into the device sample chamber, disconnect the syringe containing the air and replace the cap on the device.
2. Fluid Removal:
  - a. Remove device cap and firmly connect an empty 1ml syringe (air tight).
  - b. Firmly hold the connected device and syringe in a vertical orientation (with syringe on bottom) and aspirate out the fluid (flattening the membrane) to remove >95% of the volume.
  - c. Disconnect syringe and expel fluid as appropriate.

**Instructions for Micro Dialysis:**

1. Pre-wetting the Membrane: To most effectively wet the membrane, remove glycerin and achieve maximum membrane permeability, the Micro Float-A-Lyzer device should be soaked first in 10% alcohol followed by thoroughly flushing and soaking in DI water before dialysis.
  - a. Remove the cap on the Micro Float-A-Lyzer device.
  - b. Use the 1ml syringe provided to load the device with 10% isopropanol (IPA) or 10% ethanol (EtOH) (refer to Fluid Loading) and place device in the same alcohol solution for 10 minutes.
  - c. Remove device from the alcohol solution and use the 1ml syringe to remove alcohol from the sample chamber (refer to Fluid Removal). Expel and rinse out alcohol from syringe with DI water.
  - d. Rinse the device with DI water. Use 1ml syringe to load and remove DI water (refer to Fluid Loading and Fluid Removal) several times to flush alcohol out of the sample chamber.
  - e. Fill the sample chamber with DI water again (refer to Fluid Loading) and place the filled device in DI water for 15-30 minutes to eliminate alcohol from membrane.
  - f. Remove device from DI water. Rinse the device with DI water and use 1ml syringe to flush the sample chamber again with DI water. Remove the flush water from the sample

chamber (refer to Fluid Loading and Fluid Removal).

2. Load the Sample (100-200  $\mu$ l or 400-500  $\mu$ l) with a rinsed 1ml syringe into the sample chamber of the Micro Float-A-Lyzer (refer to Fluid Loading). Note: The 400-500  $\mu$ l size Micro Float-A-Lyzer can also be used for the dialysis of volumes between 200-400  $\mu$ l. The sample may, however, undergo a minimal increase in sample volume.
3. Place the device loaded with sample in the dialysate buffer that is at least 10 X the sample volume. Use a stir bar and magnetic stirrer to stir buffer during dialysis.
4. Dialyze sample according to particular application requirements. Typical dialysis is performed 12-24 hours with 3-4 buffer changes (after 2-4, 6-8, and 10-14 hours).

**Note:** The Luer cap and syringe provide easy access for in-process testing.
5. Upon completion of dialysis, remove the Micro Float-A-Lyzer from the dialysate buffer.
6. Retrieve the sample (refer to Fluid Removal) and dispense into an appropriate receptacle.
7. **Optional for >98% recovery:** After removing sample, load the empty sample chamber with 50-100  $\mu$ l of appropriate buffer and a small amount of air. Replace cap and gently shake the device several times to rinse the membrane. Recover the rinse volume and combine with the rest of dialysis sample.
8. Discard Micro Float-A-Lyzer device.

### Concentrate sample with Spectra/Gel® Absorbent

Use Spectra/Gel Absorbent to concentrate the sample and reduce the volume in the Micro Float-A-Lyzer dialysis device. Simply pack the dry Spectra/Gel around the outside of the membrane to draw away and permanently bind water. Since the molecular weight of the polyacrylate-polyalcohol compound is significantly larger than the membrane MWCO's, it does not pass through the membrane into the sample. When the desired volume has been achieved, wipe or rinse away the hydrated Spectra/Gel compound and retrieve reduced volume from the Micro Float-A-Lyzer.

### Storage and Shelf Life

**Storage:** Store new and unused Micro Float-A-Lyzer devices in a dry place at room temperature. Care should be taken to avoid humid environments.

**Shelf Life:** Approximately two years depending on storage conditions.

### Sterilization

The following methods are recommended for sterilizing the Micro Float-A-Lyzer.

Gamma Irradiation at 20 KG

Ethylene Oxide Gas exposure

Autoclaving is not recommended since it will likely have adverse affects on the membrane porosity and MWCO.

## Membrane Compatibility Table

This chemical resistance chart is intended for use as a guide, not as a guarantee of chemical compatibility. Variables in temperature, concentrations, durations of exposure and other factors may affect the use of the product. It is recommended to test under your own conditions.

The following codes are used to rate chemical resistance:

<b>R</b>	Recommended
<b>L</b>	Limited Exposure
<b>NR</b>	Not Recommended
<b>U</b>	Unknown

Cellulose Ester (CE)		Cellulose Ester (CE)	
Acetic acid (diluted-5%)	L	Cellosolve	NR
Acetic acid (med conc-25%)	NR	Chloracetic acid	NR
Acetic acid (glacial)	NR	Chloroform	L
Acetone	NR	Chromic acid	NR
Acetonitrile	NR	Cresol	NR
Ammonium hydroxide (diluted)	NR	Cyclohexane	L
Ammonium hydroxide (med conc)	NR	Cyclohexanone	NR
Amyl acetate	NR	Diacetone alcohol	NR
Amyl alcohol	NR	Dichloromethane	L
Aniline	NR	Dimethyl formamide	NR
Benzene	NR	Dimethylsulfoxide	NR
Benzyl alcohol	NR	"1,4 Dioxane"	NR
Boric acid	R	Ethers	NR
Brine	R	Ethyl acetate	NR
Bromoform	NR	Ethyl Alcohol	L
Butyl acetate	NR	Ethyl alcohol (15%)	R
Butyl alcohol	L	Ethyl alcohol (95%)	L
Butyl cellosolve	NR	Ethylene dichloride	NR
Butyraldehyde	NR	Ethylene glycol	L
Carbon tetrachloride	NR	Ethylene oxide	NR
		Formaldehyde (2%)	L

Cellulose Ester (CE)		Cellulose Ester (CE)	
Formaldehyde (30%)	L	Nitric acid (concentrated)	NR
Formic acid (25%)	NR	Nitrobenzene	NR
Formic Acid (50%)	NR	Nitropropane	NR
Freon®	R	Oils, mineral	R
Gasoline	R	Pentane	R
Glycerine	R	Perchloric acid (25%)	NR
Glycerol	R	Perchloroethylene	NR
Hexane	R	Petroleum based oils	R
Hexanol	L	Petroleum ether	R
Hydrochloric acid (diluted-5%)	R	Phenol (0.5%)	R
Hydrochloric acid (med conc-25%)	NR	Phenol (10%)	NR
Hydrochloric acid (con-37%)	NR	Phosphoric acid (25%)	NR
Hydrofluoric acid (25%)	NR	Potassium hydroxide (1N)	L
Hydrogen peroxide (30%)	NR	Potassium hydroxide (25%)	NR
Iodine solutions	NR	Potassium hydroxide (50%)	NR
Isobutyl alcohol	R	Propanol	NR
Isopropanol	L	Pyridine	R
Isopropyl acetate	NR	Silicone oil	R
Isopropyl alcohol	L	Sodium hydroxide (0.1N)	L
Isopropyl ether	L	Sodium hydroxide (diluted-5%)	NR
Jet Fuel 640A	R	Sodium hydroxide (25%)	NR
Kerosene	R	Sodium hydroxide (conc-50%)	NR
Lactic acid	R	Sodium Hydroxide(Concentrated)	NR
Methyl acetate	NR	Sodium Hypochlorite	R
Methyl alcohol	L	Sulfuric acid (diluted-5%)	L
Methyl alcohol (98%)	L	Sulfuric acid (med conc-25%)	NR
Methyl cellosolve	L	Sulfuric acid (6N)	NR
Methyl Chloride	NR	Sulfuric Acid (concentrated)	NR
Methyl ethyl ketone	NR	Tetrahydrofuran	NR
Methyl formate	NR	Toluene	R
Methyl isobutyl ketone	NR	Trichloroacetic acid (25%)	NR
Methylene chloride	L	Trichlorobenzene	NR
N-Methyl-2-Pyrrolidone	NR	Trichloroethane	L
Mineral spirits	R	Trichloroethylene	NR
Monochlorobenzene	L	Triethylamine	NR
Nitric acid (diluted-5%)	L	Turpentine	NR
Nitric acid (med conc-25%)	NR	Urea	R
Nitric acid (6N)	NR	Urea (6N)	NR
Nitric acid (conc-70%)	NR	Water	R
		Xylene	NR

## Ordering Information

### Spectra/Por® Micro Float-A-Lyzer®

- Biotech CE Membrane
- Individually packaged dry with glycerine
- 12 syringes (1 ml) / package
- 12 microdialysis devices / package

MWCO	Cap Color	Part No.	
		100 - 200 µl	400 - 500 µl
0.1 - 0.5 kD	Green	F235049	F235061
0.5 - 1.0 kD	Orange	F235051	F235063
3.5 - 5 kD	Black	F235053	F235065
8 - 10 kD	Yellow	F235055	F235067
20 kD	Red	F235057	F235069
50 kD	White	F235058	F235070
100 kD	Blue	F235059	F235071

### Spectra/Gel® Absorbent

Part No.	Description
292600	Spectra/Gel® Absorbent, 500 g