

96-Well Parallel Dialysis Plate

CRESVIS · PRODUCT MANUAL · 2026-09

A single-use plate consumable for parallel dialysis of low-volume samples. Samples are loaded and recovered through open wells on top, while exchange occurs through an independent tubular membrane beneath each well. One plate processes up to 96 samples.



Figure 1 · Cresvis 96-Well Parallel Dialysis Plate (96W-D-ST-25)

1 · Product overview

The plate follows standard 96-well handling conventions. Each open well connects to an independent regenerated-cellulose tubular dialysis membrane beneath the plate. The active membrane section is immersed in dialysate and every sample path remains isolated.

A 25 mm membrane supports **50–250 µL** per well; a 35 mm membrane supports **50–400 µL**. The maximum working volume per well is 400 µL; the final configuration is confirmed for the intended application.

Typical applications

Ethanol removal and buffer exchange after LNP formulation screening; desalting of proteins, peptides, and other low-volume biological samples; removal of small-molecule residuals from nucleic-acid delivery systems; and parallel process development across formulations and conditions.

2 · Structure and principle

The design separates sample handling from dialysis exchange. The open upper interface supports pipettes, multichannel pipettes, and liquid-handling workstations. Beneath each well, a potted tubular membrane provides a sealed, mechanically retained exchange interface to the surrounding dialysate.

- **Independent fluid path per well:** sample paths are hydraulically isolated.
- **Potted seal and retention:** biocompatible potting material seals and secures the membrane structure.
- **Selectable or customizable membrane length:** exchange area can be matched to volume and removal targets.



Figure 2 · Open loading interface



Figure 3 · Tubular membrane array

3 · Technical specifications

Membrane and exchange performance

Item	Specification
Membrane material	Regenerated cellulose (RC)
Standard MWCO	12 kDa
Membrane ID / wall thickness	6 mm / 0.43 mm
Membrane length	25 mm (-25 models); 35 mm (-35 models)
Active exchange height	15 mm (-25 models); 25 mm (-35 models)
Working volume per well	50–250 µL (-25 models); 50–400 µL (-35 models)
Well-to-well consistency	CV < 5%
Membrane as shipped	Dry, ambient storage; activation required before use

Plate body, operating conditions, and packaging

Item	Specification
Array format	96-well parallel interface designed for SBS / automation compatibility
Plate material	Biocompatible polymers (PC / ASA / PP)
Operating temperature	4 °C–50 °C
pH range	5–9
Salt and solvent compatibility	Common salts including CaCl ₂ and (NH ₄) ₂ SO ₄ ; isopropanol, ethanol, and acetone
Cleanliness	Not sterilized or enzyme-free treated; endotoxin free
Use	Single use; reuse reliability is not guaranteed
Packaging	1 plate per box, individually packed
Storage / transport	Dry, protected from light, ambient temperature; 6-month shelf life
Customizable	Membrane material, MWCO, membrane length; companion dialysis container and peristaltic pump

Select membrane material, MWCO, membrane length, and working volume against the target molecule, sample matrix, and dialysis time. Contact our technical team when confirmation is needed.

Models and configurations

Model	Structure	Membrane length	Active height	Working volume / well
96W-D-ST-25	Standard	25 mm	15 mm	50–250 µL
96W-D-ST-35	Standard	35 mm	25 mm	50–400 µL
96W-D-ST-C-25	Self-contained dialysate	25 mm	15 mm	50–250 µL
96W-D-ST-C-35	Self-contained dialysate	35 mm	25 mm	50–400 µL

96W = 96-well plate; D = dialysis; ST = standard structure; C = self-contained dialysate structure (Container); the final number is membrane length in millimetres. C models are designed for the companion dialysis container.

4 · Selection and customization

- Sample type and target molecular-weight range.
- Components to remove: salts, ethanol, or other small-molecule impurities.
- Sample volume per well, selected between 50 and 400 µL by model.
- Required throughput and automation needs.
- Dialysate type and volume, exchange frequency, temperature, and time.

Customizable elements include membrane material and MWCO, membrane length and active exchange height, and the companion dialysis container and peristaltic pump.

5 · Before use

A typical experiment also requires a pipette, multichannel pipette, or liquid-handling workstation; dialysate and buffers; an application-appropriate assay; and a dialysate container with either static exchanges or a controlled renewal circuit.

Membrane activation

The membrane ships dry and must be activated before use.

1. Boil for 10 min in a large volume of 2% (w/v) sodium bicarbonate solution.
2. Rinse thoroughly with distilled water.
3. Transfer to 1 mmol/L EDTA solution (pH 8.0) and boil for 10 min.
4. Cool and store immersed at 4 °C; keep every membrane fully immersed throughout.
5. Before use, fill each well with deionized water, drain, and repeat until clean.
6. Where background requirements are modest, boiling for 10 min in deionized water alone is sufficient.

6 · Operating procedure

1 Prepare — Confirm the membrane specification, working volume, dialysate, and container. Activate the membranes and start dialysate temperature control in advance when used.

2 Load — Add the specified sample volume through the openings on top with a pipette, multichannel pipette, or liquid-handling workstation.

3 Dialyze — Place the plate in the dialysate and fully immerse the active membrane sections. Use about 100× the sample volume of dialysate. For static dialysis, exchange at 2–4 h, 6–8 h, and 10–14 h, then continue for 2 h after the last exchange; controlled continuous renewal is also possible.

4 Recover and analyze — Recover samples from the upper wells. Measure residual salts, ethanol, or other small molecules and confirm recovery and sample-quality criteria.

7 · Precautions

1. Run a recovery and leakage check with blank buffer or a representative sample before the formal experiment.
2. Samples typically swell 1.2–1.5× during dialysis. Leave headroom and establish a safe loading volume for high-salt, high-density, or high-osmolality samples in a pilot run.
3. Dialysis time depends on sample volume, the target small molecule, dialysate volume, exchange frequency, membrane specification, and temperature; establish it for each system.
4. Avoid contamination and mechanical damage. Once wetted, the membrane must not be allowed to dry.
5. Verify compatibility and recovery before processing samples containing organic solvents, high salt, high viscosity, or high osmolality.
6. This is a single-use consumable. Reuse reliability is not guaranteed.
7. For automated platforms, confirm pipetting paths, tip heights, and dispense speeds in the final method.

For research and process development use only. Clinical or diagnostic use requires separate validation.

8 · Contact

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