

Nephral ST

DESIGNED FOR:
HFHD (High flux)

OTHER APPLICABLE THERAPIES:
CONVECTIVE (HDF-HF, AFB-K)

MEMBRANE:
AN 69 ST (BPA-free)

SPECIALIZED FOR HIGH BIOCOMPATIBILITY AND ADSORPTION

The **Nephral ST** dialyzer series features a heparin adsorptive hydrogel membrane, for a reduced use of heparin during dialysis. The membrane is designed to provide effective removal of uremic toxins and inflammatory mediators by adsorption¹.

FOCUSED ON PATIENT BIOCOMPATIBILITY

- > Different biocompatibility profile, compared to other fully synthetic membranes^{1,2}
- > May be an alternative for patients who have experienced hypersensitivity reactions to conventional membrane types⁵

WITH A UNIQUE ADSORPTION PROFILE

- > The unique adsorptive capabilities of the surface treated **AN 69 ST** membrane of the **Nephral ST** dialyzers may improve toxin removal efficiency¹
- > In addition to conventional middle molecule markers such as β_2 m, the **Nephral ST** dialyzers may also help enhance removal of cytokines such as TNF- α , IL-6 and IL-8^{1,6}
- > The membrane is also able to bind heparin during priming with a pre-heparinized saline solution^{1,7} and may be used to minimize the risk associated with systemic heparinization^{7,8}



Nephral ST Specifications

MATERIALS	200	300	400	500
Membrane	AN 69 ST Acrylonitrile and Sodium methallyl sulfonate blend BPA-free			
Potting	Polyurethane (PUR)			
Housing	Polycarbonate (PC)			
Surface treatment agent	Polyethyleneimine (PEI)			
Protection caps	Polyethylene (PE): Blood caps (HDPE)/Dialysate caps (LDPE)			
Sterilization	Gamma ray (wet)			
Sterile barrier	PET/Aluminium/LDPE			

SPECIFICATIONS

UF-Coefficient (mL/(h*mmHg))*	33	40	50	65
KoA urea*	530	637	824	1045
Blood Compartment volume (mL)	66	83	100	129
Minimum recommended priming volume (mL)	1000 (at UFR = 2000 mL/h) Heparinized solution: 5000 IU/L			
Maximum TMP (mmHg)	450			
Recommended Q _B (mL/min)	150–400	200–400	200–500	200–500
Storage conditions	≥ 4°C (or ≥ 39°F) and ≤ 30°C (or ≤ 86°F)			
Units per box	24			
Gross/net weight (g)	216/188	233/205	284/251	327/295

MEMBRANE

Effective Membrane Area (m²)	1.05	1.30	1.65	2.15
Fiber inner diameter (µm)	210			
Fiber wall thickness (µm)	45.5			

SIEVING COEFFICIENTS*

Vitamin B12 (1.4 kDa)	1.0
Inulin (5.2 kDa)	0.96
Myoglobin (17 kDa)	0.55
Albumin (66.4 kDa)	< 0.01

*According to EN 1283/ISO 8637:
> UF-Coefficient: measured with bovine blood, Hct 32%, Pct 60 g/L, at 37°C
> KoA urea: calculated at Q_B = 300 mL/min, Q_D = 500mL/min, UF = 0 mL/min
> Sieving coefficients: measured with bovine plasma, Q_B = 300 mL/min, UF = 60 mL/min
> Clearances In-Vitro: measured at UF = 0 mL/min, ± 10% (excepted for vit. B12 ± 20%)

CLEARANCES IN VITRO (mL/min)*	200	300	400	500
Urea (60 Da) (Q _B -Q _D , mL/min)				
200/500	173	181	189	195
300/500	216	231	250	265
400/500	241	261	287	310
500/500			311	338
Phosphate (95 Da)				
200/500	135	146	156	168
300/500	156	172	187	207
400/500	168	187	205	230
500/500			216	244
Creatinine (113 Da)				
200/500	156	166	176	184
300/500	187	204	220	237
400/500	205	226	246	269
500/500			263	290
Vitamin B12 (1.4 kDa)				
200/500	85	96	111	126
300/500	92	106	124	143
400/500	96	111	131	153
500/500			136	159

1. Thomas M, et al. AN 69: Evolution of the world's first high permeability membrane AN 69: Evolution of the world's first high permeability membrane. *Contrib Nephrol.* 2011;173:119–129.
2. Randoux C, et al. New insights in dialysis membrane biocompatibility. *Kidney Int.* 2001;60:1571–1577.
3. Santoro A, et al. Potassium Profiling in Acetate-free Biofiltration. *Contrib to Nephrol.* 2002;137(137):260–7.
4. Tessitore N, et al. Acetate-free biofiltration reduces intradialytic hypotension: a European multicenter randomized controlled trial. *Blood Purif.* 2012;34:354–363.
5. Coentrao L, et al. Treatment of severe dialysis reactions with the AN 69 ST membrane: biocompatibility does matter. *Nephrol Dial Transplant.* 2010;10:1093.
6. Malard B, et al. Adsorption as a Contributor for Inflammatory Mediators Removal. *Artif Organ.* 2017;41:545–555.
7. Chanard J, et al. The clinical evaluation of low-dose heparin in haemodialysis: a prospective study using the heparin-coated AN 69 ST membrane. *Nephrol Dial Transplant.* 2008;23:2003–2009.
8. Kessler M, et al. Anticoagulation in chronic hemodialysis: progress toward an optimal approach. *Semin Dial.* 2015;28:474–489.

For safe and proper use of the device,
please refer to the Instructions for Use.