Baxter
Nephral ST
DIALYZER

Nephral ST

DESIGNED FOR:
HFHD (High flux)

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

MEMBRANE:
AN69 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 adsorption.[1]

FOCUSED ON PATIENT BIOCOMPATIBILITY

- Different biocompatibility profile, compared to other fully synthetic membranes[1,2]
- **Nephral** ST is a dialyzer for Acetate-Free-Biofiltration,[3] which is a therapy that carries a lower long-term intradialytic hypotension rate and reduces systolic blood pressure by comparison with bicarbonate dialysis[4]
- May be an alternative for patients who have experienced hypersensitivity reactions to conventional membrane types[5]

WITH A UNIQUE ADSORPTION PROFILE

- The unique adsorptive capabilities of the surface treated **AN69** ST membrane of the **Nephral** ST dialyzers may improve toxin removal efficiency[1]
- In addition to conventional middle molecule markers such as β_2m, 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]

The images are for illustration purposes only and may differ from the actual product.

Nephral ST Specifications

MATERIALS	NEPHRAL ST 200	NEPHRAL ST 300	NEPHRAL ST 400	NEPHRAL ST 500
Membrane	**AN69** 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 (m^2)	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			

CLEARANCES IN VITRO (mL/min)*	NEPHRAL ST 200	NEPHRAL ST 300	NEPHRAL ST 400	NEPHRAL ST 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
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
Phosphate (142 Da)				
200/500	135	146	156	168
300/500	156	172	187	207
400/500	168	187	205	230
500/500			216	244
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

* According to ISO 8637-1
– UF-Coefficient: measured with bovine blood, Hct 32%, Pct 60g/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%)

1. Thomas M, et al. AN69: *Evolution of the world's first high permeability membrane AN69: 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 AN69-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 AN69 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.

The hemodialyzer/filter is intended for use in hemodialysis, hemodiafiltration and hemofiltration for the treatment of chronic or acute renal failure.
The products meet the applicable provisions of Annex I (Essential Requirements) and Annex II (Full quality assurance system of the Council Directive 93/42/EEC of 14 June 1993, amended by Directive 2007/47/EC)

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

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