

Easy • Cost Effective • **Anticoagulation***

Citrasate®

*Citrasate® dialysate contains a small quantity of citric acid (2.4 mEq/L) that provides mild **anticoagulation** where needed, in the extracorporeal circuit, not systemically in the patient.

Citrasate® is a cost effective alternative to regional citrate anticoagulation and more effective than saline flushes alone. See inside or call 800-346-2080 today for more information.

Citrasate® is helpful for hemodialysis patients with:

- HIT (Heparin Induced Thrombocytopenia)
- Heparin Antibodies
- Clotting Problems
- Bleeding Risk Factors -
active bleeding, trauma, surgery

Citrasate® works well with SLEDD
(Sustained, Low-efficiency, Daily Dialysis)



REXEED

Dialyzers
by ASAHI



With the REXEED dialyzer, Asahi has achieved a new level of overall performance in dialyzer design by combining the new polysulfone membrane REXBRANE with a new jacket design allowing for optimum flow dynamics. Incorporated on the inner surface is Asahi's unique hydrophilic gel layer technology. This minimizes blood membrane interaction and plays a crucial roll in **ANTICOAGULATION** requirements, **LESS HEPARIN!!**

www.chiefmedical.com

Citrasate®

The only dialysate containing citric acid, a known **anticoagulant**

Better Products = Better Treatments

Easy, Cost Effective, **Anticoagulation***

***Citrasate** contains a small quantity (2.4 mEq/L) of citric acid that provides mild **anticoagulation** where needed, in the extracorporeal circuit, not systemically in the patient.

Citrasate is helpful for hemodialysis patients with:

- HIT - Heparin Induced Thrombocytopenia
- Heparin antibodies
- Severe clotting problems
- Bleeding risk factors such as active bleeding, trauma and pre / post surgery

Citrasate works well with SLEDD
(Sustained, Low-Efficiency, Daily Dialysis)

Citrasate replaces acetic acid (found in regular dialysate) with citric acid, this provides the added benefit of **anticoagulation**.

Dialysate Composition (mEq/L)	Regular Dialysate	Citrasate®
Sodium	137	137.3
Chloride	105.5	105.5
Calcium	2.5	2.5
Magnesium	1.0	1.0
Potassium	2.0	2.0
Dextrose (g/L)	2.0	2.0
Acetate	4.0	0.3
Citrate	0	2.4
Bicarbonate	37	37

Citrasate is not a drug; there are no adverse side effects, only improved treatments. There are no changes necessary with your equipment or procedures. **Citrasate** is used exactly as you would use your standard (acetic acid) dialysate.

Citrasate is not the same as regional citrate anticoagulation

Performing citrate dialysis is no different operationally than doing regular bicarbonate dialysis. There is no regional infusion of citric acid employed.

"Some **anticoagulant** (citrate) is in the dialysate".

REXEED By ASAHI

Beginning where other dialyzers leave off

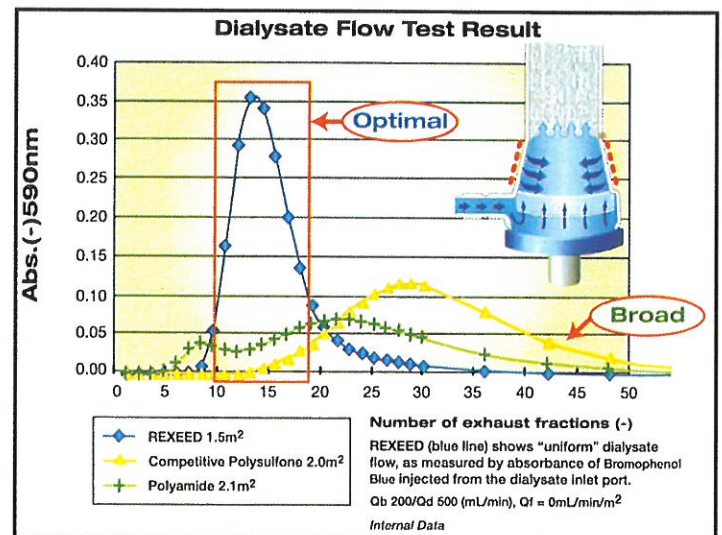
New Level of Overall Performance

- Highest performance dialyzer in the US
- Improved **anticoagulation** / less heparin
- Available in four sizes:
2.5m² / 2.1m² / 1.8m² / 1.5m²
- 2.5 m² - highest performance dialyzer offered today
- 1.5 m² is ideal for Acute Patients
- Single and Multiple use
- Gamma sterilized (No ETO residuals)
- 2.5m² - Alternative to "Tandem Dialysis"
- High middle molecule removal
- Next generation polysulfone membrane REXBRANE
- Exceptional urea, creatinine and phosphate clearances

Improved Flow Dynamics

The improved flow dynamics of **REXEED** are provided by Asahi's new high performance jacket design that provides a uniform dialysate flow.

The waved fiber design in **REXEED** provides smooth blood flow and improved dialysate penetration into the middle of the bundle for ideal dialysate / fiber contact and ideal small molecule clearance



The ideal flow pattern is shown as a symmetrical sharp peak (above) that suggests quick dialysate turnover leading to exceptional small molecule clearance.

Citrasate®

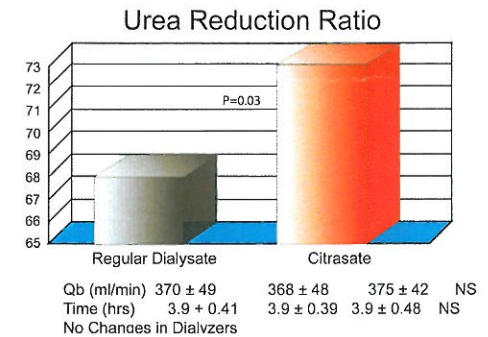
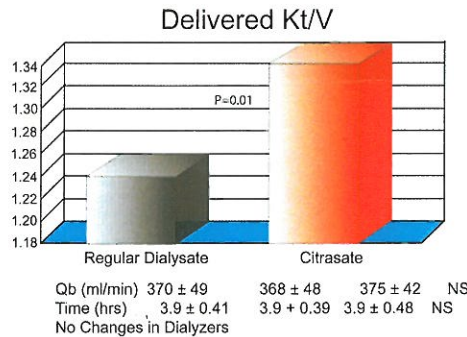
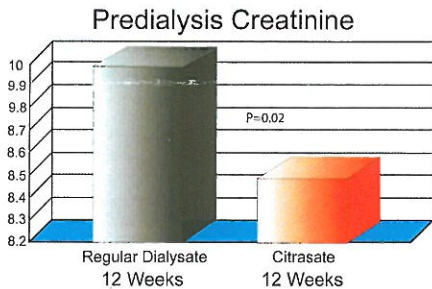
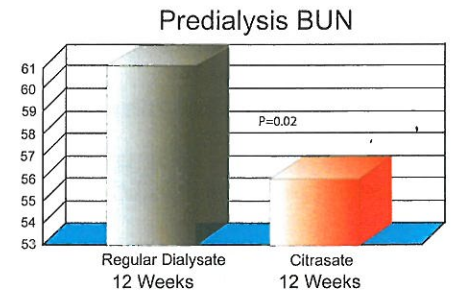
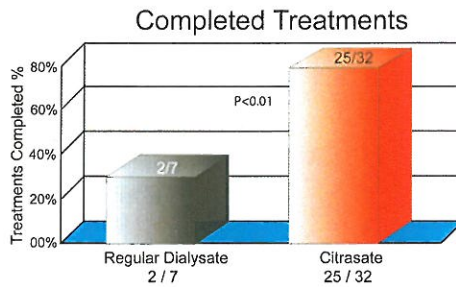
The only dialysate containing citric acid, a known **anticoagulant**

You do not need to be concerned about hypocalcemia

The concentration of citrate in Citrasate® is only 2.4 mEq/L; only about one-fifth of the concentration used to achieve **anticoagulation** via traditional regional citrate infusions. The use of Citrasate® does not produce measurable systemic **anticoagulation**, the **anticoagulant** effect is confined to the dialyzer and the venous side of the dialysis set up. Citrasate® generally produces a clinically acceptable transitory reduction (about 10%) in ionized calcium¹. Ionized calcium begins to normalize to the pre-dialysis level as soon as the Citrasate® dialysis session stops¹. The consistent treatment of chronic dialysis patients with Citrasate® has demonstrated no change over extended time periods in either total or ionized serum calcium levels¹.

(1) Ahmad S, Callan R, Cole JJ, Blagg CR. Dialysate made from Dry Chemicals using Citric Acid Increases Dialysis Dose. American Journal of Kidney Diseases 2000; 35: 493-499.

Citrasate® provides improved **anticoagulation** properties that lead to a higher dose of dialysis (Graph Completed Treatments), superior heparin free treatments and better dialyzer reuse (Citrasate prevents clotting of fibers). **Published studies available upon request**



Qb (ml/min) 370 ± 49 368 ± 48 375 ± 42 NS
 Time (hrs) 3.9 ± 0.41 3.9 ± 0.39 3.9 ± 0.48 NS
 No Changes in Dialyzers

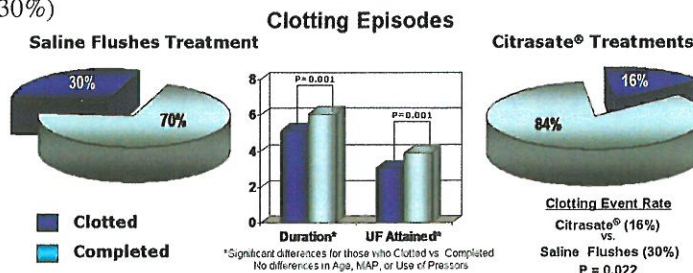
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 No Changes in Dialyzers

Independent* study conducted at the University of California, Davis by:

James R Madison DO, MS - Margarita P Iumin MSN, RN - Andrew I Chin MD

“Citrate-Containing Dialysate Is Well Tolerated During Slow Extended Daily Dialysis In The ICU”

- Citrate based dialysate appears safe, since we observed no adverse events during 6 hour SLEDD treatments
- Citrasate® was more effective than saline flushes alone, at completing **anticoagulant**-free SLEDD treatments in the ICU
- We observed significantly less clotting events in those on Citrasate® + hourly saline flushes (16%), compared to those receiving saline flushes every 30 or 60 minutes alone (30%)



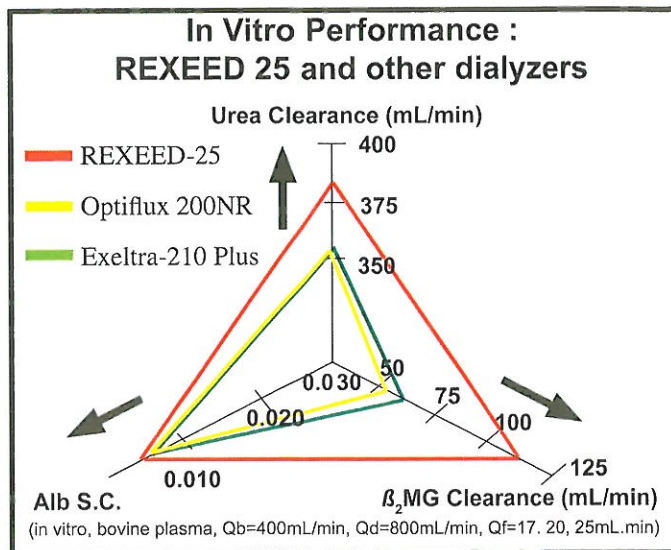
- Serum ionized calcium levels remained clinically stable during all SLEDD treatments
- Use of Citrasate® required significantly less frequent flushing of dialysis circuits and thereby reducing nursing time
- The authors affirm there is no conflict of interest, they have no commercial relationship with any company selling citrate-based dialysate

REXEED By ASAHI

Raising the bar in performance and safety

Balanced and Comprehensive Small Molecule Clearance

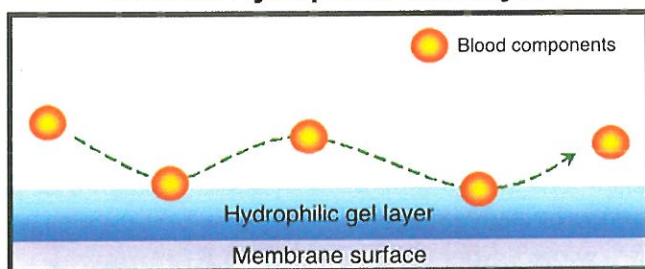
REXEED has been developed to provide well balanced and comprehensive small and middle molecule clearance while minimizing albumin loss. This is demonstrated by the triangular graph (right).



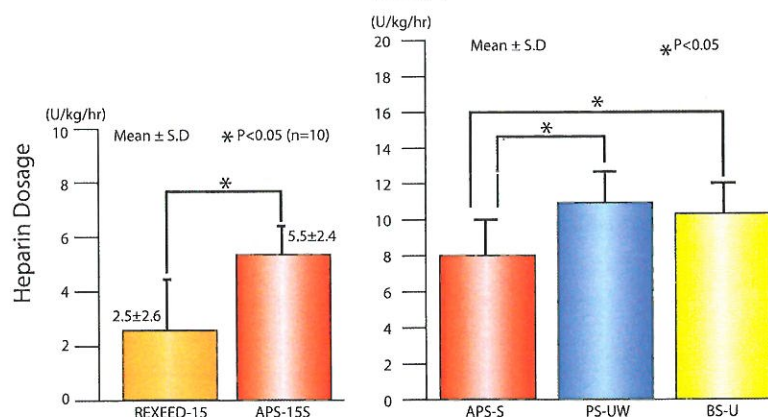
Improved Anticoagulation

Asahi's unique membrane technology contributes to improved **anticoagulation**. Asahi's hydrophilic gel layer helps to reduce the interaction between blood components and the membrane surface as illustrated below left. This reduces the potential for platelet activation and protein adhesion to the membrane. **REXEED** dialyzers frequently require less heparin than other dialyzers (graph right).

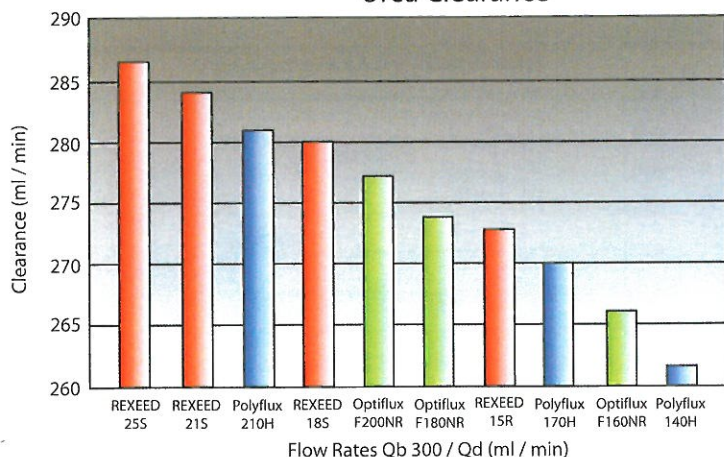
Asahi's Hydrophilic Gel Layer



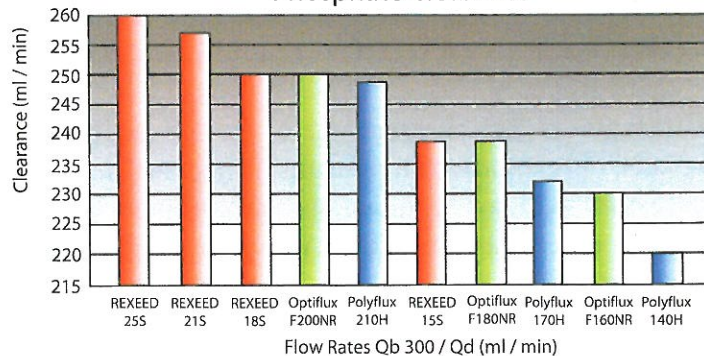
Minimum Heparin Requirements (Average)



Urea Clearance



Phosphate Clearance



Product #	Description	Membrane	Size M ²	Use	Priming Vol. ml	Wet / Dry	Sterilization	KOA (Urea)
REXEED 15	Hi-Flux	Polysulfone	1.5	S / R	82	Wet	Gamma	1232
REXEED 18	Hi-Flux	Polysulfone	1.8	S / R	95	Wet	Gamma	1483
REXEED 21	Hi-Flux	Polysulfone	2.1	S / R	112	Wet	Gamma	1683
REXEED 25	Hi-Flux	Polysulfone	2.5	S / R	128	Wet	Gamma	1881