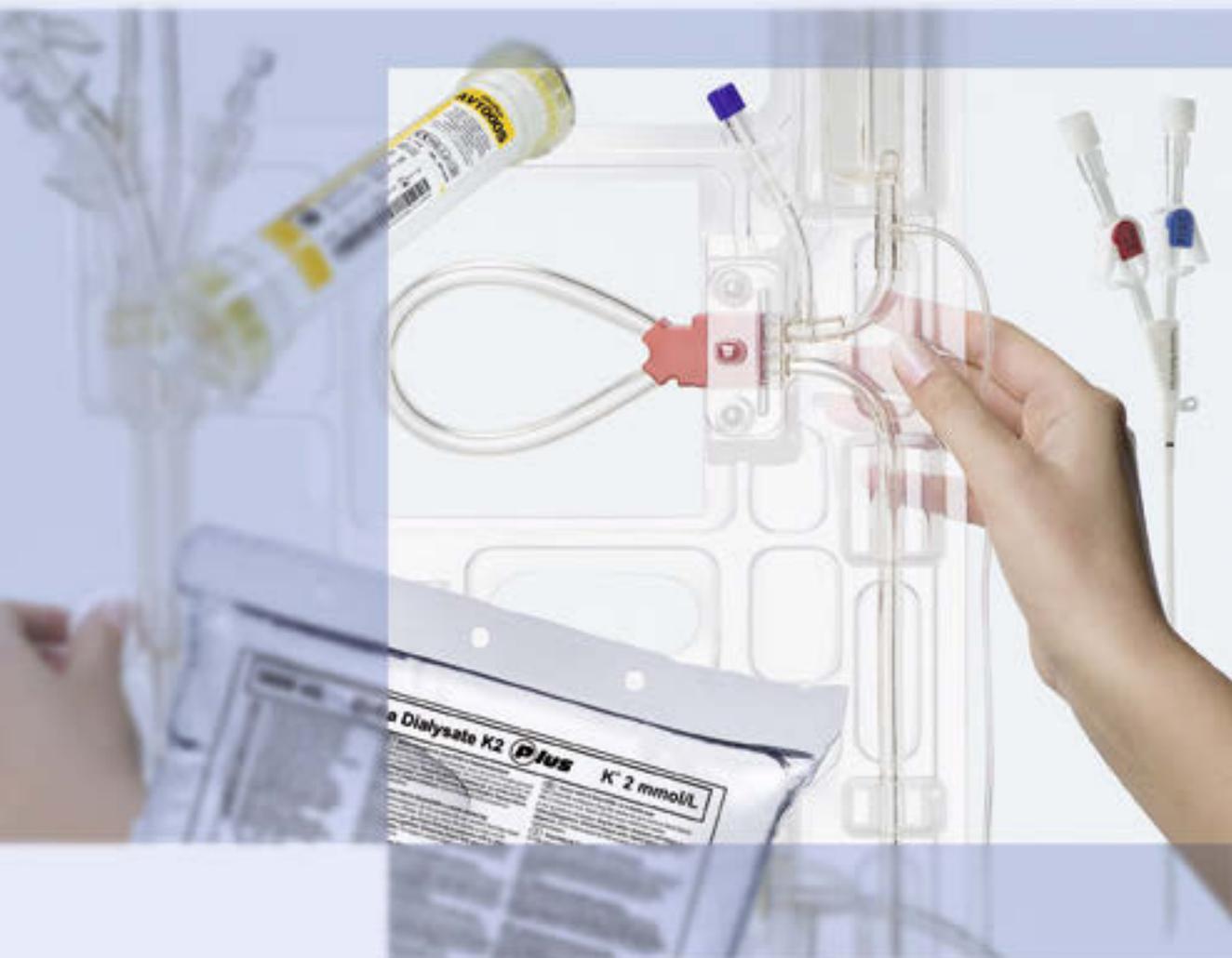


Product Range



Continuous Renal Replacement Therapy

Multifunctional and Easy to Use



Fresenius Medical Care is always focused on services for people.

We concentrate on the patients' health as well as the staff in the clinics.

In this brochure you will find a comprehensive product range for acute renal replacement and plasma exchange therapy. These disposables and solutions from Fresenius Medical Care have been particularly developed for use in life-threatening situations.

In combination with the multi**Filtrate** the disposables and solutions provide effective treatments for patients. All products are concerted to complement each other. As a result this enables nursing staff to focus on patient care. In this brochure you will find a number of benefits for patients, doctors and nurses.

Acute renal replacement therapy with Fresenius Medical Care:

- Reliable
- Convenient
- Effective

Contents

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multi**Filtrate** Acute Therapy System

Multifunctional and easy to use

Safe and easy handling is one of the main requirements for a modern, multifunctional acute therapy system.

The multi**Filtrate** features an ergonomical and intuitive operating concept providing the full range of renal replacement therapies.

The advantage of citrate anticoagulation is completely integrated via Ci-Ca[®] module, adapted Ci-Ca[®] cassette, and Ci-Ca[®] fluids.



*multi**Filtrate** acute therapy machine:
multi**Filtrate** basic Art. No. M20 070 1
with Ci-Ca[®] module Art.-No. M20 127 1*

Range of therapies offered by the
multiFiltrate acute therapy system

Ci-Ca[®] CVVHD

Continuous veno-venous haemodialysis with citrate anticoagulation

Ci-Ca[®] postCVVHDF

Continuous veno-venous haemodiafiltration with citrate anticoagulation

CVVHD

Continuous veno-venous haemodialysis

CVVHDF

Continuous veno-venous haemodiafiltration

pre-post CVVH

Pre-post continuous veno-venous haemofiltration (High volume CVVH)

CVVH

Continuous veno-venous haemofiltration

paed CVVH

Paediatric continuous veno-venous haemofiltration

paed CVVHD

Paediatric continuous veno-venous haemodialysis

SCUF

Slow continuous ultrafiltration

MPS

Membrane plasma separation / a form of therapeutic plasma exchange (TPE)

HP

Haemoperfusion

Complete Kits for multiFiltrate



The multiFiltrate-Kits contain:

- multiFiltrate cassette (AV-set and filtrate system pre-assembled) or volume-reduced midi AV-set or paed system with very low extracorporeal blood volume
- Substitute and/or dialysate system (depends on therapy mode)
- Haemofilter or plasmafilter

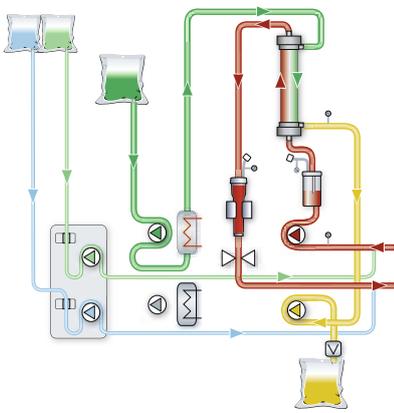
A multiFiltrate cassette consists of arterial, venous, and filtrate lines. This allows easy installation of the tubing system required for each treatment. The combination of the multiFiltrate cassette with treatment-specific tubing systems enables the multiFiltrate to be set up quickly and efficiently.

Kit guideline chart		Tubing system	CVVHD	CVVHDF	CVWH	MPS	SCUF	HP
5039011	multiFiltrate - Kit Ci-Ca® CVVHD 1000	cassette	●					
F00001172	multiFiltrate - Kit Ci-Ca® CVVHD EMIC®2	cassette	●					
F00002290	multiFiltrate - Kit Ci-Ca® postCVVHDF 1000	cassette		●				
5038871	multiFiltrate - Kit 8 CVVHDF 1000	cassette	○	●	○			○
5038931	multiFiltrate - Kit 4 CVVHDF 600	cassette	○	●	○			○
F00003317	multiFiltrate - Kit midi CVVHDF 400	midi	○	●	○			○
5038791	multiFiltrate - Kit 9 CVWH 1000	cassette			●			○
5038911	multiFiltrate - Kit 2 CVWH 600	cassette			●			○
5038181	multiFiltrate - Kit 7 HV-CVWH 1000	cassette			●			○
5039031	multiFiltrate - Kit 5 pre-post CVWH 600	cassette			●			○
F00001173	multiFiltrate - Kit CVVHD EMIC®2	cassette	●					○
5038921	multiFiltrate - Kit 3 CVVHD 600	cassette	●					○
5039051	multiFiltrate - Kit paed CRRT/SCUF	paed	●		●		●	
F00000215	multiFiltrate - Kit 16 MPS P2dry	cassette				●		○
F00004671	multiFiltrate - Kit 16 IS MPS P2dry	cassette				●		○
F00003316	multiFiltrate - Kit MPS P1dry	midi				●		○

● = Dedicated usage ○ = Alternative usage - some of the included lines will not be used

Ci-Ca® CVVHD

Continuous veno-venous
haemodialysis with citrate
anticoagulation



multiFiltrate – Kit Ci-Ca® CVVHD 1000

Art. No. 5039011

Type	Description
Ultraflux® AV1000S	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Ci-Ca® Cassette	Pre-assembled cassette with arterial, venous, and filtrate systems and integrated citrate and calcium lines
Dialysate System multiFiltrate	Dialysate system with integrated heater bag

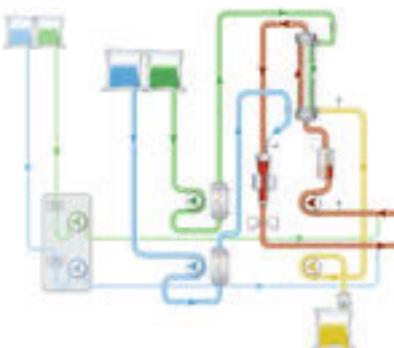
multiFiltrate – Kit Ci-Ca® CVVHD EMiC®2

Art. No. F00001172

Type	Description
Ultraflux® EMiC®2	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Ci-Ca® Cassette	Pre-assembled cassette with arterial, venous, and filtrate systems and integrated citrate and calcium lines
Dialysate System multiFiltrate	Dialysate system with integrated heater bag

Ci-Ca® post- CVVHDF

Continuous veno-venous
haemodiafiltration with
citrate anticoagulation



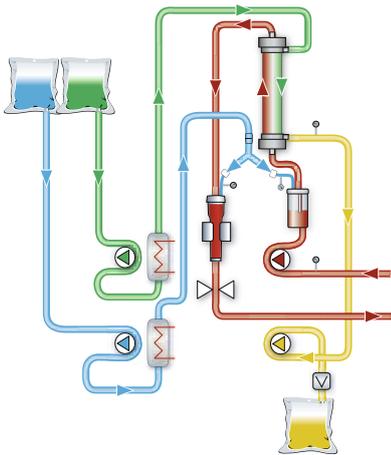
multiFiltrate – Kit Ci-Ca® postCVVHDF 1000

Art. No. F00002290

Type	Description
Ultraflux® AV1000S	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Ci-Ca® Cassette	Pre-assembled cassette with arterial, venous, and filtrate systems and integrated citrate and calcium lines
Substitute System multiFiltrate	Substitute system with integrated heater bag
Ci-Ca® HDF Dialysate System multiFiltrate	Dialysate system with integrated heater bag

CVVHDF

Continuous veno-venous haemodiafiltration



multiFiltrate – Kit 8 CVVHDF 1000

Art. No. 5038871

Type	Description
Ultraflux® AV1000S	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
Substitute System multiFiltrate	Substitute system with integrated heater bag
Dialysate System multiFiltrate	Dialysate system with integrated heater bag

multiFiltrate – Kit 4 CVVHDF 600

Art. No. 5038931

Type	Description
Ultraflux® AV600S	Ultraflux® haemofilter, steam-sterilised, 1.4 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
Substitute System multiFiltrate	Substitute system with integrated heater bag
Dialysate System multiFiltrate	Dialysate system with integrated heater bag

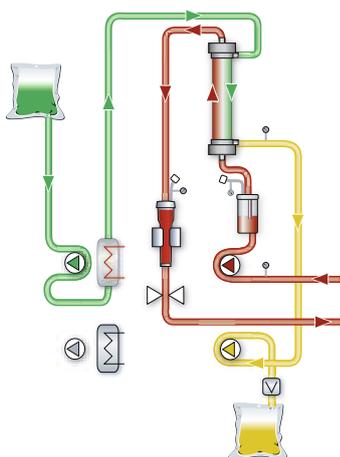
multiFiltrate – Kit midi CVVHDF 400

Art. No. F0003317

Type	Description
Ultraflux® AV400 S	Ultraflux® haemofilter, steam-sterilised, 0.75 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate midi AV-Set	Volume reduced arterial and venous blood line set for use with multiFiltrate in adult treatment mode, filling volume 83 mL
Substitute System multiFiltrate	Substitute system with integrated heater bag
Dialysate System multiFiltrate	Dialysate system with integrated heater bag
Filtrate System multiFiltrate	Filtrate system

CVVHD

Continuous veno-venous haemodialysis



multiFiltrate – Kit CVVHD EMIc®2

Art. No. F0001173

Type	Description
Ultraflux® EMIc®2	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
Dialysate System multiFiltrate	Dialysate system with integrated heater bag

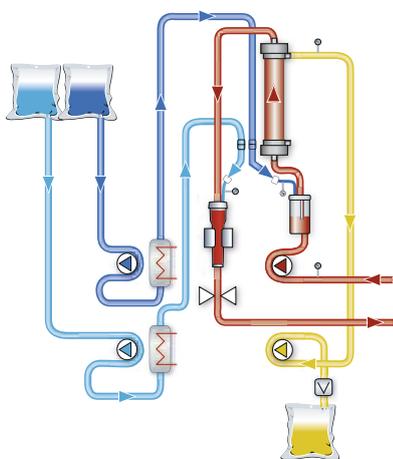
multiFiltrate – Kit 3 CVVHD 600

Art. No. 5038921

Type	Description
Ultraflux® AV600S	Ultraflux® haemofilter, steam-sterilised, 1.4 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
Dialysate System multiFiltrate	Dialysate system with integrated heater bag

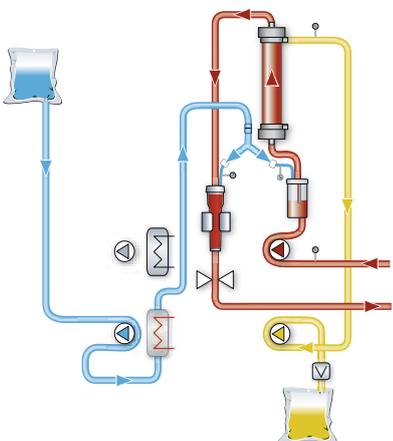
pre-post CVWH

Pre-post continuous
veno-venous haemofiltration
(High volume)



CVWH

Continuous veno-venous
haemofiltration



multiFiltrate – Kit 7 HV-CVWH 1000 (High-Volume CVWH)

Art. No. 5038181

Type	Description
Ultraflux® AV1000S	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
HV-CVWH Substitute System multiFiltrate	2 substitute lines with integrated heater bags for pre- and postdilution

multiFiltrate – Kit 5 pre-post CVWH 600 (High-Volume CVWH)

Art. No. 5039031

Type	Description
Ultraflux® AV600S	Ultraflux® haemofilter, steam-sterilised, 1.4 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
HV-CVWH Substitute System multiFiltrate	2 substitute lines with integrated heater bags for pre- and postdilution

multiFiltrate – Kit 9 CVWH 1000

Art. No. 5038791

Type	Description
Ultraflux® AV1000S	Ultraflux® haemofilter, steam-sterilised, 1.8 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
Substitute System multiFiltrate	Substitute system with integrated heater bag

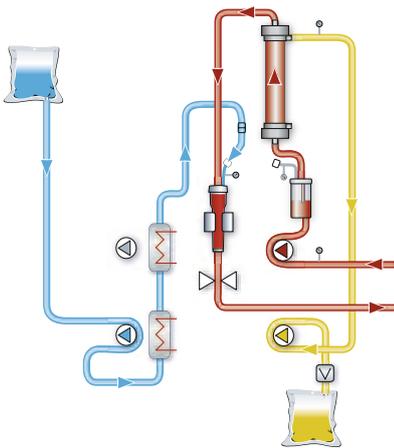
multiFiltrate – Kit 2 CVWH 600

Art. No. 5038911

Type	Description
Ultraflux® AV600S	Ultraflux® haemofilter, steam-sterilised, 1.4 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
Substitute System multiFiltrate	Substitute system with integrated heater bag

MPS

Membrane plasma separation



multiFiltrate – Kit 16 MPS P2dry

Art. No. F0000215

Type	Description
plasmaFlux® P2dry	Plasmafilter delivered dry, steam-sterilised, 0.6 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
MPS Substitute System multiFiltrate	Substitute system with 2 integrated heater bags, luer-lock male with 4 vented spikes pre-connected
Filtrate bag 10 L	10 litre bag with draining cock and luer-lock connector male

multiFiltrate – Kit 16 IS MPS P2dry

Art. No. F00004671

Type	Description
plasmaFlux® P2dry	Plasmafilter delivered dry, steam-sterilised, 0.6 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate Cassette	Pre-assembled cassette with arterial, venous and filtrate systems
MPS Substitute System multiFiltrate	Substitute system with 2 integrated heater bags, luer-lock male with 4 vented spikes pre-connected
Filtrate bag 10 L	10 litre bag with draining cock and luer-lock connector male
Heparin syringe 50 mL	Fresenius Injectomat syringe, male luer-lock

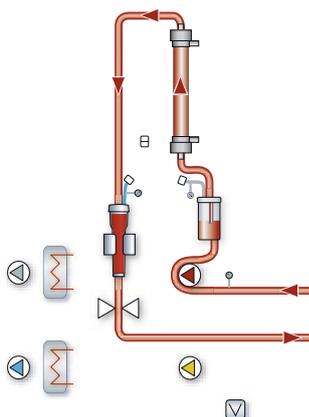
multiFiltrate – Kit MPS P1dry

Art. No. F00003316

Type	Description
plasmaFlux® P1dry	Plasmafilter delivered dry, steam-sterilised, 0.3 m ² surface area, Fresenius Polysulfone® membrane
multiFiltrate midi AV-Set	Volume reduced arterial and venous blood line set for use with multiFiltrate in adult treatment mode, filling volume 83 mL
Filtrate System multiFiltrate	Filtrate system
MPS Substitute System multiFiltrate	Substitute system with 2 integrated heater bags, luer-lock male with 4 vented spikes pre-connected
Filtrate bag 10 L	10 litre bag with draining cock and luer-lock connector male

HP

Haemoperfusion



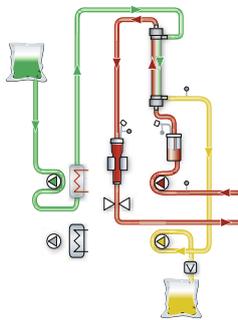
Haemoperfusion as blood purification therapy is available with the multiFiltrate simply by using a multiFiltrate cassette and an adequate adsorption cartridge.

Paediatric CRRT and SCUF

With Very Low Extracorporeal Blood Volume

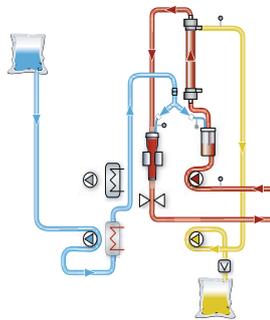
paed CVVHD

Paediatric
continuous
veno-venous
haemodialysis



paed CVVH

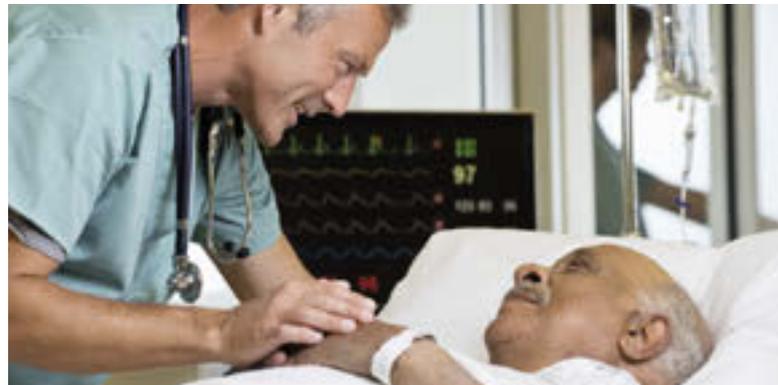
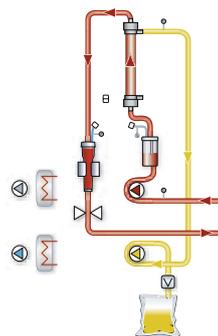
Paediatric
continuous
veno-venous
haemofiltration



A specifically developed multiFiltrate treatment-mode monitors the paediatric therapy. The Ultraflux® AVpaed haemofilter combined with special volume-reduced lines is used to perform paediatric CVVH in post- or predilution and CVVHD.

SCUF

Slow continuous
ultrafiltration



The combination of a small Ultraflux® AV haemofilter and the paed lines with very low extracorporeal blood volume enables the user to perform an efficient continuous ultrafiltration for adult and paediatric patients.

multiFiltrate – Kit paed CRRT/SCUF

multiFiltrate – Kit paed CRRT/SCUF

Art. No. 5039051

Type	Description
Ultraflux® AVpaed	Ultraflux® haemofilter, steam-sterilised, 0.2 m ² surface area, Fresenius Polysulfone® membrane, volume 18 mL
multiFiltrate paed CRRT/SCUF Set	Paediatric arterial and venous blood lines, blood volume 54 mL, and paediatric dialysate/substitute and filtrate systems packed as a set

Ultraflux® AVpaed can only be used with holder for small dialysers
Total extracorporeal blood volume is only 72 mL

(Art. No. M384201)

CRRT Haemofilters

Ultraflux® AVpaed / AV400S / AV600S / AV1000S / EMiC®2



Ultraflux® filters contain a Fresenius Polysulfone® membrane specifically developed for continuous renal replacement therapy. Successful treatments are achieved by:

- Excellent filter lifetimes
- High biocompatibility
- Robust capillaries with minimal risk of blood leak
- Filter size selectable to meet patient's requirements

AVpaed, AV400S, AV600S, and AV1000S filters have different surface areas but the same membrane. Substances with a molecular weight of up to approximately 30 kDa can be eliminated, but plasma proteins like albumin and cellular blood constituents are retained.

The membrane of the Ultraflux® EMiC®2 is optimised to increase the removal of middle molecules in CVHD or Ci-Ca® CVHD mode. Successful treatments are achieved by:

- High permeability of its pores and an adjusted cut-off (approximately at 40 kDa). Clearance of myoglobin in rhabdomyolysis or of cytokines, interleukins and other factors elevated in sepsis can be increased
- Its steep sieving coefficient curve closely mimics the glomerular basement membrane and therefore narrows the gap to physiological renal function
- In Ci-Ca® CVHD mode, also patients with high bleeding risk can benefit from these advantages

Ultraflux® haemofilters, INLINE steam-sterilised, Fresenius Polysulfone® membrane

Type	Description	Units per box	Art. No.
Ultraflux® AV400S	0.75 m ² surface area, filling volume 52 mL	12	5007341
Ultraflux® AV600S	1.4 m ² surface area, filling volume 100 mL	12	5007361
Ultraflux® AV1000S	1.8 m ² surface area, filling volume 130 mL	12	5008981
Ultraflux® AVpaed ¹	0.2 m ² surface area, filling volume 18 mL, luer-lock dialysate and filtrate ports	20	5008231
Type	Description	Name and Art. No of Kit*	
Ultraflux® EMiC®2 ²	1.8 m ² surface area, filling volume 130 mL	Ci-Ca® CVHD EMiC®2	F00001172
		CVHD EMiC®2	F00001173

¹ Ultraflux® AVpaed must only be used with the dialyser holder for small dialysers (Art. No. M384201)

² Ultraflux® EMiC®2 filter only available in kits for multiFiltrate

Plasmafilters

plasmaFlux® Series P1dry / P2dry



INLINE steam-sterilised dry plasmafilter with two layer structure and modelled membrane topology

- Dry delivery enables simplified set-up with a short rinsing procedure
- wide-stretched pores allow free passage of protein components such as immunoglobulins, lipoproteins and also other big molecules with molecular weights even exceeding 2 million dalton
- The membrane's blood contact surface has a coarse-meshed topology that prevents blood cells from blocking fine pores; a stable filtration process at low TMP with excellent sieving coefficient is enabled
- The surface layer inside of the capillary is surrounded and complemented by a second homogeneous, fine-pored layer
- Passage of blood cells through the membrane is prevented
- Fresenius Polysulfone® membrane with proven biocompatibility

plasmaFlux® plasmafilters, INLINE steam-sterilised, Fresenius Polysulfone® membrane

Type	Description	Units per box	Art. No.
plasmaFlux® P1dry	0.3 m ² surface area, filling volume 35 mL	10	5008021
plasmaFlux® P2dry	0.6 m ² surface area, filling volume 67 mL	10	5008031



proVencare Catheter Sets are premium quality products optimised for blood transport. proVencare helps to minimise the cause of interruptions of the extra-corporeal circuit and therefore reduces the need for costly and time-consuming exchanges.

- Developed for continuous access and return blood flows
- Premium quality, reliable vascular access
- Small sizes for paediatric care
- Excellent fit with Fresenius Medical Care therapies

proVencare High Flow Double Lumen Catheter Sets

Straight Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FHC-1115	11.5	150	F00002330
FHC-1120	11.5	200	F00002331
FHC-1125	11.5	250	F00002332
FHC-1315	13	150	F00002335
FHC-1317,5	13	175	F00002336
FHC-1320	13	200	F00002337
FHC-1325	13	250	F00002338

Curved Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FHC-1115J	11.5	150	F00002333
FHC-1120J	11.5	200	F00002334
FHC-1315J	13	150	F00002339
FHC-1320J	13	200	F00002340

proVencare Double Lumen Catheter Sets

Straight Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FDC-1115	11	150	F00002315
FDC-1117,5	11	175	F00002316
FDC-1120	11	200	F00002317
FDC-1125	11	250	F00002318
FDC-1215	12	150	F00002319
FDC-1220	12	200	F00002320

Curved Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FDC-1112,5J	11	125	F00002321
FDC-1115J	11	150	F00002322
FDC-1117,5J	11	175	F00002323
FDC-1120J	11	200	F00002324

proVencare Single Lumen Catheter Sets

Straight Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FSC-817,5	8	175	F00002303
FSC-825	8	250	F00002305

Curved Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FSC-812,5J	8	125	F00002306
FSC-815J	8	150	F00002307
FSC-820J	8	200	F00002308

proVencare Triple Lumen Catheter Sets

Straight Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FTC-1215	12	150	F00004862
FTC-1217,5	12	175	F00004864
FTC-1220	12	200	F00004865

Curved Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FTC-1215J	12	150	F00004866
FTC-1220J	12	200	F00004867

proVencare Paediatric Double Lumen Catheter Sets

Straight Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FDC-607,5P	6.5	75	F00002309
FDC-610P	6.5	100	F00002310
FDC-612,5P	6.5	125	F00002311

Straight Extension Lines

Type	Diameter (French)	Insertion length (mm)	Art. No.
FDC-810P	8	100	F00002312
FDC-812,5P	8	125	F00002313
FDC-815P	8	150	F00002314

IntraLock® - catheter locking solution, 4% Citrate



Language	Art. No.
EU I (DE, UK, FR, NL, IT, P, E, DK, FI, SE, N, EST, HU, LT)	F00000980
EU II (BG, CY, CZ, GR, LV, PL, RO, SLK, SLO)	F00004849
Non-EU (BA, HR, IL, RU, RS, TR, IS)	F00004874

proVencare Catheter accessories

Type	Product	Size	Art. No.	Min. order quantity
PN-177	Seldinger needle	17 G x 70 mm	F00002351	50 pieces
PN-187	Seldinger needle	18 G x 70 mm	F00002352	50 pieces
G-3250J	J-tipped guidewire	0.032" x 500 mm	F00002353	15 pieces
G-3570J	J-tipped guidewire	0.035" x 700 mm	F00002354	15 pieces
G-3870J	J-tipped guidewire	0.038" x 700 mm	F00002355	15 pieces
Cap	Cap	Standard	F00002357	100 pieces
D-815	Dilator	8 F x 150 mm	F00002358	15 pieces
D-1015	Dilator	10 F x 150 mm	F00002359	15 pieces
D-1115	Dilator	11 F x 150 mm	F00002360	15 pieces

Solutions

multiBic® – Bicarbonate Buffered Haemofiltration Solutions



The 5 litre multiBic® at a glance:

● Mixing the two components provides	100 % bicarbonate-buffered haemofiltration solution
● Meeting individual patient needs	4 different potassium concentrations available
● Increased solution stability, usable for up to 48 hrs	thanks to the sophisticated gas barrier
● Simple handling	thanks to the bag geometry with its diagonal peel seam
● PVC-, latex- and DEHP-free, environmentally friendly	due to the use of “Biofine” material
● Quiet unpacking of bags	thanks to the packaging’s softer, sound-reduced foil
● Easy monitoring	through the clear, transparent foil
● Convenient transport	thanks to the new, comfortable handle
● Suitable for almost all common CRRT devices	due to the bag eyelets and connectors
● Addition of medication possible	by means of the injection port

Order information	Language/Art. No.					
Name	D, A, CH / NL / F / I	GB, M / P / S / FIN / DK / N	E / TR / CZ / H / PL / LT	EST / LV / SK / SLO / GR, CY	RO / HR / BIH / SRB / (GB)	RUS / B (D, NL, F)
multiBic®	2 x 5 L	2 x 5 L	2 x 5 L	2 x 5 L	2 x 5 L	2 x 5 L
potassium-free	9678201	F00001138	F00001142	F00001146	F00001134	F00001300
2 mmol/L potassium	9679201	F00001139	F00001143	F00001147	F00001135	F00001301
3 mmol/L potassium	9672201	F00001140	F00001144	F00001148	F00001136	F00001302
4 mmol/L potassium	9673201	F00001141	F00001145	F00001149	F00001137	F00001303

Packaging: 5 litre bag, 2 bags per box, 104 bags per pallet

Not all potassium concentrations of multiBic® potassium-free / 2/3/4 mmol/L are approved/available in the countries mentioned.

Base solution 4.75 L **> Double chamber bag with peel seam**
 Electrolyte solution 0.25 L

Solutions must be mixed before use.

Abbreviated Product Information

multiBic® potassium-free, Solution for Haemofiltration
 multiBic® 3 mmol/L potassium, Solution for Haemofiltration

multiBic® 2 mmol/L potassium, Solution for Haemofiltration
 multiBic® 4 mmol/L potassium, Solution for Haemofiltration

multiBic® potassium-free/2/3/4 mmol/L potassium is delivered in a double-chamber bag. One chamber (large compartment) contains the alkaline hydrogen carbonate solution, the other chamber (small compartment) contains the acidic glucose-based electrolyte solution. Mixing of both solutions by opening the peel seam between the two chambers results in the ready-to-use solution.

Composition: 1000 mL of the ready-to-use solution contain:

Active substances in [g/L]:	multiBic® potassium-free	multiBic® 2 mmol/L potassium	multiBic® 3 mmol/L potassium	multiBic® 4 mmol/L potassium
Sodium chloride	6.136	6.136	6.136	6.136
Potassium chloride	–	0.1491	0.2237	0.2982
Sodium hydrogen carbonate	2.940	2.940	2.940	2.940
Calcium chloride dihydrate	0.2205	0.2205	0.2205	0.2205
Magnesium chloride hexahydrate	0.1017	0.1017	0.1017	0.1017
Glucose monohydrate	1.100	1.100	1.100	1.100
= equivalent to glucose	1.000	1.000	1.000	1.000

1000 mL of the ready-to-use solution contain:

Active substances in [mmol/L]:	multiBic® potassium-free	multiBic® 2 mmol/L potassium	multiBic® 3 mmol/L potassium	multiBic® 4 mmol/L potassium
Na ⁺	140	140	140	140
K ⁺	–	2.0	3.0	4.0
Ca ²⁺	1.5	1.5	1.5	1.5
Mg ²⁺	0.50	0.50	0.50	0.50
Cl ⁻	109	111	112	113
HCO ₃ ⁻	35	35	35	35
Glucose	5.55	5.55	5.55	5.55
Theoretical osmolarity [mosm/L]	292	296	298	300
pH ≈ 7.2				

Excipients: Water for injections, hydrochloric acid (25 %), carbon dioxide.

Indications: For use in patients with acute renal failure requiring continuous haemofiltration.

Contraindications: Solution dependent contraindications: multiBic® potassium-free/2/3 mmol/L potassium: hypokalaemia, metabolic alkalosis; multiBic® 4 mmol/L potassium: hyperkalaemia, metabolic alkalosis; Haemofiltration dependent contraindications due to the technical procedure itself: Renal failure with increased hypercatabolism in cases where uraemic symptoms can no longer be relieved by haemofiltration; Inadequate blood flow from vascular access; If there is a high risk of haemorrhage on account of systemic anticoagulation.

Side effects: Adverse reactions, such as nausea, vomiting, muscle cramps, hypotension and hypertension, may result from the treatment mode itself or may be induced by the substitution solution. In general, the tolerability of bicarbonate buffered haemofiltration solution is good. However, the following potential side effects of the treatment can be anticipated: Hyper- or hypohydration, electrolyte disturbances (e.g. hypokalaemia), hypophosphataemia, hyperglycaemia, and metabolic alkalosis.

Warnings and Precautions: Do not use unless solution is clear and the container is undamaged. Do not use before the two solutions have been mixed. The ready-to-use solution shall be used immediately, not be stored above +25°C and must be used within a maximum of 48 hours after mixing. Any unused residual solution should be discarded. Do not store below +4°C.

Date: April 2012.

Fresenius Medical Care Deutschland GmbH, 61346 Bad Homburg v.d.H., Germany

Solutions

Ci-Ca[®] Dialysate K2 / K4 – Dialysate for Citrate CRRT



Citrate anticoagulation for CRRT – A beneficial system: The Ci-Ca[®] method confines anticoagulation to the extracorporeal circuit making this method specifically attractive for intensive care patients and patients at risk of bleeding.

- Clearly reduced risk of bleeding
- Prolonged filter lifetime
- Successful treatments of patients with HIT II
- Two different potassium concentrations allow the adaption to the patient's requirements
- 5 L double chamber bag for safe and convenient handling
- Use of the mixed solutions for up to 48 h
- Yellow connector for colour coded guidance

Composition and order numbers of Ci-Ca[®] Dialysate K2 / K4

Name	Language/Art. No. D/GB/F/I/E/P/NL/ DK/S/N/FIN/CZ/ SRB/SK/TR	Language/Art. No. RUS/EST/LT/LV/ GR/H	Na ⁺ mmol/L	K ⁺ mmol/L	Ca ⁺⁺ mmol/L	Mg ⁺⁺ mmol/L	Cl ⁻ mmol/L	HCO ₃ ⁻ mmol/L	Glucose g/L
Ci-Ca [®] Dialysate K2	9689201	F00003194	133	2	0	0.75	116.5	20	1
Ci-Ca [®] Dialysate K4	F00000431	F00003195	133	4	0	0.75	118.5	20	1

Other constituents: water for injections, hydrochloric acid (25%), carbon dioxide

Packaging: 5 litre bag, 2 bags per box, 104 bags per pallet

Solutions

Ci-Ca[®] Dialysate K2 / K4 **Plus** – Dialysate for Citrate CRRT with Phosphate



With the physiological phosphate concentration of 1.25 mmol/L, Ci-Ca[®] Dialysate **Plus** inherently contributes to stabilising serum phosphate concentration in the physiological range. Thus easing the medically essential phosphate management and thereby further adding to the safety of Ci-Ca[®] therapy.

- Ci-Ca[®] Dialysate **Plus**: Easing phosphate management
- Fully integrated citrate anticoagulation with multi**Filtrate** Ci-Ca[®]
- Virtually interruption-free CRRT: High efficacy and easy handling
- Inherent stabilisation of serum phosphate concentration
- Yellow connector for colour coded guidance
- Two different potassium concentrations

Composition and order numbers of Ci-Ca[®] Dialysate K2 / K4 **Plus**

Name	Language/Art. No. D/GB/F/I/E/P/NL/ DK/S/N/FIN/CZ/ SRB/SK/TR	Language/Art. No. RUS/EST/LT/LV/ GR/H/SLO	Na ⁺ mmol/L	K ⁺ mmol/L	Ca ⁺⁺ mmol/L	Mg ⁺⁺ mmol/L	Cl ⁻ mmol/L	HCO ₃ ⁻ mmol/L	inorganic Phosphate mmol/L	Glucose g/L
Ci-Ca [®] Dialysate K2 Plus	F00001624	F00003579	133	2	0	1	115.75	20	1.25	1
Ci-Ca [®] Dialysate K4 Plus	F00001625	F00003580	133	4	0	1	117.75	20	1.25	1

Other constituents: water for injections, hydrochloric acid (25%), carbon dioxide

Packaging: 5 litre bag, 2 bags per box, 104 bags per pallet

Solutions

multiPlus – Dialysate with Phosphate



The advantages at a glance

- With the physiological phosphate concentration of 1.0 mmol/L, multiPlus inherently contributes to stabilising serum phosphate concentration in the physiological range
- Phosphate and glucose ingredients are a basis for the essential cellular energy metabolism
- multiPlus: Easing phosphate management
- Simple handling due to the 5 litre double chamber bag
- Inherent stabilisation of serum phosphate concentration

Composition and order number of multiPlus

Name	2 x 5.0 L	Na ⁺ mmol/L	K ⁺ mmol/L	Ca ⁺⁺ mmol/L	Mg ⁺⁺ mmol/L	Cl ⁻ mmol/L	HCO ₃ ⁻ mmol/L	Inorganic Phosphate mmol/L	Glucose g/L
multiPlus	9688201	140	2	1.5	0.75	109.7	35	1	1

Other constituents: water for injections, hydrochloric acid (25%), carbon dioxide

Packaging: 5 litre bag, 2 bags per box, 104 bags per pallet

Solutions

multiLac® – Lactate Buffered Haemofiltration Solutions



The 5 litre multiLac® at a glance:

- | | |
|--|--|
| ● Meeting individual patient needs | due to four different potassium concentrations |
| ● PVC-, latex- and DEHP-free, environmentally friendly | thanks to the use of Biofine® foil |
| ● Suitable for all common CRRT devices | due to bag eyelets, connectors and bag design |
| ● Low risk of contamination, easy to handle | due to the touch-protected HF connector |
| ● CRRT-appropriate haemofiltration solution | thanks to an optimised composition |

Order information	Language/Art. No.			
Name	D/A/CH/NL/P/M	GR/CY/CZ/H/BiH/SK	RUS	BG/RO/HR
multiLac®	2 x 5 L	2 x 5 L	2 x 5 L	2 x 5 L
potassium-free	7000201	F00000672	F00000996	F00004964
2 mmol/l potassium	7001201	F00000673	F00000997	F00004965
3 mmol/l potassium	7002201	F00000674	F00000998	F00004966
4 mmol/l potassium	7003201	F00000675	F00000999	F00004967

Packaging: 5 litre bag, 2 bags per box, 96 bags per pallet

Not all potassium concentrations of multiLac® potassium-free /2/3/4 mmol/l are approved/available in the countries mentioned.

Abbreviated Product Information

multiLac® potassium-free, Solution for Haemofiltration
 multiLac® 2 mmol/l potassium, Solution for Haemofiltration
 multiLac® 3 mmol/l potassium, Solution for Haemofiltration
 multiLac® 4 mmol/l potassium, Solution for Haemofiltration

multiLac® potassium-free/2/3/4 mmol/l potassium is provided in a one-compartment bag containing 5 l solution for haemofiltration.

Composition: 1000 ml of multiLac® potassium-free/2/3/4 mmol/l potassium contains:

Active substances	multiLac® potassium-free	multiLac® 2 mmol/l potassium	multiLac® 3 mmol/l potassium	multiLac® 4 mmol/l potassium	Unit
Sodium chloride	5.961	5.961	5.961	5.961	g
Potassium chloride	0	0.1491	0.2237	0.2982	g
Sodium (S)-lactate solution 50%	corresponding to 4.260 g of sodium (S)-lactate				
Calcium chloride dihydrate	0.2205	0.2205	0.2205	0.2205	g
Magnesium chloride hexahydrate	0.1017	0.1017	0.1017	0.1017	g
Glucose anhydrous	1.000	1.000	1.000	1.000	g
as Glucose monohydrate	1.100	1.100	1.100	1.100	g

1000 mL of the ready-to-use solution contain:

Active substances	multiLac® potassium-free	multiLac® 2 mmol/l potassium	multiLac® 3 mmol/l potassium	multiLac® 4 mmol/l potassium	Unit
Na ⁺	140	140	140	140	mmol
K ⁺	0	2.0	3.0	4.0	mmol
Ca ²⁺	1.5	1.5	1.5	1.5	mmol
Mg ²⁺	0.50	0.50	0.50	0.50	mmol
Cl ⁻	106	108	109	110	mmol
Lactate ⁻	38	38	38	38	mmol
Glucose	5.5	5.5	5.5	5.5	mmol
Theoretical osmolarity	292	296	298	300	mosm

pH: 4.5–6.5

Excipients: Water for injections, hydrochloric acid 25% (for pH-adjustment), sodium hydroxide (for pH-adjustment)

Indications:

- For use in patients with acute renal failure requiring continuous haemofiltration or another form of continuous renal replacement therapy.
- For use in patients with chronic renal failure in whom a transient treatment with a solution for haemofiltration is indicated, e.g. during the stay on an intensive care unit.
- For use in patients in whom continuous renal replacement therapy is indicated as part of the treatment of an intoxication with water soluble, filterable/dialysable toxins.

Contraindications:

multiLac® potassium-free/2/3 mmol/l potassium:

Hypersensitivity to the active substances or to any of the excipients. Hypokalaemia, metabolic alkalosis, hyperlactataemia, lactic acidosis, liver insufficiency and insufficient lactate metabolism due to other causes, significant cardiac co-morbidity (e.g. cardiac insufficiency), concomitant treatment with metformin

multiLac® 4 mmol/l potassium:

Hypersensitivity to the active substances or to any of the excipients. Metabolic alkalosis, hyperlactataemia, lactic acidosis, liver insufficiency and insufficient lactate metabolism due to other causes, significant cardiac co-morbidity (e.g. cardiac insufficiency), concomitant treatment with metformin

Side effects: Adverse reactions, such as nausea, vomiting, muscle cramps, hypotension and hypertension, may result from the treatment mode itself or may be induced by the solution for haemofiltration.

The following potential side effects of the treatment can be anticipated:

Hyper- or hyponatremia, electrolyte disturbances (e.g. hypokalaemia), hypophosphataemia, hyperglycaemia, metabolic alkalosis and hyperlactataemia.

The exact frequency of such events is not determined.

Warnings and Precautions: Do not use unless the solution is clear and colourless and the container is undamaged. Any unused solution must be discarded. Do not store below +4°C.

Date: July 2010

Fresenius Medical Care Deutschland GmbH, 61346 Bad Homburg v.d.H., Germany

Solutions

Sodium Citrate 4% for Citrate CRRT / Saline 0.9%



Citrate solution for Ci-Ca® therapy

The citrate solution impedes coagulation by forming chelate complexes with the ionised calcium in blood.

- 4% citrate solution and Ci-Ca® Dialysate are concerted to each other
- The citrate bag is equipped with a special connector to avoid misconections

Sodium Citrate 4%

Trisodiumcitrate, pH adjusted with citric acid

Art. no.	citrate mmol/L	bag volume	bags per box
E 2011	136	1 L	7
E 2012*	136	1.5 L	4

* Available from April 2014

Saline solutions 0.9%

Isotonic saline solutions 0.9% (1 litre contains sodium chloride 9 g)

Art. no.	Na ⁺ mmol/L	Cl ⁻ mmol/L	bag volume	bags per box	bags per pallet
F00004551	154	154	250 mL	30	1.440
F00004550	154	154	500 mL	15	720
F00004549	154	154	1000 mL	10	480

If products are categorized as pharmaceuticals, availability is depending on pharmaceutical product registration.

Disposables and Accessories

Waste bags

Type	Description	Connection	Units per box	Art. No.
Filtrate bag 10 L	Filtrate collection bag with draining cock and male luer-lock connector		40	5029011
Filtrate bag 10 L Single use	Filtrate collection bag with male luer-lock		40	5029031
Waste bag 2000 mL	Waste bag with female luer-lock connector		100	5015091
PF waste bag 5000 mL	Waste bag with male luer-lock connector for single use		50	5015101

Accessories

Type	Description	Connection	Units per box	Art. No.
Scissor clamp	For clamping lines		5	2845241
Pressure monitor line 60 cm	Pressure monitor line with filter, connector male/female luer-lock, length 60 cm, white		200	5019151
Pressure monitor line 30 cm	Pressure monitor line with filter, connector male/female luer-lock, length 30 cm, blue		100	5014631
Transducer protector	Pressure monitor filter, connector male/female luer-lock		100	5015911
Vented spike	female luer-lock/spike (vented)		100	F0000520
Spike	female luer-lock/spike		100	5015921
Recirculation adapter	Connector 2 female luer-lock with eyelet		100	5015971
Filtrate bag Y-adapter	To connect two filtrate bags, 2 x female / 1 x male luer-lock			F00005539
SN-adapter	Y-adapter with two clamps, 2 x female / 1 x male luer-lock		100	5027851
Adapter 2 x HF female / 4 x HF male	To connect 4 solution bags to substitute or dialysate tubing system		30	5046131
HF Y-adapter	Y-adapter with two clamps, 2 x male / 1 x female HF		30	F00005473
PF-adapter HF female / luer-lock female	To connect infusion sets to substitute tubing system		100	5014741
Adapter luer-lock male	Connector 2 male luer-lock		100	5014771
Adapter luer-lock female	Connector 2 female luer-lock		100	5014801
Filtrate adapter	To connect luer-lock to the filtrate outlet of a filter, with a clamp		100	5014911
HF female / spike adapter	To connect bags with septum to substitute tubing system		100	5016351
Adapter HF female / luer-lock male	To connect rinsing solution to substitute tubing system		100	5016891
Check valve	Check valve male luer-lock / female luer-lock		100	8502802
Prolongation 75 cm	Connector male/female luer-lock		150	7030011
Heparin syringe 50 mL	Fresenius Injectomat syringe, male luer-lock		100	9000711



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