

THE ORIGINAL

ECOMix

Fully Automatic Dry Concentrate System



Fully Automatic Dry Concentrate System **ECOMix**

Many dialysis centres purchase ready-to-use acid concentrate in canisters or containers. A medium size dialysis centre requires approx. 60,000 – 80,000 L of acid concentrate yearly. Between 53,000 and 71,000 L of that is water! Water that is available in your dialysis centre with the required quality. As a result approx. **45 million litres of water** are unnecessarily transported across Germany's roads to supply dialysis centres.

We don't transport any water!

*Produce the concentrate directly in your dialysis centre –
fast, safe and exact!*

The fully automatic dry concentrate system **ECOMix** in combination with **BIGKART** allows for in-house concentrate production within the guidelines of the Medical Devices Directive. The production process is automated and requires only minimal intervention from your personnel. Innovative, independently operating control mechanisms will guarantee you a qualitatively perfect concentrate!

System Description

Thanks to the **ECOMix** production system for the first time fully automated production of an acidic dialysis concentrate can be achieved in the dialysis facility with ease. This is accomplished in accordance with legal guidelines (e.g., Medical Devices Directive - MDD) for in-house use.

The ECOMix production system consists of three functional units:

- The production system **ECOMix** with mixing tank and full automation
- **BIGKART** large cartridges on handcarts
- **ECOTanks** for storing the finished saline solutions

Process optimisation in the dialysis practice

The dry concentrate system **ECOMix** in combination with **BIGKART** offers many advantages:

- **Cost savings** Lower transportation costs
- **Preservation of the environment** Greatly reduced transport volume compared to ready-to-use solutions
Reusable **BIGKART**
No packaging waste
- **Process optimisation** More effective use of space compared to carton, containers or bags
No carrying of canisters or laborious handling of large containers
Professional association safety regulations regarding "moving large containers" or "bottling acetic acid" do not apply



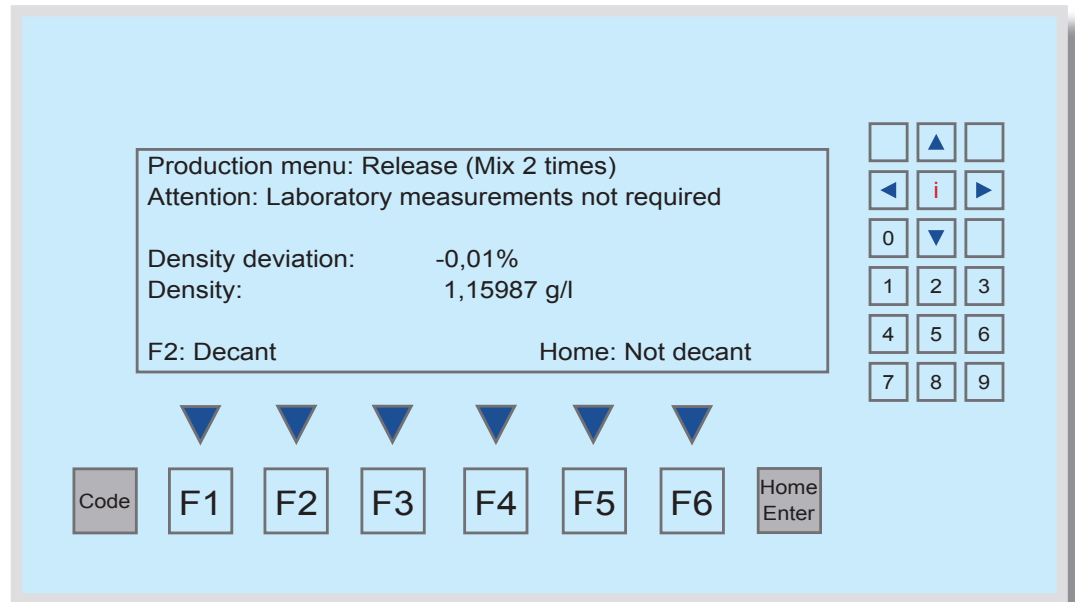
860 L **ECOTank**

Fully Automatic Dry Concentrate System **ECOMix**



Production system **ECOMix**

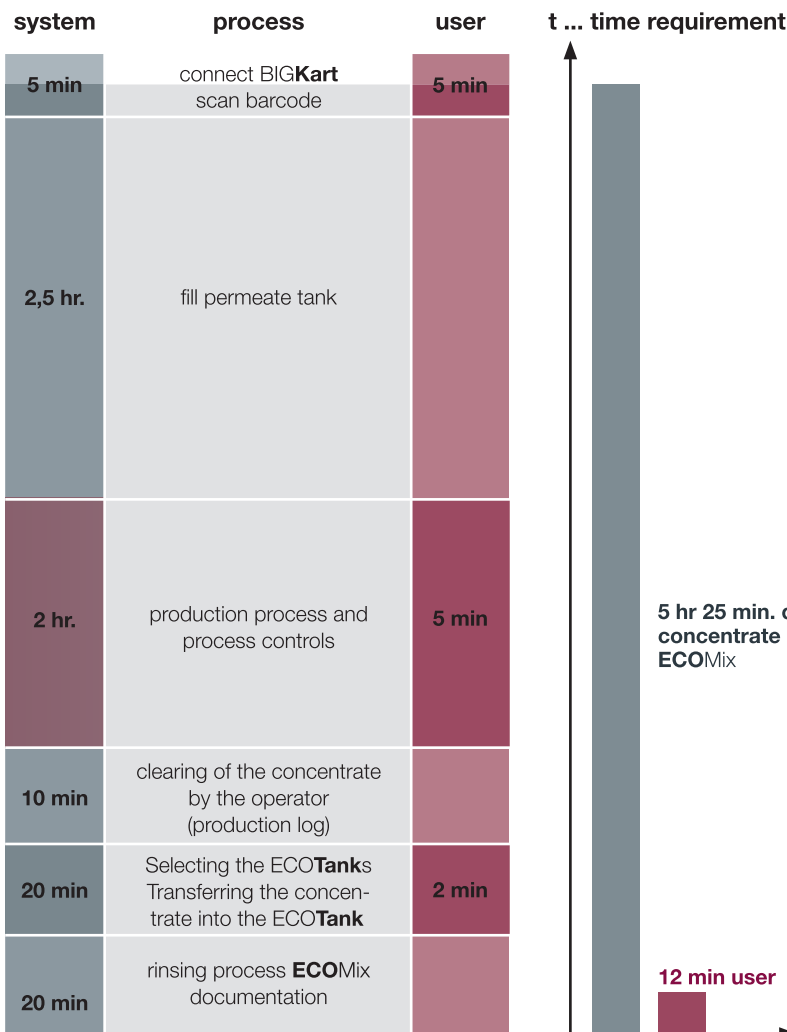
Large cartridge **BIGKart**



Display **ECOMix**

Fast - Save - Exact

Dry Concentrate System **ECOMix**



Time lapse and time requirement for the production process

Fast

Because of the weight and size of the containers and tanks, handling industrially produced concentrate is time-consuming and user-unfriendly.

Producing concentrate in-house with the fully automatic dry concentrate system **ECOMix** and **BIGKART** is accomplished quickly and requires only minimal assistance from the operator. The average required work time for each production is only 12 minutes.

The average required work time for each batch is just 12 minutes.



Safe

Through changes to the Medical Devices Directive (MDD) health care facilities today are allowed to produce medical products for use in-house. In doing so lawmakers laid the groundwork for dialysis centres to produce concentrates themselves.

Intermedt Medizin & Technik GmbH, who manufactures the fully automatic dry concentrate system **ECOMix** with **BIGKART**, is certified according to EN ISO 9000 13485:2003. The dry concentrate system is approved as a class II b medical product. The reliable overall concept for the in-house production of concentrate as a medical product has been tested by TÜV (German Technical Inspection Authority).

The innovative technical product details, with which the production process is continually monitored, and the sophisticated documentation concept ensure that you will always be on the safe side with **ECOMix**.



Exact

The dry concentrate system **ECOMix** offers you complete process security and thorough documentation. This begins with the automatic weighing of the **BIGKART** with double security to a tolerance of $\pm 0.2\%$ for the total weighing.

The water required for each use is measured by a highly accurate flow sensor in the production system's water intake. The required amount of water for each solution is automatically calculated. The flow sensor, with an accuracy of $\pm 0.3\%$, monitors the amount of water during the production process.

A density measurement, which is made automatically and compensates for temperature, guarantees that the salts have been 100% dissolved. The target density for each solution is known. The density sensor measures the density of the produced concentrate after the production process. The variance between target and measured density can't be more than -0.04% .

Through this control mechanism the composition of the concentrate can be guaranteed by the manufacturer. No further quality controls are required for your dialysis. The operator can clear the concentrate for use.

A further lab control is only necessary if the density variance is more than -0.04% .

Individual concentrate compositions in 1+34 or 1+44

The dry concentrate system **ECOMix** allows you to produce the concentrate solution of your choice.

Concentrate type	Examples for the composition of commonly used solutions								
	Na ⁺ mmol/L	K ⁺ mmol/L	Ca ²⁺ mmol/L	Mg ²⁺ mmol/L	Glucose g/L	Acetate mmol/L	Chloride mmol/L	Bicarbonate mmol/L	Theoretical osmolarity mOsm/L
DSK-3272-K	138	1	1,75	0,50	1	3	108,5	32	290,30
DSK-3472-K	138	2	1,75	0,50	1	3	109,5	32	292,30
DSK-3672-K	138	3	1,75	0,50	1	3	110,5	32	294,30
DSK-3872-K	138	4	1,75	0,50	1	3	111,5	32	296,30
DSK-3262-K	138	1	1,50	0,50	1	3	108,0	32	289,55
DSK-3462-K	138	2	1,50	0,50	1	3	109,0	32	291,55
DSK-3662-K	138	3	1,50	0,50	1	3	110,0	32	293,55
DSK-3862-K	138	4	1,50	0,50	1	3	111,0	32	295,55
DSK-3252-K	138	1	1,25	0,50	1	3	107,5	32	288,80
DSK-3452-K	138	2	1,25	0,50	1	3	108,5	32	290,80
DSK-3652-K	138	3	1,25	0,50	1	3	109,5	32	292,80
DSK-3852-K	138	4	1,25	0,50	1	3	110,5	32	294,80
DSK-3242-K	138	1	1,00	0,50	1	3	107,0	32	288,05
DSK-3442-K	138	2	1,00	0,50	1	3	108,0	32	290,05
DSK-3453-K	138	2	1,25	0,75	1	3	109,0	32	291,55
DSK-3653-K	138	3	1,25	0,75	1	3	110,0	32	293,55
DSK-3853-K	138	4	1,25	0,75	1	3	111,0	32	295,55
DSK-3463-K	138	2	1,50	0,75	1	3	109,5	32	292,30
DSK-3663-K	138	3	1,50	0,75	1	3	110,5	32	294,30
DSK-3464-K	138	2	1,50	1,00	1	3	110,0	32	293,05

Examples for concentrate solutions **ECOMix**



The production system

ECOMix, BIGKart, ECOTank



Production system **ECOMix**

The large cartridge **BIGKART**, which is filled with dry concentrate, is connected to the production system by way of a quick coupling. The dry salts are dissolved in a special mixing procedure.

An automatic density measurement ensures that the salts are 100% dissolved.

The system includes a circulation and transfer pump for mixing and transferring the saline solution being produced and sensors for dry run and overload protection.

A microprocessor control takes over control of the production and transfer processes as well as communication with the **ECOTank**.

The finished solution is transferred to the **ECOTanks** through a multi-stage filtration. During this process the control monitors the automatic distribution of the produced concentrate into the connected **ECOTanks** and monitors their levels.



Acid cartridge **BIGKart**

Acid cartridge **BIGKart**

BIGKART is a „reusable large cartridge“. The **BIGKART** contains all raw materials for the production of 750 L of dialysis acid concentrate in dry form. The composition can be adjusted freely. Through its low total weight of 235 kg (for comparison: a 800 L container with liquid concentrate weighs 1.2 T !), its exceedingly small base area of 60 x 60 cm, as well as its extra large rollers the **BIGKART** is easy to move.

The order will be processed with the utmost reliability from the purchase order to production and finally through to delivery. After being cleaned at high temperatures the **BIGKART** will be automatically filled with the weighed pharmaceutical raw materials for the respective solution. After a final test of the contents the **BIGKART** will be sealed and delivered.

Dry concentrate delivery in **BIGKART** means:

- Reduction of delivery frequency by at least three quarters
- No weight restrictions for the delivery route (e.g., Lift)
- Space saving in storage
- Transport without lift truck
- And of course... cost savings!

ECOTank with pump module for central concentrate supply

The **ECOTanks** are connected to the ring line through an integrated pump module **ECO-CDS** (optional) and don't need to be disconnected. Through the fixed connection to the ring line tanks can no longer be mistaken for one another. The filling of the tanks is also accomplished through fixed connections. Communication to the production system is conducted over a CAN-bus system to eliminate the possibility of filling the wrong **ECOTank** or mistaking **ECOTanks** for one another.

If needed canisters can be quickly and easily filled from the **ECOTank**.

Unlike industrial concentrate containers or canisters, the **ECOTanks** require exceedingly little space.

Pump module **ECO-CDS**

For automatic concentrate line supply

- No down time due to system redundancy
- Ring or branch line operation
- Automatic venting of the ring line



Pump module **ECO-CDS** concentrate supply



ECOTank 860 Liter

Technical specifications

ECOMix

Measurements	1.950 x 880 x 1.260 (HxWxD in mm)
Weight (empty)	approx. 200 kg
Power supply	CEE 400 V AC / 50Hz / 16A
Power consumption	1 kW
Fuse	3 x automatic circuit breaker K16, FI
Water supply	Osmosis pressure: 2 to 5 bar Water quality: < 15 µS/cm ³ , free of floating particles
Drain	HT 50 floor drain max. 5cm clearance above floor level

BIGKart

Measurements	1250 x 600 x 600 (HxWxD in mm)
Weight	approx. 220 kg (full) / 25 kg (empty)

ECOTank

Measurements	2290 x 880 (H x Dia in mm)
Capacity	860 L
Weight	approx. 40 kg (empty) / approx. 900 kg (full)

The Future - Dialysis concentrate systems

THE ORIGINAL

ECOMix

BIGKart

ECOTank



Technical Service

Our technicians are available and ready to help you with any maintenance or service issues you may have. You can contact us at:

Phone **+49 (0) 4952 / 82 691 - 0** ■ www.intermedt.de

Manufacturer

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