Concentrate Supply
Process automation with central supply – Customised for your individual needs
Fresenius Medical Care
Water Technology Solutions

Applications should fit the customer, not the other way around.

We provide advising, planning and water technology products and services for dialysis—all tailored to meet your specific needs. Your benefits: long-term cost and time savings, easy handling, and our proven system reliability.
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Fresenius Medical Care offers a wide range of concentrate supply possibilities. Our portfolio includes canisters and bags for direct connection of dialysis devices and central solutions to storage tanks and 300 L smart-bags.

We also offer two options for in-house concentrate preparation with our Granudial and DIAMIX systems. Based on the specific local requirements, the need for liquid dialysis concentrates, and various other factors, we provide just the right solution to deliver a very good support for your clinic processes. In this brochure, we’ll show you the options available for centralised concentrate supply.

**Individual solutions**

Process automation with central supply
Doctor
“I want to make sure that my patients’ treatment is uneventful.”

Technician
“I have to ensure high availability of technical equipment.”
Administration
“I need a solution, that results in cost-efficient processes and low price per liter.”

Nurse
“I only want limited interaction with the technical equipment.”
Benefits for doctors
### Granumix plus

**Flexibility**
- Eleven different concentrate formulas (DIAMIX®) can be configured for flexible prescription options
- Up to three different concentrates can be mixed, stored and supplied, allowing the most frequently used concentrates to be mixed in-house

**Operational safety**
- Two storage tanks per concentrate can be used in rotation, providing 1,500 L per concentrate type (approx. 350 treatments) for longer operation without mixing
- If the mixing device should fail, the supply of stored concentrate is not interrupted, as the integrated supply system features an emergency mode for continuous operation

### Granumix

**Flexibility**
- Five different concentrate formulas (Granudial®) for flexible prescription options
- Two different mixing volumes (100 L and 500 L)

**Operational safety**
- The use of proven and less complex components prevents system breakdowns

### CDS3

**Flexibility**
- Up to three different concentrates can be supplied, so that the most common concentrates can be distributed centrally

**Operational safety**
- Optional emergency operation ensures a continuous supply of acid dialysis concentrate to the treatment stations
- Failures are prevented through the use of reliable components (e.g. durable membrane pumps)
Benefits for nurses
Granumix plus

Handling  • Scanning the required concentrate automatically starts the mixing process, reducing the necessary user interaction time to just five minutes

Automation  • Mixed concentrate is automatically supplied to the treatment stations from the storage tanks, eliminating the need to carry concentrate canisters

Documentation  • Every mixing procedure is documented on a printed wlabel

Granumix

Handling  • Easy handling thanks to a two-button control panel

Automation  • Mixed concentrate can be supplied to treatment stations from the storage tanks, eliminating the need to carry concentrate canisters

CDS3

Automation  • Start/stop timer can be programmed for each day to allow individual shift planning

• When a concentrate storage tank is empty, the system automatically switches to the standby tank

• After a tank switch, the CDS3 independently ventilates all of the lines
Benefits for administration
### Granumix plus

**Logistics**
- Granumix plus can provide a significant reduction in logistics costs, since no water is transported and no concentrate canisters need to be stored (one barrel of DIAMIX® replaces 178 4.2-liter canisters ≈ 2 Euro pallets)

**Lifecycle costs**
- Reduced waste, logistics costs and working time drastically lower lifecycle costs when compared with the use of concentrate canisters

**Quality control**
- Because the process for DIAMIX® production and the mixing procedure are already validated, users do not have to perform quality control measures for mixed concentrate

### Granumix

**Logistics**
- Granumix helps reduce logistics costs, since no water is transported and no concentrate canisters need to be stored (one box of Granudial® replaces 23 4.2-liter canisters)

**Lifecycle costs**
- Reduced waste, logistics costs and working time lead to lower lifecycle costs than when using concentrate canisters

### CDS3

**Space-saving**
- All CDS3 components can be mounted on a rail system, allowing the system to be easily adapted to all building conditions

**Consumption data**
- All tank switches for each concentrate type are saved, which greatly simplifies the documentation process for concentrate consumption
Benefits for technicians
Granumix plus

**Connectivity**
- With TSDiag+, the system can be controlled and configured via remote access
- All relevant technical data are stored on an FTP server and in internal storage, so that they are available at any time

Granumix

**Maintenance**
- Reliable and less complex components require minimal maintenance

CDS3

**Connectivity**
- All relevant technical data are stored on an FTP server and in internal storage, so that they are available at any time
- The system can be controlled via web browser and the current operating status is displayed

**Failure prevention**
- To prevent scale buildup in the concentrate ring main, all lines are rinsed automatically (automatic circulation)
Granumix plus key facts

**Concentrate storage**
- For 1,500 L of concentrate per type
- Up to 3 types

**Scanner**
- For type selection and automatic start of mixing procedure

**Integrated concentrate supply**
- For distributing concentrate in up to two ring mains
**Closed mixing tank**
- For hygienic mixing
  no splashing

**Touchscreen**
- For intuitive operation

**DIAMIX®**
- 11 formulas
- One barrel replaces 178 concentrate canisters
Granumix key facts

2-button control
- For intuitive operation

Closed mixing tank
- For hygienic mixing no splashing
- 100 or 500 liter mixing volume

Compact design
- Saves space
**Modular construction**
- Up to 2 loops for each hydraulic unit
- Up to 3 concentration lines for each loop

**Hydraulic module**
- Up to 6 modules
- 3 concentrates into 2 ring mains

**Reliable**
- Durable membrane pumps
- Optional emergency operation (continuous operation)

**Central control unit**
- Control of hydraulic units
- Proven user interface
- Display of all relevant data

**Modular tank system**
- Automatic tank switch
- Automatic hose rinsing after tank swap

**Tank level indicator**
- Empty tank notification

**Full control**
- Easy integration into existing network
- Operating data accessible from terminal computer
- Documentation of concentrate consumption

**CDS3 key facts**