DDP1-01 Diffusion Dialysis System

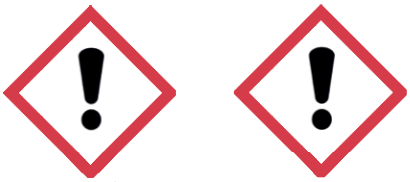
Technical data sheet (1/4)

Spiraltec

System for separating metal salts from free acids from process baths

Flow:	**7 - 15 l/h per channel (freely selectable, but extreme differences between the channels should be avoided)**
Minimum pre-pressure:	**1.0 bar (at DI water inlet)**
Maximum pressure:	**2.5 bar (overpressure before the filters)**
Recommended flow rate:	**9 - 11 l/h per channel**
Operating temperature:	**5 °C - 30 °C**
Weight when empty:	**Approx. 175 kg (incl. empty module)**
Fill volume:	**Approx. 10 L per channel (without storage containers)**
Storage container:	**Max. 30 L per container**
Installation:	Connecting up the diffusion dialysis system (see installation instructions)

Conditions of operation and use:



Suitable media:
sulphuric acid (up to 30%); phosphoric acid (up to 30%), hydrochloric acid (up to 10%)

Forbidden media:
nitric acid; hydrofluoric acid; organic liquids; alkalis; oxidation agents; liquids with particles > 10 microns.

Hazards could arise when working with corrosive substances!
Before commissioning, ensure that the safety data sheets of the media used have been observed!

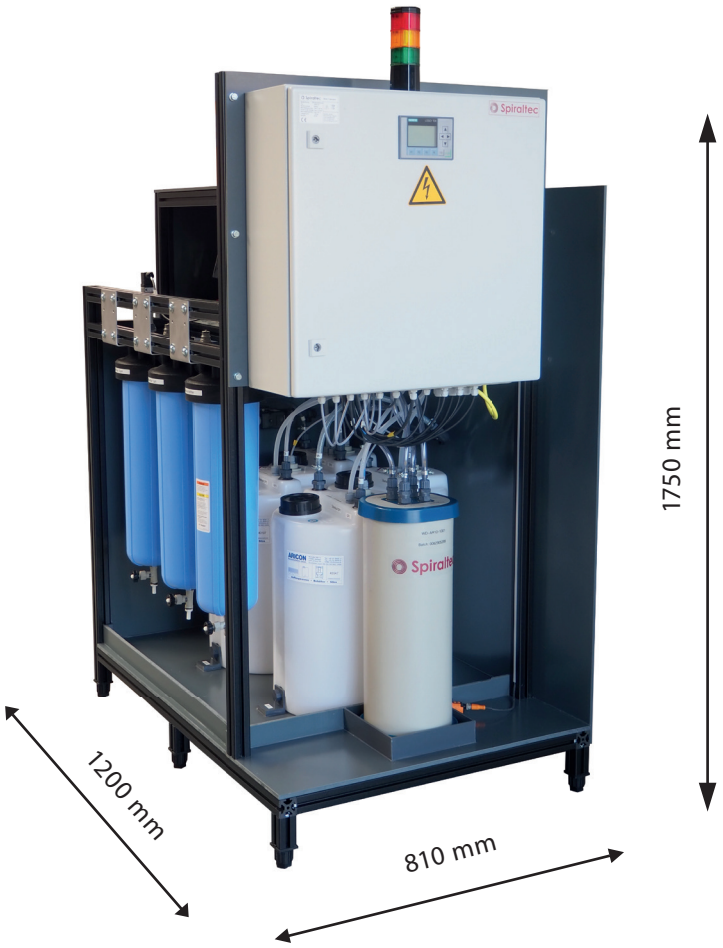
NO organic substances (e.g. oils) and NO particles > 10 microns are permitted to enter the diffusion dialysis system. To protect the spiral membrane module, 2 particle filters (10 µm, 1 µm) and an activated carbon filter were installed. These must be replaced if necessary (latest at a pressure of 2.5 bar on the filter)!

Performance parameters of the diffusion dialysis system DDP1-01:

The flow rates of the individual flows are freely selectable between 7 - 15 l/h via the pump control system and can therefore be adapted to your requirements.

The exact performance parameters depend on the spiral membrane module used, the volume flows and the composition of the feed! More detailed information can be found in the ***technical data sheet*** of the spiral membrane module that is used.

Dimensions:



Filling/emptying the storage containers:

The storage containers must be filled and emptied before commissioning in accordance with their designation. Refer to the operating instructions for more detailed information: *6.1 Before initial commissioning.* **The fill levels of these containers are automatically monitored. This means that it is not possible for the storage containers to overflow.**

1. Starting the system:

1. Turn the main switch on the right side of the switch cabinet, turning it to ON. This starts up the electronics, the system is booted and the homepage appears on screen. Follow the instructions on the display.
2. Pressing button F1 starts automatic mode. The display now shows the current flow rates for DI water and feed. Make sure that valves installed by the customer in the inlets and outlets are open!
3. If the green control lamp lights up, the system is in automatic mode.

2. Take a sample (diffusate and dialysate):

1. Hold a suitable sampling extraction container under the sampling cock.
2. Remove the required sample quantity from the sampling cock.
3. To obtain current values, discard the first sample.
4. Take and analyse samples of diffusate 1.1 and dialysate 2.2, respectively.

Notices:
Wear personal protective equipment (PPE) when taking samples.

In order to obtain meaningful samples, they must be taken in a stationary process. This occurs approximately 90 minutes after the pumps start up. The values obtained are dependent on the volumetric flow rates set, and on the composition of the feed, and they are subject to fluctuations. If the salt content of the diffusate rises significantly, the spiral membrane module needs to be replaced.

3. Running down the system:

Pressing button F1 again stops the pumps, and the green control lamp goes out. Automatic mode is now stopped. Control voltage to the production system is switched off by turning the main switch into the Off position.

Shutdown/Storage:

No measures are required for shutdowns of less than 7 days. For extended downtimes, we recommend flushing the system with DI water and then emptying it. Used spiral membrane modules must be kept damp at all times. We recommend preserving the diaphragm modules inside the system at a storage temperature of 5°C - 30°C. Refer to the operating instructions for more detailed information: ***9. Shutdown/Storage***

After use:

After use, the entire system must be rinsed out and sent to a professional disposal facility. Refer to the operating instructions for more detailed information: ***8. Removal***

Further information:

Please refer to the operating instructions for more detailed information.