

ULTRAFILTRATION UNIT



Experimental capabilities

- **Study the ultrafiltration process**
- **Determination of the different phases of ultrafiltration**
- **Determination of the membrane retention rate**
- **Influence of the feed flow rate**
- **Material balance**
- **Study of the membrane permeability**

Operating principle

The GPBUF1 bench allows the study of ultrafiltration.

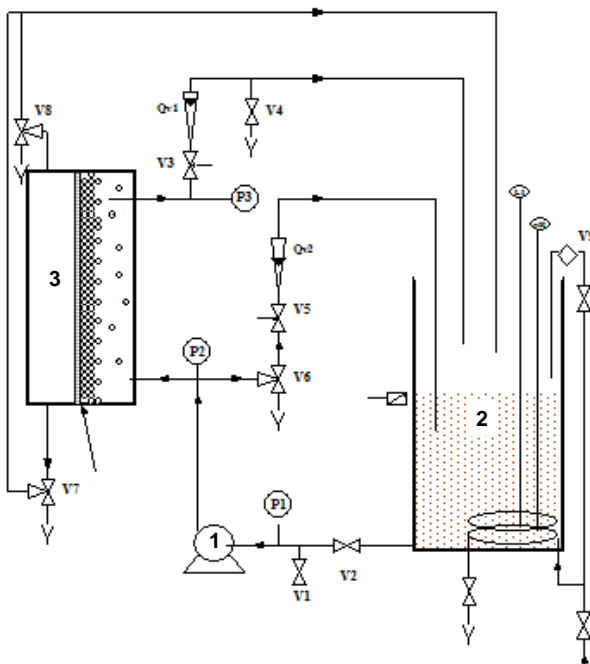
The flux passing through the membrane is called permeate and the flux retained by the membrane is called retentate. This separation is made possible by the pressure difference applied between the incoming flux and the permeate flux.

The ultrafiltration occurs most often in tangential mode, it means that the flux circulates parallel to the membrane, in order to limit the accumulation of stopped species on the surface of the membrane.

The robust design of this equipment makes it perfectly suited for school use.

Its anodized aluminum structure on wheels makes it very robust as well as a great flexibility of integration into your premises. The manufacture of this equipment meets the European machine directive

Illustrations



Technical specifications

Centrifugal pump

- Stainless steel body
- $Q_{max} = 21 \text{ m}^3/\text{h}$
- HMT = 20 mCE

Supply tray

- Material: High density polyethylene
- Volume 100 L
- 1 heat exchanger
- 1 pH probe
- 1 temperature probe
- 1 low level sensor

PVC float flowmeters

- Two flowmeters 1.6 to 16 m³/h
- A flowmeter from 30 to 300 L/h

Manometers

- 3 BOURDON type manometers
- Scale: (-1 +0,6 bar) ; (0 +2,5 bars)

An ultrafiltration membrane

- $S = 0,11 \text{ m}^2$ / plate
- 20 plates

Services required

- Power supply: 230 VAC - 50 Hz - 20 A
- Electrical supply type: 1 Phase + Neutral + Earth
- Water capacity: 100 L
- Dimensions: (LxWxH mm): 1100 x 800 x 1500
- weight (Kg): 150

Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE


Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

GPBUF1



Data supervision option of the bench (not included)

- Complete supervision of bench
- Ref: GPB UF2

GPB UF2	<i>Complete supervision of the bench comprising:</i> <ul style="list-style-type: none">- Digital flowmeter (x3)- Pressure sensor (x3)- PH probe- Temperature probe- USB port for connection to PC- Supervision software included	 <p>Multi-line display with USB output</p>
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Supervision : Paramétrage, Tracé de courbe

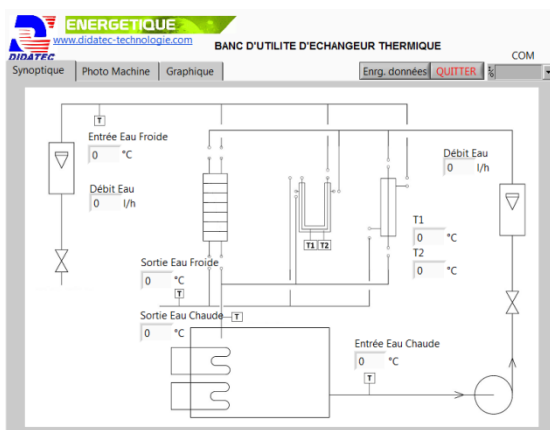
The bench is also equipped with an original supervision and parameter setting software. The connection to the PC is made by a standard USB port. The software is divided into three parts:

MACHINE PICTURE :

We find in this window the photo of the machine with the location of the different steps of the process and their values.



BLOCK DIAGRAM :



We find in this window the block diagram of the machine with the location of the different measures of the process and their values.

GPBUF1



GRAPH:

We find in this graph window, the possibility of drawing the measurements curves according to the time by selecting the desired quantities.

