

GPA UFO

Food pilot of ultrafiltration

DESCRIPTION

- v Allows the study of a system of filtration (ultrafiltration) on membrane. Proceeded of membrane separation under the action of a gradient of pressure which retains the dissolved particles and macromolecules in a fluid
- v The pilot is especially designed like a material of laboratory.
- v It makes it possible to test the feasibility of a separation on the whole of the industrial range of mineral and organic membranes, by optimizing the samples
- v General-purpose, it can be equipped with two modules, while ensuring the simplicity of the connections for the passage of a module the other:
 - v RayflowÒ, plane micromodule for feasibility on organic membrane,
 - v Micro CarbosepÒ, tubular micromodule for feasibility on mineral membranes.
- complete and instrumented, with technical handbooks and teaching delivered material.



TEACHING APPLICATIONS

- Study of the process of ultrafiltration
- Determination of the various phases of ultrafiltration
- Determination of the rate of retention of the membrane
- Influence feed rate
- Assessment matter
- Mode of flow: checking of the law of DARCY
- Study of the permeability of the modules
- Comparison and industrial utilities of the 2 modules

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GENERAL DIAGRAM

The pilot is especially designed like a material of laboratory.

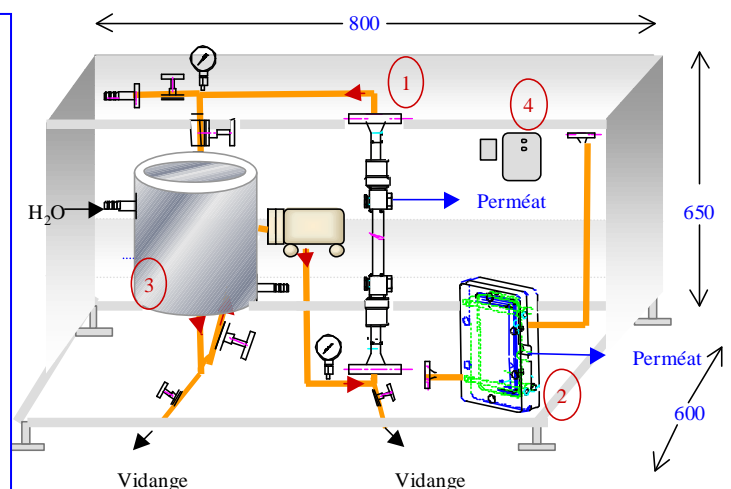
It makes it possible to test the feasibility of a separation on the whole of the industrial range of mineral and organic membranes, by optimizing the samples.

General-purpose, it can be equipped with two modules, while ensuring the simplicity of the connections for the passage of a module the other:

- μ Rayflow®, plane micromodule for feasibility on organic membrane,
- μ Carbosep® microphone, tubular micromodule for feasibility on mineral
- μ Membranes.

➤ The minipilot of the laboratory

- ★ Interchangeability of the modules
 - ① Microphone carbosep® /kerasep™
 - ② Rayflow®
- ★ Ferment 8 liters with double envelope(3)
- ★ Volumetric variator pumping of frequency(4)
- ★ Sensor and indicator (4) of temperature
- ★ Pressure gauges input/output modulates
- ★ Together of membrane valves
- ★ 0,5 liters of dead volume



INSTRUMENTATION

- 2 pressure pick-ups
- Precision $\pm 1\%$ - scale 0-5 bars
- 1 stainless float Flowmeter: 0-750 L/H
- Variator of frequency for the pump allowing to control the flow
- Pt 100 classifies A 3 wire with digital bill-poster
- With data acquisition

ELECTRICAL EQUIPMENT BOX

- On/off Buttons; of the pump
- With all the elements necessary to the correct operation and the safety of the equipment: fuses, thermics...
- Master switch with indicator low tension
- Stop blow of fist, differential 30 my

Piping: Stainless 316 L

SPECIFICATIONS

Cut fluid: between 2nm and 0,1 μm for the UF
Between 20 μm and 0,1 μm for MF

DIMENSIONS:

- 1- Positive-displacement pump –
 - Pmaxi = 4 bar -
 - Flow: 0,1 - >3 m³/H
 - With variable speed transmission
 - P = 0,75 kw
- 2- Modulate ultrafiltration –
- 3- Filter for the water of the network by the exchanger
 - QV1 = recycled
 - QV2 = re circulation – valves
 - V1 = draining vat of food
 - V2 = food pumps
 - V3 = adjustment of recycled
 - V4 = low on not recycled
 - V5 = adjustment of the re circulation
 - V6 = valve 3 ways insulation membrane
 - V7/V8 = adjustment flow perméat
 - V9 = supply water vat of food
 - V10 = water supply of the exchanger
 - P1 = pressure aspiration
 - P2 = entered pressure membrane
 - P3 = pressure left membrane (recycled side)
- 4 - **Group thermoregulator**
 - Power 2 kw
 - Team of a centrifuges pump 0-600 L/H with float flowmeter
 - With regulator PID

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Modules and membranes

Modules

Tubular module CARBOSEPÒ 40

1 tubular module stainless monocanal 316 L, being able to be equipped with membranes CARBOSEPÒ 40 cm or KERASEP™ 40, joined EPDM, without membrane.
Surface membrane available: 80 cm²

Ceramic membranes carbons

Membranes CARBOSEPÒ 40 mono canal proposed are available in the following thresholds of cut:

Membranes CARBOSEPÒ 40

Threshold of cut	Reference	Desired quantity
15 KD	M2	2
150 KD	M1	2

Membranes CARBOSEP® et KERASEP™ la gamme de membranes industrielles au service du laboratoire

MEMBRANES ET SEUILS DE COUPURE

CARACTÉRISTIQUES

Support : Carbone ou céramique

diamètre externe/longueur : 10 mm/400 mm
nombre de canaux : 1
diamètre hydraulique des canaux : 6 mm
couche active membrane : ZrO₂ - TiO₂

Seuils de coupure	CARBOSEP®	KERASEP™
Microfiltration		
0,10 µm	-	KER 04040
0,14 µm	M 14 CAR14040	-
0,45 µm	-	KER 06040
Ultrafiltration		
15 KD	M2 CAR02040	KER 05040
50 KD	M8 CAR08040	KER 01040
150 KD	M1 CAR01040	KER 02040
300KD	M9 CAR09040	KER 03040
Nanofiltration	-	nous consulter

CONDITIONNEMENT

- à l'unité
- par lot de 5 membranes
- Starter kit (1 membrane de chaque seuil de coupure de la gamme Carbosep®)

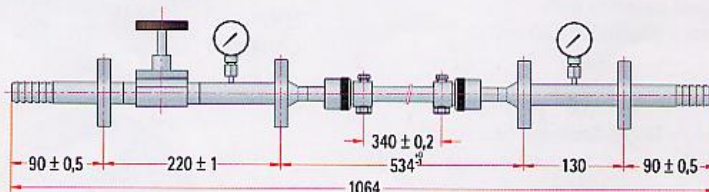
CAR40500

PIÈCES DÉTACHÉES :

Joint pour membranes livrés par paquet de 4 unités

- Joints étanchéité mb. Viton vapeur 00181010
- Joints étanchéité mb. Silicone 00181100
- Joints étanchéité mb. EPDM 00181200

PLAN D'ENCOMBREMENT



Pompage conseillé :
700 l/h, 4 bars
variateur de vitesse
viscosité de 1 à 500 cp