

GPC VC1

Evaporator-Crystallizer

DESCRIPTION

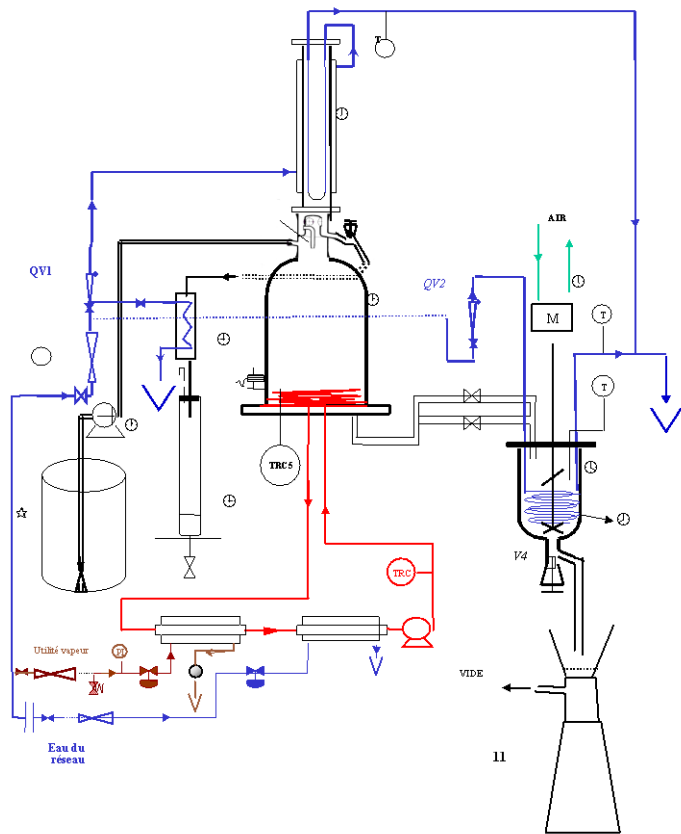
- Two separation technologies are combined on this unit:
 - The Evaporator: Components for the partial or total separation of a liquid from a mixture by evaporation. Here, the partial evaporation of the solvent results in the saturation of the initial solution with respect to a specific solid in order to make the crystallization more efficient.
 - The crystallizer: Allows for the crystallization of solid (solute) as the temperature of the solution is gradually lowered.
- The mixture studied consists of a solvent (e.g. water) and a solid (e.g. FeSO_4 or CuSO_4).
- The unit is semi-automatic and can run continually.
- A user manual is included.



SUGGESTED APPLICATIONS

- Study of the process in batch or in continuous mode
- Thermal and matter balance
- Study of crystallization balance
- Kinetic study of crystallization
- Effect of agitation and temperature

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MAIN COMPONENTS OF THE UNIT

1. **Polyethylene supply tank**
 2. **Dosing supply pump P1**
 - Flow rate: 0-16 L/h
 3. **Evaporator**
 - Borosilicate glass
 - Equipped with a 316 L stainless steel coil
 - Volume = 5 L
 - Equipped with a capacitive level sensor that stops the heating at a low level
 4. **Distillate receiver 3 L**
 - Borosilicate glass
 5. **Crystallizer**
 - Borosilicate glass
 - Equipped with a stainless steel coil
 - Volume : 5 L
 6. **Agitator**
 - Agitation speed: 50-1750 rpm
 - ADF pneumatic motor
 7. **Heating group with vapour service**
 - Hot water circuit equipped with a centrifugal pump of 0.75 kW with an ADF motor
 - 2 single-tube exchangers
 - Permit the regulation of the temperature in the evaporator and the hot water circuit
 - 2 electro valves and 1 PID regulator
 - 1 Pt 100
 8. **Condenser for the evaporator ECH 1**
 - 1 stainless steel section, 1 borosilicate glass section
 9. **Cooling coil for the crystalliser ECH 2**
 - 316 L stainless steel
 10. **Exchanger for the distillate**
 - Borosilicate glass
 11. **Filter**
 - Borosilicate glass of polypropylene
 - Volume = 5 L
- QV1** : Water flow rate on the evaporator's exchanger (0-100 L/h)
QV2 : water flow rate on the crystalliser's coil (0-60 L/h)

MESURES DE TEMPERATURES

- T1** : Water inlet into the double shell of the condenser ECH 1
T2 : Water outlet of the condenser ECH 1
T3 : Water outlet of the crystalliser's coil
T4 : Temperature of vapour
TRC 5 : Regulated temperature of the pressurized water (heating group)
TR6 : Temperature into the crystalliser

WEIGHT AND DIMENSIONS

Length : 2200 mm
 Width : 800 mm
 Height : 2400 mm
 Weight : 150 kg