GPCE11

STIRRED LIQUID-LIQUID EXTRACTION

Experimental capabilities

- **Study of a liquid-liquid extraction pilot**
- **Study of stirred technology**
- **Study of the efficacy of the extraction column**
- **Study of mass balance**
- **Calculation of the number of theoretical stages**

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version : FT-GPCE11-STD-D

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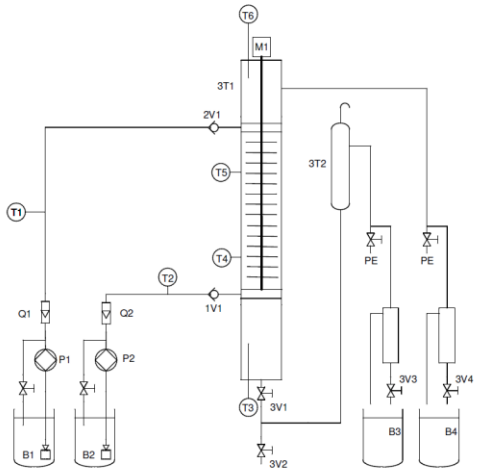
Operating principle

The GPC E11 bench is used to study a liquid-liquid extraction system with stirrers.
A gear pump feeds the mixture from the top of the column. A second gear pump feeds the solvent from the bottom of the column. The mixture and the solvent will therefore circulate against the current, which will allow the solvent to extract the solute by shearing the discs on the liquid.
The students will have to start the installation after preparing the solutions and then carry out measurements to verify the effectiveness of the separation.
The rugged design of this equipment makes it perfectly suited for use in a school setting.
Its anodized aluminum structure on multidirectional wheels with brakes gives it a very high robustness as well as great flexibility of integration into your premises. The manufacture of this equipment complies with the European Machine Directive.

Illustrations



The bench is installed on an aluminium profile structure equipped with four braked-directional castors.

The bench has a main power supply box that complies with European electrical standards with standby power disconnector, white voltage presence light, emergency stop button, ground connection and differential protection. It is equipped with a 7-inch touch screen displaying temperature measurements.
The elements in contact with the reagents are made of Teflon, HDPE, stainless steel and borosilicate glass.

1. **Two Feed Tanks**
   - Material: PEHD
   - Volume: 20 L

2. **Feeding Pumps**
   - variable speed
   -Two-pass valve for return to the tank

3. **Float Flow Meters for Mixing and Solvent**

Technical details

4. **Extraction column**
   - Material: borosilicate glass
   - ND: 50 mm
   - Height: 1100 mm
   - baffles ensuring better shear

5. **Glass decanter for heavy phase**

6. **Glass decanter for light phase**

7. **Stirrer**
   - variable speed
   - includes 20 Rushton type turbines

8. **Extraction pot**
   - Allows adjustment of the interphase level
   - Material: borosilicate glass
   - Adjustable height

9. **Sampling valves**
   - Extract and raffinate

10. **Graduated recipes for extract and raffinate**
    -Volume: 0.5L

11. **Two recovery tanks**
    - Material : PEHD
    - Volume : 20 L

12. **Pt100 Temperature Probes**
    T1: base
    T2: Lower 1/3 of the column
    T3: Upper 1/3 of the column
    T4: column head
    T5: Mixture feeding
    T6: Solvent feeding

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Services required

- Electrical supply : 230 Vac – 50 Hz – 10 A
- Electrical network : 1 phase) + Neutral +
- Dimensions: (L x W x H mm): 1845 x 800x 2210
- weight (Kg): 160

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

Documentation

- Notice d'instructions
- Technical documentation of components
- Practical work
- Electrical diagram
- Fluidic diagram
- CE Certificate of Conformity

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