

PULSED LIQUID-LIQUID EXTRACTION PILOT UNIT



Experimental capabilities

- Identification of the components of a liquid-liquid extraction plant
- Preparation of chemicals and commissioning of the installation
- Study of liquid-liquid extraction
- Study of the efficiency of the column
- Mass balance

Operating principle

The GPC E20 bench allows the study of liquid-liquid extraction with a pneumatic pulser.

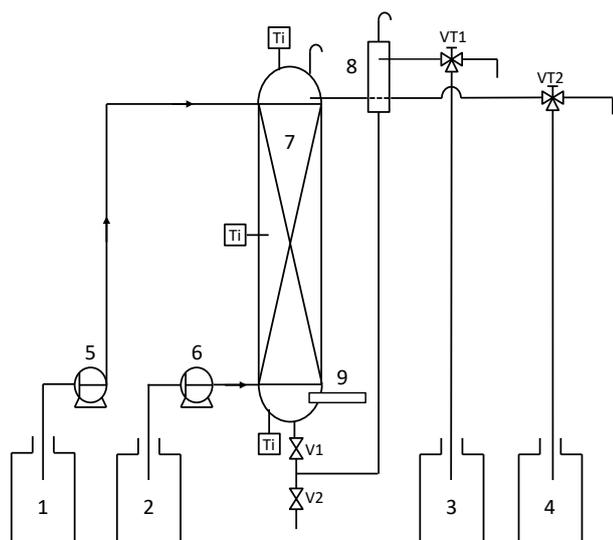
A pump provides supply of the mixture through the top of the column. A second pump ensures the solvent supply from the bottom of the column. The mixture and the solvent therefore will circulate at counter-current, which will allow the solvent to extract the acetic acid from the water.

The robust design of this device makes it suitable for use in schools.

The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises.

The manufacture of this equipment complies with the European standard for machinery manufacturing

Illustrations



This unit is installed on a 4-wheel aluminum frame. It includes an electrical cabinet with general disconnecter and differential circuit breaker.

1. **Supply tray of the mixture**
 - Material: high density polyethylene
 - Volume : 20 L
2. **Solvent supply bin**
 - Material: high density polyethylene
 - Volume : 20 L

3. **Raffinate recovery bin**
 - Material: high density polyethylene
 - Volume : 20 L
4. **Extract recovery bin**
 - Material: high density polyethylene
 - Volume : 20 L
5. **Supply pump of the mixture**
 - peristaltic ppump
 - $Q_{maxi} = 10 \text{ L/h}$
6. **Supply pump for solvent**
 - peristaltic ppump
 - $Q_{maxi} = 10 \text{ L/h}$

7. **Extraction column**
 - Material: borosilicate glass
 - DN : 50 mm
 - Length : 1000 mm

8. **Extraction leg**
 - Material: borosilicate glass
 - adjustable height

9. **Pulser**
 - Pneumatic pulsation system with variable frequency
 - pulser made of PTFE

3 Temperature probes of type Pt 100 with digital indicator:

- Top of column
- Middle of column
- Bottom of column

Services required

- Electrical supply : 230 Vac – 50 Hz – 10 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 1500 x 650 x 1950
- weight (Kg): 150

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

- User's manual
- Technical documentation of the components
- Lab exercises
- Wiring diagram
- Hydraulic diagram
- Certificate of conformity CE