

Extraction liquide-liquide avec rectification



PEDAGOGICAL APPLICATIONS

- Use of a liquid-liquid extraction with rectification
- Determination of the number of theoretical stages
- Column efficiency
- Material and thermal balance

PRINCIPLE OF OPERATION

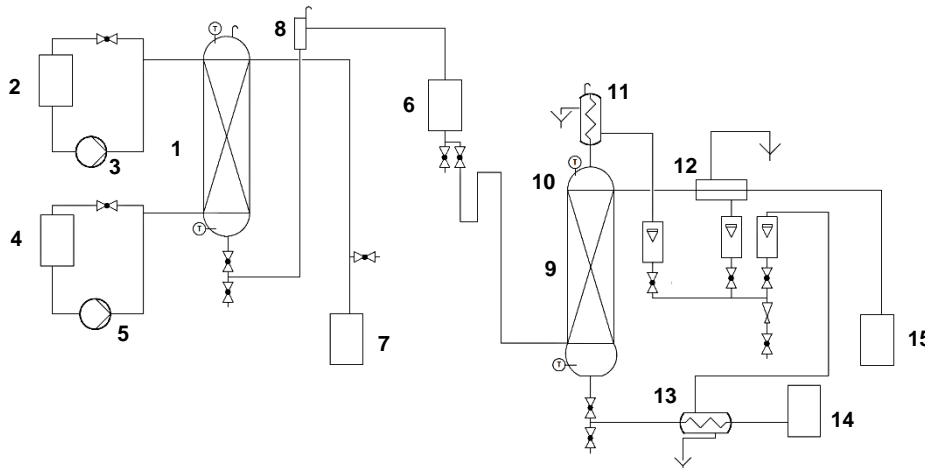
The GPCE40 bench allows the study of liquid-liquid extraction with rectification.

First, we will perform a liquid-liquid extraction and then the extract is sent to a rectification column (distillation) to recover the solvent and to enrich the extract.

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

Its anodized aluminum structure on multidirectional wheels with brakes gives it a very high robustness as well as a great flexibility of integration in your premises. The manufacture of this equipment complies with the European Machinery Directive.

Illustrations



Technical specifications

- | | |
|---|--|
| <p>1. Extraction column
- Material: borosilicate glass
- DN: 50 mm
- Length: 1000 mm</p> <p>2. Solvent feed tray
- Material: polyethylene
- Volume: 20 L</p> <p>3. Solvent feed pump</p> <p>4. Feed tray of the mixture
- Material: polyethylene
- Volume: 20 L</p> <p>5. Mixture feed pump</p> <p>6. Extract recovery tray
- Material: polyethylene
- Volume: 20 L</p> <p>7. Raffinate recovery tray
- Material: polyethylene
- Volume: 20 L</p> <p>8. Barometric leg
- Part to adjust the interphase in the column</p> <p>9. Rectification column
- 5L borosilicate glass boiler
- Background heating resistance: Total P = 2kW
- Adjustment of the heating power
- Temperature probe Pt 100</p> | <p>10. Manual reflux head
- Material: borosilicate glass
- Temperature probe Pt 100</p> <p>11. Inclined condenser
- Borosilicate glass material</p> <p>12. Distillate exchanger
- Material: borosilicate glass</p> <p>13. Extract exchanger
- Material: borosilicate glass</p> <p>14. Tray of the extract of the base
- Material: polyethylene
- Volume: 20 L</p> <p>15. Distillate tray
- Material: polyethylene
- Volume: 20 L</p> <p>16. Electrical steel supply box
- Including standard safety: differential circuit breaker, emergency stop, circuit breakers, general disconnecter
- start buttoning
- 7" touch screen displaying the following measurements on a synoptic:
- 5 temperatures
- 1 boiler control power in %</p> <p>17. Three water flow measurements with adjustment valve for cooling the condenser and distillate exchangers and extract.</p> |
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Mobile structure in screwed anodized aluminum profile equipped with directional castors with brake.

Installation Specifications

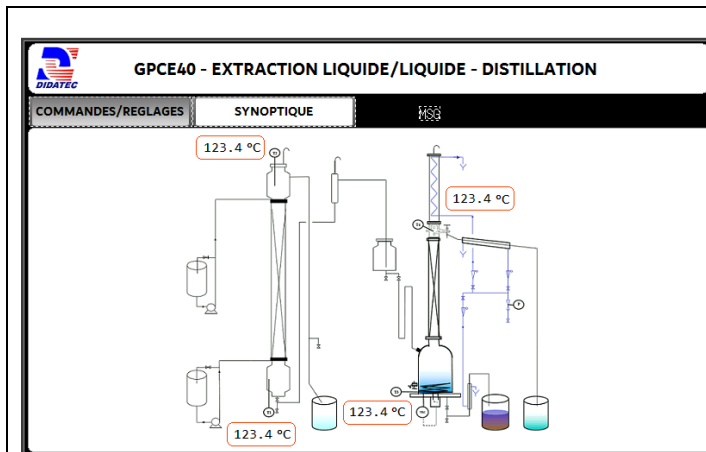
- Power supply: 230 VAC – 50 Hz – 20 A
- Power supply type: 1 phase + Neutral + Earth
- Water supply: 15 L/min – 3 bar
- Water evacuation: at ground level
- Dimensions: (WxWxH mm): 23708001955
- Weight (Kg):180

Note: As part of an installation of the equipment by our services, all connections to the networks must be less than 2m from the machine

Documentation

- Instructions
- Technical file of the components
- Lab exercises
- wiring diagram
- Fluidic diagram
- CE certificate of conformity

Included with the installation: Touch screen



Control of the different actuators and display of the evolution of the process measurements:

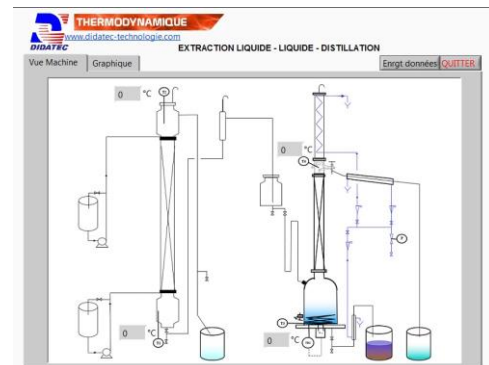
- T1:** top column temperature
- T2:** low column temperature
- T3:** temperature in the boiler
- T4:** reflux head temperature
- T5:** temperature inlet water condenser
- T5:** temperature output water condenser

Supervision: Measurements and curve plotting

The bench is also originally equipped with supervision and parameterization software. The connection to the PC is made by WIFI. The software is divided into two parts:

SYNOPTIC:

In this window we find the synoptic of the machine with the location of the different measurements of the process and their values.



GRAPHIC:

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

