

GPC RC1

Comparison of continuous reactors

DESCRIPTION

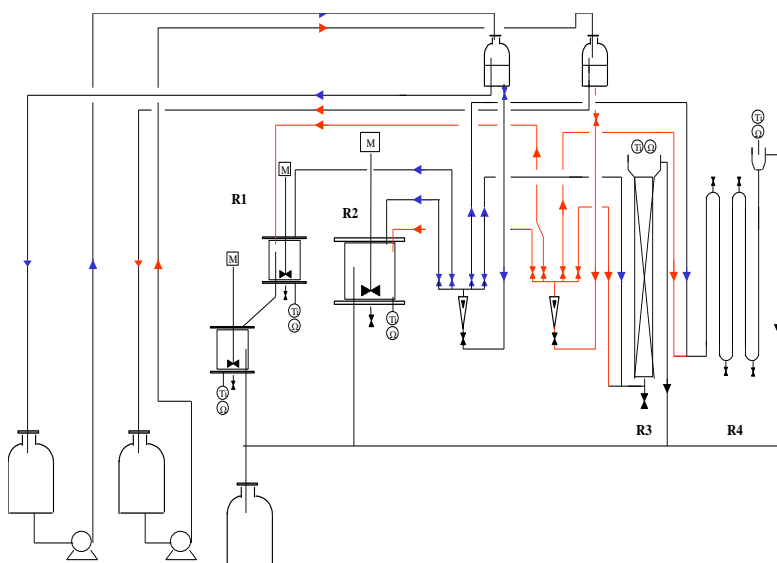
- This unit is designed for a comparative study of four reactors (with a similar volume – 1 L), which work in continuous mode.
- Reactor Types:
 - 1 reactor with agitation consisting of two 0.5 L- reactors in cascade,
 - 1 reactor, with agitation
 - 1 reactor-cylinder of large diameter with plunger.
 - 1 reactor-S shaped cylinder, narrow in diameter.
- Each reactor is equipped with a conductivity sensor.
- Chemical reactions using two reagents are studied.
- This unit is mounted on a frame with little wheels making it easy to move.
- The unit is delivered complete with technical documentation and instructions.



SUGGESTED APPLICATIONS

- Mass balance : material transmission
- Hydrodynamic study of the reactors
- Determination of the conversion rate
 $T = Ct/C0$
- Determination of the Staying Time (DTS)
- Effect of the action of the agitator (comparative study with and without any agitation)
- Industrial applications

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INSTRUMENTS

- 5 conductivity cells – 2 poles $0.1 \mu\text{S}/\text{cm}$ at $100 \mu\text{S}/\text{cm} \pm 2\%$ with a Pt 1000 temperature probe : $0-100 \text{ }^\circ\text{C} \pm 0.5 \text{ }^\circ\text{C}$
- Conductivity: electro luminescent display with simultaneous indication of the temperature

The frame is an aluminum section, mounted on 4 little wheels with brakes

DIMENSIONS

Length : 2290 mm
Width : 800 mm
Height : 2145 mm
Mass : 152 kg

UTILITIES

Electricity : 220/380 VAC – 50/60Hz
Network water and evacuation

- 1. Reagent Supply tanks**
 - High density polyethylene
 - Volume 30 L
- 2. Supply pump for reagents**
 - Centrifugal and electromagnetic
 - Flow rate : $0-600 \text{ min}^{-1}$ at 4 mce
- 3. Constant flow rate tanks for the reagents**
 - 3.3 borosilicate glass - DN 50
- 4. Flow meters**
 - With stainless steel floater - $0-46 \text{ L}/\text{h}$
 - With 316 L stainless steel adjusting valve
- 5. Manifolds**
 - 316 L stainless steel
 - Equipped with 4 $1/4$ turn- valves for the distribution of reagents into each reactor
- 6. Reactor R1 : perfectly agitated**
 - 2 reactors in cascade – volume 0.5 L each
 - 3.3 borosilicate glass
 - each reactor is equipped with a variable-speed agitator $0-2000 \text{ rpm}$
- 7. Reactor R2 : perfectly agitated**
 - Volume 1 L
 - 3.3 borosilicate glass
 - with variable-speed agitator $0-2000 \text{ rpm}$
- 8. Reactor R3 : high-dispersion plunger**
 - Column DN 50 // $L=550 \text{ mm}$
 - 3.3 borosilicate glass
 - Padding : glass beads - $\phi 3 \text{ mm}$
 - Padding support : PTFE
- 9. Reactor R4 : low-dispersion plunger**
 - Coil DN15 // $L = 6000 \text{ mm}$
 - 3.3 borosilicate glass
 - with 4 purging connections and draining valves
- 10. Receiving tank**
 - High density polyethylene
 - Volume 20 L