



*Non contractual photo*

**SERVICE : 230 V / 50 HZ / SINGLE PHASE: 1 KW. COLD WATER 20 ° C / 3 BAR: 1 M3 / H. EMPTY 100 MBAR: 2 NM3 / H STEAM 4 BAR: 5 KG / H. SEWER FOR HEATING CONDENSATES.**  
**DIMENSIONS : 1,90 M X 0,83 M X 3,05 M**

**WEIGHT : ~ 250 KG**

## REFERENCE : MP1070

### Principle of operation

The reaction is a fundamental operation of the chemical industry, making it possible to produce, from simple molecules (reagents), more and more complex compounds intended for a growing number of industries (chemistry, pharmacy, etc.).

The reactor is of the perfectly stirred type and operates discontinuously: the quantity of reagent is introduced at the beginning of the handling at one time or controlled as a function of time. The reactor also makes it possible to make "batch" crystallizations.

### Educational Objectives :

- Study of simple reactions.
- Study of kinetics of reaction.
- Study of reversible or irreversible reactions.
- Study of evaporation.
- Crystallization by evaporation, chemical reaction or cooling.
- Total reflux reactions.
- Discontinuous distillation.
- Material balance.
- Conversion rate.
- Thermal balance.

### Technical specifications :

#### Technical specifications.

#### Equipment

- Storage reagent recipe in borosilicate glass, graduated with "juice elevator" system for filling reagents.
- Cylindrical reactor type "GRIGNARD": with double steam heating jacket, flush drain valve and operator protection; borosilicate glass lid.
- 316L stainless steel variable speed stirring unit with inclined tri-blade impeller.
- Cooling coil of the 316L stainless steel reaction mass.
- Column in borosilicate glass, in one element with 316L stainless steel lining.
- Borosilicate glass column head, with temperature measurement, equipped with a timer valve to control the reflux ratio.
- Vertical 316L stainless steel condenser, borosilicate glass ferrule.
- 316L stainless steel distillate coolant.
- Recipes of borosilicate glass distillate, graduated.
- Circuit for relaxing and adjusting the heating steam with operator protection panel.
- Heating hoses for insulated heating steam.
- 316L stainless steel connection pipes.

- Support frame in 304L stainless steel tubes and aluminum nuts.

### **Instrumentation**

- Condenser cooling water supply equipped with a float flowmeter with its control valve and a water circulation controller to stop heating due to lack of cooling.
- Measurement of supply pressure of the heating vapor by manometer.
- Control and control cabinet, IP55, equipped with emergency stop, operating buttons and the following interfaces:
- Electronic timer controlling the valve of the column head.
- Regulator of the temperature of the reactor.
- Variator of the stirring speed.
- Digital indicator of stirring speed.
- Two digital temperature indicators of five Pt100 ? probes.

### **OPTIONS :**

Option 1: Reduced pressure bag filter in 316L stainless steel; capacity 9 liters (cake) + 9 liters (filtrate)