

# ASCENDING FILM EVAPORATOR

**REFERENCE : MP1050**



*Non contractual photo*

**SERVICE : 230 V / 50 HZ / SINGLE PHASE: 1 KW. COLD WATER 10 ° C / 3 BAR: 1 M3 / H. STEAM 6 BAR: 5 KG / H. EMPTY 10 MBAR: 20 NM3 / H SEWER FOR HEATING CONDENSATES.**  
**DIMENSIONS : 1,60 M X 0,62 M X 3,35 M**

**WEIGHT : 150KG**

## Principle of operation

The purpose of evaporation is to concentrate a solution composed of a volatile solvent and a less volatile solute. Upwash evaporation is a continuous process in which the solution is heated in a vertical single-tubular evaporator to vaporize the solvent. In the head cyclone, the mists, formed by the vaporization of the solution and composed of solvent vapor and concentrated solution, are separated into two phases: the concentrated liquid phase is removed by gravity and stored, the vapor is condensed before to be collected in a recipe.

## Educational Objectives :

- Continuous concentration of an evaporation solution
- Influence of operating conditions
- Thermal balances
- Material balances

## Technical specifications :

### Technical specifications

#### Equipment

- Storage can of the polyethylene feed solution.
- Feeder dosing pump.
- Evaporator with ascending film, double steam heating jacket, removable insulation.
- Cylindrical cone cyclone made of borosilicate glass.
- Vertical condenser, borosilicate glass ferrule, 316L stainless steel coil heat exchanger
- Solvent refrigerant.
- Borosilicate glass solvent recipe, graduated.
- Concentrate refrigerant.
- Recipe of borosilicate glass concentrate, graduated.
- Vacuum trap made of borosilicate glass.
- Circuit for relaxing and adjusting the heating steam with operator protection panel.
- 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 heating steam by manometers.

- Pressure measurement of the process by manometer.
- Control and control cabinet, IP55, equipped with emergency stop, operating buttons and the following interfaces :
- Two digital temperature indicators of nine probes type Pt100 ?.