

# PILODIST®

laboratory & process technology

## FILMDIST® SP 200 HT



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## **FILMDIST SP 200 HT**

Turn-key short path distillation system for universal application in laboratories.

The short path distillation system is a bench scale system and designed for distillation of thermally sensitive products under vacuum. As a result all obtained values and datas of this pilot operation can be used also for larger systems. The system is used for organic products of thermic instability, high molecular weight and/or high viscosity at operating temperatures and depending on the type of rotating wiper elements.

The evaporation surface consists of a vertical glass cylinder, heated by an electrical heating mantle surrounding the evaporator for temperatures up to 450°C. The electrical version is also able to operate in the lower range (20-200°C), but the thermal oil version got a more uniform temperature which is useful for high sensitive products (pharmaceutic, aromatics, etc.).

The product is being spread to a thin film on the inner surface of the evaporator by means of rotating wiper elements, available in glass and PTFE. These wipers are being pressed to the inner wall of the surface by centrifugal forces where they produce a thin film with a continuous distribution of the liquid film. The condenser is vertically arranged in the centre of the glass evaporator, heated by means of a thermostat or alternatively by an electrical heating mantle, depending on the operating temperature to be achieved.

For the optimization of the evaporation process the type of wipers as well as the speed of the rotation can be adjusted to the viscosity of the product to be evaporated. The system includes a controller for vacuum, temperature, power supply for vacuum pump, thermostat and speed of wiper motor.

In addition to the double stage vacuum pump the system is equipped with an oil diffusion pump incl. all corresponding accessories and control elements to achieve a high vacuum range of up to  $10^{-5}$  Torr.

The rotating wiper basket is made of aluminium, hard covered with PTFE slide coating. It is available in 3 different versions (to be selected) to accommodate 3 different types of wiper elements:

- Type a: PTFE wipers and glass wipers which can be used alternatively. These wiper elements are being moved by centrifugal forces
- Type b: PTFE wipers with spiral gearing
- Type c: PTFE wipers as rolls

The cleaning of the evaporator is very easy due to an easy removable fastener. SP 200 is offered as a turn-key system including complete vacuum accessories. A mobile rack to accommodate the system as well as accessories is offered optionally.

## Technical Data

|                        |  |
|------------------------|--|
| Operating temperature  | : up to 450°C  |
| Operating pressure     | : standard ATM, 100...0,1 Torr<br>: optionally ATM, down to $1 \times 10^{-5}$ Torr                        |
| Feed range             | : approx. 50-1000 ml/h, dep. on distillation parameters  |
| Evaporator surface     | : 200 cm <sup>2</sup> , short path   |
| Evaporator             | : borosilicate glass   |
| Feed vessel            | : 250 ml, graduated  |
| Product receivers      | : 2 x 250 ml   |
| Evaporation volume     | : 96% of feed volume   |
| Speed range of stirrer | : 30...2000 rpm  |
| Mains supply           | : 3 x 208 – 260 V, 50 Hz (60 Hz upon request)  |
| Dimensions (w x h x d) | : 900 x 1200 x 750 mm (without optional mobile rack)<br>: 1050 x 2100 x 780 mm (with optional mobile rack) |