

MIXER-GRANULATOR-DRYER

REFERENCE : MP411-B



Non contractual photo

SERVICE : 3,5 KW - 380V THREE-PHASE

DIMENSIONS : 1000 X 1900 X 1000 MM

WEIGHT : ~ 200KG

This device is versatile. It is a replica of an industrial technology on a pilot scale. It allows the study of mixing, granulation and drying of powders for the manufacture of pharmaceutical tablets. It is also used for the formulation of creams and emulsions in cosmetology or agro-food.

Educational Objectives :

- Study the unitary operation of mixing.
- Study the unit operation of wet granulation
- Study the unitary drying operation by conduction and under vacuum
- Study the influence of different binders on wet granulation.
- Study the influence of the parameters of the operation on this process (stirring speed, temperature, pressure).

measures

- Temperature, pressure, stirring speed, stirring torque.

Technical specifications :

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1 - The tank

- A bowl with a hemispherical bottom surmounted by a straight ring part and a conical upper bottom, made of 316 L stainless steel. It has a double stainless steel casing. Its capacity is 10 liters useful.
- The double jacket is insulated by a rock wool insulation with 316 stainless steel waterproofing.
- Maximum service conditions:
- Bowl:
- Pressure: 1.4 bar absolute (gas)
- Empty: 40 mbar
- Temperature: 90 ° C
- Double envelope :
- Pressure: 2 absolute bars (liquid)
- Temperature: 100 ° C

2 - The lid

- The lid includes the following taps or accesses:
- A viewing window with diameter lighting 63.
- A tapped sleeve on tank for implantation of a Pt 100 temperature probe.
- Vacuum connection tubing with SMS 25 quick coupling.
- A threaded sleeve for manometer.
- An inch diameter threaded pipe for mounting a valve and vacuum valve. SMS 51 quick-connect tubing for filling powders and liquids.
- Tubing with quick connector clamp 25 for mounting the filter.

3 - A fast disperser

- This disperser is fixed on the flange located at the upper part of the apparatus and comprises:
- An electric motor with a power of 1.1 KW
- A coupling sleeve
- Turret support, stainless steel with bearings and dry mechanical seal

4 - A three-way anchor

Anchor speed: 300 rpm

It is fixed in the central part of the lid and comprises :

- a gear motor with a power of 2.2 KW
- a support turret, made of stainless steel, with bearings and dry mechanical seal.

5 - A painted steel table equipped with 4 wheels

- A telescopic guide column

6 - Sécurité

- Electrical safety on lid lifting by IV key

7 - Accessories

- 1 vacuum valve tap, inch diameter
- 1 manovacuometer -1, +3 bars
- 1 product temperature probe
- 1 porthole with lighting
- 1 stainless steel housing for the filter with polypropylene cartridge of surface 0,025 m2
- 1 stainless steel safety valve calibrated at 1.4 bar absolute on the lid
- 1 safety valve in brass calibrated at 2 bar absolute on the double jacket circuit.

8 - Electrical equipment and control cabinet

- 1 three-phase motor, ventilated, power 2 200 W at 500 rpm.
- 1 electronic speed variator, variable speed by potentiometer from 0 to 300 rpm. Digital display of speed.
- 1 three-phase motor, power 1,100 W at 3,000 rpm, preset speed to 3,000
- 1 pocket of programming allowing to follow also the parameters of agitation (in particular the absorbed powers) push button stop punch.
- 1 product temperature display.
- control of the lighting of the machine by switch on the window placed on the lid.