



Spray Dryer (SMT-SD-115)

Spray drying is the transformation of feed from fluid state into a dried particulate form by spraying feed into hot drying medium. Spray drying technology is the most widely used process in chemical, minerals, pharmaceuticals, food, and dyestuff industries for converting liquid solution/suspension/slurry/emulsion into powder, granule, or agglomerates. The advantages of spray drying are consistent product quality, with better control on product parameter like product moisture, bulk density, particle size, dispersion, flow ability, etc.

TECHNICAL SPECIFICATIONS

Technical Data:

- Material: SS 316 for product contacts parts.
- Insulated with steel sheathing on exterior.
- Includes Nozzle atomizer.
- Includes exhaust air filter.
- Capacity: Approximately 5-15 litter/hr. evaporation depending on drying temperature.
- Dimensions: 39" diameter X 39" straight side, approximately 38" deep 40-degree cone bottom.
- Electrical heating power: 10 KW or better for maximum 300 °C temperature or above.
- Digital temperature controller.
- Blower fan with adjustable speed control.
- Side door with locking levers and site glass window.
- On leg supports. Includes Control Panel.
- Spray Nozzle and cyclone with a powder collecting bottle.



Applications of Spray Dryer Machine

1. In the food industry: fruit powder, milk powder, coffee, tea, eggs, cereals, spices and flowering etc.
2. Pharmaceutical: antibiotics, medical ingredients, additives, and so on.
3. Industrial: paint pigments, ceramic materials, catalyst supports.

Working Principle of Spray Dryer Machine

After filtering and heating, the air is blown into air distributor that is on the top of the drying machine. The hot air in spiral form equably enters the drying chamber. At the same time, liquid raw materials pass through the high-speed centrifugal sprayer on the top of the machine, moreover, they are rotated and sprayed into the extreme slim mist liquid beads. So, the evenly and swirly distributed hot air completely contact with raw materials. In several seconds, the materials will be dried into a powder and discharged continuously from the bottom of the drying tower

Main Parts of Powder Drying Machine

1. Feeding system
 - Feeding pump is to keep feeding smoothly
 - The atomizer is driven by motor directly with variable frequency control and imported bearings. The atomizer can make slurry vaporize continuously and evenly and enlarges the superficial area for heat exchange with hot air.
 - The induced draft fan can help remove water steam out.
2. Air processing system – It adopts primary filter and medium efficiency filter to ensure that the air used for drying is the clean and filtered air
3. Drying system – Drying chamber consists of hot air volume, hot air distributor, air disperser, inner tower body, outer tower body, tower frame, discharge pipe, thermal insulation material, observing and clean door, lamp hole and etc
4. Material collecting system – The first cyclone separator can collect 80% powder and the other 19.8% can be collected by the second cyclone separator. The total collecting rate can be above 90%.
5. Electric controller – Start the motor stable.