

Twin screw pump is a kind of positive displacement pumps that are widely used in a variety of industries for the transfer of liquids with high viscosity or containing solids. They are particularly useful for pumping viscous fluids, such as crude oil, heavy fuel oils, and asphalt, as well as for applications where product integrity is critical. After years of R&D and improvement, SeFluid's STSP series twin screw pump has continuously improved its efficiency and quality. It has been used in many industrial fields that cannot be replaced by conventional centrifugal pumps, and has been highly praised by users.

Working Principles Of A Spray Dryer

The operation of a spray dryer can be broken down into several key steps. First, the liquid feed is pumped into the spray dryer chamber. Inside the chamber, the liquid is atomized into tiny droplets through the use of high-pressure nozzles or a rotary atomizer. These droplets are then exposed to hot air or gas, which rapidly evaporates the liquid content, leaving behind solid particles.

The key to the efficiency of a spray dryer is the large surface area created by the fine droplets, allowing for rapid drying. The dried particles are collected at the bottom of the drying chamber or through a cyclone separator. The remaining gas or air is typically filtered and recirculated, ensuring minimal waste and energy conservation.

Advantages Of SeFluid's Spray Dryer Series

SeFluid's Spray dryer series offer several advantages that make them a preferred choice in the drying process of various industries:

High Efficiency

Spray drying allows for the production of fine powders with high yields, making it an efficient process for large-scale production.

Preservation Of Product Characteristics

The gentle drying process of spray drying helps preserve the product's integrity, particularly in sensitive applications like food and pharmaceuticals.

Control Over Particle Size

By adjusting the atomization process and drying conditions, manufacturers can control the size and properties of the resulting powder particles.

Fast Drying Speed

After atomization, the surface area of the liquid is greatly increased. In the hot air flow, 95-98% of the water can be evaporated instantly, and the drying time is only a few seconds. It is especially suitable for drying heat-sensitive materials.

Good Product Quality

The dried product has good uniformity, flowability, and solubility. The product purity is high and the quality is good.

Simplified Production Process

The production process is simplified and the operation and control are convenient. Liquids with a moisture content of 40-60% (up to 90% for specific materials) can be dried into powder products in one step. After drying, no crushing or screening is required, which can reduce production processes and improve product purity. It is convenient to adjust, control, and manage the product particle size, loose density, and moisture content within a specific range by changing the operating conditions.

Versatility

Spray drying is suitable for a wide range of materials, from dairy products and detergents to ceramics and pigments.



Applications Of Spray Dryers

Food Industry

Spray dryers are used for producing powdered milk, coffee, and food flavorings, as they can retain the original taste and aroma of the ingredients.

Chemicals

Chemical manufacturers use spray dryers for producing catalysts, detergents, and specialty chemicals.

Pharmaceuticals

In the pharmaceutical industry, spray drying is employed to create drugs in powder form, ensuring precise dosages and rapid dissolution.

Ceramics and Pigments

The production of ceramic materials, pigments, and dyes often involves spray drying to achieve the desired particle size and properties.

Technical Specification

SPEC. / MODEL	SSD-5	SSD-25	SSD-50	SSD-150	200-2000
INLET TEMPERATURE	140-350 °C				
OUTLET TEMPERATURE	80-90 °C				
MAX. EVAPORATION	5 kg/h	25 kg/h	50 kg/h	150 kg/h	200-2000 kg/h
MAX. SPEED	25000 rpm	18000 rpm	18000 rpm	15000 rpm	8000-15000 rpm
HEAT SOURCE	Electricity	Electricity/Steam	Electricity+Steam, Fuel Oil, Fuel Gas, Air Heater		
HEATING POWER	9 kw	36 kw	72 kw	99 kw	Customized
POWDER RATE	≥95				