

LABSPRAY

LABFREEZ®



Laboratory Spray Dryer

Aqueous, Organic solvent, Heat sensitive material
Making large particle, Granulation, Coating
1.5kg~5kg per hour base on your requirements

ΔΙΑ•Μ
современная лаборатория

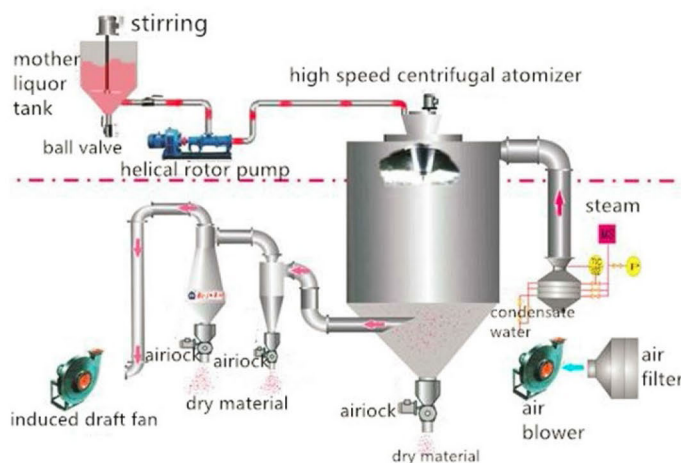
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What is spray drying?

Spray drying is a process of drying water solution, emulsion and so on. It is widely used in Industrial Chemistry and food industry. Dry milk, detergents and dyes are only some of the products currently dried by spray dryer. Spray drying can be used to preserve food or only as a quick drying method with the advantages light weight and small volume.

Spray drying is usually a method of injecting a fluid mixture into the hot dry air for drying. The solvent usually is water-based; it is instantly volatilized by hot air.

This evaporation process removes heat quickly so that the product is dried gently without being affected by heat. The product becomes powder, particle, or lump within seconds.



Applications



Biology, chemical
pharmaceutical
industry



New materials
science

Bioengineering
industry



Chemical
industry



SD-2000 Series Vacuum Spray Dryer



Why need vacuum spray dryer?

The rapid drying of heat-sensitive material has been troubling plenty of researchers. Common vacuum drying and spray drying cause great damage to biological activity or structure of material. Freeze drying has disadvantages such as long drying time and low energy efficiency. Moreover, the material after freeze drying is lumpy and needs to be smashed a second time.

What can vacuum spray dryer do?

Our company after long-term communication with researchers, realizes that low-temperature spray drying is able to solve the problems of drying of heat-sensitive material effectively. Therefore, we developed the SD-2000 low-temperature spray dryer for laboratory. The dryer not only inherits many advantages of SD-15 mini spray dryer, but also integrates the merits of vacuum drying creatively. It is capable of drying material rapidly (1 second) when the temperature of inlet air is around 50°C. The damage to activity or structure of material during drying is completely prevented. It is a convenient and safe method for drying heat-sensitive material, such

as biological products (e.g. enzyme preparation and viable bacteria), extract of natural product from traditional Chinese medicine with high sugar content, heat-labile high polymer material, and material that gasifies when contacting with heat.

Controls & Functionality

SD-2000 vacuum spray dryer is designed to ensure that all functions are simple to select and adjust, to quickly achieve the optimum conditions for spray drying. Both use a clear touch screen display, the operator can control the following functions:

- Inlet Temperature
- Airflow Volume
- Air compressor flow
- Pump Speed
- De-blocker Frequency

Easy to use

- Color Touch Screen, Fast setup and cleaning times
- Scale up to pilot or industrial scale possible.
- Visible process due to glass assembly
- Adjustable particle size (1 – 100 microns)

Two Fluid Nozzle with SUS316L stainless steel

The stainless steel spray assembly consists of an inner tube for the liquid sample leading to a small diameter jet. An outer tube directs compressed air to the nozzle. All units are supplied with 0.7mm jets, other sizes are available as accessories. The spray assembly incorporates an automatic de-blocking device that prevents the jet nozzle from

becoming blocked, the de-blocking needle is activated by an integral compressor. De-blocker is sometimes necessary with materials which may solidify or when large particles in suspension cause blockages in the jet.



Temperature protection The heater has an extreme high temperature when experiment finished, which needs air blower to continue working in order to reduce the inside temperature and ensure the safety of equipment, SD-2000 spray dryer can control air blower running automatically, even the operator wants to turn off the air blower, the system would prevent the operator until the temperature of system reduce to the default security state of system ;

SUS 304 stainless steel Spray chamber, cyclone separator, collector are all made of SUS 304 stainless steel . It can work in a no-pollution and stable environment, and sight glass equipped so the whole process can be inspected. All the spare parts are easy to install and clean.

Trusted by the users Over 1,500 domestic customers of top universities, enterprises and research institutes use our mini spray dryer. And exported to more than 40 countries & regions such as the United States, Italy, South Korea, Mexico, Singapore, Canada, Malaysia, Chile and Russia etc.

Wide range of applications

SD-2000 vacuum spray dryer can be used in a wide range of applications where the production of a free-flowing powder sample is required. This technique has successfully processed materials in the following areas:

- Oxide • Blood • Polymers and Resins
- Beverages • Flavours & Colourings
- Milk & Egg Products • Plant & Vegetable Extracts
- Pharmaceuticals • Heat Sensitive Materials
- Plastics • Perfumes • Dyestuffs
- Ceramics & Advanced Materials
- Soaps & Detergents •Textiles
- Foodstuffs • Adhesives
- Bones, Teeth & Tooth Amalgam and many others



Specifications:

Model	SD-2000	SD-2000A
Material	External SS304 and material contact part SS316, two-fluid spray atomization structure, with the movable roller	External SS304 and material contact part SS316, two-fluid spray atomization structure, with the movable roller
Inlet air temperature	50 ~ 150 ° C	50 ~ 150 ° C

control		
Process capacity	1.5L/h	3L/h
Nozzle cleaner	with a nozzle cleaner (needle deblock), will automatically clear when the nozzle is blocked, the frequency of the needle can be automatically adjusted;	with a nozzle cleaner (needle deblock), will automatically clear when the nozzle is blocked, the frequency of the needle can be automatically adjusted;
Minimum sample size	50mL (depending on the difference in solid content of materials)	50mL (depending on the difference in solid content of materials)
Temperature control accuracy	± 1 ° C, real-time regulation of PID constant temperature control technology,	± 1 ° C, real-time regulation of PID constant temperature control technology,
Nozzle diameter	0.5mm, 0.7mm, 1mm, 1.5mm, 2mm optional, and can be customized according to customer requirements;	0.5mm, 0.7mm, 1mm, 1.5mm, 2mm optional, and can be customized according to customer requirements;
Machine power	6KW 380V 50HZ	9KW 380V 50HZ
Instant spray drying temperature	low temperature (50 ° C)	low temperature (50 ° C)
Powder size	1~25um	1~100um
Degree of vacuum	-0.03 ~ 0.09MPA	-0.03 ~ 0.09MPA
Display	color LCD touch screen operation control, full English operation interface, automatic control and manual control combined, unique temperature change curve online display, conducive to data observation and scientific research	color LCD touch screen operation control, full English operation interface, automatic control and manual control combined, unique temperature change curve online display, conducive to data observation and scientific research
Pump	Supporting imported British RS brand peristaltic pump and motor	Supporting imported British RS brand peristaltic pump and motor
Cooling water	With water cooling system to support the use of heat sensitive and high concentration products, provide corresponding patent certificate	With water cooling system to support the use of heat sensitive and high concentration products, provide corresponding patent certificate
Dimensions	950 × 700 × 1715MM (L × W × H)	950 × 700 × 1715MM (L × W × H)
Weight	205kg	205kg

Why choose us ?

LABFREEZ® Lab Spray Dryer have been applied by over 1,500 domestic customers of top universities, enterprises and research institutes including AMSS Institute of Systems Science, Tsinghua University, Shanghai Jiao Tong University, South China University of Technology, Wuhan University, Tongrentang, Xiehe Pharmaceutical, Bright Dairy, Hong Kong Polytechnic University, Harbin Pharmaceutical Group, Strong Group, General Electric (GE) Shanghai R&D Center, Jiangnan University, China Agricultural University, Zhejiang University, Tongji University and Huazhong University of Science and Technology. With firm grasp of domestic market advantage, LABFREEZ® also vigorously expands overseas markets with equipment exported to the United States, Italy, South Korea, Singapore, Canada, Malaysia, Chile and Russia, receiving extensive praise in view of product quality.

How to find the model?

SD-15A lab spray dryer can be used for organic & water solvents

SD-1800F lab low temperature spray dryer can be used for thermo-sensitive materials and high carbohydrate compositions materials.

SD-2000 lab vacuum spray dryer can be used for probiotics, enzyme and other thermo-sensitive materials.

SD-3000F Lab spray freeze dryer is a new freeze dryer method which is faster than traditional freeze dryer.

SD-1000 laboratory spray granulator (fluidized bed granulation) can be used for granulation and coating.)

Certificates



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