



Specialized in laboratory equipment

YC-1800 LABORATORY SCALE SPRAY DRYER

SHANGHAI PILOTECH INSTRUMENT & EQUIPMENT CO., LTD



Focused • Perfection • Reputation • Innovation

The world leading R&D solution for Spray Drying

- Famous brand for spray dryer in China
- 15 years continuous development
- Over 1,500 customers all over the world



Mini Spray Dryer YC-1800
The world leading R&D solution
for Spray Drying

Why you need YC-1800 low temperature spray dryer?

YC-1800 mini spray dryer is a kind of drying machine developed by our company based on years of experience in spray drying technology. It applies to TCM products (juice products) with low melting point and high sugar content. With YC-1800 spray dryer, the material will not stick to inner wall, coke or absorb moisture. When common spray dryer is used for spray drying of extract of natural product from TCM (Chinese herbal medicine) and juice in laboratory, the material melts immediately after spray drying starts, and sticks to the bottle wall in drying chamber of spray dryer like sticky candy, because the material itself has a high content of sugar which can easily melt at high temperature.

Consequently, it is impossible for researchers to obtain the powder with good fluidity. Sometimes, they have to add a large number of auxiliary materials (e.g. starch and cyclodextrine) to obtain powder, but the effect also is not very ideal. YC-1800 spray dryer determines the technological conditions of spray drying based on characteristics and nature of materials. It is featured by high degree of automation and easy operation, and meets the requirements of GMP. The successful development of the dryer solves the technological difficulty that spray drying cannot be applied to many TCM products (juice products) with low melting point and high sugar content. Moreover, it is also a new progress of spray drying in the research on application technology of Chinese pharmaceutical manufacturing.

Perfect combination of low temperature and high temperature

With maximum inlet air temperature reaching 200°C, it can meet high temperature drying requirements of ceramics and other materials; with minimum inlet air temperature being 105°C, it is especially suitable for spray drying of traditional Chinese medicine, extracts of natural substances and other materials with sugar content. No material will adhere to the wall during drying and materials are featured with excellent fluidity after drying.

Controls & Functionality

YC-1800 mini 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 – 25 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, YC-1800 mini 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 & BOROSILICATE GLASS.

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.



PRINCIPLE

1. A menu driven microprocessor controller allows the selection of inlet temperature, airflow, automatic de-blocker frequency and pump speed.
2. The self-priming peristaltic pump delivers the sample liquid from a container through a small diameter jet into the main chamber. At the same time an integral compressor pumps air into the outer tube of the jet which causes the liquid to emerge as a fine atomised spray into the drying chamber.
3. Heated air is blown through the main chamber evaporating the liquid content of the atomised spray. The solid particles of the material, which are normally in a free flowing state, are then separated from the exhaust air flow by a cyclone and collected in the sample collection bottle. The exhaust airflow is directed through a flexible 60 mm diameter hose direct to atmosphere or to an existing extraction system.

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

YC-1800 mini 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



YC-1800 technical data sheet

Sr.no.	Parameter	Pilotech YC-1800 low temperature spray dryer
1.	Power	4000W
2.	Voltage	220V
3.	Frequency	50/60 Hz
4.	Evaporating Capacity	1500ml/h for water
5.	Airflow	0-330 m ³ /h
6.	max. Inlet temperature	200°C
7.	Heating power	3500W
8.	Temperature precision	±1°C
9.	Compressed air	4.2m ³ /h, 2-5bar
10.	Nozzle jet	0.7mm standard/(0.5/0.75/1.0/1.5/2.0mm available)
11.	Nozzle type	Two fluid nozzle
12.	Possible particle size range	1-25µm
13.	Mean Residence time	1.0-1.5 sec
14.	Operation mode	Automatic/Manual
15.	Max. Sample feed	2000ml/hr
16.	Minimum sample volume	30ml
17.	Seal of cyclone/cylinder	Silicone
18.	Inlet temperature	105~200°C
19.	Cyclone separator material	SUS-304 Stainless steel
20.	Body material	SUS-304 Stainless steel
21.	Spray chamber material	SUS-304 Stainless steel& borosilicate glass
22.	collection bottle material	SUS-304 Stainless steel
23.	Sound	<60db
24.	Dimensions	950*800*1350
25.	Weight	135KG
26.	Display	7-Inch LCD display for Heat, Spray, Pump, Air pressure, de-blocker frequency
27.	Thermal protection	Blower does not stop until temp <90°C
28.	Deblocking	Automatic
29.	Atomizer material	SUS 316 Stainless steel



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