Pilotech 雅程设备

About
PILOTECH

www.equipsci.com

Leader For
SPRAY DRYER

Pilotech has been engaged in spray drying for nearly 20 years. Our products are exported to more than 60 countries. Now we already have over 3,500 users around the world.

To be The **Leader for Spray Dryer** in the World -Pilotech

Pilotech started to produce laboratory spray dryer since 2005. We have over 50 patents and over 5 software copyrights.

Our company is also the only manufacturer in the world that can produce a wide range of spray dryers, including benchtop spray dryer, vacuum spray dryer, spray-freezing dryer, all-in-one machine for spray drying and fluidized granulator, organic solvent spray dryer and nano spray dryer.

Our laboratory spray dryer has many advantages, such as stable performance, easy operation and durable service. For this reason, the product is very popular among researchers. It has occupied more than 70% of the market in China. It is now used by more than 3,500 users in the world, and exported to more than 60 countries and regions, including USA, UK, Germany, Italy, Russia, South Korea, Singapore, Japan, Malaysia, Canada, Australia, South Africa, Taiwan and Hong Kong.

500 Papers on Google Scholar

Pilotech JOURNEY

2005

YC-015: The first lab two fluid spray dryer in China

Our laboratory spray dryer is very small, but it solves many problems. For example, with our product, you don't need to face the problems like difficulty in preparing materials, large coverage, and big noise.

2007

YC-1800: The first lab low temperature spray dryer in China

You don't need to worry that the materials containing sugar will stick on the wall when they are used for spray drying. You don't need to worry that the heat-sensitive materials, such as enzymic preparations, will degenerate when they are used for spray drying.

2008

YC-015A: The first inert loop spray dryer in China (for organic solvents)

It can also ensure safe spray drying of organic solvent in laboratory. With our product, both toxic and oxidizable materials can be treated with spray drying in laboratory.

2009

YC-1000: The first lab spray granulator in China

Only one machine can realize four functions, including spray drying, spray granulation, fluidized bed drying and fluidized bed coating.

2010

YC-2000: The first lab vacuum spray dryer in China

It is a perfect combination of vacuum drying and spray drying. The heat sensitive materials such as probiotics can remain active after spray drying in laboratory.

2011

YC-3000: The first lab spray freeze dryer in China

It is also a perfect combination of spray drying and freeze drying. Compared with freezer dryer, our spray dryer can provide a faster drying process, and the dried materials have better fluidity and solubility.

2012

YC-018: The first pilot scale spray dryer, powder recovery rate can reach 92%

Our spray dryer for pilot plant test is also very small. It only covers an area of 1 square meter, but it has the processing capacity of 3L/H. It has the advantages, such as low noise, low power (only 5.5KW), and high material recovery rate.

2013

YC-500: benchtop spray dryer

The processing capacity is 500ML/H. The minimum material volume is 30ML. Because it is very small, it can be placed on the workbench.

2014

YC-501 and YC-018A: Inert loop spray dryer

YC-501 is the smallest organic solvent spray dryer. It can be applied to spray drying of very tinny materials. YC-018A is organic solvent spray dryer for pilot plant test. It applies to the preparation of materials in laboratory and pilot plant.

2016

YC-510: Vacuum spray dryer, which contains high temperature type, vacuum low temperature type or inert loop type (optional)

YC-510 is a multifunctional device. It can be used as traditional laboratory spray dryer, vacuum spray dryer or organic solvent spray dryer (optional) to process different materials.

2017

Developed a new concentric spray nozzle

If the materials are atomized by traditional spray nozzle, they can be easily sprayed to the wall of bottle, because traditional spray nozzle may have some defects in installation or spraying accuracy. So we recommend the concentric spray nozzle. The concentric spray nozzle has better performance. Its spray will form an umbrella around the nozzle.

The world leading R&D
SOLUTION FOR SPRAY DRYING

- Famous brand for spray dryer in China
- 20 years continuous development
- Over 3,500 customers all over the world

The Mini Spray Dryer YC-015A- innovative solutions for spray drying in the laboratory

The Mini inert loop spray dryer YC -015A is the result of 20 years continuous development , is your choice for the quick and gentle drying to powder of aqueous and organic solutions. The impressive features of the Spray Dryer include its efficient performance with very short set-up times, an effective integrated nozzle cleaning mechanism and a high degree of flexi-bility thanks to the different cylinder geometries.

Mini inert loop spray dryer YC-015A efficient and safe Spray Drying of aqueous and organic solutions

CONTROLS & FUNCTIONALITY

YC-015A mini spray dryer is designed to ensure that all functions are simple to select and adjust, to quickly achieve the optmum conditions for spray drying. It uses a clear touch screen display that shows the following functions:

- Inlet Temperature
- Oxygen Concentration
- Pump Speed
- De-blocker Frequency

Easy to use

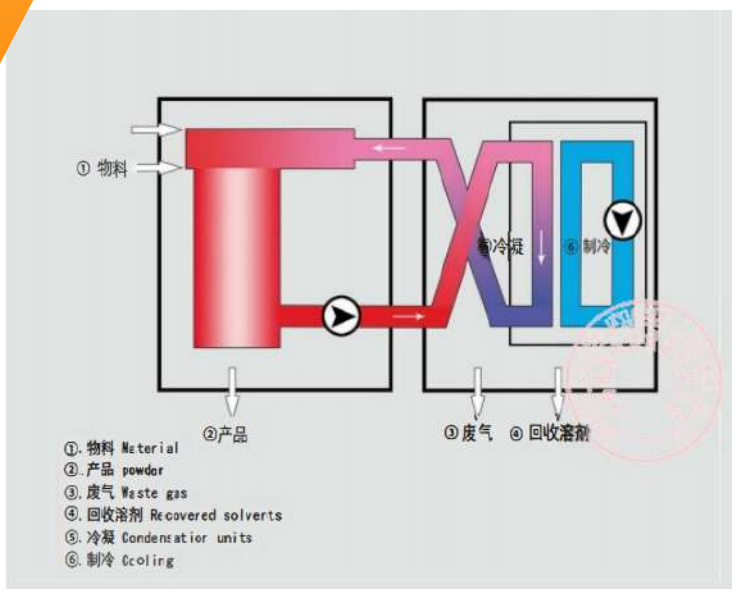
- PLC control, One-click boot
- Color Touch Screen, Fast setup and cleaning times

  Scale up to pilot or industrial scale possible
- Visible process due to glass assembly
- Adjustable paricle size (1- 25 microns)

Two Fluid Nozzle with SUS316L stainless steel

The stainless steel spray assembly consists of an inner tube for the iquid sample leading to a small diameter jet. An outer tube directs compressed air to the nozzle. All units are supplied with 1.0mm 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-bocking is sometimes necessary with materials which may solidify or when large particles in suspension cause blockages in the jet.

PRINCIPLE



To safely spray dry inflammable solvents, a new operating principle is empoyed which uses a combination of the Spray Dryer YC-015 and the inert loop to provide a closed loop circulation under inert conditions. The absence of oxygen prevents the formation of an ignitable mixture. At the same time, the solvent contained in the gas stream is cooled and consequently condensed. The regenerated flow is then returned again to the spray dryer.

SAFETY

YC-015A inert loop spray dryer features good safety and easy operations as it adopts closed cycle of nitrogen (or other inert gas), a safe gas, to keep the entire system in a closed state, and online monitoring of oxygen concentration such that the system would power off automatically and alarm when the oxygen concentration has reached 2.5%(which can be preset by the user as needed).

The combination of closed nitrogen cycle and full solvent recovery allows treatment of flammable and toxic solvents and drying of readily oxidizable material. In addition, the low boiling points of organic solvents allow low temperature drying of the material subject to heat denaturation.

Solution to difficulty to dry organic solvents

While organic solvents are generally flammable and explosive, an explosion-proof, inert loop spray dryer allows the materials to circulate in a closed drying system and prevents the organic solvent gas from coming in contact with the outside air, thus ensuring safe operations.

Solution to difficulty to dry oxidizable material

Taking advantage of the antioxidant property of inert gas, this technology allows the materials to be dried and transmitted in an antioxidant environment in the closed circulation system isolated from oxygen, which ensures quality of the drying process for readily oxydizable material.

Solution to toxic gases pollution from raw materials

While some materials or solvents may produce toxic gases when vaporized, a mini spray dryer with closed cycle of inert gas would keep these toxic gases in the closed system and allow them to be collected in subsequent processes, thus reducing environmental pollution, which is favorable for environmental protection.

The following solvents have been tested and can be used without reservation:

- Methanol
- Ethanol
- Toluene
- Hexane
- Acetone
- Ethylacetate

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 60 countries & regions such as the United States, Italy, South Korea, Mexico,Singapore, Canada, Malaysia, Chile and Russia etc.

Wide range of applications

YC-015A 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

Mini spray dryer YC-015A technical data

Sr.no	Parameter	Pilotech YC-015A Inert Loop Spray Dryer
1	Power	3500W
2	Voltage	without chiller; 220V; single-phase; with chiller; 380V; three-phase five-wire ; 50-60Hz
3	Capacity	1500ml/h
4	Rated airflow	1.5 m^3/min
5	Max. Inlet temperature	200°C
6	Heater power	3000W
7	Temperature precision	±1°C
8	Nozzle jet	1.0mm standard/(0.5/0.8/1.5/2.0mm available)
9	Nozzle type	Two fluid nozzle
10	Possible particle size range	1-25μm
11	Mean Residence time	1.0-1.5 sec
12	Max. Sample feed	1500ml/hr
13	Minimum sample volume	30ml （related to factors such as the solid content of the material）
14	Spray chamber material	SUS304 Stainless steel
15	Cyclone separator material	SUS304 Stainless steel
16	Receiving tank material	SUS304 Stainless steel
17	Body material	SUS304 Stainless steel
18	Seal of cyclone/cylinder	Silicone
19	Gas type	N_2 (for solvent)or compressed air(for aqueous)
20	Display	7-Inch LCD touch screen displays inlet air temperature, needle frequency, peristaltic pump speed, oxygen concentration
21	Thermal protection	Blower does not stop until temp <90°C
22	Deblocking	Automatic
23	Inert loop (for organic solvents)	Yes

*This catalog is for reference only. Equipment upgrades may bring changes in parameters and structure. Therefore, this catalog does not serve as equipment acceptance proof. Thanks for your understanding.

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