



A solution ahead --Spherical Dryer



Haichang Machinery

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Contents



II Status Quo of drying

The commonest contact-type dryers are as follows:



Vacuum Dryer



**Trigonal
Bipyramid
Dryer**



**Bipyramid
Dryer**



**Target-type
Dryer**



Filter Dryer



Spray Dryer

|| Status Quo of Drying

Existing Question:

1

Bad effects of dehydration

2

Low heat efficiency but large energy consumption

3

Finished products' sticking on the wall

4

Safety problems



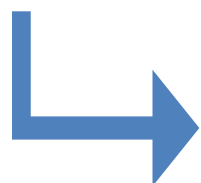
In order to solve these questions, spherical dryer was invented.



II Status Quo of Drying

Comparison Between Different Dryers

	Vacuum Dryer	Trigonal Bipyramid Dryer	Spherical Dryer	Target-type Dryer	Filter Dryer	Bipyramid Dryer
Cost	Low	Low	High	Medium	High	Medium
Feeding Coefficient	50%	30%	80%	50%	20%	70%
GMP	Bad	Bad	Good	Medium	Good	Good
Performance	Bad	Bad	Good	Good	Bad	Medium
Installing Shreding Knife	No	No	Yes	Limited	No	No
Material	Extensive	Extensive	Steel & Alloy	Extensive	Steel & Alloy	Steel & Alloy

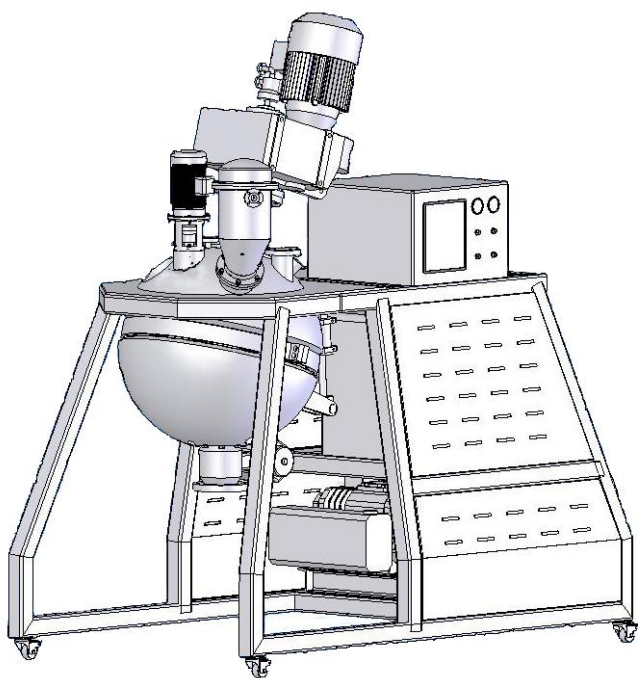


So, the spherical dryer have ***more obvious advantages*** than others.



Overview of Spherical Dryer

Brief introduction:



Spherical dryer is a kind of new dryer machine which can not only **dry** but also **granulate** and **mix**.

Overview of Spherical Dryer

Principle of spherical dryer:

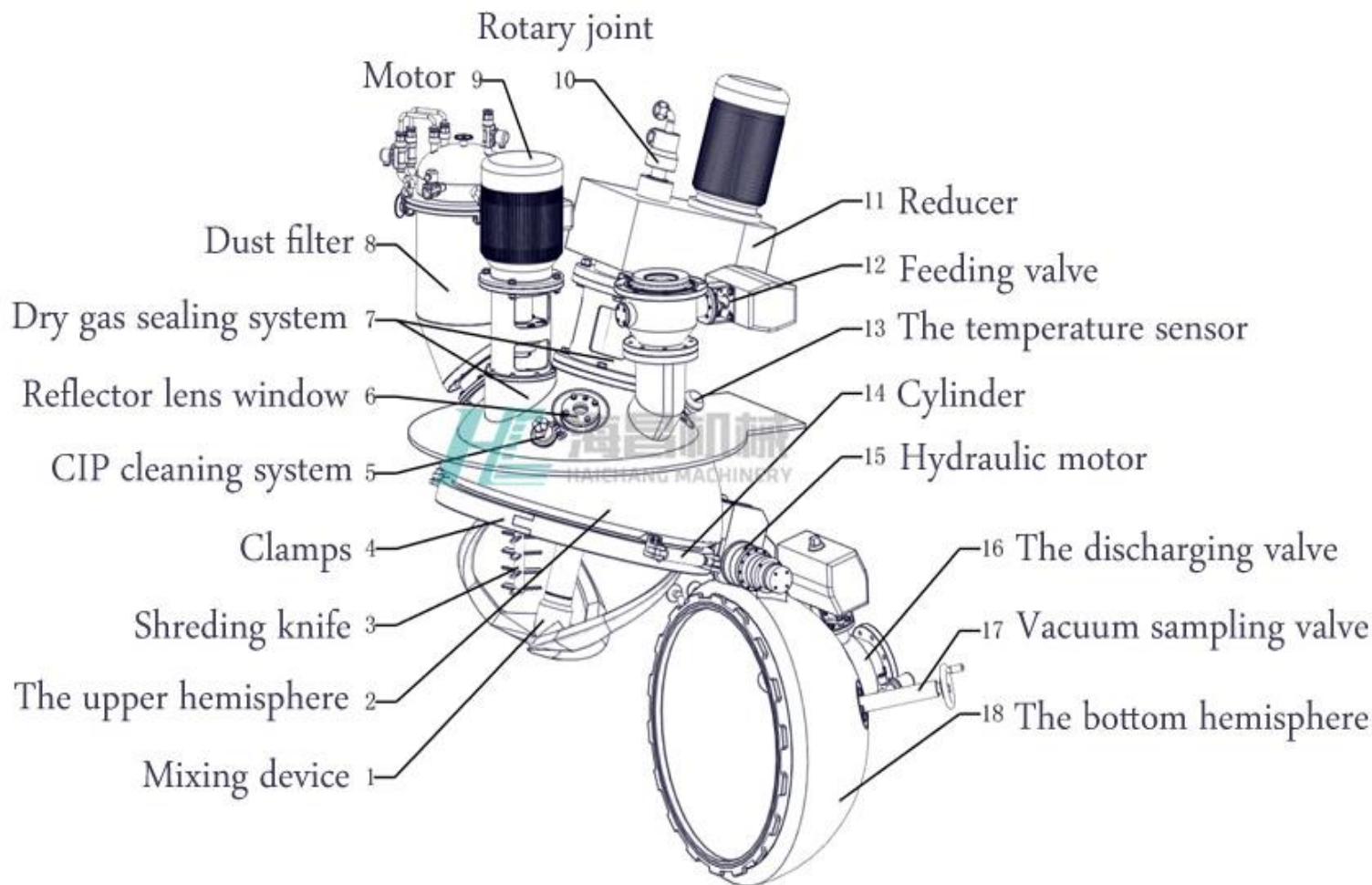
Spherical dryer is high automated and precision-machining, which can make use of heat input to carry on efficient mixing and vacuum drying.

The blender fits neatly with the wall of the container in order to achieve full mixing, which is beneficial to drying.



Overview of Spherical Dryer

Structure of spherical dryer:



Advantage of Spherical Dryer



So, why do I prefer this kind of spherical dryer?



Advantage of Spherical Dryer

Characteristics of spherical dryer:

1

Higher effective working volume

2

Maximum mixing with the three blade agitator

3

Mixing uniformly and no flaws

4

Cleaning in a flash and emptying completely

5

Grinding at high speed and less lump formation

6

Everything is under control

7

Safer and more reliable operation

Advantage of Spherical Dryer

Higher effective working volume:

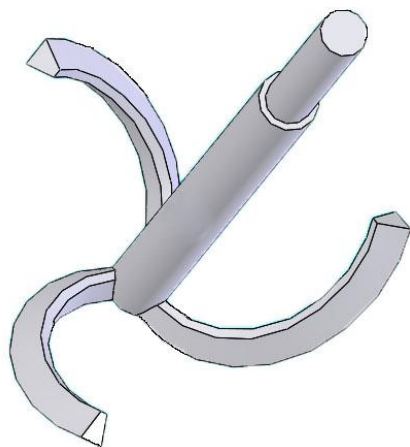
Usually, target-type dryer or bipyramid dryer contains just 30-40% of its volume considering effects, sensibility to temperature and other factors. Due to specific spherical structure, spherical dryer has relatively larger effective working volume, which can be 80% at most.





Advantage of Spherical Dryer

Maximum mixing with the three blade agitator

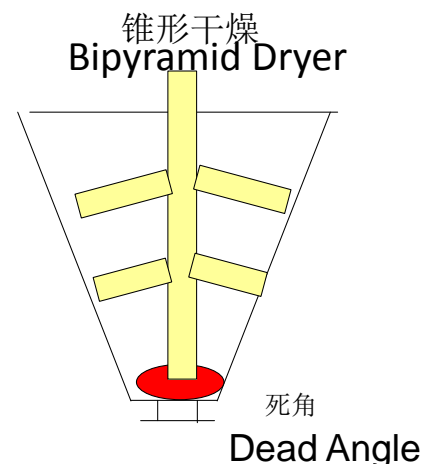
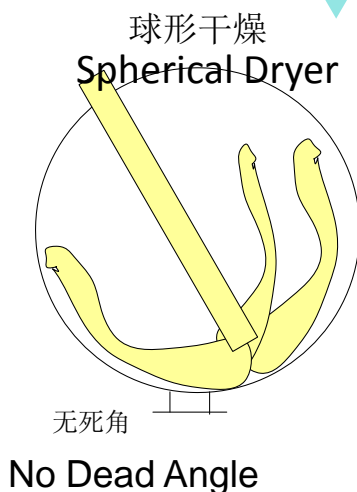
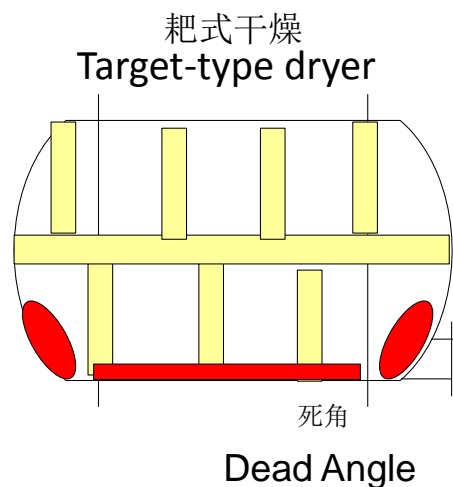


The high-speed spinning three blade agitator can mix the material efficiently and the heated agitator is able to largen the heat exchange area, which can improve the exchange and prevent wet material from roasting, sticking to the wheel and axel or blades. Therefore, drying in short time and repeated drying are easily achieved under such circumstances.

Advantage of Spherical Dryer

Mixing uniformly and no flaws

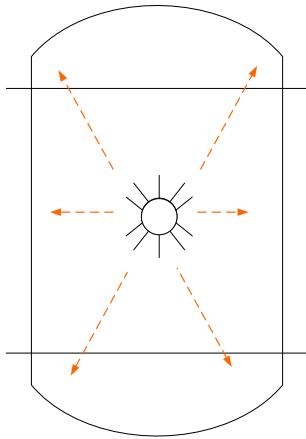
Compared with target-type dryer and bipyramid dryer, mixing of spherical dryer agrees with dynamics and directions in all directions, so it is symmetrical in mixing, which is more efficient.



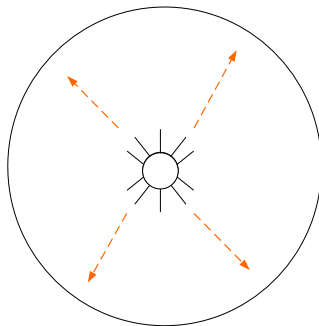


Advantage of Spherical Dryer

Cleaning in a flash and emptying completely



Target-type Dryer



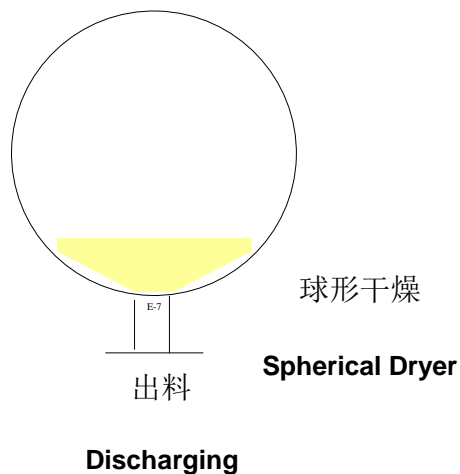
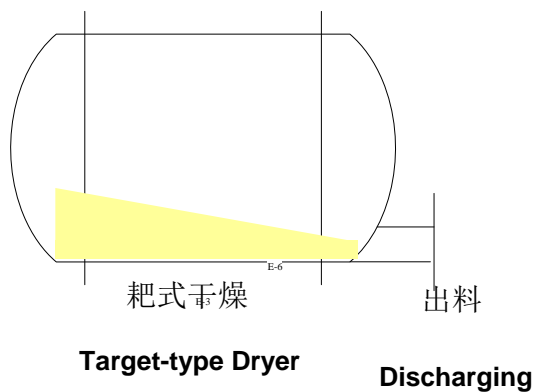
Spherical Dryer

Spherical dryer has a simple structure, and spherical container and slide seal link above the material can do CIP cleaning and SIP disinfecting under the circumstance of ARD nozzle.

Advantage of Spherical Dryer

Cleaning in a flash and emptying completely

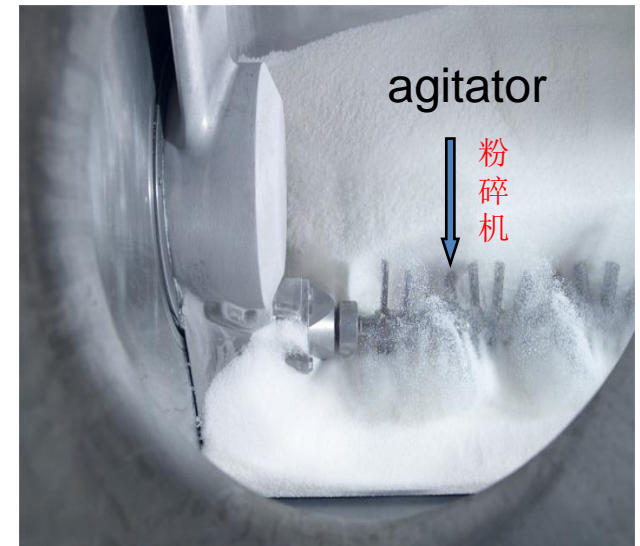
Because of its spherical design, there is only one point at its lowest. When setting a outfall at this point, cleaning fluid and residue can be fully discharged.



Advantage of Spherical Dryer

Grinding at high speed and less lump formation

In order to prevent material from caking, it is necessary to set an agitator. The agitator is vertically placed, which has two obvious advantages. First, it is beneficial to achieve consistent shattering results under circumstance of different filling volumes. Second, wet material will not spray the container wall which the agitator can not touch.





Advantage of Spherical Dryer

Everything is under control



It is convenient to open the dryer by spinning the lower part of the sphere to check at any time. You just need to touch the button simply to complete the operation. Spherical dryer is able to be attached to the ceiling, while discharging is in the certain cleaning room.



Advantage of Spherical Dryer

Safer and more reliable operation



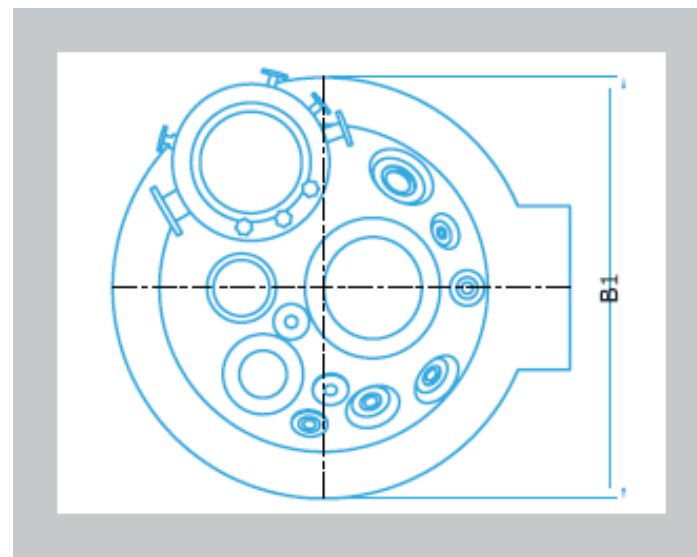
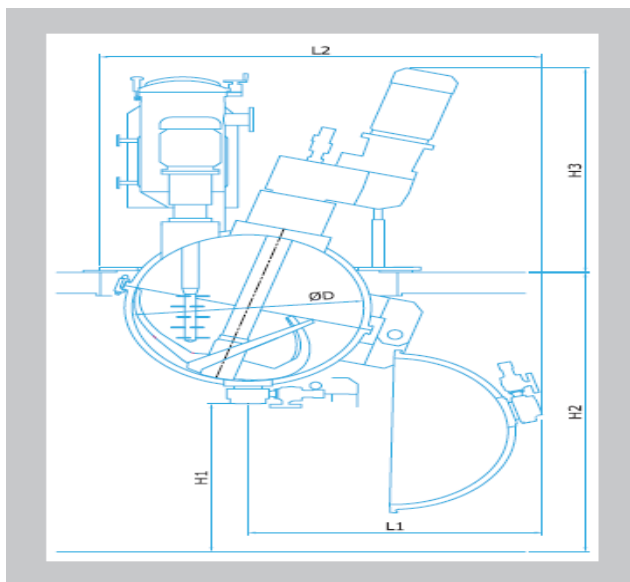
Dryer is designed for vacuum operating, so it is generally required to be high-pressured in danger of heat decomposition and powder explosion. The sphere owns the most volume and the least square, which is the ideal geometric shape for a contain to explode. Even there is an outage, the valve can keep still at the sealed position. So it is the strcuture that can resist explosion.





Model of Spherical Dryer

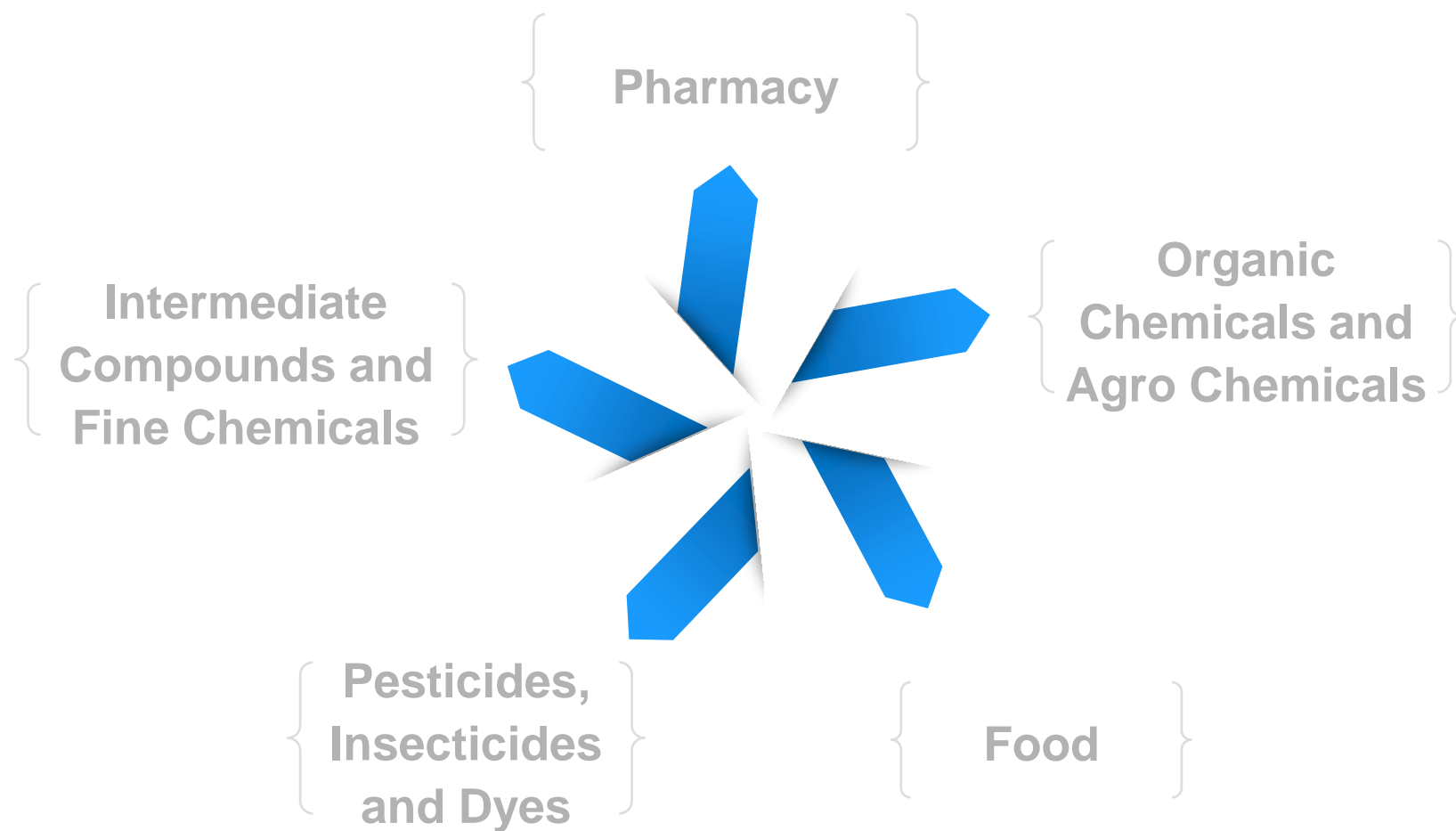
Specific parameters are as follows:



Model	Working Volume (liter)	L1 (mm)	B1 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	Φ (mm)	Empty Weight (kg)	Heat Transfer Area(m ²)	Agitator Power(KW)	Agitator Speed (/min)	Chopper Power (KW)	Chopper Speed (/min)
TYP100	100	1000	1000	900	1800	900	700	1500	1.5	11	3.5-40	3	1000
TYP400	400	1300	1400	900	2050	1400	1050	3000	3.5	25	3.5-30	5.5	1000
TYP1000	1000	1800	1800	1400	2800	2100	1400	8000	6.4	45	2.5-18	7.5	1000
TYP2000	2000	2400	2200	1700	3500	2600	1700	12000	9.4	55	2.5-18	12	1000
TYP4000	4000	2900	2600	1700	4000	3200	2100	17000	16.5	75	2.5-15	15	1000

Application of Spherical Dryer

Applicative scopes of spherical dryer are as follows:



About us

Introduction of Wuxi Haichang Machinery Co., Ltd.



Wuxi Haichang Machinery Co., Ltd. is an enterprise specialized in manufacturing drying, crystallizing and granulating & tableting equipment for such industries as pharmacy, food, chemical engineering and and biochemistry.

About us

Main products of Wuxi Haichang Machinery Co., Ltd.



Spherical Dryer



Belt Vacuum Powder
Continuous Dryer



Belt Vacuum Liquid
Continuous Dryer



PTFE Lining

Haichang Machinery



Thank You !



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