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FREEZE DRYER

2021

Quality Instruments, Lifetime Care

Professional service provider in the global laboratory field

ANTECH GROUP INC.

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Company Profile

ANTECH Group is committed to offering high quality laboratory instruments and medical products while matching to the unique needs of customer. Our dedication is to provide quality instruments with lifetime care.
Antech Group sets its production facilities in 5 cities. The product lines include:
Cold storage - Cryogenic freezer, ULT freezer, deep freezer, pharmacy refrigerator, blood bank refrigerator, vaccine refrigerator and cold room
Cryogenic storage - liquid nitrogen freezer, liquid nitrogen container and Dewar vessel
Clean air product - biological safety cabinet, laminar flow cabinet (clean bench), air shower, sample booth, fan filter unit and clean room
Scientific instrument - fermenter, bio-reactor, freeze dryer, glassware washer, incubator
Medical equipment & consumable - washer disinfector and plasma sterilizer
In accordance to our unique business philosophy, we always remind ourselves to avoid any short-sighted activities and to focus on long-term success and growth.
We Antech team treat our customers as long-term partners & life-time friends. We are very clear that any of our success comes and will come from satisfaction of our partners and customers. "Quality instruments, lifetime care" is commitment to our partners, as well as to ourselves.

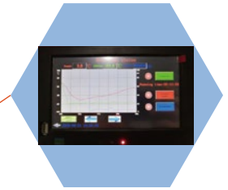
Application

The freeze-dryer has been exclusively designed for the freeze-drying of solid or liquid products in ampoules, vials or dishes.
The freeze-dryer is suitable for freeze-drying solid substances and aqueous solutions (e.g. bacteria and virus cultures, blood plasma, serum fractions, antibodies, sera, vaccines and pharmaceutical products such as chloramphenicol, streptomycin, vitamins, ferments and plant extracts for biochemical tests).
The freeze dryer is mainly used in industries such as biomedicine, chemical industry, food and environmental testing.

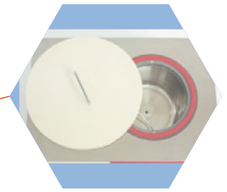




Freeze dryer introduction



Control system
The freezer dryer 7" PLC touch screen can real-time display the sample temperature, cold trap condenser, vacuum rate, and freeze dryer work condition. It controls the refrigerant system, vacuum pump and vacuum display,
The tilt design touch panel is easy for reading and operation.



Ice condenser chamber
The ice condenser chamber can pre-frozen the products to -55°C, it also captures the gaseous water into ice and collect them in it.
it is made by #304 stainless steel
Optional ice condenser temperature -80°C Optional electrical defrost for quick arrange next work.

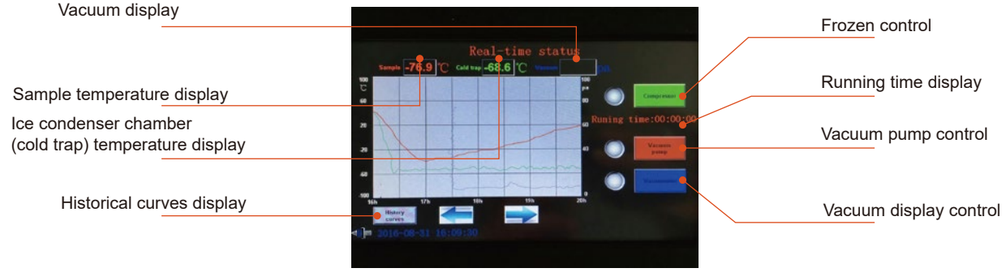
Refrigerant System
Pre-frozen process: The powerful refrigerant system enable the sample to be frozen in the low temperature of the ice condenser -60°C （@ambient temperature 20°C） and - 55 °C (@ ambient temperature 32°C).
The samples temperature is measured by sensor PT-100 and real-time displays which convenience to check. During the pre-freezing phase, it takes 30 minutes from 32°C to -55°C （empty load）

Vacuum system
Reliable and high performance vacuum pump is used in the vacuum drying process, the vacuum pressure rate affects the drying results.

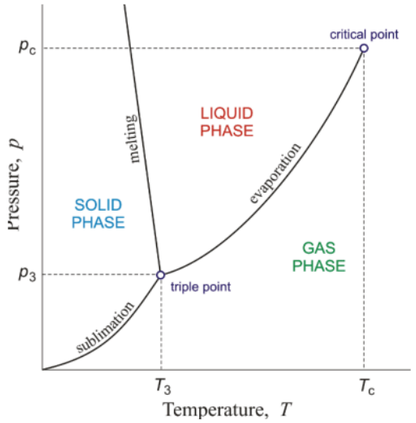
Vacuum-drying process: the samples temperature is monitoring by product sensor, it real-time shows the products temperature from Pre-frozen and vacuum drying phase.

Connections
Water drainage and Gas inlet are the same port, it is for ice condenser water melt and flow out.
It also supports the air flow into after the freeze-drying finished.
International standard vacuum hose port is easy for installed and discharge off.

Intelligent Control System



Freeze Drying Introduction



Sublimation is the transition of a substance directly from the solid to the gas state, without passing through the liquid state. Sublimation is an endothermic process that occurs at temperatures and pressures below a substance's triple point in its phase diagram, which corresponds to the lowest pressure at which the substance can exist as a liquid.
If the pressure is higher than P3, sample passes through all three states (solid, liquid, and gaseous) as the temperature increases or decreases. Below this point however, i. e. if the pressure is less than P3, it passes directly from the solid to the gaseous state. At exactly P3, the melting-point curve, vapour-pressure curve and sublimation-pressure curve meet at the so-called triple point. At the triple point all three phases can coexist.

Freeze Dryer Accessories

Standard
Chamber

Stopper
Chamber

8 manifords
Chamber

8 manifords
chamber & stopper

Stainless steel
8 port maniflods

20 EA Drying
shelf

24 EA Drying
shelf

Valve and
Freeze Drying
Bottle

Penicillin bottle Loading Quantity

Model		AFD-10S/10P/12T/12P	AFD-10T/10PT/12T/12PT	AFD-18S/18P	AFD-18T/18PT
Penicillin bottle	(ф22mm)	260	195	360	270
	(ф16mm)	480	360	740	555
	(ф12mm)	920	690	1320	990

Bench Top Freeze Dryer

Model		AFD-10S	AFD-10T	AFD-10P	AFD-10PT
Type		Standard	Stopper	8 port manifold	8 port manifold and stopper
Basic performance	Ice condenser temp temperature	-55°C			
	Ice condenser Capacity	3Kg/24h			
	Freeze drying area	0.12m²		0.09m²	
	Drying Vacuum	≤10Pa			
	Freezing temperature pull down time	30 minutes (from 32°C to -55°C)			
	Freeze drying time	24 hours			
Control System	Controller	7" PLC touch screen with microprocessor			
	Sample temperature display	Yes, display 0.1°C accuracy			
	Ice condenser temperature display	Yes display 0.1°C accuracy			
	Data Record	Sample temperature/Prefrozen temperature			
	Vacuum display	Yes,1pa			
	Histroical record display	Yes			
	USB Download function	Yes			
Main Unit power	Votlage/Current	220~240V/50HZ/9A			
Main unit dimension		582*541*374			
Overeal (W*D*H,mm)		582*541*824	582*541*884	582*541*824	582*541*884
Exterior Material		Powder coated steel, table is SUS304			
Condenser trap Material		SUS304			
Eggplant bottle quantity		/	8	/	8
Shelf layer		4 layers	3 layers	4 layers	3 layers
Material tray dimension		ф200mm*H20mm			
Material tray capacity （based on 10mm thickness）		300			
Total material load capacity（ml）		1200	900	1200	900
Condener trap φxH(mm)		φ215mm×H193.5mm			
Adjustbale feet		Yes			
Optional function	Shelf heater	Yes			
	Heater defrost	No			
	LN2 filling port	No			
	-80°C condenser temperature	No			