

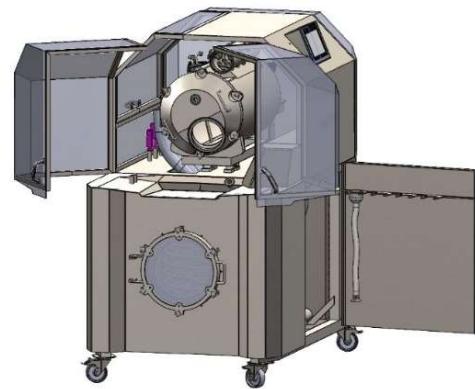
INNOVATIVE DYNAMIC FREEZE-DRYING TECHNOLOGY

LYOPHITECH, is a French Deeptech, located in the chemical & pharmaceutical valley, which designed and patented a bulk dynamic freeze drying technology.




Our Dynamic Freeze Drying technology

Freeze-drying process, also known as vacuum drying at low temperature, preserves sensitive products from water activities. Conventional static freeze-drying cycle time is a typical function of product cake thickness.

By producing and drying in beads shape, which are considered as divided solids, with a constant diameter the product can roll over the dryer bowl surface for continuous layer renewal and better heat exchange effect. This constant layer renewal enhances heat exchange, eliminating the risk of poorly freeze-dried product fractions. Our bulk freeze-drying technology ensures significantly better product quality. Dynamic freeze-drying occurs into a gentle rotating drum for efficient heat transfer.




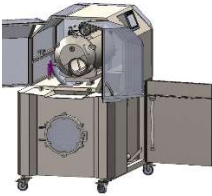
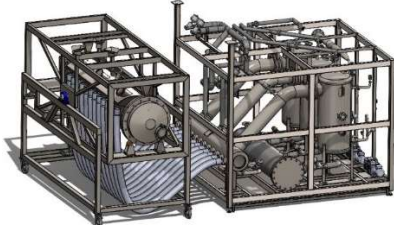
2 steps process

Drops deep-freezing in liquid nitrogen.	Beads shape	Solvent sublimation by dynamic Lyophilization
		

Lyophitech key advantages

- **Homogeneous product** due continuous gentle beads mixing into the machine.
- **High product quality** due to beads layer renewal with heat exchange surface.
- Products are instantly **deep-frozen** at very low temperatures.
- Products are **protected from oxygen**.
- Products are **contained** during **loading** and **unloading**.
- Operations are controlled by accurate **pressure monitoring**.
- Cleaning is carried out by a **CIP / SIP**.
- Easy-to-handle **beads shape**, no tray and no crushing operations.

Dynamic freeze dryers main characteristics

			
Model	Lyophitech 7	Lyophitech 50	Lyophitech 1000
Total volume	7 liters	50 liters	1000 liters
Max capacity	1 kg	8 kg	250 kg
Lenght	1500 mm		3900 + 3000 mm
Width	960 mm		1700 + 2500 mm
Height	1575 mm		3800 + 3000 mm
Weight	650 kg		1500 + 2000 kg
Heating Power	1 kW	3 kW	15 kW
Vacuum pump	8 m ³ /h		3 x 22 m ³ /h
Pressure Abs	Up to 6.7x10 ⁻³ hPa		
Power supply	2 Ph 16 A		3 Ph 64 A
PLC control	Siemens S7		
Temp. sensors	8 x PT100		16 x PT100
Press. sensors	1 x Piranni 3 x capacitive		1 x Piranni 3 x capacitive
Materials	SS316L for contact product surfaces, quality 0.6 µm SS304L frame Sealings PTFE & EPDM Sightglass Transparent PMMA		

Extensive list of products references







Aromatics, Anaerobic Bacteria, Enzymes / probiotics, Hyaluronic acid, Micro-organisms, Dyes

Our added value



We support our customers from product development step, produce first batches and ensure further industrial transfer.

Laboratory, pilot and industrial workshop are available for trials and production.

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