

**CIMA<sup>®</sup>**  
**Industries Inc.**  
Food and Beverage Equipment

# FREEZE DRYING

*The best technology for the food conservation*



*Aroma, flavor and nutritional  
value for much more time*



# FREEZE DRYING



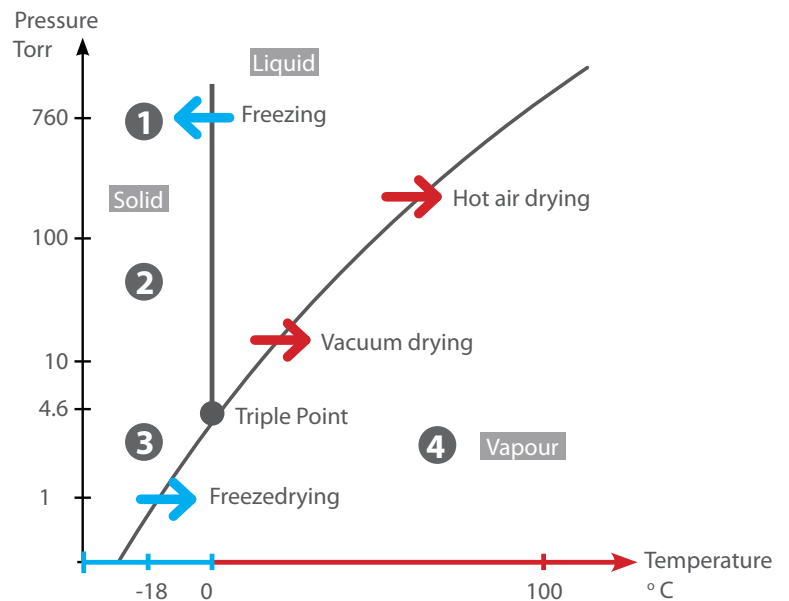
Today, more than ever, consumer requires food products with a longer shelf life compared to fresh produce, but maintaining all its nutritional properties, color, fragrance and taste. When we dehydrate a product by freeze drying, all these properties are maintained, because products are first frozen and then dehydrated at high vacuum levels, thus removing just water and leaving the product intact.

The lyophilization process basically involves four stages:

1. Freeze the food.
2. Apply a vacuum.
3. The ice sublimates in steam and this is extracted from the drying chamber.
4. Once this process is complete, removes the food from the lyophilizer and is ready to be packed and stored.

## MAIN APPLICATIONS:

- Coffee, tea and other extracts and liquids
- Vegetables, fruits
- Meat and seafood
- Prepared meals
- Milk products
- Dyes, pharmaceuticals, pigments



## BENEFITS:

- The product keeps for as long as possible the original color, flavor and nutrients.
- Instant rehydration.
- Lightweight for easy handling and transport.
- No need for refrigeration during transport and storage.
- Long shelf life due to the elimination of 95% -99.5% of water.
- Little loss of activity of the ingredients.
- Small decrease in the volatile chemicals, nutrients and heat sensitive components.
- With minimal changes in properties, since the effect of the growth of microorganisms and enzymes can not be performed at low temperatures.



*CIMA, your best ally  
in food preservation*

## ADVANTAGES

- Automatic process
- Touchscreen
- CFR21 part 11 (optional)
- Scada System
- Each of our models possesses a peripheral freezing chamber (optional), implemented to pass of a process for batches to a semi continuous process, reducing the process times and production cost.

*CIMA has the capacity to develop your Project  
from the idea, through installation and startup to  
technology transfer.*



## TECHNICAL SPECIFICATIONS

Item	Unit	TFDS-1	TFDS-3	TFDS-5	TFDS-10	TFDS-20	TFDS-30	TFDS-50	TFDS-75	TFDS-100	TFDS-150	TFDS-200
Effective Drying Area	m <sup>2</sup>	1.1	3.15	5.12	10.48	19.88	31.68	51.48	79.2	102	147.84	204
Ice Capacity	Kg	12	36	60	120	240	360	600	900	1,200	1,800	2,400
Power Requeriment	KW.H	12	18	21	35	45	65	125	150	190	230	275
Freeze drying chamber dimensions (L*W)	m	2.23*1	2.5*1.1	3*1.2	5.4*1.4	6.1*4	8*5.2	10*5.5	11*9.5	11.5*10	15*6	19*6
Input Capacity @10% solids	kg/ batches	10	30	50	100	200	300	500	750	1000	1500	2000
Output Capacity	kg/ batches	1	3	5	10	20	30	50	75	100	150	200

*\*Information only for reference. The production capacity depends on the product proprieties.*



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