

How to Choose a Lyophilizer

Finding the Best Freeze Dryer for Your Needs

With so many options available it's no wonder the task of choosing a lyophilizer can be confusing. Rightfully so, there are a number of things to consider.

Types of Lyophilizers

The common notion that 'all freeze dryers are the same' is false. In fact freeze dryers should always be customized to your specific needs. These needs generally fall into the following basic categories:

- Laboratory Freeze Dryers
- Production Freeze Dryers
- Non-Sterile Freeze Dryers
- Sterilizable Freeze Dryers

Laboratory Freeze Dryers vs. Production Freeze Dryers

Laboratory freeze dryers are used for a large variety of applications which range from simple removal of solvent from a material to Phase 1 clinical trials to protocol development for scale-up production. Typically, laboratory freeze dryers have a shelf area of 0.1 sq. meters up to 1 sq. meter.

On the other hand, Production Freeze Dryers are used for Phase 2 and Phase 3 clinical trials and tend to be used for the same or a limited number of products in high volume productions. Unlike the generally small laboratory freeze dryer shelf area, production freeze dryers typically offer a shelf area from 1 sq. meter up to and over 40 sq. meters.

Non-Sterile vs. Sterilizable Freeze Dryers

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Lyophilizer Options & Features

Once you have determined the type of freeze dryer that fits your needs there are additional options and features to consider. These features include:

- Shelf Size
- Shelf Style: bulk vs. stoppering
- Condenser Location: internal vs. external
- Material: 304 vs. 316SS

Shelf Size

Depending on your needs, shelf size can vary dramatically from 0.1 sq. meters to 40 sq. meters and beyond. How much shelf space need is entirely dependent on each freeze dryers specific needs. Our freeze drying capacity calculator will lead you in the right direction.

Shelf Style: Bulk vs. Stoppering

Bulk style shelves are fixed in place. Bulk applications include but are not limited to: API's, Diagnostics, Tissue, Surgical kits, etc... Stoppering units have movable shelves. Stoppering configurations can be modified to accommodate additional shelf inter-distance. Stoppering shelves are most commonly used for the compression of stoppers into vials under vacuum conditions. Additionally, stoppering shelves can also be used for aiding in CIP cycles.

Condenser Location: Internal vs. External

Internal condensers are less expensive and provide unrestricted vapor flow. An external condenser is supplied with an isolation valve to separate the product from the condenser. This protects the product from reconstitution during power loss and keeps the condensate out of the clean room environment.

Material: 304 vs. 316SS

316L is typically used on pharmaceutical and biotech applications while 304L is mostly used on food grade and industrial applications.

More Questions?

For more information, do not hesitate to contact us, request a quote, send an email, or give us a ring. Our staff is ready and available to answer your questions and get you on the road to the perfect freeze dryer for your specific needs.

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