



Freeze Dry Microscopy: Introduction and Relevance for Process Design

ABSTRACT:

Freeze drying is a well known technique to stabilize delicate products (e.g. vaccines, vitamins, hormones, antibodies) when the product is not sufficiently stable in a liquid formulation. The aim is to remove water as a reactant by sublimation in order to reduce or avoid degradation reactions and to maintain adequate stability for storage. The drawback of this drying technology is that it is expensive and time consuming. In order to optimize a freeze drying cycle we have to learn more about the process and its critical parameters. One fundamental aspect is the knowledge of the critical formulation temperature since it is the limiting factor for the maximum product temperature during primary drying.

Controlling the product temperature at the sublimation interface close to the critical formulation temperature is the key to an optimized cycle design. This webinar will illustrate the important role of freeze dry microscopy in finding a compromise between process time and product quality. It will introduce a participant to the equipment and rational method of freeze dry microscopy. The theoretical part will be completed by the means of pictures and a short video showing the proceeding sublimation interface and collapse of the dried structure.

For information on Linkam Freeze Drying Microscopy systems, please click here:

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