

SmartTips

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QA

Can Thermo Scientific™ Savant™ SpeedVac™ Systems be used for lyophilization or freeze drying samples?

Yes, with the correct equipment.

Lyophilization, also known as freeze drying, is a process of removing water and other solvents from concentrated samples while keeping the samples in a frozen state. The solvents are removed by evaporation, during which the solvents go directly from a solid (ice) to a vapor in a process called sublimation.

Freeze drying in a vacuum concentrator can be used for samples that are: sensitive to heat, need long term storage at room temperature or need the solvent removed to stop biological activity. This is used by a variety of laboratories processing biological samples such as proteomics, genetics, cancer research, pharmacology, and agriculture.

What is at risk if the solvents goes into a liquid state instead of sublimation?

If the sample warms to the point where the solvent turns into liquid, there is a risk of sample degradation. For example, if the samples are mixed with solvents such as acetonitrile or ethanol, the sample can go back into solution. Once the organics are evaporated, the water in the sample will refreeze and the freeze drying process will continue, which could change the quality of the final product.



