

Fed up with producing a sticky films, oils or gums?

Want to lyophilise but don't have enough time to do it?

Genevac have developed a set of fast lyophilisation methods to enable samples to be dried in little more time than by concentrating to dryness. The methods have been specially developed for use with HPLC fractions containing water and acetonitrile, or methanol.



Traditionally Evaporated



Lyophilised in Genevac

Exceptional Performance

Traditional concentration to dryness in a Genevac evaporator is fast and safe, however for some users a dried film is not the best fit for their requirements. When working with certain solvents, e.g. HPLC solvents or DMSO, a fully dried result can be hard to achieve due to interactions with the dissolved sample – resulting in the formation of a gum or oil.

In response to customer demand Genevac have developed the Fast Lyophilisation, or LyoSpeed™ process to resolve these problems for customers working with HPLC solvents. Using Genevac HT series evaporators, HPLC fractions can be automatically concentrated to a few millilitres and then frozen and rapidly lyophilised to produce a diffuse dry powder, which can easily be redissolved or weighed out.

Using LyoSpeed™ can take less than 6 hours for 15ml HPLC fractions and ensures that every sample is dry every time, eliminating the possibility of having to reprocess samples which fail to dry. The equivalent speed if drying samples sequentially is as fast as 3 minutes per tube!

To find out more about how to achieve Fast Lyophilisation using LyoSpeed™ visit the Genevac website to download an in depth technical report detailing the process. Please follow this direct link:
www.Genevac.com/LyoSpeed

System Requirements

This process can only be performed in Genevac HT series 2 evaporators, and requires the cold traps to have auto-defrost and drain functionality. This is available with the Genevac VC6000, or with the auto-defrost and drain option on standard condensers, please see overleaf for details.

Auto-Defrost & Drain

What is Auto-Defrost & Drain?

Auto-Defrost and Drain is an option for the standard condensers on Genevac HT-4X and HT-24 Workstation. The HT-8 & HT-12 have the SuperCool -75°C VC6000 which has Auto-Defrost and Drain as standard. This enables the system to automatically drain the condenser of volatile solvent(s) between stages in a method, and at the end of the method to fully defrost and drain the system with no user intervention. When performing an intermediate drain (i.e. mid method) the system also does a short defrost just in case residual solvent from the previous use has frozen in the outlet pipe of the condenser. The intermediate drain can only be used to remove volatile solvents.

Benefits of Auto-Defrost & Drain

The principal benefit of the Auto-Defrost and Drain function is to eliminate volatile solvent(s) removed from the condenser. Volatile solvents will boil off first and be collected in the condenser, to remove the higher boiling point solvents, low pressures must be achieved however, this often will cause the volatile solvent to boil out of the condenser and 'spoil' the vacuum level. Vacuum spoiling affects final dryness of samples, or in the very worst cases, the ability to evaporate the higher boiling point solvent at all. To overcome these problems the user must, until now, be present to drain the condenser after the volatile solvents have been removed, this can now be automated. An additional benefit of Auto-Defrost and Drain is that volatile solvents are collected and can be safely disposed of, reducing VOC emissions.



Flexibility

A Genevac evaporator enhanced with Auto-defrost and Drain functionality can not only be used as part of the LyoSpeed™ process (see overleaf), but will also deliver improved results when working with any mixture of solvents with differing boiling points.

When evaporating HPLC fractions, auto-defrost and drain will help achieve excellent final dryness. Mixtures of DCM and DMSO or DMF, are almost impossible to evaporate without draining the cold trap once the DCM is removed, and before tackling the higher boiling point solvent. This is now possible with a system which is Auto-defrost and Drain enabled.



Functionality

The auto-defrost and drain enhanced condenser has the following features:

- Enhanced draining with minimum hold-up design
- Automation of the drain valves
- Mid-method short defrost and drain to remove volatiles
- Automated full defrost and drain at end of method