

Concentration for Analysis

Many of the features of Genevac evaporators make them a very useful tool for people who wish to concentrate a sample safely and quickly. Temperature control, Dri-Pure[®], pressure control, SampleGenie[™] and highly solvent resistant build quality make Genevac evaporators suitable for the task.

It is of great benefit to concentrate samples prior to analysis to help accurately determine low levels of sample or analyte in a given sample. The use of SampleGenie technology also helps eliminate handling of samples by concentrating the sample directly into a small vial. This, and the automation offered by every Genevac system helps users to deliver uniform results every time – increasing productivity in analytical laboratories. Clearly this is better than watching paint (or solvent) dry!



The challenge was put to Genevac by several users to develop a method which enables samples to be concentrated to less than 2ml without losing volatile analytes. Working with several laboratories, Genevac has developed a concentration method which will successfully concentrate samples, even volatile ones. This method was first pioneered by ARPAT – the Environmental Protection Agency of Tuscany, and is as follows:

1. Samples are collected in a volatile solvent
2. A drop of up to 1ml of a less volatile solvent is added as a solvent keep
3. By using appropriate software on Genevac EZ-2 the more volatile solvent only is automatically removed, leaving the sample in the drop of less volatile solvent

When evaluated, the results were very good, highly uniform and delivered a massive labour saving in that the laborious manual process of concentration was now automated leaving the analyst free for more productive tasks. Further work has been done evaluating the EZ-2, the Rocket evaporator and SampleGenie by the Laboratoire départemental d'analyses de la Drôme, Valence, France and Leochimica Laboratories, Zoppola, Italy.

Work has also been done with the application of a miVac concentrator to analytical testing by the Australian Sports Drug Testing Laboratory, although in this case they needed to dry the samples completely. Another paper of interest covers the development of a novel method to detect diclofenac residues in wildlife species, this was done by researchers at Anglia Ruskin University in Cambridge, UK and transferred to laboratories in Africa to help with conservation.

Full details can be found on the Genevac website at www.Genevac.com/CFA.

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Tools for working with ASE[®] tubes

Samples may be concentrated in ASE[®] vials in the EZ-2 range, HT series, and Rocket high speed evaporator. For laboratories who reuse their glassware Genevac offers an alternative more robust tube with tube wall thickness of 1.4mm (standard is normally 1.1mm but varies by manufacturer) which is better able to withstand the rigors of reuse and use within centrifugal evaporator. Should you wish to concentrate in standard ASE vials, the use of a solvent keep is recommended.



Flip-Flop[™]



The Flip-Flop system has been specially designed for those currently working with ASE[®] vials who require high speed evaporation, and, the functionality of SampleGenie. Flip-Flop enables the sample preparation process to be greatly simplified, or automated – just with out the robotics! Using a double-ended Flip-Flop tube (which has the same dimensions as an ASE[®] vial) collect your sample as normal. Attach the Flip-Flop adaptor and vial to the end of the tube, flip it over to fill the vial, place in the Rocket Evaporation system and concentrate. The 2ml autosampler vial is insulated from heat so cannot dry. After concentration, simply unscrew the adaptor and recover your vial, your sample is now ready to be capped and analysed.

SampleGenie[™]

SampleGenie is a system similar to Flip-Flop but that can accommodate a range of volumes (60ml to 400ml – depending on system) and vial sizes. Various forms of SampleGenie are offered to suit all types of Genevac evaporator.

Concentration Systems

For further details and pricing please contact Genevac or your local representative.

Note

An ASE[®] vial is defined as a flat based vial with diameter of 27.5mm and a height of 140mm. Dimensions may vary between manufacturers.

ASE is a registered trade mark of Dionex Corporation.



EZ-2



Rocket