AutoDest and AutoDry function with SyncorePlus

SyncorePlus: Study on the performance of the AutoDest and AutoDry option

1. Introduction

AutoDest and AutoDry are two possibilities making evaporations on the SyncorePlus even more convenient without a need to define a method.
This Technical Note revealed that the AutoDest and AutoDry options have an excellence performance with a SyncorePlus system. The automated evaporation of different solvents was investigated on SyncorePlus Polyvap and SyncorePlus Analyst by use of the AutoDest sensor in combination with the AutoDry valve without a preset method.

2. AutoDest & AutoDry

The combination of AutoDest and AutoDry results in the highest automation for the evaporation process for SyncorePlus Polyvap. AutoDest concentrates the evaporation solvent to a minimum and AutoDry evaporates the residual solvent to dryness. Setting a method is not required, only rotation, temperature of SyncorePlus base unit and cover, and the drying time needs to be defined. Further information about AutoDry and AutoDest is seen in the Technical Note No. 798/2022.

3. Experimental

The parameters for the evaporation with AutoDest and AutoDry are shown in Table 1. The AutoDest function does not require any settings regarding the pressure profile for the evaporation.

Table 1:Parameters for the evaporation with AutoDest & AutoDry function using SyncorePlus with Interface I-300 Pro.

Parameter AutoDest	Settings
Timer AutoDry	10 min (30 min for Water)
Temperature SyncorePlus base	60 °C (50°C for Dichlormethane)
Temperature SyncorePlus cover	60°C (50 °C for Dichlormethane)
Recirculating Chiller	10 °C (5 °C for Dichlormethane)
Rotation	300 rpm
Flask size	1 – 4 (*Depends on volume per vessel: 1: 50 - 100 ml, 2: 100 - 1000 ml, 3: > 1000 ml, 4: <50 ml*)

4. Results

Different solvents were investigated on Polyvap racks. Here by, the AutoDest function evaporates at least 90 % of the initial solvent amount fully automatically, enabling a reliable solution without boiling retardation. The AutoDry function then further evaporates the SyncorePlus Polyvap vessels to dryness. In Figure 1 the results are shown.

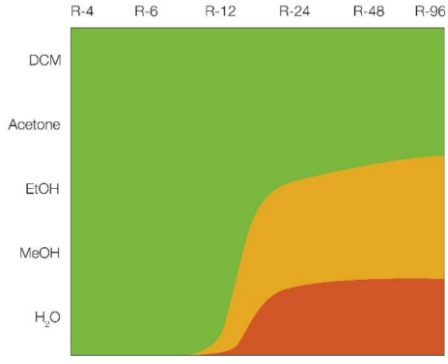

Figure 1: Results from all tests using the AutoDest & AutoDry function with the SyncorePlus. The green area was operating without any issues. In the yellow area, a sonification of the evaporation solvent in the vessels prior to the evaporation is recommended to prevent boiling retardations. Red area led to insufficient results and are therefore not recommended

5. Conclusion

Different solvents on SyncorePlus Polyvap racks were investigated in detail. This Technical Note revealed that the AutoDest and AutoDry option have excellence performance when in use with a SyncorePlus system. For the evaporation of water, the advice of Technical Note 776/2021 is recommended due to the high surface tension of water. For further information about AutoDry and AutoDest please download the full Technical Note from the website.

6. Reference

Technical Note 798/2022: AutoDest and AutoDry function with SyncorePlus
Technical Note 398/2020: A comprehensive guide to setting optimal methods for parallel evaporation by SyncorePlus
Technical Note 776/2021: A comprehensive guide to set optimal parameters for parallel evaporation of water using the SyncorePlus Polyvap
Operation Manual of SyncorePlus
Operation Manual of Interface I-300 Pro
Application Notes on application finder on Applications | Buchi.com