

Armen Glider CPC software: Solvent System Automated Generation (SAG)

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SAG as a new tool for CPC/CCC systems

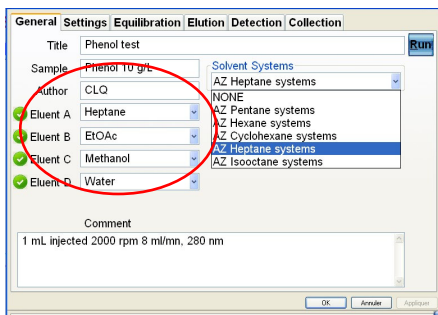


Figure 1. Solvent system selection during method development

In addition, AGC software calculates the volume of each solvent consumed for the separation. [fig 2]

Preparation of solvent systems in CPC is generally time consuming and it is sometime tricky to determine the exact volume of lower and upper phase required for a run. Consequently a large part of the solvent system prepared is lost.

The SAG feature of AGC software allows the user to directly generate each phase of a biphasic system according to an integrated database. [fig1] Pure solvents are used directly [fig 3] and during method development the software automatically proposes the right proportion of solvents according to the phase.

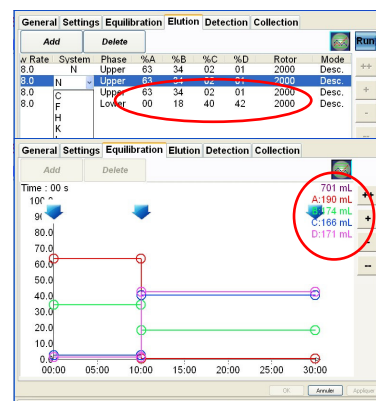


Figure 2. CPC chromatogram 210 nm of 500

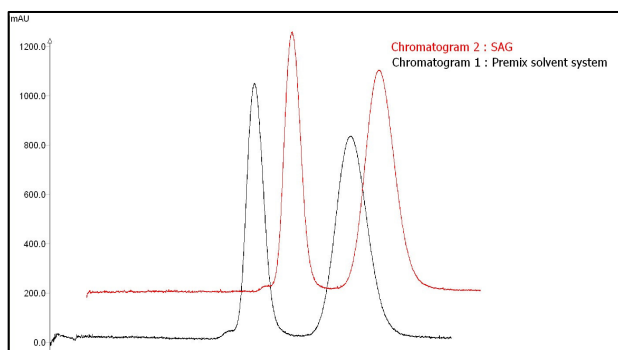
Advantages of SAG system

To be able to check if SAG gives the same results as premixed solvents, two runs are performed; the first one when the solvent system is preliminarily prepared before separation, and the second when it is automatically generated by the software with SAG.

The instrumentation system consists of an SCPC-250 coupled to a Spot Prep II with a mixing chamber, an automated ASC/DSC valve, and a 50 ml/min, 300 bar quaternary gradient pump. An Armen Glider CPC piloted the entire system. [fig 3]



Figure 3. CPC chromatogram 210 nm of 500



A simple mixture of hydroquinone and pyrocatechol was used with the Arizona N solvent system (1:1:1:1). The upper phase of this solvent system, used as the stationary phase, is composed of (63:34:02:01) and the lower phase, used as the mobile phase, is composed of (0:18:40:42) [1]. All proportions are integrated to the SAG database: selecting N and upper in the method development automatically adds the right proportion of solvents in the method. [fig 2]

Conclusion

SAG allows for performing a CPC run without solvent manipulation and for consuming the exact solvent volume needed. This method gives exactly the same performance as classical premixed solvent preparation.

A combination of CPC, Spot prep II and AGC software allows for automation of separations during all steps of purification: solvent system preparation, column equilibration, sample injection, elution, detection, and collection.