thermoscientific

ISQ EC AND ISQ EM

TIPS AND TRICKS: ISSUE 3

Recommendations for Inject Synchronization

Author

Stephan Meding

Thermo Fisher Scientific,

Germering, Germany

Keywords

Single quadrupole mass spectrometer, ISQ EC, ISQ EM, inject synchronization

Goal

Guideline on the best practices for using hardware or software inject synchronization

Introduction

The Thermo Scientific™ ISQ™ EC and EM single quadrupole mass spectrometers are controlled through Thermo Scientific™ Chromeleon™ 7.2 CDS. Two options for synchronizing data acquisition with sample injection are available: software and hardware inject synchronization.

Software inject synchronization triggers the MS data acquisition through Chromeleon 7.2 while hardware inject synchronization utilizes a contact closure cable and a relay on the autosampler to trigger MS data acquisition. In most cases software inject synchronization is adequate. However, there are some caveats to be considered.

Guideline

The ISQ EC/EM and the HPLC system are separately connected to the instrument control PC. Thus, there may be an internal delay within the computer while transmitting the injection signal. Usually this delay is very short and therefore unperceivable (a few milliseconds). However, if computers which don't meet the recommended specifications are used or additional processing is taking place (e.g. through other software) the delay may become perceptible. In contrast, hardware synchronization always triggers the start at precisely the inject start time.

Therefore, we recommend the following:

If you are using a Thermo Scientific™ Vanquish™ or Thermo Scientific™ UltiMate™ HPLC system you can use software or hardware synchronization.

- If your computer meets recommended specifications, you do not use it for other purposes while running sequences (e.g. data processing or data transfer), and you require normal run-to-run retention time precision (shifts of ~50 milliseconds are acceptable), then software synchronization is the right choice.
- If your computer doesn't meet recommended specifications or you run intensive data transfer or processing while running sequences, use a contact closure cable.
- If very high retention time precision is essential, install a contact closure cable.
- If you are unsure, install a contact closure cable.

If you use third party HPLC systems, use a contact closure cable.

Find out more at thermofisher.com/SinglequadMS

ThermoFisher SCIENTIFIC