

CON-PRA-045

CONFIRMATORY METHODS

The special case of POPs

• Context

The Persistent Organic Pollutants regulation in foodstuff is based on maximal contamination limits. In this way, the sample preparation has to lead to an efficient quantitative measurement giving a confident value for congener concentration whatever the matrices (more or less complex). Due to specificities of the target compounds and halogen atoms, GC-HRMS at high resolution (R better than 10,000), using the isotope dilution technique, has been recognised as the reference measurement technique for a long time.

• General objective(s)

The aim of this practical module is to present the implementation of an efficient acquisition method in GC-HRMS. This also includes the signal treatment with respect to the isotopic dilution method, the TEQ concept and the expected European criteria.

• Main items

Confirmatory method / GC-HRMS / Dioxins

• Pedagogical objectives

- ✓ To explain the principle of an electromagnetic sector
- ✓ To identify key parameters in the high resolution settings
- ✓ To explain how to create an acquisition method in the SIM mode regarding the isotopic dilution method
- ✓ To understand data analysis for further result expression

• Pedagogical tools

- ✓ Demonstration on a GC-HRMS instrument
- ✓ Jeol DioK software

• Duration

- ✓ 30 minutes

• Pre-requisite

- ✓ Theoretical lectures on sample preparation (SAM-THE-010, SAM-THE-020, SAM-THE-030)
- ✓ Theoretical lecture on confirmatory methods for POPs (CON-THE-040)
- ✓ Practical presentation on confirmatory methods for POPs (CON-PRA-053)