

SAM-THE-042

SAMPLE PREPARATION

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 a efficient quantitative measurement giving a confident concentration in all the considered matrices (more or less complex).

• General objective(s)

The main objective is to provide theoretical considerations about the analysis of POPs in foodstuff, including agrochemical pesticides, dioxin-like compounds and other emerging POP-like substances. The Toxic Equivalent Quotient concept developed for the dioxin-like compounds will be introduced. Then, starting from the necessity to take into account both the physicochemical properties of the target compounds and the complexity of the matrix of interest, a description of the sample treatment steps and mass spectrometer measurements used will be provided.

• Main items

POPs / Dioxins / Sample treatment / GC-HRMS

• Pedagogical objectives

- ✓ To point out state-of-the-art methods in the field of sample preparation for dioxin analysis
- ✓ To explain the TEQ concept
- ✓ To introduce the isotopic dilution method

• Pedagogical tools

- ✓ Powerpoint slide show
- ✓ Quick exercise on isotopic clusters from halogenated compounds

• Duration

- ✓ 2 hours

• Pre-requisite

- ✓ Knowledge of the chemistry of contaminants of interest (REG-THE-010)
- ✓ Theoretical lectures on sample preparation (SAM-THE-010, SAM-THE-020, SAM-THE-030)
- ✓ Theoretical lectures on confirmatory methods (CON-THE-010, CON-THE-020, CON-THE-030)