THE IMPORTANCE OF QA/QC AND THE LATEST DEVELOPMENTS IN POP ANALYSIS REGULATED BY THE STOCKHOLM CONVENTION

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Within the UNEP program 'Assessment of Existing Capacity and Capacity Building Needs to Analyze POPs in Developing Countries' several activities were undertaken during 2006 and 2007. The program is focused on the analytical capacity for the POPs under the Stockholm Convention including several pesticides (DDT, chlordane, toxaphene) and industrial (by)-products (dioxins, PCBs). Recently brominated flame retardants (BDE) and an organic fluor compound (PFOS) were added. One of the conclusions of the program was that it is quite a challenge to analyze all POPs in the sample types proposed for the global monitoring program (GMP). Traditionally low resolution GC/MS is used for the analysis of the chlorinated POPs, mostly operating in the EI mode or NCI mode for specific compounds including toxaphene and the brominated BDEs. For dioxins high resolution GC/MS systems are often required to avoid inferences and to achieve the low LODs needed. One of the difficulties to develop a universal method for the Stockholm convention POPs is that different ionization techniques are needed for different POPs. With the advances in LC/MS ionization using electro spray with or without corona needle (APCI) more reliable equipment for atmospheric pressure ionization is now becoming available. The use of atmospheric pressure ionization for GC might be a possibility to efficiently ionize the majority of the POPs on the Stockholm convention.

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