
P24. ANALYTICAL METHODS FOR THE DETECTION OF PERSISTENT ORGANIC POLLUTANTS IN COMPLEX ENVIRONMENTAL SAMPLES

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Persistent organic pollutants (POPs) are defined as the most hazardous chemicals due to their low water solubility, high lipophilicity, resistance to biodegradation, toxic effects and bioaccumulation properties. Stockholm Convention as an international environmental treaty, became effective for the ban or restriction of the use of POPs. Consequently, monitoring and risk assessment of these chemicals have become a global concern and received great importance. Prioritized pollutants including POPs are monitored routinely from environmental samples regardless the restricted resources. Measurement of pollutants in environment are laborious, expensive and usually contains more than one procedure. Moreover, these analyses were frequently advanced aiming one class of contaminants, consequently cannot correspond the demand of monitoring multiple pollutants at the same time from the environmental samples. The precise analysis of POPs requires selective and sensitive methods. The conventional extraction methods generally start with a homogenization step, followed by one or more steps of purification to remove coextracted interferences before instrumental analysis. For satisfactory purification of sample extracts, the choice of an appropriate adsorbent and eluent solution is important and depends mainly on the chemical properties of the target analytes as well as the sample matrix. Several interlaboratory comparison studies and proficiency testing programs are in place throughout the world. Nevertheless, there are imminent challenges in accurate and precise analysis of POPs in complex environmental matrices. This presentation will provide a brief and systematic description of the methods for the measurement of POPs in complex sample matrices, with the emphasis on analytical methods.

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