

INVESTIGATION ON THE CAPABILITIES OF A NEW PARALLEL PRESSURIZED LIQUID EXTRACTION SYSTEM FOR DIOXINS AND PCBs IN BIOLOGICAL SAMPLES

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Preparing samples for dioxin and PCB measurement in biological specimen is a task that is challenging many research centers and routine laboratories. For either human or food-related matrices, the implementation of proper procedures requires time, know-how, and money. Among other techniques, pressurized liquid extraction (PLE) has been used for several years to save time and to reduce solvent consumption, while maintaining good extraction efficiency. Samples are normally sequentially extracted and extraction sequences can be performed unattended overnight. The unavoidable clean-up procedure that follows the extraction step has also evolved last 15 years to offer automated parallel sample processing capabilities, based on multi-column set-ups and computer piloted solvent deliveries. Recently, a novel PLE instrumental design has been proposed to allow parallel extraction of several samples in order to better fit with sample throughput requirements of the parallel clean-up procedure. We investigated the use of both parallel PLE and clean-up procedures for sample preparation of reference and quality control food and serum samples. Recovery rates, extraction and transfer efficiency, accuracy, precision, robustness, and usability of the system have been estimated.