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Continuous sample drop flow-based microextraction method as a microextraction technique for determination of organic compounds in water sample

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Abstract

Continuous sample drop flow-based microextraction (CSDF-ME) is an improved version of continuous-flow microextraction (CFME) and a novel technique developed for extraction and preconcentration of benzene, toluene, ethyl benzene, m-xylene and o-xylene (BTEXs) from aqueous samples prior to gas chromatography–flame ionization detection (GC–FID). In this technique, a small amount (a few μL) of organic solvent is transferred to the bottom of a conical bottom test tube and a few mL of aqueous solution is moved through the organic solvent at relatively slow flow rate. The aqueous solution transforms into fine droplets while passing through the organic solvent. After extraction, the enriched analyte in the extraction solvent is determined by GC-FID. The type of extraction solvent, its volume, needle diameter, and aqueous sample flow-rate were investigated. The enrichment factor was 221- 269 under optimum conditions and the recovery was 89% to 102%. The linear ranges and limit of detections for

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