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Water quality — Determination of selected estrogens in whole water samples — Method using solid phase extraction (SPE) followed by liquid chromatography (LC) or gas chromatography (GC) coupled to mass spectrometry (MS) detection

Qualité de l'eau — Dosage d'œstrogènes sélectionnés dans des échantillons d'eau totale — Méthode par extraction en phase solide (SPE) suivie d'une détection par chromatographie en phase liquide (CL) ou en phase gazeuse (CG) couplée à la spectrométrie de masse (SM)

FDIS stage

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This document was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

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Introduction

Natural and synthetic ~~oestrogens~~estrogens are widely used worldwide, e.g. for contraception. Through application or improper disposal, these estrogens can enter the water cycle unchanged or transformed. They can therefore be detected in surface and groundwater, as well as in treated wastewater. It is known that estrogens ~~may~~can end up in surface waters via wastewater, and due to their physicochemical properties, they can partition in the different compartments ~~{[~~water and suspended particulate matter (SPM~~)}]~~ of water systems. They are of rising concern, due to their high estrogenic activity even at the measured ultra-trace levels (far below ng/l). Beside feminised fish and other endocrine disruptive effects in water ecosystems, they ~~may~~can also be a factor in biodiversity loss.[0] ~~[1].~~ Therefore, appropriate measurement methods are required to monitor estrogen levels below their ecotoxicological level ~~{[~~e.g. predicted no effect concentration (PNEC) or environmental quality standard (EQS~~)}]~~ and accordingly demonstrate if a water body is at risk.

This document specifies validated methods for analysing water samples in monitoring programs aiming at qualifying the quality of the water environment with respects to the selected estrogens.

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