

series	cap color	membrane	pore size	part #
eXtremelFV®	●	PTFE	0.2µm	85530

## EPA Method 539: Determination of Hormones in Drinking Water by SPE and LC-ESI-MS/MS with eXtremelFV®

### Introduction

Method 539, Determination of Hormones in Drinking Water by Solid Phase Extraction [SPE] and Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC-ESI-MS/MS) method for the determination of hormones in finished drinking water. Endocrine disrupting hormones in waste, surface and drinking waters have been studied extensively in the last decade. These compounds (and their metabolites) enter the environment through a variety of anthropogenic activities, with typical concentrations found in different water sources in the ng/L range. Within the scope of EPA Method 539 there are seven hormones monitored in finished drinking water. The Thomson Filter Vials were evaluated to replace the filtering step using a syringe and syringe filter.

### Analytes

- 16α-Hydroxyestradiol (Estriol)
- 17β-Estradiol
- 17α-Ethynylestradiol
- Testosterone
- Estrone
- 4-Androstene-3, 17-dione
- Equilin

### Method

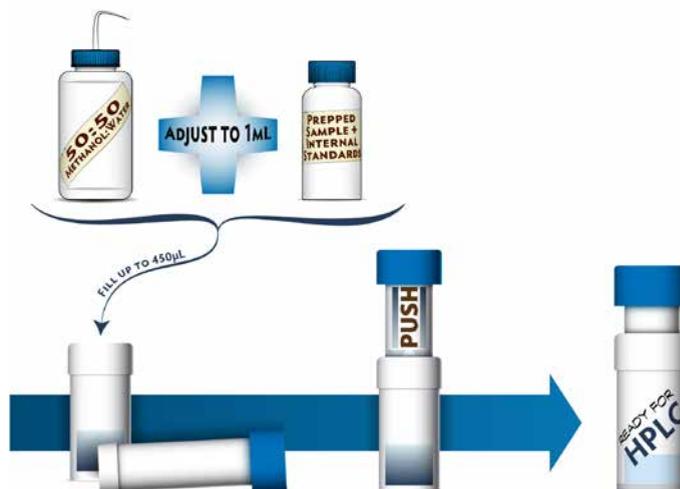
1. Prepare internal standards according to EPA Method 539
2. Prepare sample according to EPA Method 539
3. Add internal standards to sample and adjust final volume to 1 mL with 50:50 methanol:water
4. Transfer an aliquot to a Thomson eXtremelFV®
5. Press plunger
6. Load onto LCMS

### Recommended Vials

eXtremelFV® – all membrane types, 0.2 µm.

“I used a reporting-limit level standard and filtered it through each of the four vial types (PES, PVDF, PTFE, and Nylon). I evaluated the results against a 6-point calibration curve, and my recoveries ranged from 90.8% to 107% for all analytes and surrogates and internal standards, and filtrations of blank sample diluent revealed no interferences at my target compound retention times. ... 539 requires that a standard that is filtered have no more than a 15% difference from the unfiltered standard, so any of the filter vials will meet criteria.”

Analytical Laboratory



The current EPA method recommends a 0.2 µm GHP® syringe filter. Thomson eXtremelFV® are an efficient and cost-effective alternative that contain pre filters. Thomson Solutions At Work™ is not affiliated with Pall® or their product the GHP®-syringe filter.