



The SPE-DEX[®] 4790 for Automated Extraction of Dioxins from Water

Dioxins are persistent organic pollutants (POPs) that are of concern around the world. They need to be efficiently extracted and then are usually measured with HRGC/HRMS using methods such as US EPA 1613 or ISO 18073:2004 for guidance. The SPE-DEX 4790 using solid phase extraction disks is a well-established technology that can be used for this application.

The SPE-DEX 4790 can:

- Efficiently extract large volumes of water
- Efficiently extract water with particulates
- Dispense the water from the original sample bottle and automatically rinse it.

This helps provide an efficient sample extraction step. Combined with installation and training a laboratory can be up and running very quickly. An example of the kind of recoveries expected when each sample was spiked with 25 µL of 20pg/µL solution containing CDDs and CDFs and a 40pg/µL for OCDD and OCDF and allowed to sit for three hours prior to the extraction in order for adsorption of surrogates onto suspended soil in the samples is shown in the table.



Horizon Technology SPE-DEX 4790 Automated Extractor

Selected Dioxin Analytes Spiked in a Wastewater Influent

Compounds	Sample 1 % Recovery	Sample 2 % Recovery	SD
2,3,7,8-TCDF	88.3	87.6	0.49
1,2,3,7,8-PeCDF	71.3	69.2	1.48
2,3,4,7,8-PeCDF	81.6	77.6	2.83
1,2,3,4,7,8-HxCDF	76.9	74.5	1.70
1,2,3,6,7,8-HxCDF	75.5	72.5	2.12
2,3,4,6,7,8-HxCDF	86.1	84.8	0.92
1,2,3,7,8,9-HxCDF	86.7	81.9	3.39

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