



**SPE-DEX® 4790** AUTOMATED EXTRACTION SYSTEM



PREPARE FOR BETTER RESULTS



**CHROMATOGRAPHIC  
SPECIALTIES INC.**

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# Mature SPE for Routine Use

Solid phase extraction (SPE) is a modern alternative to older techniques, such as liquid-liquid extraction and continuous liquid-liquid extraction.

Over the course of SPE history, different adsorbents and chemistries have become well characterized and understood. As a result, SPE is used routinely in a variety of industries to separate semivolatile and nonvolatile compounds from liquid matrices. Regulatory programs, such as US EPA, allow this technology in methods for drinking water, groundwater, surface water and wastewater.

## SPE HAS A NUMBER OF BENEFITS, INCLUDING:

- Uses less solvent, and creates
- Less waste, controlling costs
- Reduces exposure to solvent, increasing safety
- Less chance of emulsions, providing more predictable productivity

## SPE IS READILY AUTOMATED PROVIDING ADDITIONAL BENEFITS:

- Better reproducibility between technicians
- Handles difficult samples reliably
- Less attention required for good results

# SPE Automation

The Horizon Technology SPE-DEX 4790 Automated Extraction System is a programmable, multipurpose SPE system, capable of processing aqueous samples directly from their original containers. Once the process is initiated, each SPE-DEX 4790 system sequentially delivers all the necessary solvents to precondition the sorbent material within the SPE disk, then passes the water sample through the disk and, after a preset air-dry time, extracts the sorbed analytes from the disk into a collection vessel using the required amounts of solvents.

Examples of the kinds of recoveries that can be obtained from spiked drinking water samples and spiked wastewater samples can be seen in Tables 1 and 2 for selected compounds.

TABLE 1. Recoveries of PAHs from Clean Water Samples

Compound	Spike (µg/L)	%Recovery	%RSD
Naphthalene	20 or 30	77	5.0
Phenanthrene	20 or 30	92	3.3
Benzo(a)pyrene	20 or 30	92	5.1
Indeno(1,2,3-cd)pyrene	20 or 30	91	6.7
Benzo(ghi)perylene	20 or 30	90	5.8

*Determination of PAH Compounds from Aqueous Samples Using a Non-Halogenated Extraction Solvent and Atlantic C18 Disks, App Note AN072-20120203, www.horizontechnic.com.*

TABLE 2. Recoveries of Selected Semivolatile Compounds from Wastewater, 100 mL One-pass Method (n=4)

Compound	Spike (µg/L)	%Recovery	%RSD
Acenaphthene	125	85.0	1.6
Fluorene	142	89.6	1.1
2-Methylnaphthalene	171	97.7	2.4
2,6-Dichlorophenol	78.5	91.8	2.9
Dieldrin	8.78	80.5	7.6

*New Method US EPA 625 with Solid Phase Extraction for Challenging Wastewaters, App Note AN0911408\_01, www.horizontechnic.com.*

## SPE-DEX 4790 WORKFLOW

Workflow for the SPE-DEX 4790 Extractor, used with Atlantic® solid phase extraction disks, the DryVap® In-line Drying and Concentration system and the SolventTrap<sub>S<sub>VOC</sub></sub> Solvent recovery System for a full sample preparation system.



# Compliant with most US EPA and other regulatory methods around the world

## SAMPLE HANDLING

- Use the bottle of your choice for easier implementation
- Rinses the bottle for best sample recoveries
- Accommodates 20 mL-4L samples for all sensitivity needs

## WASTE MANAGEMENT

- Collects organic and water waste separately for proper and economical disposal

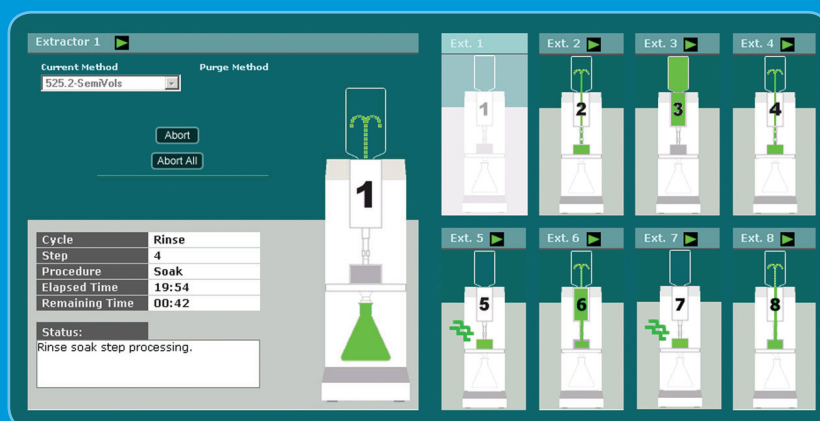
## SOLVENT HANDLING

- Handles up to five solvents for conditioning and three for elution – accommodating most methods
- A variety of solvents can be used, including dichloromethane, methanol, and hexane, for example



## SAMPLES WITH PARTICULATES

- The EZ Flow disk holder is designed to collect particulates before the SPE disk, maintaining flow
- Prefilters available to keep the sample flowing
- Large water inlet valve to accommodate particulates
- Includes a Purge function to clean the system between samples



## UNIQUE WEB-BASED CONTROLLER SOFTWARE INCLUDED

- Access status from anywhere
- On-board diagnostics report system readiness
- Resident methods for a quick start-up
- New methods can be created and stored
- Quick status review through icons
- Transfer developed methods to other systems
- Up to eight stations can be controlled at once for increased productivity

Put Our  
Experience  
To Work  
For You



[horizontechinc.com](http://horizontechinc.com)

At Horizon Technology, we recognize the importance of sample preparation as the first step in achieving better results in the analysis of semivolatile or nonvolatile organic compounds. Whether you're using GC/MS, GC, LC/MS or LC for your analysis, our extraction, drying, evaporation/concentration, solvent recovery systems and automated solutions will help you streamline your workflow while improving cost-efficiency and reproducibility.

The consumables that fuel your sample preparation must be readily available and consistently high-quality to ensure that your analyses run predictably and reproducibly. Purchase these and other items through Horizon Technology by phone or on the expanding E-store for reliable delivery and operation.

Whether you're just switching to automated sample preparation or have new employees running your equipment, Horizon can reduce the learning curve. Online videos, comprehensive instruction manuals, application notes and live technical support get you up and running quickly, while our in-house or on-site service provides fast and convenient installation, repair and maintenance of your equipment.

With our ever-expanding product line and consultative approach, we're committed to helping laboratories worldwide get their analyses off to a great start.

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