



SPE-DEX® 5000 AUTOMATED EXTRACTION SYSTEM

Horizon
technology

PREPARE FOR BETTER RESULTS

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, ISO and European EN, include this technology in methods for drinking water, groundwater, surface water, wastewater and whole water. It is also used in field sampling with both passive and dynamic samplers.

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 and increased productivity

Additionally, SPE is readily automated providing additional benefits.

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

The Horizon Technology SPE-DEX 5000 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 5000 module delivers all the necessary solvents to precondition the sorbent material within the SPE disk, 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 Selected SVOCs from Six Drinking Water Sample Replicate Spikes

Compound	Spike (µg/L)	%Recovery	%RSD
2,6-Dinitrotoluene	5	101	2.85
Acenaphthylene	5	90.9	4.03
Acenaphthene	5	98.2	3.07
Chloroneb	5	104	2.94
Tebuthiuron	5	111	4.84

Extraction of a full Suite of Semivolatile Compounds from Drinking Water Using Automated Solid Phase Extraction and Atlantic C18 Disks, App Note AN1141703_01, www.horizontechnic.com.

TABLE 2. Recoveries of Selected Pesticide Compounds from Wastewater Duplicate Samples

Compound	Spike (µg/L)	%Recovery	%RSD
Dieldrin	5	101	2.85
Endrin	5	90.9	4.03
4,4'-DDD	5	98.2	3.07
Endosulfan II	5	104	2.94
4,4'-DDT	5	111	4.84

Analysis of Pesticides in Wastewater Samples Using SPE and GC-ECD, App Note AN1151703_01, www.horizontechnic.com.

The SPE-DEX 5000 can also be applied to the extraction of Dioxins, 1, 4 dioxane, BPA, and other important environmental contaminants.



Workflow for the SPE-DEX 5000 Extractor, used with Atlantic® solid phase extraction disks, the DryVap® In-line Drying and Concentration system and the SolventTrap_{SVOC} Solvent recovery System for a full sample preparation system

Compliant with most US EPA, ISO, EN and other regulatory methods around the world

SAMPLE HANDLING

- Use the bottle of your choice for easier implementation
- Rinses the bottle for best analyte recoveries
- Accommodates 40 mL-2 L samples for all sensitivity needs

SOLVENT HANDLING

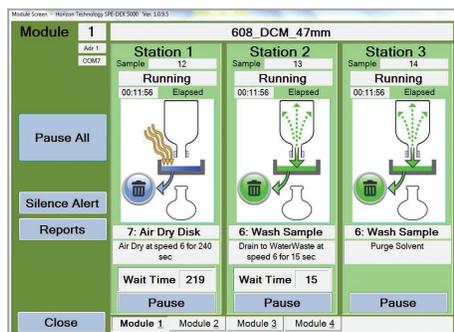
- Handles up to seven solvents for conditioning, washing and elution
- Solvents can be positioned on the top of the instrument (similar to HPLC) to use space efficiently
- A variety of solvents can be used, including dichloromethane, methanol and hexane
- Collects organic and water waste separately for proper and economical disposal

FLEXIBLE SOFTWARE CONTROL

- Sample IDs can be entered through a bar-code reader
- Methods can be modified or new methods developed
- Transfer developed methods to other systems
- Vacuum can be varied to adjust sample loading speed
- Choice of report formats for Client delivery or transfer to LIMS

PRODUCTIVITY

- Use up to four modules with one software instance allowing 1-12 samples to be run at once
- Easily connected with a USB hub
- System can be operated in a hood or on the bench with exhaust system
- All valves and pumps are internal to the system, requiring less bench space



SAMPLES WITH PARTICULATES

- The Fast Flow disk holder is designed to collect particulates before the SPE disk, maintaining flow and characterizing the whole sample
- Includes method steps to clean the system between samples
- Never lose a sample with detection systems to pause the run for user intervention when an unsatisfactory situation is detected
- Run even complex samples without emulsions forming; the power of SPE at work!

SIMPLE SOFTWARE CONTROL

- Optional password protection for limited access during routine operation
- Resident methods for a quick start-up
- Pause with message feature delivers additional instructions to user
- Quick status review through icons
- Alerts warn operator of an unsatisfactory situation

Put Our Experience To Work For You

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.

For more information, visit our website or contact us today. And prepare for better results.

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