



SOLID PHASE EXTRACTION

Reproducible Results - Increased Productivity

FOOD & BEVERAGE
DRINKING WATER CLINICAL POLYMERIC
ION EXCHANGE CONDITION LOAD
MIX-MODE DRUG TESTING
WASH ELUTE CARTRIDGES
AGRICULTURAL
FORENSICS INJECT CONCENTRATE
REVERSE PHASE PESTICIDES
NORMAL PHASE SILICA



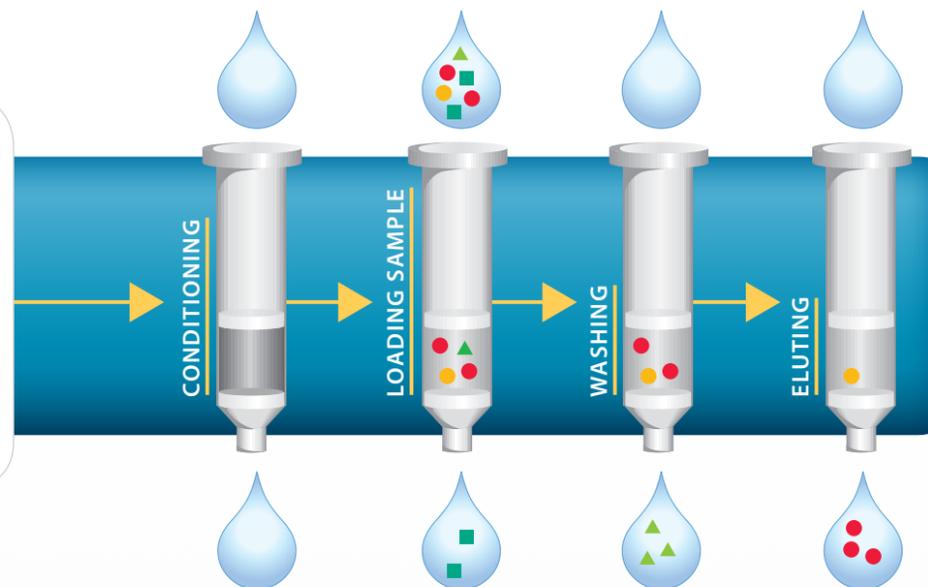
Is sample processing your major source of error with SPE?

Solid phase extraction consists of multiple steps that require precise volumes, pressure, timing and more. Automation delivers the accuracy, reproducibility, high recoveries and yields required by researchers in environmental, clinical, pharmaceutical, forensic and agricultural labs. Versatile applications that improve performance are at your fingertips with our trusted ASPEC™ solutions.

ASPEC



Automated Solid Phase Extraction Cartridges



ASPEC™ Complete Solid Phase Solutions

Enhanced SPE sample processing and applications offer increased versatility for today's busy laboratories. Gilson SPE systems feature cutting-edge technology in a space-saving, modular design that can be customized to meet your exact specifications.

- Automation-ready right out of the box
- Pre-capped cartridges save time
- Lot-to-lot reproducibility
- Wide selection of phases

TRUST GILSON

Decades of experience in engineering, optimizing and supporting automation and custom solutions for countless laboratories around the world have made Gilson the gold standard for reliability, fast installation, straight-forward operation, and high lifetime value. Built to be modular and versatile, Gilson systems will adapt to your changing needs for years to come and help lower operating costs while improving results, morale and productivity.

REPRODUCIBLE RESULTS INCREASE YOUR PRODUCTIVITY

Automating SPE improves reproducibility, reduces the costs and delays associated with re-runs and increases overall throughput by running samples 24/7 without overtime or coffee breaks. Imagine starting your day with samples ready for analysis! Equally important, process automation limits the long-term exposure of personnel to repetitive, often demoralizing tasks or harmful chemicals and frees up people to focus on mission-critical efforts that require human touch.

ASPEC® SPE PRE-CAPPED CARTRIDGES - CONSISTENT FLOW RATES AND YIELD

ASPEC™, pre-capped solid phase extraction cartridges are available in 1, 3, and 6 mL volumes. These high quality silica and polymer products come in a variety of phases including Silica, C18, SCX, WCX, HLB (Polymeric) and many more. With reproducible separation, high loading capacity and accurate elution properties, each of the phases allows low solvent consumption and reliable analysis.

- More consistent flow rates and analyte recoveries
- Reduced variation
- Minimal carryover from sample to sample



Application of *positive pressure* to individual cartridges using Gilson's unique sealing cap technology ensures more consistent flow rates and analyte recoveries, reduced variation, and minimal carryover from sample to sample.





Seamless SPE with the GX-Series ASPEC™ Systems

Laboratories are under pressure to process more samples than ever in a limited laboratory space. Integrating SPE with all the capabilities of an automated liquid handler, the GX-Series ASPEC™ is Gilson's solution to the requirements for smaller, flexible, highly capable instruments that are cost-effective and simple to operate.



- Single and dual syringe pumps deliver volumes from 10 µL to 25 mL with high accuracy and precision
- Positive pressure elution with syringe push or external gas



- Standard racks accommodate 1, 3 and 6 mL SPE pre-capped cartridges



- Racks accommodate a wide variety of test tubes and vials. Gilson provides customized rack solutions for specialized vessels, allowing the instrument to conform to your application.

QUESTIONS ANSWERED...WITH ASPEC



Post purification processing?

With the mobile rack technology from Gilson, you have access to purified samples for any subsequent steps, including pH adjustment, solvent evaporation or automatic injection.



Analyze the sample automatically?

The GX Direct Injection Module supports on-line injections onto HPLC or LC/MS systems. Transfer ports are also available to deliver samples to off-bed detection sources such as spectrophotometers for flow injection analysis.



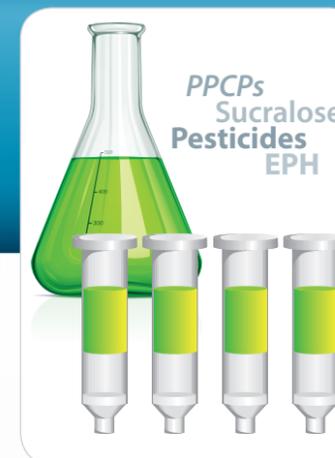
Prepare more samples faster?

Process up to four samples simultaneously with the GX-274 ASPEC™. Four probes run in parallel and deliver higher total throughput and faster turn-around during hectic periods.

Concentrate with Large-Volume Water SPE



Built upon the robustness of the Gilson GX-Series ASPEC™ systems, the Large-Volume (LV) Water SPE system configurations provide rugged and reliable automation of small to large volume SPE applications for labs conducting research and routine testing on drinking water, rain water, ground water and surface water. *Concentration* extends the range of analytical equipment and makes the difference between the right result – and no result at all.



VALVEMATE II

Concentration works best with larger volumes, so it is a natural fit for samples that never run out, such as water.

But how do I push a liter of water through standard SPE cartridges?

Large-Volume Water SPE solution from Gilson combines all of the features of the GX-271/GX-274 ASPEC™ with special hardware that makes large-volume SPE practical and cost-effective.

- VALVEMATE® II Valve Actuator programmable actuators allow for access to 40 large-volume samples and up to 17 solvents (8 standard)
- Dual-drain mobile rack design separates aqueous load stream from organic elution stream to reduce waste volumes and disposal costs
- Multi-fraction collection capability required by many large-volume regulatory methods is made possible by our unique mobile rack technology

REMOVE BOTTLENECKS WITH INTEGRATED DRY-DOWN

After SPE, samples often need to be dried down to facilitate the next step of the analysis. Taking up only one rack position, the **GX Solvent Evaporation Station** automates this time-consuming step and removes a common bottleneck in laboratories.

- Dries down 40 samples simultaneously
- Unattended and fully automated
- Moisture and maintenance free, low temperature dry down
- Programmable or keypad controlled



Limited Lab Space? GX-241 ASPEC™ System



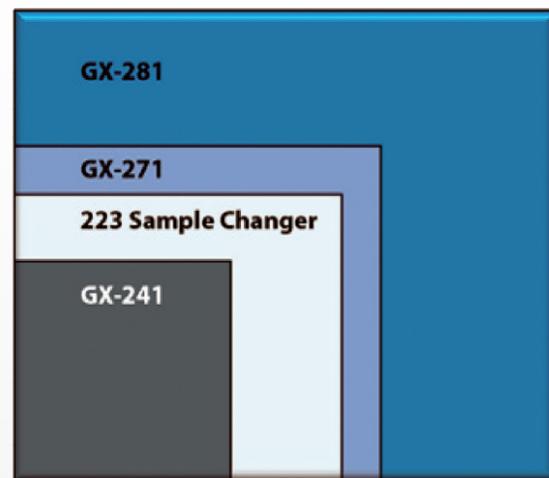
Occupying less than 40 cm of linear bench space, Gilson's smallest automated SPE and liquid handling system is ideally suited for facilities where bench space or budget is limited. The **GX-241 ASPEC™ System** offers all standard features of the larger ASPEC systems in a single-probe, compact configuration designed for lower-throughput applications.

- One rack for samples and one rack for cartridges
- Syringe pump precisely dispenses 10 µL - 25 mL
- Compatible with test tubes, vials and microplates
- On-bed access to six 100 mL solvent reservoirs
- Accommodates 1, 3, and 6 mL SPE cartridges

Which Gilson SPE system is right for you?

Whether your priority is flexibility, throughput or footprint, there is a Gilson system that offers the right features for your application. Regardless of which configuration best meets your needs, you can be confident that any Gilson SPE solution will perform to the highest industry standards.

	GX-241 ASPEC™	GX-271 ASPEC™	GX-274 ASPEC™
No. of Probes	1	1	4
No. of Racks	2	5	5
Direct Inject	No	Standard	Available
Large-Volume	No	Yes	Yes
Evaporation	No	Yes	Yes
Post-SPE auto	No	Yes	Yes



Gilson Liquid Handling Footprint Comparison

Control Comfortably with TRILUTION® LH

Created to make automation accessible to everyone, TRILUTION LH, the SPE software from Gilson, combines unparalleled flexibility with a graphical intuitive interface that gets users up to speed quickly and allows you to start running samples on day 1.

Distinct modules simplify building methods and application



Methods: ES-27X, SPE, Test

Operators: Variable, Expression, String Manipulator, If..EndIf, If..Else..E..., DoOnlyIn, Loop, Label, GoTo, Pick, Intelligent Pipetting, Intelligent Pipetting f...

Tasks: Liquid Handling (Add, Aliquot, Cherry Pick, Derivatize, Dilute, Dispense, Dispense Random to Random, Inject, Mix, Prime 402 Dual with Tee, Prime Pump, Prime Transfer Ports, Rinse Probes, Transfer, Z Inject), SS Liquid Handling, Disposable Tips, SPE (Condition, Dry, Elute, Evaporate, Fractionate, Load, Load and Collect, Move Mobile Rack, Wash), Tweaks, Auxiliary, Custom, Utility Tasks

Configuration: Bed Layout, Method, Error Handling

Workflow: Aliquot → Add → Condition → Load → Wash → Elute → Wait → Dry Down

Elute Configuration: Source (Reservoir), Source Volume (µL): 0, Source Flow Rate (mL/min): 3, DEC Well: 1, Result Flow Rate (mL/min): 3, Equilibration Time (min): 0.1, Dispense Air Gap to DEC: [checkbox], Air Push: Syringe, Air Push Volume (µL): 0, Air Gap (µL): 20, Aspirate Flow Rate (mL/min): 6, Dispense Flow Rate (mL/min): 6, Equilibration Time (min): 0.1

Run Modes: Seq, Multiple, Batch, Run, Pause, Simulate

Control third party devices with GEARS software plug-ins: Heaters or chillers, Barcode readers, Balances, Grippers, Hot plates, Shakers



ASPEC™ System Specifications

	GX-271/GX-274 ASPEC™	GX-241 ASPEC™
SPE Cartridge Sizes	1 mL, 3 mL, 6 mL standard, other sizes as specials	
Disposable Extraction Cartridge (DEC) Rack Capacity	36 (1 mL), 20 (3 mL), 15 (6 mL)	
DEC Rack Type	Code 20, 33X/34X, 37X, others as specials	
Locator Plate Capacity	5 racks	2 racks
Solvent Reservoirs	4 (500 mL or 700 mL)	6 (100 mL)
Positive Pressure	Air Push or Gas Cylinder	
Syringe Range	100 µL – 25 mL	
Auto sampler	X/Y/Z with stationary racks	
Probe Performance	± 0.75 mm in X/Y/Z dimensions ± 0.20 mm in X/Y/Z dimensions	
Software Control	TRILUTION® LH	
Volumetric Accuracy	±2% (10%-90% syringe capacity, water)	
Dimensions (W x D x H) [excluding syringe pump(s)]	60 x 54 x 57 cm 24 x 21 x 22 in.	39 x 50 x 47 cm 15 x 20 x 18 in.
Weight	22 kg (48 lbs.)	7.7 kg (17 lbs.)

Standard ASPEC™ Pre-Capped SPE Cartridges



SILICA	SCX	C4
ASPEC SILICA, 50 mg, 1 mL	ASPEC Tonic Acid (SCX), 50 mg, 1 mL	ASPEC C4, 50 mg, 1 mL
ASPEC SILICA, 100 mg, 1 mL	ASPEC Tonic Acid (SCX), 100 mg, 1 mL	ASPEC C4, 100 mg, 1 mL
ASPEC SILICA, 200 mg, 3 mL	ASPEC Tonic Acid (SCX), 200 mg, 3 mL	ASPEC C4, 200 mg, 3 mL
ASPEC SILICA, 500 mg, 3 mL	ASPEC Tonic Acid (SCX), 500 mg, 3 mL	ASPEC C4, 500 mg, 3 mL
ASPEC SILICA, 500 mg, 6 mL	ASPEC Tonic Acid (SCX), 500 mg, 6 mL	ASPEC C4, 500 mg, 6 mL
ASPEC SILICA, 1 g, 6 mL	ASPEC Tonic Acid (SCX), 1g, 6 mL	ASPEC C4, 1 g, 6 mL
SAX	SCX-2	C8
ASPEC A Chloride nec (SAX), 50 mg, 1 mL	ASPEC Propylsulfonic Acid (SCX-2), 50 mg, 1 mL	ASPEC C8, 50 mg, 1 mL
ASPEC A Chloride nec (SAX), 100 mg, 1 mL	ASPEC Propylsulfonic Acid (SCX-2), 100 mg, 1 mL	ASPEC C8, 100 mg, 1 mL
ASPEC A Chloride nec (SAX), 200 mg, 3 mL	ASPEC Propylsulfonic Acid (SCX-2), 200 mg, 3 mL	ASPEC C8, 200 mg, 3 mL
ASPEC A Chloride nec (SAX), 500 mg, 3 mL	ASPEC Propylsulfonic Acid (SCX-2), 500 mg, 3 mL	ASPEC C8, 500 mg, 3 mL
ASPEC A Chloride nec (SAX), 500 mg, 6 mL	ASPEC Propylsulfonic Acid (SCX-2), 500 mg, 6 mL	ASPEC C8, 500 mg, 6 mL
ASPEC A Chloride nec (SAX), 1 g, 6 mL	ASPEC Propylsulfonic Acid (SCX-2), 1g, 6 mL	ASPEC C8, 1 g, 6 mL
SAX-2	WXC	C18
ASPEC TMA Acetate nec, 50 mg, 1 mL	ASPEC Carboxylic Acid (WCX), 50 mg, 1 mL	ASPEC C18, 50 mg, 1 mL
ASPEC TMA Acetate nec, 100 mg, 1 mL	ASPEC Carboxylic Acid (WCX), 100 mg, 1 mL	ASPEC C18, 100 mg, 1 mL
ASPEC TMA Acetate nec, 200 mg, 3 mL	ASPEC Carboxylic Acid (WCX), 200 mg, 3 mL	ASPEC C18, 200 mg, 3 mL
ASPEC TMA Acetate nec, 500 mg, 3 mL	ASPEC Carboxylic Acid (WCX), 500 mg, 3 mL	ASPEC C18, 500 mg, 3 mL
ASPEC TMA Acetate nec, 500 mg, 6 mL	ASPEC Carboxylic Acid (WCX), 500 mg, 6 mL	ASPEC C18, 500 mg, 6 mL
ASPEC TMA Acetate nec, 1 g, 6 mL	ASPEC Carboxylic Acid (WCX), 1 g, 6 mL	ASPEC C18, 1g, 6 mL
WAX		POLYMERIC
ASPEC Amine (WAX), 50 mg, 1 mL		ASPEC HLB, 30 mg, 1 mL
ASPEC Amine (WAX), 100 mg, 1 mL		ASPEC HLB, 60 mg, 3 mL
ASPEC Amine (WAX), 200 mg, 3 mL		ASPEC HLB, 100 mg, 6 mL
ASPEC Amine (WAX), 500 mg, 3 mL		ASPEC HLB, 200 mg, 6 mL
ASPEC Amine (WAX), 500 mg, 6 mL		ASPEC HLB, 500 mg, 6 mL
ASPEC Amine (WAX), 1 g, 6 mL		

Additional phases are available upon request. Please inquire to sales@gilson.com for more information.



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