Agilent Bond Elut Family of SPE and QuEChERS Products

SOLUTIONS FOR WORRY-FREE SAMPLE PREPARATION
Behind every separation lie dozens of questions.
Are my results reliable? Are they reproducible?
Will I stay within my budget and meet my deadline? But when it comes to sample prep, there is no question.

That’s because Agilent Bond Elut Sample Preparation products deliver performance you can count on, run after run – and are backed by decades of quality and technical expertise. So you can efficiently and quantitatively extract the analytes you’re looking for – and ensure accurate, reproducible results right from the start.

- **Avoid surprises that increase your cost per sample**
  Reduce unexpected instrument downtime, overtime, or rework with a full portfolio of Agilent products that deliver the quality and consistency your lab needs.

- **Prevent failed extractions, interferences, and contamination**
  Bond Elut sorbents are manufactured using proprietary techniques to ensure consistent performance. By maintaining control over the manufacturing process, Bond Elut minimizes your risk of unpleasant surprises in your analyses.

- **Spend less time troubleshooting problems**
  Inconsistency between analysts, variable extractions, and adjusting sample prep methods for large and/or dirty samples are notorious time-wasters. That’s why Agilent is always there to help with resources like our sample preparation handbook of basic and advanced techniques, extensive application compendia, and world-class technical support.

- **Find what you need for your methods**
  From QuEChERS to SPE, the Bond Elut portfolio gives you the widest range of options for your selectivity and matrix needs. Plus, the global Agilent distribution network ensures that supplies will be available when you need them.

Reliable, productive chromatography demands sample preparation that is straightforward, cost-effective, and compatible with your analytical goals and method. From solid phase extraction... to filtration and purification... Agilent makes achieving accurate results easier.

A history of Bond Elut innovation and expertise

The roots and evolution of the Agilent Bond Elut portfolio include multiple milestones in chromatographic technology. With the acquisition of Varian, Agilent added depth, breadth, and expertise to our capabilities. Today, Agilent integrates this legacy of expertise into a single system that ensures precise and reliable production, quality, and worldwide availability.

Bond Elut launched
1979
1985

Sorbent Extraction Technology Handbook
A test standard was used for testing recovery and performance of Bond Elut Plexa. This overlay represents reverse-phase recovery test results of four separate lots of Plexa, from a range of approximately 6 years, demonstrating consistent recovery.

**Consistent quality enables consistent results**

As instruments have become more selective and sensitive, Agilent manufacturing standards have evolved as well. Our multi-step quality assurance (QA) and quality control (QC) processes covered under our ISO 9001: 2008 compliant quality management system, minimize variability and deliver the consistency, reliability, and robustness you expect.

**Bond Elut Plexa lot-to-lot recovery comparison**

A test standard was used for testing recovery and performance of Bond Elut Plexa. This overlay represents reverse-phase recovery test results of four separate lots of Plexa, from a range of approximately 6 years, demonstrating consistent recovery.

**Bond Elut Plexa particle distribution**

Tight control of particle size distribution ensures consistent flow. Agilent Bond Elut Plexa sorbent particles are nearly mono-dispersed in size, resulting in homogeneous packing, higher bed packing efficiency, and more consistent performance.
"I need help finding the right sample prep product for my needs."

START YOUR SAMPLE PREP DEVELOPMENT WITH QUALITY PRODUCTS FROM A TRUSTED SOURCE

Selection of Agilent Bond Elut SPE mode and phase

This chart helps you select the correct Bond Elut polymer, silica, or other sorbent cartridges for applications that call for consistent results and lower detection limits.

<table>
<thead>
<tr>
<th>Analyte MW &lt; 3,000 Da</th>
<th>Analyte Solubility (Matrix)</th>
<th>Water-Soluble</th>
<th>Organic Solvent-Soluble (Water Immiscible)</th>
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</thead>
<tbody>
<tr>
<td>Molecular Character</td>
<td>Cation Exchange</td>
<td>Anion Exchange</td>
<td>Polar</td>
</tr>
<tr>
<td>Stationary Phase</td>
<td>Plexa PCX</td>
<td>Plexa PAX</td>
<td>Plexa PPL</td>
</tr>
<tr>
<td>Phases: Polymeric</td>
<td>WCX</td>
<td>WAX</td>
<td>PPL</td>
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<tr>
<td>Phases: Silica-based</td>
<td>SCX</td>
<td>SAX</td>
<td>CN-E</td>
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<tr>
<td>Phases: Specialty</td>
<td>CBA</td>
<td>DEA</td>
<td>C18</td>
</tr>
<tr>
<td>Phases: Dual Phase or Mixed Mode</td>
<td>Prepa PCX</td>
<td>Prepa PAX</td>
<td>Prepa PPL</td>
</tr>
</tbody>
</table>

Tip: For more selection guides to help choose the best product for your application, see the Essential Chromatography & Spectroscopy Supplies Catalog (5991-1057EN).

*For Forensic Use.
## Ordering Information

This is only a small selection of popular products. The entire portfolio of Bond Elut SPE and QuEChERS products is available in a wide range of bed sizes, volumes, and sorbent types. You can find them at [Agilent.com/chem/sampleprep](http://Agilent.com/chem/sampleprep), or in the Essential Chromatography & Spectroscopy Supplies Catalog.

### Ion-exchange SPE

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Part Number</th>
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</thead>
<tbody>
<tr>
<td>Bond Elut Certify*</td>
<td>130 mg 3 mL 50/pk</td>
<td>12102051</td>
</tr>
<tr>
<td>Bond Elut SCX</td>
<td>500 mg 3 mL 50/pk</td>
<td>12102040</td>
</tr>
<tr>
<td>Bond Elut PRS</td>
<td>500 mg 3 mL 50/pk</td>
<td>12102039</td>
</tr>
<tr>
<td>Bond Elut AccuCAT</td>
<td>500 mg 3 mL 50/pk</td>
<td>12102039</td>
</tr>
<tr>
<td>Bond Elut Plexa PCX</td>
<td>60 mg 3 mL 50/pk; 30 mg 2 mL 96-well 1/pk</td>
<td>12108603; A3968030</td>
</tr>
<tr>
<td>Bond Elut WCX</td>
<td>60 mg 3 mL 50/pk</td>
<td>5982-3536</td>
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</table>

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<tr>
<td>Bond Elut Certify II*</td>
<td>200 mg 3 mL 50/pk</td>
<td>12102080</td>
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<tr>
<td>Bond Elut SAX</td>
<td>100 mg 3 mL 50/pk</td>
<td>12102125</td>
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<tr>
<td>Bond Elut PSA</td>
<td>500 mg 3 mL 50/pk</td>
<td>12102042</td>
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<tr>
<td>Bond Elut AccuCAT</td>
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<td>12282003</td>
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<tr>
<td>Bond Elut Plexa PAX</td>
<td>60 mg 3 mL 50/pk; 30 mg 2 mL 96-well 1/pk</td>
<td>12107603; A3967030</td>
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<tr>
<td>Bond Elut WAX</td>
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### Normal-phase/Reversed-phase SPE

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<th>Description</th>
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<tr>
<td>Bond Elut Silica</td>
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<td>Bond Elut C1</td>
<td>100 mg 3 mL 50/pk</td>
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<td>Bond Elut Florisil</td>
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### Normal-phase

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<tr>
<td>Bond Elut Cyano (CN)</td>
<td>500 mg 3 mL 50/pk</td>
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<tr>
<td>Bond Elut Diol (2OH)</td>
<td>100 mg 1 mL 100/pk</td>
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<tr>
<td>Bond Elut NH2</td>
<td>200 mg 3 mL 50/pk</td>
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### Specialty and Inorganic phases

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<tr>
<td>Bond Elut Carbon</td>
<td>250 mg 6 mL 30/pk</td>
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<tr>
<td>Bond Elut Mycotoxin</td>
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<tr>
<td>Bond Elut PBA</td>
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<tr>
<td>Bond Elut PCB</td>
<td>1 g 3 mL 50/pk</td>
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</table>

### Manifolds

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<tbody>
<tr>
<td>Vac Elut SPS 24</td>
<td>24 position, 13x100 mm tubes</td>
<td>12234022</td>
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<tr>
<td>Vac Elut 12 and 20</td>
<td>20 position, 13x100 mm tubes; 12 position, 16x100 mm tubes</td>
<td>12234101; 5982-9110</td>
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<tr>
<td>VersaPlate Manifold</td>
<td>Complete manifold</td>
<td>12236101</td>
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**Tip:** To meet your lab’s high-throughput needs, choose cost-effective bulk packaging for many of our products.

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Move easily from sample to success. Visit [Agilent.com/chem/sampleprep](http://Agilent.com/chem/sampleprep)
“I want to remove matrix background and interference.”

CONFIDENTLY CLEAN SAMPLES AND ELUTE ANALYTES WITH BOND ELUT SPE

Agilent Bond Elut SPE products are manufactured using state-of-the-art processes – and are subject to more than 25 tests to ensure consistent recovery, cleanliness, and flow.

Take the risk out of high-throughput testing with Bond Elut Plexa

Bond Elut Plexa SPE products give you validated performance with minimal method development.

- **Plexa**: unique polymeric architecture with non-retentive, hydroxylated, amide-free surface and non-polar PS/DVB core that makes it ideal for retaining small molecules. This ensures rapid flow, reproducible performance, and ease of use – as well as improved extract cleanliness. Ideal for non-ionic extraction of a wide range of acidic, neutral, and basic analytes from different matrices.

- **Plexa PAX**: non-polar/anion-exchange polymeric SPE offers clean extracts, high recoveries, and low RSDs – helping you reduce method time, repeated runs, and cost per sample.

- **Plexa PCX**: non-polar/cation-exchange polymeric SPE offers a single-method approach for basic and neutral compounds.

Perform rugged, consistent economical sample cleanup with Bond Elut Certify and Certify II*

Forensics labs around the globe rely on Bond Elut Certify – a reversed-phase mixed-mode sorbent – to extract drugs and metabolites from urine and blood. Certify is also effective for extracting compounds from aqueous matrices. Available in a wide range of formats to support automation.

- **Certify**: non-polar and strong cation-exchange sorbent most commonly used to extract basic drugs and metabolites.

- **Certify II**: non-polar and strong anion-exchange sorbent most commonly used to extract acidic drugs and metabolites.

More plate and cartridge formats to fit your analytical needs

- **SPE cartridges and 96-well plates** are available in a variety of sorbents.

- **VersaPlate design options** – prepackaged and loose cartridges – let you customize plate configurations to reduce waste, and apply different phases for sorbent screening.

*For Forensic Use.
LC/MS/MS analysis of opiates in urine using Bond Elut Plexa PCX
(Learn more in Application Note: 5990-9625EN)

Analysis

Excellent peak shape: Bond Elut Plexa PCX mixed-mode SPE is ideal for matrix removal and analyte concentration, and has the versatility to support a wide range of applications.

Method Evaluation

High extraction recovery and process efficiency for morphine and codeine. Method performance metrics were calculated according to the principle laid out in B. K. Matuszewski et al. Anal. Chem. 75, 3019-3030 (2003) and widely accepted as an industry standard approach for LC/MS/MS methods.

RESOURCES YOU CAN USE RIGHT NOW

Select your Bond Elut SPE products: agilent.com/chem/spe


Achieve the right level of cleanup by striking a balance between your sample prep budget, required method ruggedness, and mandated selectivity and sensitivity.

Drug Screening Compendium: agilent.com/chem/DrugScreeningandConfirmation

Discover sample preparation methods that support efficient and effective extractions across a range of compound classes. In this interactive online compendium, you’ll also find tools for product selection, along with suggested “starting points” for your sample preparation method development.

High-volume ordering for cartridges and plates: agilent.com/chem/SPEpacks

Save time, money, and shelf space.

Move easily from sample to success. Visit agilent.com/chem/sampleprep
“Our biggest worry? Cost per sample.”

SAVE TIME AND LABOR
WITH BOND ELUT QuEChERS KITS

A fast, uniform sample preparation method is critical to your ability to detect trace amounts of analytes in complex matrices such as food, blood, and soil.

You can speed up your workflow and improve your detection of target analytes with Agilent Bond Elut QuEChERS kits. These easy-to-use kits remove interfering matrix compounds, allowing you to analyze samples for a broad range of pesticides, veterinary drugs, environmental contaminants, and other compounds of interest. Our stringent quality-control process also ensures lot-to-lot consistency for your most reproducible results.

Make sample prep as easy as 1-2-3

Bond Elut QuEChERS kits are an easy way to capture the timesaving benefits of QuEChERS. Kits come in a variety of options:

• Extraction kits with pre-weighed anhydrous salts in sealed packets let you add salts to your sample after adding organic solvent. This minimizes an exothermic reaction that can compromise recovery.

• Dispersive kits with sorbents and salts, supplied in 2 mL or 15 mL centrifuge tubes, accommodate aliquot volumes specified by AOAC and EN methodologies.

• Universal dispersive kits remove a wide range of matrix interfering materials, and provide excellent recovery and reproducibility.

• Optional ceramic homogenizers break up salt agglomerates, promote consistent extraction, and increase recovery during extraction and dispersion. They also optimize your shaking time for more efficient extractions.
**LC/MS/MS analysis of pesticide residues in chicken using Agilent Bond Elut QuEChERS**

(Learn more in Application Note 5991-3191EN)

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**No interference peaks:** Shown in the matrix blank (IS spiked) and 10 ng/g fortified chicken extract processed by the Bond Elut QuEChERS method.

Bond Elut QuEChERS kits simplify QuEChERS protocols, allowing you to easily optimize the extraction for different sample types and target analytes.

**Recoveries and reproducibility of pesticides in fortified chicken with Bond Elut QuEChERS**

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High recoveries and precision were obtained for the 12 pesticides.
“Every step of our workflow gives us something to be concerned about.”

Captiva Syringe filters

Maximize accuracy with minimal time and effort

At every step of analysis, there is risk of variability and contamination. Even small amounts of injected particulates can cause problems such as inlet clogging, increased backpressure, retention time shift, resolution loss, and shorter column life. Captiva premium syringe filters are certified for cleanliness by LC and LC/MS, guaranteeing extremely low levels of observed extractables along with the industry’s highest flow rates and loading capacity.

Captiva filtration is available in a variety of formats, including plates, cartridges, non-drip filtration plates for protein precipitation, and lipid-removal plates for advanced filtration.

Sample Preparation accessories

Take the hassle out of interference removal

Boosting throughput and efficiency is easy with Agilent manifolds, collection plates, sealing mats, and other accessories. For example, our Vac Elut SPS 24 lets you prepare up to 24 samples at one time, with a rotating lid that easily switches from waste to sample collection. Rotating the lid from waste to collect directs eluant into pre-racked collection tubes, reducing the number of steps needed to perform the method.

Agilent Inert Flow Path solutions

Lower detection limits and reliably quantify active analytes

As available sample becomes increasingly smaller, active, and complex, you cannot afford interferences caused by flow path activity. Agilent Inert Flow Path solutions, including Agilent J&W Ultra Inert GC columns, ensure a consistently inert flow path for higher trace-level sensitivity, accuracy, and reproducibility — and are qualified using chromatographic QC tests.
Supplies and accessories

Minimize costly downtime

Ensure peak performance for every instrument in your lab with Agilent supplies for GC, LC, and MS, as well as atomic and molecular spectroscopy. All have been engineered or selected by our instrument design teams, manufactured to our demanding specifications, and tested under a variety of conditions to make sure they perform at optimal levels. In addition, Agilent features a range of GC and HPLC supplies for your non-Agilent instruments.

Agilent ZORBAX, InfinityLab Poroshell 120 and Poroshell 300 columns
Choose from more than 2,000 configurations

From research... to method development... to quality assurance... Agilent ZORBAX LC columns feature the sensitivity, accuracy, and reliability that demanding applications require. We also manufacture — and rigorously test — the silica used in Agilent ZORBAX, InfinityLab Poroshell 120 and Poroshell 300 columns to ensure stability and reproducibility

More than just parts and supplies
Advice and support customized for your application

• Expedite your purchasing schedule and minimize work interruptions
Essential supplies are readily available through the global Agilent distribution network, making Agilent your single source for sample prep, instruments, and supplies to keep your lab running smoothly.

• Find fast answers to your test protocol questions
Agilent helps you meet tough challenges with comprehensive applications compendia and expert personal guidance. In addition, our industry and academic collaborations enable us to develop new insights into evolving analytical issues.

• Minimize method development time and costs
Our technical representatives and online resources are always available to take the guesswork out of finding the right products for your sample preparation needs.

Move easily from sample to success. Visit agilent.com/chem/sampleprep

RESOURCES YOU CAN USE RIGHT NOW

Online Selection Tools:
agilent.com/chem/finditnow
Easily and confidently identify the correct columns, sample preparation products, and supplies for all your chromatographic needs.

Syringe Filter Selection Tool:
agilent.com/chem/SelectFilter
Choose the best syringe filter to prevent extractables and other contaminants from damaging the integrity of your samples.

Agilent Inert Flow Path:
agilent.com/chem/inert
See how easy it is to ensure an inert flow path from injection through detection.

Reliable GC Results through Better GC Connections:
agilent.com/chem/betterGConnections
Improve your GC flow path integrity — and lengthen periods of unattended operation — with easy-to-use, leak-free connections from Agilent.
When you’re under pressure to deliver superior data without a moment to spare, your sample preparation method has to do the job right the first time. And with Agilent Bond Elut, it will.

For over 35 years, chemists around the world have trusted the Bond Elut name to help them prepare samples that are interference free, compatible with analytical methods, and safe for both columns and detectors.

From SPE supplies for sample cleanup and concentration... to QuEChERS kits for food extraction... Agilent Bond Elut products let you quickly produce sample aliquots that are representative, reproducible, homogenous, and suitable for column injection or assay.

No question about it...

Bond Elut sample preparation products deliver consistent, reliable performance