

Agilent Bond Elut Family of SPE and QuEChERS Products

SOLUTIONS FOR WORRY-FREE SAMPLE PREPARATION





Your day is filled with tough decisions. *Sample prep shouldn't be one of them.*

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

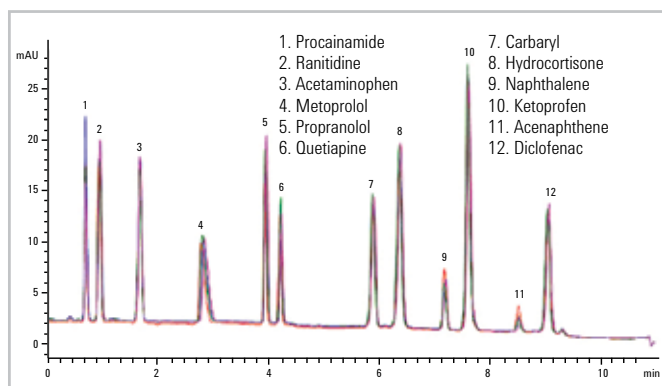
Sorbent
Extraction
Technology
Handbook



Consistent quality enables consistent results

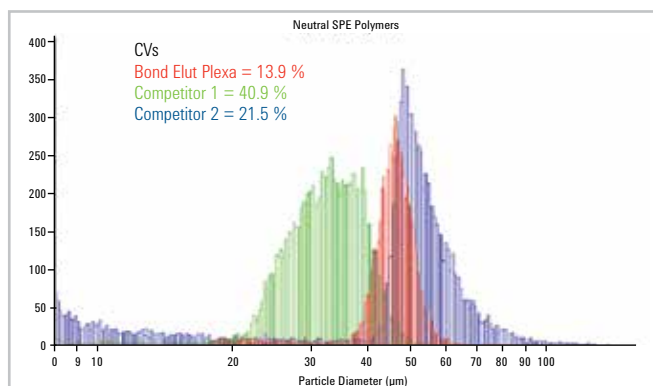
As instruments have become more selective and sensitive, Agilent manufacturing standards have evolved as well. Our multi-step quality assurance (QA) and quality control (QC) processes covered under our ISO 9001: 2008 compliant quality management system, minimize variability and deliver the consistency,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

Bond Elut Certify*
Mega Bond Elut

Bond Elut NEXUS
VersaPlate

Bond Elut
Plexa

Agilent
QuEChERS

Bond Elut
Plexa PAX

Sample Preparation
Fundamentals for
Chromatography
published



Dedicated Enviro SPE:
EnvirElut, PPL, ENV

96-well
SPE plates

Bond Elut
Plexa PCX

Agilent acquires
Varian, Inc.

Integration of Varian
and Agilent Planning
and Quality Systems

“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.

Analyte MW < 3,000 Da						
Analyte Solubility (Matrix)	Water-Soluble				Organic Solvent-Soluble (Water Immiscible)	
Molecular Character	Ionic		Non-ionic		Polar	Moderately Polar
Stationary Phase	Cation	Anion	Polar	Non-polar	Polar	Polar
Phases: Polymeric	Plexa PCX WCX Strong/weak cation exchange	Plexa PAX WAX Strong/weak anion exchange	Plexa PPL	Plexa PPL ENV LMS		
Phases: Silica-based	SCX CBA PRS Certify*	SAX DEA PSA NH2 Certify II*	CN-E Diol NH2	C18 C180H C8 PH C2 C1 CH	Diol NH2 DEA PSA	Si NH2 Diol
Phases: Specialty			Carbon	Carbon	FI Alumina A, B, or N	FI Alumina A, B, or N
Phases: Dual Phase or Mixed Mode	Certify & Certify II*: Mixed mode (silica) AccuCAT: Dual-mode anion and cation exchange (silica) Plexa PCX: Mixed-mode cation exchange (polymeric) Plexa PAX: Mixed-mode anion exchange (polymeric) Carbon/NH2: Interference removal for food/pesticide analysis Carbon/PBA: Interference removal for food/pesticide analysis					



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



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, or in the Essential Chromatography & Spectroscopy Supplies Catalog.

Ion-exchange SPE

Cation-exchange SPE		
Product	Description	Part Number
Bond Elut Certify*	130 mg 3 mL 50/pk	12102051
Bond Elut SCX	500 mg 3 mL 50/pk	12102040
Bond Elut PRS	500 mg 3 mL 50/pk	12102039
Bond Elut AccuCAT	500 mg 3 mL 50/pk	12102039
Bond Elut Plexa PCX	60 mg 3 mL 50/pk 30 mg 2 mL 96-well 1/pk	12108603 A3968030
Bond Elut WCX	60 mg 3 mL 50/pk	5982-3536

Anion-exchange SPE		
Product	Description	Part Number
Bond Elut Certify II*	200 mg 3 mL 50/pk	12102080
Bond Elut SAX	100 mg 3 mL 50/pk	12102125
Bond Elut PSA	500 mg 3 mL 50/pk	12102042
Bond Elut AccuCAT	200 mg 3 mL 60/pk	12282003
Bond Elut Plexa PAX	60 mg 3 mL 50/pk 30 mg 2 mL 96-well 1/pk	12107603 A3967030
Bond Elut WAX	60 mg 3 mL 50/pk	5982-3636

Reversed-phase SPE

Product	Description	Part Number
Bond Elut C18	100 mg 1 mL 100/pk (end-capped) 100 mg 1 mL 100/pk (un-end-capped)	12102001 12102020
Bond Elut C8	100 mg 3 mL 50/pk	12102100
Bond Elut Phenyl	500 mg 3 mL 50/pk	12102032
Bond Elut Plexa	60 mg 3 mL 50/pk 60 mg 2 mL 96-well 1/pk	12109603 A3969030
Bond Elut PPL	100 mg 3 mL 50/pk	12105004

Normal-phase/Reversed-phase SPE

Product	Description	Part Number
Bond Elut Silica	100 mg 1 mL 100/pk	12102010
Bond Elut C1	100 mg 3 mL 50/pk	12102090
Bond Elut Florisil	200 mg 3 mL 50/pk	12102129

Normal-phase

Product	Description	Part Number
Bond Elut Cyano (CN)	500 mg 3 mL 50/pk	12102034
Bond Elut Dial (20H)	100 mg 1 mL 100/pk	12102009
Bond Elut NH2	200 mg 3 mL 50/pk	12102089

Specialty and Inorganic phases

Product	Description	Part Number
Bond Elut Carbon	250 mg 6 mL 30/pk	12102201
Bond Elut Mycotoxin	500 mg 3 mL 50/pk	12102167
Bond Elut PBA	100 mg 3 mL 50/pk	12102127
Bond Elut PCB	1 g 3 mL 50/pk	12105032

Manifolds

Product	Description	Part Number
Vac Elut SPS 24	24 position, 13x100 mm tubes	12234022
Vac Elut 12 and 20	20 position, 13x100 mm tubes 12 position, 16x100 mm tubes	12234101 5982-9110
VersaPlate Manifold	Complete manifold	12236101



Tip: To meet your lab's high-throughput needs, choose cost-effective bulk packaging for many of our products.

Move easily from sample to success. Visit 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.

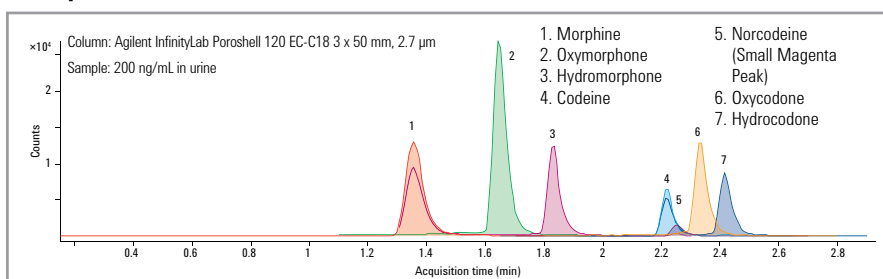




LC/MS/MS analysis of opiates in urine using Bond Elut Plexa PCX

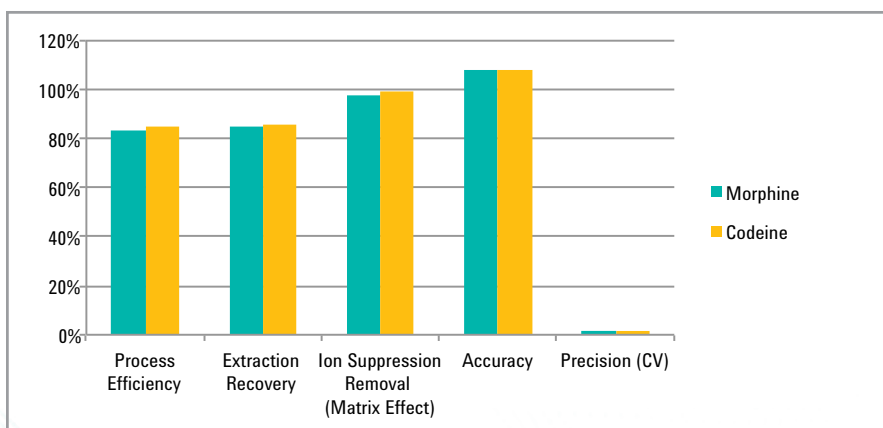
(Learn more in Application Note: 5990-9625EN)

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

Agilent Food Safety Applications Notebook: Volume 1 – SPE, SPME, SLE, and Captiva Filtration:
agilent.com/chem/foodSPEbook

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

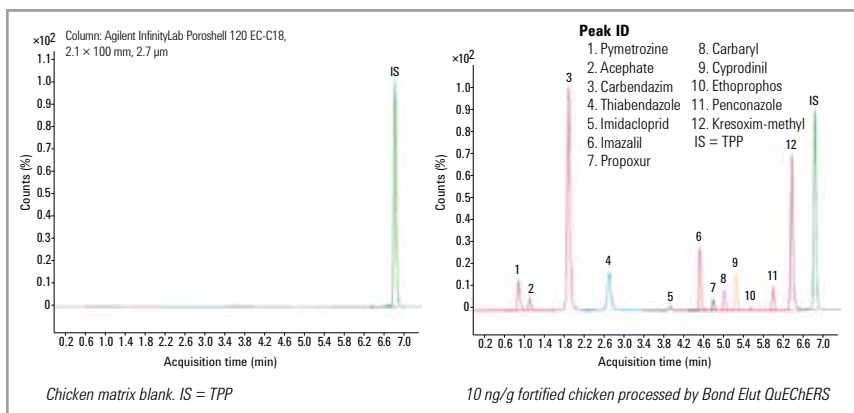
Bond Elut QuEChERS kits are an easy way to capture the timesaving benefits of QuEChERS. Kits come in a variety of options:

- 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.





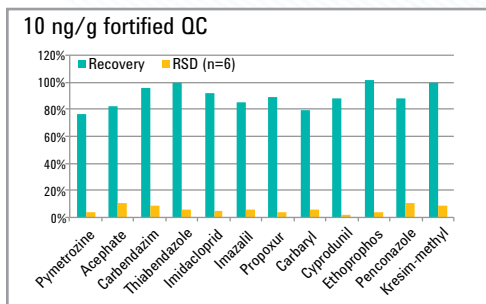
LC/MS/MS analysis of pesticide residues in chicken using Agilent Bond Elut QuEChERS *(Learn more in Application Note 5991-3191EN)*



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



High recoveries and precision were obtained for the 12 pesticides.

RESOURCES YOU CAN USE RIGHT NOW

Bond Elut QuEChERS Online Selection Tool:

[agilent.com/chem/SelectQuEChERS](https://www.agilent.com/chem/SelectQuEChERS)

Easily choose the Bond Elut QuEChERS products you need, based on method and matrix.

Agilent Food Safety Applications Notebook: Volume 2 – Bond Elut QuEChERS

[agilent.com/chem/quechersbook](https://www.agilent.com/chem/quechersbook)

Access common Bond Elut QuEChERS applications grouped according to the standard method (such as AOAC, and EN).

Sample Preparation Fundamentals for Chromatography

[agilent.com/chem/sampleprepbook](https://www.agilent.com/chem/sampleprepbook)

Whether you want to brush up on the basics, or implement advanced sample prep techniques, this illustrated handbook can help you reduce the need for repeated runs, and minimize interferences that can compromise your results.

Move easily from sample to success. Visit [agilent.com/chem/sampleprep](https://www.agilent.com/chem/sampleprep)

“Every step of our workflow gives us something to be concerned about.”

OPTIMIZE YOUR PRODUCTIVITY FROM SAMPLE PREP TO SEPARATION

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.

RESOURCES YOU CAN USE RIGHT NOW

Online Selection Tools:

[agilent.com/chem/finditnow](https://www.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](https://www.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](https://www.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/betterGCconnections](https://www.agilent.com/chem/betterGCconnections)

Improve your GC flow path integrity – and lengthen periods of unattended operation – with easy-to-use, leak-free connections from Agilent.

Move easily from sample to success. Visit [agilent.com/chem/sampleprep](https://www.agilent.com/chem/sampleprep)



For more information

To learn more about the Agilent Sample Preparation portfolio, visit agilent.com/chem/sampleprep

To find your local Agilent Representative or Agilent Authorized Distributor, visit agilent.com/chem/contactus

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No question about it...

Bond Elut sample preparation products deliver consistent, reliable performance

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.



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