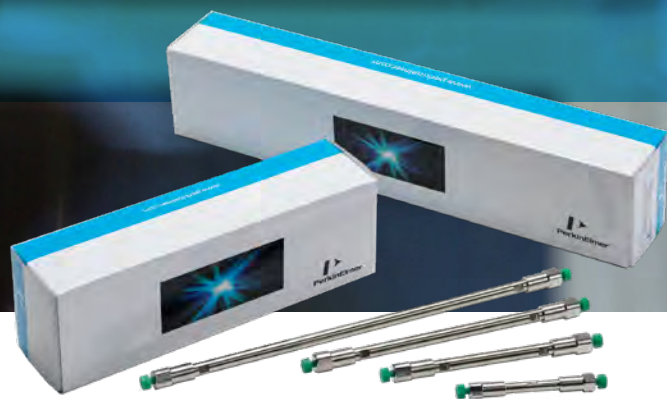


# SEPARATION CHALLENGE ACCEPTED



Quasar™ Liquid Chromatography Columns

# HERE'S WHERE SEPARATIONS COME TOGETHER



Whether you're testing food, water, or pharmaceuticals, success often depends on getting back to basics. So whatever your separation challenge, your choice of liquid chromatography (LC) column can make all the difference.

Our Quasar portfolio of LC columns allows you to achieve rugged and reproducible results – batch to batch and column to column – with an all-encompassing, flexible solution that meets the diverse, changing needs of analysis.

Ultrapure silica-based Quasar columns deliver a comprehensive range of chemistries, together with state-of-the-art, optimized bonding technology to give you a versatile, high-performing analytical solution for your increasingly complex samples.

For flexibility, we provide a wide range of column sizes, including shorter columns packed with smaller particle sizes for shorter run times and better productivity. Plus, our scalable columns facilitate easy method transfer between HPLC and UHPLC technology platforms – and the smaller particle sizes means optimized sensitivity for those applications. Whatever your separation need, we have a chemistry or dimension to fill it.

With Quasar LC columns, you now have the tools to confidently say: **separation challenge accepted.**





# QUASAR **LC** COLUMNS



**Ultrahigh purity silica combined with a wide variety of phases provides you with modern, innovative solutions to tackle increasing complex samples.**

Complex samples? No problem. We understand the challenges that come with LC applications. That's why we offer a diverse set of selectivities for use in reverse, HILIC, and normal phase modes in a variety of column dimensions.

Our Quasar LC Columns feature high sensitivity for mass spectrometry (MS) applications. They deliver high efficiency for complex separations and support both high- and low-throughput environments, helping you to increase productivity and reduce run times.

The high-sample loading capacity helps improve detection of low-level compounds. And with excellent pH stability across commonly used mobile phase buffers, you're able to extend their usage at lower and higher pHs.

## Quasar LC Column Applications at a Glance

### Quasar C18

#### APPLICATIONS:

- Workhorse HPLC and UHPLC phase for RP small molecule analysis
- Basic, neutral, and acidic analytes
- Pesticides, antibiotics

#### CHROMATOGRAPHIC PROPERTIES:

- Optimal ligand bonding enables wide pH range for method development
- Excellent peak shape for a wide range of compounds

#### USP CODE:

L1

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## Quasar LC Column Applications at a Glance

### Quasar C8

#### APPLICATIONS:

- For separations that require less retention
- More hydrophobic compounds, both charged and neutral
- Lipids and steroids

#### CHROMATOGRAPHIC PROPERTIES:

- Offers less hydrophobicity than C18, bonded to ultrahigh purity silica base
- Excellent peak shape for a wide range of compounds

#### USP CODE:

L7

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## Quasar LC Column Applications at a Glance

### Quasar AQ

#### APPLICATIONS:

- Improved retention for more hydrophilic compounds
- Increased retention of polar compounds without the addition of IP reagents
- Vitamins, polar pesticides

#### CHROMATOGRAPHIC PROPERTIES:

- No phase collapse even in 100% aqueous mobile phase conditions
- Polar end capping aids retention of more polar compounds

#### USP CODE:

L1

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## Quasar LC Column Applications at a Glance

### Quasar HILIC

#### APPLICATIONS:

- Retention of very polar, hydrophilic compounds
- Herbicides, nucleotides, alkaloids, and peptides

#### CHROMATOGRAPHIC PROPERTIES:

- Bonded diol phase for more reproducible HILIC separations
- Low water content mobile phase for elution increases MS sensitivity

#### USP CODE:

L20

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## Quasar LC Column Applications at a Glance

### Quasar Biphenyl

#### APPLICATIONS:

- Alternative selectivity for aromatic containing analytes
- Metabolite analysis and isomer separations

#### CHROMATOGRAPHIC PROPERTIES:

- Biphenyl bonded phase
- Provides  $\pi$ - $\pi$  interactions to facilitate alternative selectivity

#### USP CODE:

L11

# QUASAR **LC** COLUMNS



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## Quasar LC Column Applications at a Glance

### Quasar Cyano

#### APPLICATIONS:

- Suitable for RP and NP applications
- Higher molecular weight compounds in RP

#### CHROMATOGRAPHIC PROPERTIES:

- Cyano functionality offers increased dipole interactions for alternative selectivity
- Less hydrophobic phase

#### USP CODE:

L10



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The high-sample loading capacity helps improve detection of low-level compounds. And with excellent pH stability across commonly used mobile phase buffers, you're able to extend their usage at lower and higher pHs.

## Quasar LC Column Applications at a Glance

### Quasar Silica

#### APPLICATIONS:

- Traditionally used for NP applications
- Can be used in the HILIC mode

#### CHROMATOGRAPHIC PROPERTIES:

- Ultrahigh purity base silica

#### USP CODE:

L3

# QUASAR **SPP** COLUMNS

**Our next-generation superficially porous particle (SPP) phases promise productivity with shorter run times and less solvent.**

When it comes to your applications, it's all about efficiency. Quasar SPP phases are just as robust as traditional silica phases, featuring excellent ligand stability and solid packed bed and resulting in robust, reliable columns.

Whether you're using an ultrahigh-performance liquid chromatography (UHPLC) system or a traditional high-performance liquid chromatography (HPLC) system, you can seamlessly switch to Quasar SPP columns and enjoy the benefits right away.

## Quasar SPP Column Applications at a Glance

### Quasar SPP C18

#### APPLICATIONS:

- Workhorse phase for small molecule analysis
- Basic, neutral and acidic analytes
- Pesticides, antibiotics

#### CHROMATOGRAPHIC PROPERTIES:

- Optimal ligand bonding facilitates wide pH range for method development
- Excellent peak shape for a wide range of compounds

#### USP CODE:

L1

#### ✓ I currently use a traditional HPLC system

With no modifications to your instrument, you'll experience a 50% improvement in cost and efficiency, including:

- No change to the sample prep SOP
- Faster run times and method development
- Savings on solvent consumption

#### ✓ I currently use an UHPLC system

In little or no time, you'll see improved efficiencies in your lab, including:

- No specialised filtrations of sample and mobile phase
- Optimized low band spreading
- Lower back pressures compared to sub 2µm columns with robust operation

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## Quasar SPP Column Applications at a Glance

### Quasar SPP HILIC

#### APPLICATIONS:

- HILIC separation mode for increased retention of very polar compounds under RP conditions

#### CHROMATOGRAPHIC PROPERTIES:

- Uniform surface for improved reproducibility
- Excellent peak shape for a wide range of compounds, including basic analytes

#### USP CODE:

L3

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## Quasar SPP Column Applications at a Glance

### Quasar SPP Biphenyl

#### APPLICATIONS:

- Alternative selectivity for aromatic containing analytes
- Separation of structurally similar analytes

#### CHROMATOGRAPHIC PROPERTIES:

- Biphenyl bonded phase
- Provides  $\pi$ - $\pi$  interactions to facilitate alternative selectivity
- No MS bleed

#### USP CODE:

L11

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## Quasar SPP Column Applications at a Glance

### Quasar SPP RP Amide

#### APPLICATIONS:

- Alternative selectivity to alkyl chain phases
- Ideal method development starting point due to wide analyte applicability with both hydrophobic and dipolar phase interactions

#### CHROMATOGRAPHIC PROPERTIES:

- Polar embedded group within alkyl chain
- Excellent peak shape for a wide range of compounds, including basic analytes

#### USP CODE:

L60

#### ✓ I currently use a traditional HPLC system

With no modifications to your instrument, you'll experience a 50% improvement in cost and efficiency, including:

- No change to the sample prep SOP
- Faster run times and method development
- Savings on solvent consumption

#### ✓ I currently use an UHPLC system

In little or no time, you'll see improved efficiencies in your lab, including:

- No specialised filtrations of sample and mobile phase
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- Lower back pressures compared to sub 2µm columns with robust operation

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- No specialised filtrations of sample and mobile phase
- Optimized low band spreading
- Lower back pressures compared to sub 2 $\mu$ m columns with robust operation



### Quasar SPP PFP

#### **APPLICATIONS:**

- Alternative selectivity to hydrophobic phases
- Metabolite analysis and isomer separations

#### **CHROMATOGRAPHIC PROPERTIES:**

- Pentafluorophenyl (PFP)
- Biphenyl bonded phase
- Provides  $\pi$ - $\pi$  interactions to facilitate alternative selectivity

#### **USP CODE:**

L43

# TASTE THE CONFIDENCE



**With the right tools, your analysis can help keep our food supply – and our communities – safe.**

Testing to ensure food safety and quality is a top priority for food-testing labs everywhere. With the increase in pesticide use and residual compounds and contaminants popping up in our food supply, it's important these substances are identified accurately and quickly.

Using LC and LC/MS methodologies is paramount in helping the industry uphold public health. But we know it's not an easy task. Maintaining compliance of food safety regulations coupled with increasing complexity of analytes and driving down detection limits of residual compounds can create analytical challenges.

With a wide range of food products and chemical species within them, successful separation and identification of contaminants relies on alternative bonded phases and orthogonal column selectivities. Our Quasar LC columns, based on ultrapure silica, either traditional or SPP particles, offer the breadth of phases and selectivities required to meet today's separation challenges.

## **Our LC columns promise benefits such as:**

- Rugged and reliable results
- Longevity to withstand high-throughput environments
- Trace-level analysis
- Analysis of increasing polar and complex analytes
- Rapid screening methods for pesticide analysis

## **WHAT ARE YOU TESTING FOR?**

Click each category to reveal types of analytes and applications.

### **Residues and Contaminants**

- Pesticides
- Antibiotics
- Veterinary drugs
- Mycotoxins
- Reactive intermediates (i.e. Bisphenol A)

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Click each category to reveal types of analytes and applications.

**Natural Components**

- Vitamins (fat and water soluble)
- Carbohydrates (sugars)
- Amino acids



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## **WHAT ARE YOU TESTING FOR?**

Click each category to reveal types of analytes and applications.

- Artificial sweeteners
- Preservatives (benzoic acid, sorbic acid)
- Colors

Additives

# PEACE OF MIND FROM LAB TO SHELF



## Create safe, quality products consumers can feel confident about.

Pharmaceutical analysis is dominated by small molecules, but depending on the stage of the drug development process, there are different requirements for LC analysis. For both traditional and SPP columns, the final selection depends on the specific application requirements.

### Our LC columns promise benefits such as:

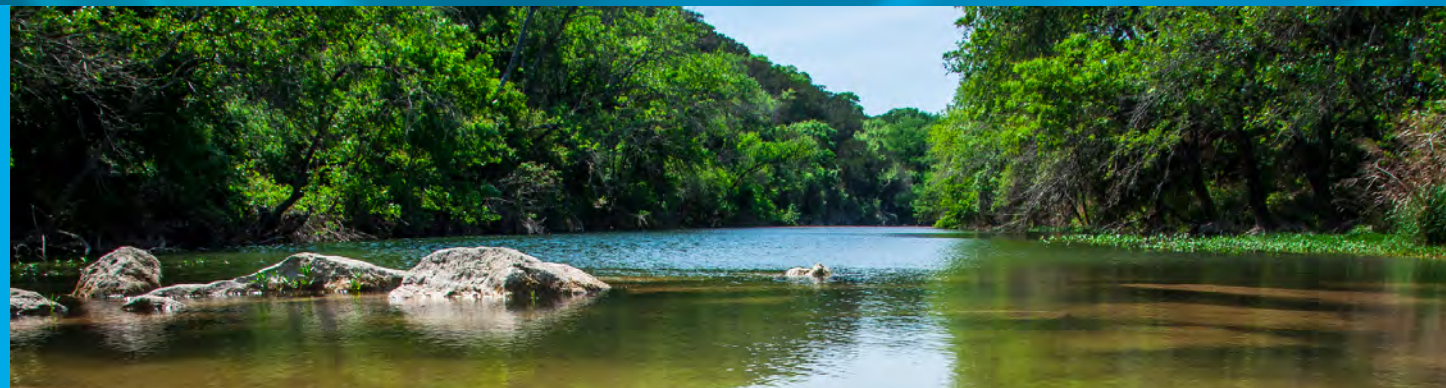
- Reproducible results, batch to batch and column to column
- Mixed mode interactions to overcome current challenges of analyzing diverse polarities of drug combinations
- Stability and ruggedness (for both open access screening and early method development)
- The separation of isomers and isobaric compounds
- High efficiencies to help identify any drug impurities
- Well-separated sharp peaks for accurate quantitation
- Adhering to requirements of USP listing (and other monographs)
- Quick access to three different silica batches for method validation
- Ability to transfer across instrument platforms (UHPLC and HPLC)
- Outstanding performance with UV and MS detection methods
- Column dimensions to help modernize older methods

### WHAT ARE YOU TESTING FOR?

#### Types of Analytes and Applications

- API (Active Pharmaceutical Ingredient)
- Excipient analysis
- QA/QC of final drug product
- Analysis of new drug entities
- Screening and identifying a combination of chemistry products
- Metabolite profiling
- Drug purity analysis

# A SAFE ENVIRONMENT STARTS WITH GREAT SCIENCE



**Help protect our environment and the public's health by discovering contaminants in air, drinking water, waste water, rivers, and soils.**

Widespread use of pesticides and herbicides in agriculture can result in harmful contaminants seeping into our water, air, and soil. Environmental monitoring for the detection of these harmful pollutants is crucial to ensure the water we drink, the air we breathe, and the ground we cultivate is safe for all.

LC/MS techniques are essential for screening and quantification of known and unknown organic contaminants, and our high-efficiency LC columns are an essential component to complete trace-level analysis for identification and quantification of contaminants.

## **Our LC columns promise benefits such as:**

- Longevity to withstand high-throughput environments
- High-efficiency separations to facilitate trace-level analysis
- Good resolution and peak shapes for more effective compound separation
- Analysis of increasing polar and complex analytes
- Rapid screening methods for pesticide analysis

## **WHAT ARE YOU TESTING FOR?**

[Click each category to reveal types of analytes.](#)

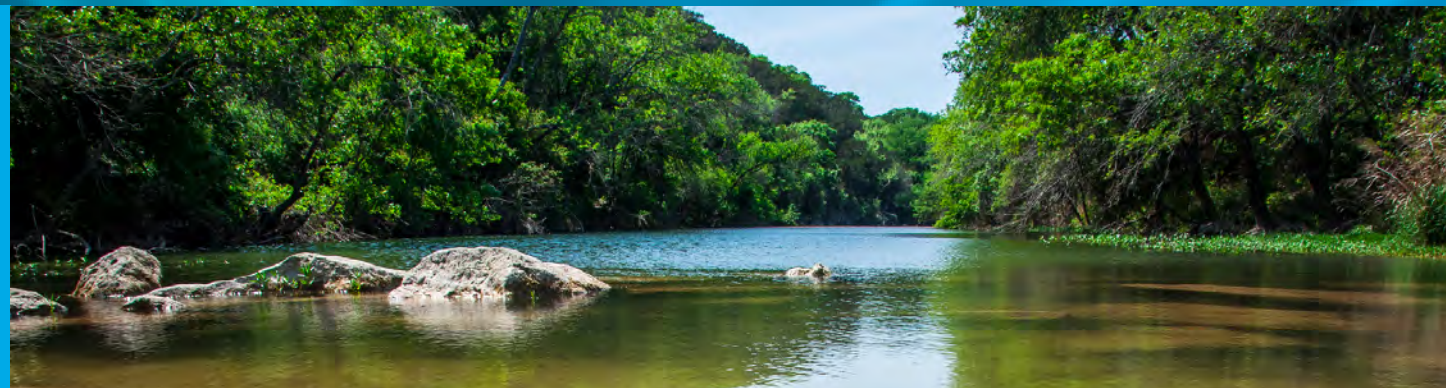
### **Environmental Monitoring of Contaminants**

- Pesticides and herbicides in water and soil
- Persistent organic pollutants (POPs)
- Pharmaceuticals
- Hormones
- Personal care products





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- Rapid screening methods for pesticide analysis

## **WHAT ARE YOU TESTING FOR?**

Click each category to reveal types of analytes.

- Contaminants that could affect health

**Emerging Contaminants**





# DISCOVERY STARTS WITH LEARNING



**We've been working with academia for decades and are committed to supporting scientific research.**

Having a diverse range of chemistries within the Quasar LC column range ensures there is a column to support all application scenarios and deliver consistent reproducible results, day after day.

Selecting from a range of phases, sizes, and lengths gives you the flexibility to choose the column best suited to your application – all with the support of our technical expertise to guide you.

## **Our LC columns promise benefits such as:**

- Good resolution and peak shapes to aid separation and detection of unknown compounds
- Range of chemistries for alternative selectivities to optimize method development
- Efficiency maintained during open-access student testing environments
- Options to reduce cost of analysis – high-efficiency separations using shorter columns
- Reproducible separations for the duration of a project
- Optional guard cartridges to protect the column from contamination and extend its lifetime
- Support for phase selection and method development

## **WHAT ARE YOU TESTING FOR?**

### *Types of Analytes and Applications*

- A broad range depending on the department's area of research
- Unknowns – pure research compounds
- Food testing research
- Environmental research

# OneSource Laboratory Services

In today's complex laboratory environments, every function has to work in sync toward the common goal: lab efficiency in the service of scientific discovery and progress. And that's the overarching goal of OneSource Laboratory Services, too. We deliver solutions that cover all aspects of scientific lab operations and can be customized for the scientific workflows – and business outcomes – you're driving toward.

OneSource is the one service organization with the requisite understanding of lab and R&D needs, delivering a customized systems approach to your success. With insights and expertise, our consultants pinpoint the issues and inefficiencies and engineer the right solutions to solve your scientific and business challenges. From everyday **instrument repair and service** to **compliance and validation**, from **laboratory IT service** to **consulting and scientific staffing**, OneSource Laboratory Services can help streamline your lab routines and get your scientists back to their main order of business – science.



For more information about Quasar Columns, go to [www.perkinelmer.com/quasarl](http://www.perkinelmer.com/quasarl)

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For a complete listing of our global offices, visit [www.perkinelmer.com/ContactUs](http://www.perkinelmer.com/ContactUs)

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