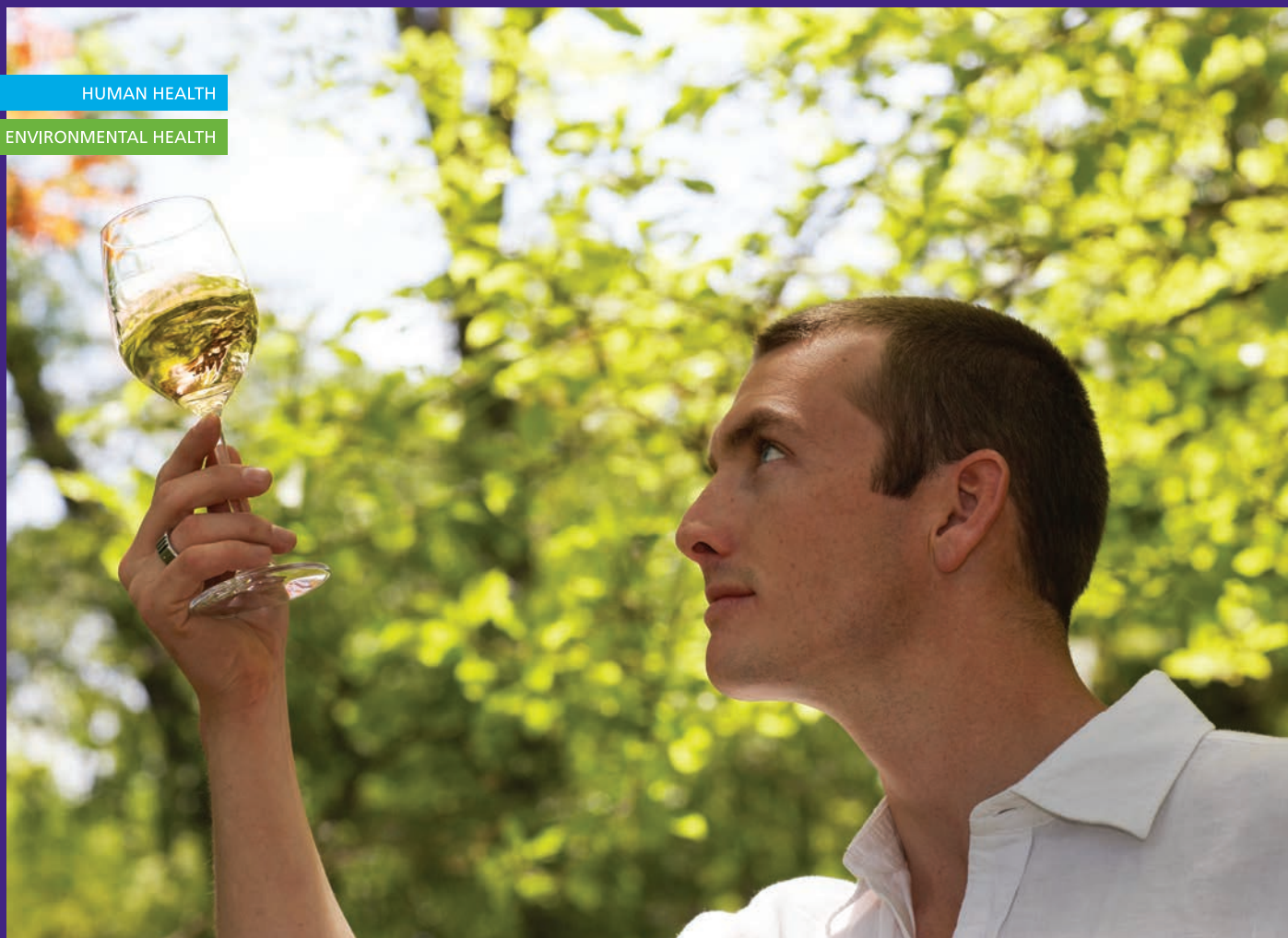


HUMAN HEALTH

ENVIRONMENTAL HEALTH



# IT'S ALL ABOUT PEAK PERFORMANCE



Altus™ UPLC®

  
**PerkinElmer**  
*For the Better*





CHROMATOGRAPHY FOR  
THE WORK YOU DO



# CHROMATOGRAPHY AT A WHOLE NEW LEVEL OF CONFIDENCE

## Altus UPLC



### Food

The Altus™ UPLC® system and Empower® 3 CDS help ensure that your lab can meet rigorous FSA, EFSA, and upcoming FSMA requirements for food safety – and do it with minimal impact to your bottom line. The enhanced performance of this system enables you to detect even trace levels of components better than ever before.

### Environmental

The Altus UPLC® solution delivers powerful integration algorithms that make it fast and easy to detect and integrate even the most challenging chromatograms (those with small or shouldered peaks) by using a curvature approach that's more sensitive than traditional integration. The result? Comprehensive and fully automated integration that enables you to have a real impact on environmental analysis.

### Industrial/Fine Chemicals

Advanced materials and fine chemicals are playing a *growing* part in everyone's lives. And regulations are keeping pace. By helping improve quality, data efficiency, and lab productivity – and by standardizing workflows and platforms – the Altus UPLC® solution can significantly lower your operating costs while enabling you to comply with regulation and red tape. And its improved chromatographic throughput and reduced solvent consumption make the system a true win-win.

## Best-in-class technology for greater insights

The purity and safety of the global food supply. The dangers posed by pollutants and contaminants in our drinking water. The quality and effectiveness of our fine chemicals and polymers. The world is becoming more complex all the time – and so are the challenges you face in your laboratory. Not only are the samples becoming more complex, but so are the guidelines and regulations that govern your lab operations.


For labs with these kinds of complex challenges, there's Altus™ UPLC® – the chromatography platform with best-in-class technology that's already at work in labs the world over, delivering superior performance (with up to nine times the throughput of traditional HPLC systems), optimal efficiency, higher user productivity, and lower consumable costs – and the kinds of insights you've only dreamed about in other chromatography platforms.

And it runs the most respected, comprehensive chromatography data software in the business – the Waters® Empower® 3 CDS – enabling you to take on the most complex samples and the most stringent regulatory requirements, whatever industry you work in.

And best of all, you and your lab benefit from the most trusted, proven – and certified – service and support organization on the planet. So you know that whatever your challenges, you're in good company.

The Altus UPLC® system: This is chromatography that just instills confidence.



A man with dark hair, wearing a white lab coat, is shown in profile, looking out a window. He has his hand on his chin in a thoughtful pose. A large purple rectangular box is overlaid on the left side of the image, containing white text.

# THROUGHPUT OR RESOLUTION? WHY NOT BOTH?

Laboratories looking for a high-throughput, high-resolution answer to traditional HPLC technology need look no further. It's here in the Altus UPLC® system – a real breakthrough in LC particle technology and system design, combining advanced fluidics with sub-2- $\mu$ m particle columns for extraordinary performance at high pressures, with minimal volumes and optimized flow paths.

## The elite class of LC systems

Whether you're performing routine analyses or developing methods with high reproducibility and low carry-over performance, the Altus UPLC® system combines the flexibility and simplicity of quaternary solvent blending with the flow-through needle injector. So you get the high resolution, sensitivity, and improved throughput you expect from UPLC® type separations, with exceptional reliability and robustness.

## Solving your prep-time issue

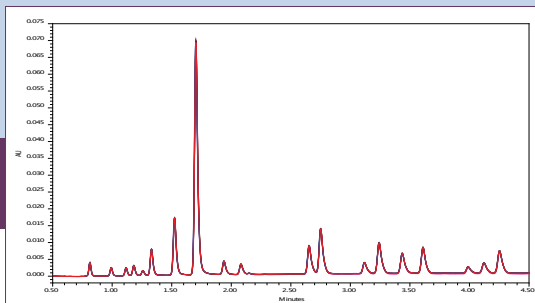
AutoBlend™ technology automates the formulation of mobile phases from reservoirs of pure solvents or concentrated stock solutions, reducing prep time significantly. You can take full advantage of the Altus UPLC® system's quaternary blending capabilities, because AutoBlend Plus™ manages pH and ionic strength requirements for the selected mobile phase - automatically.

AutoBlend™ technology makes everyday routine analyses easier to manage by reducing the work of preparing complex mobile phases. Plus, you can transfer methods to other laboratories quickly and easily, reducing the possibility of costly and time-consuming errors.

With the Altus UPLC® system, you can achieve UPLC®-quality separations without changing your lab SOPs. The Quaternary Solvent Manager and Sample Manager (SM-FTN) features deliver all the flexibility and usability of HPLC, together with the extremely efficient separations that only UPLC® systems can provide.



Specifically designed for UPLC®, the Altus family of optical detectors deliver outstanding sensitivity and linearity.



The exceptional flow rate and injection precision of the Altus UPLC® is demonstrated by the chromatographic overlay shown above – 10 gradient runs of a 19 PAH standard mixture.



Add the power of mass detection with the Altus SQ detector – also fully controlled by Empower® 3 software.

In addition, your lab benefits from:

- **Multisolvent blending** The solvent select valve provides the capability to expand the D line and add six additional solvent lines, any of which can be used for your quaternary gradient.
- **Direct inject sampling** The needle-inflow path provides precise injections with exceptional sample recovery, with specialized technology that makes sure the needle is accurately sealed, even at high pressure.
- **Next-generation column compartments** Column heaters and managers are standardized with accessible, low-volume, active solvent preheaters, for efficient operation across all your systems. And column preheaters ensure consistent thermal performance, while the fully stackable column module provides an automated column switching capability combined with a temperature range of 4 °C to 90 °C.
- **Managed dwell volume** The Altus UPLC® system's SmartStart® technology automatically manages gradient start time and preinjection steps serially, minimizing cycle times.
- **Full complement of detection modes** UV, PDA, FL, RI, SQ MS – these UPLC®-optimized, low-dispersion detection modes and more enable you to customize your system for whatever work you do.

## Method transfer made easy

With the Altus UPLC® system, it's simple to transfer methods from your current instruments. Just select a column that's comparable to your HPLC column, enter your existing HPLC conditions into the system's UPLC® Columns Calculator, and run.

Choosing the right UPLC® columns and conditions is simple as well, with method transfer guidelines available on the system console.

## The ultimate in high performance

The result is a system that delivers vast improvements in analytical resolution, sensitivity, and throughput. And that means the Altus UPLC® system can help eliminate laboratory bottlenecks, with one system able to accomplish the same amount of work as multiple HPLC systems. And with fewer instruments, you save on energy and solvent consumption with less waste.



# SOFTWARE AND SERVICES THAT BRING IT ALL TOGETHER

## The premier CDS in the business

Empower® 3 software brings all your labs' operations and applications together, enabling you to realize extraordinary results with minimal training, workflow reengineering, or additional software modules to support new instruments or techniques.

Empower® 3 software provides customizable reports, integrated custom fields and calculations, and online help, too, while delivering world-class security and data integrity.

Bottom line, Empower® 3 delivers all the functionality you need, with unique, individualized interface options that are tailored to the individual skill levels of everyone in your lab, whether novice or expert. Simply log in and you're greeted with the interface that's appropriate to your task.



## Workflow-driven, user-centric QuickStart™ interface

The single-window Empower® 3 QuickStart™ interface allows all your users to perform tasks that match their skill level, with no confusion. You can develop new methods, including PDA and MS data extraction, customize reports, manage data, and receive results and notifications by email.

The QuickStart™ interface streamlines the collection, processing, reviewing, and reporting of chromatographic results. Capabilities provided through the interface include:

- Instrument control and data acquisition
- Peak detection (including the ApexTrack™ peak detection algorithm for consistent results)
- Quantitation
- GPC processing and calculations
- Data review
- Data searching
- Mass spectrometry
- Custom reporting

## One software package handles many requirements

Empower® 3 software enables you to manage all the data your instrumentation generates, plus run mission-specific applications, including optional method development and validation, integrated chemical structures, and polymer analysis.

The software features the ApexTrack™ peak detection algorithm, enhancing peak integration capabilities, with exceptional detection of poorly resolved or low-level peaks on noisy or

sloping baselines, you can process data efficiently without manual intervention. It also controls a wide range of multivendor systems, including HPLC, UPLC®, IC, GC, and CE, enabling you to make the most of your CDS technology investment.

## The right accessories, consumables methods, and application support

Whether you're conducting routine raw materials confirmation or performing the most demanding applications, our top priority is to help improve efficiency, control costs, and optimize your analysis. We have the consumables and accessories for applications in atomic spectroscopy, materials characterization, and chromatography and mass spectrometry, and our comprehensive portfolio of solutions is designed to ensure you receive accurate, repeatable results – on time, every time – throughout the lifetime of your instrument.

## Everything you need under one roof

When you engage with us, you're benefiting from multivendor service and support from the absolute best in the business. Thousands of certified technicians in the field, who are familiar with all the techniques you employ. More than 400,000 multivendor assets under our care. And operations in more than 120 countries across the globe.

Analytic method services, asset procurement and disposition, business intelligence, qualification and validation, lab relocation, and, of course, instrument service and repair – all these services and more, plus a deep-seated knowledge of the business requirements of our customers, uniquely qualify us to help empower your science and drive your business.

## UPLC Columns with Automated Identification and Tracking



All our Altus UPLC® columns are specifically designed to help you achieve superior levels of performance from your system. These UPLC® columns allow you to take advantage of both the analytical and productivity gains delivered by sub-2-µm particles. You can choose from ethylene bridged hybrid (BEH), charged surface hybrid (CSH™), or high-strength silica (HSS) technologies to best fit your unique application needs. Altus UPLC® columns also feature a novel integrated serialization device that tracks the serial number, column manufacturing summary, and column usage history. This data is automatically read by the Empower® 3 CDS and recorded with your data for total traceability – and peace of mind.

**Want more from your LC/GC solutions? You're in good company.**

Learn more at: [www.perkinelmer.com/altusuplc](http://www.perkinelmer.com/altusuplc)

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