



Analytical Polymer Solutions

DESIGNED FOR INNOVATION



Waters
THE SCIENCE OF WHAT'S POSSIBLE™

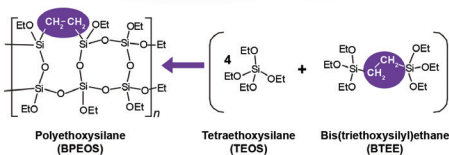
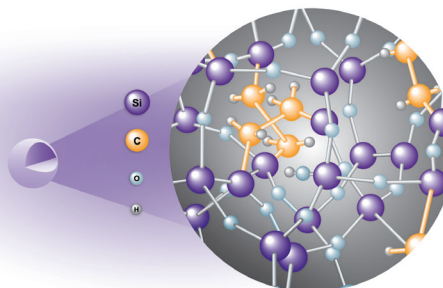
COLUMN TECHNOLOGY THAT KEEPS UP WITH THE PACE OF YOUR RESEARCH

BEH Column technology

Ethylene Bridged Hybrid [BEH] Technology synthesis creates particles that ensure extreme column performance and long column lifetime under harsh operating conditions.

State-of-the-Art Reversed-Phase and HILIC HPLC Columns

BEH columns are suitable for general purpose, reversed-phase chromatography and ideally suited for method development due to extreme pH stability and applicability to the broadest range of compound classes, providing optimum separation performance when paired with the APC with p-QSM technology.



BEH Technology™ Particle Synthesis. * US Patents 6,686,035; 7,250,214



One System. One Bank of Columns. Any Solvent.

The ACQUITY APC System combined with ACQUITY APC Columns allows polymer scientists the versatility to rapidly analyze their polymers in the ideal solvent for their application without the cost of maintaining multiple columns sets.

Build Solutions for Tomorrow Before Tomorrow Comes

Today's polymer manufacturers operate within an increasingly dynamic market that is fueled by intense competition for materials that are lighter, stronger, higher-performing, and more sustainable than the last.

By leveraging the latest analytical technologies, organizations can gain a competitive advantage and accelerate their materials innovation to enhance productivity, improve processing, and meet sustainability goals.

Waters' robust polymer analysis solutions are designed to support your passion to discover and drive for innovation so that you can focus on building innovative solutions for tomorrow before tomorrow comes.

TIME

Accurate and repeatable polymer MW information
5X to 20X faster

COST

One system for multiple analysis means more lab space and less capital spend

EFFICIENT

Reduced solvent consumption and waste disposal volumes

INFORMATION

High resolution analysis and improved data quality

General Purpose Chromatography

FUNDAMENTAL GRADIENT SEPARATION OF POLYMER BLENDS AND ADDITIVES

Industry-leading accuracy and reproducibility

Achieving accurate and reproducible results with Waters' Alliance™ HPLC System provides polymer scientists with timely answers from a reliable analytical instrument that is ready to perform as soon as the samples arrive.

Integrated leak management

For confident, unattended operation.

Simplified set-up

User-interface featuring automated system preparation (SystemPREP) functionality.

Flexible sample support

High sample capacity, at 120 vials, in a closed environment with optional temperature control and access to STAT samples.

Maximized uptime

Tool-free maintenance for common user-replaceable parts minimizes system down times.

Versatile detection

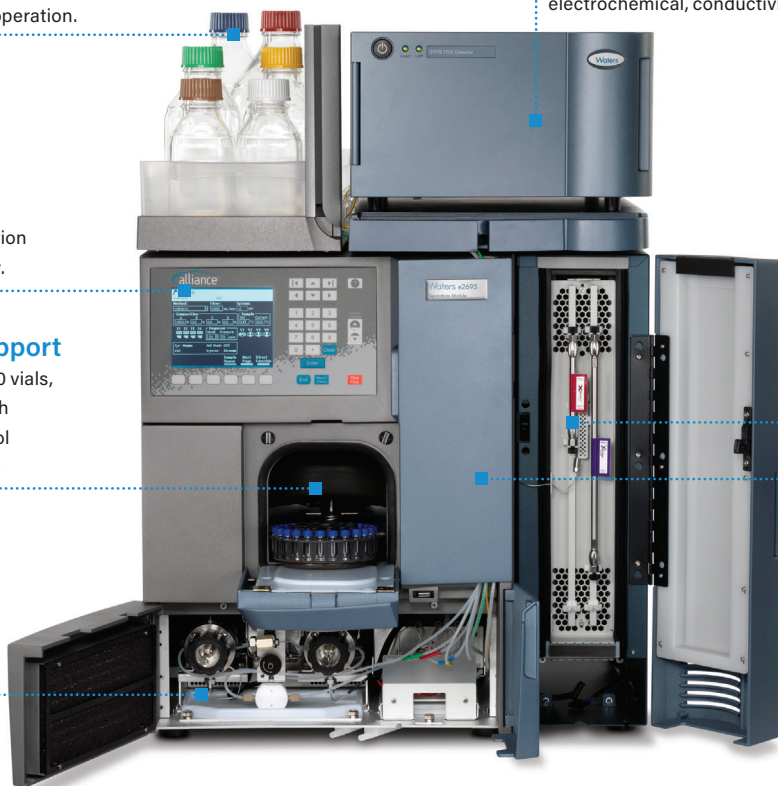
A wide range of detection capabilities, optimized to support the diversity of applications. Includes photodiode array, UV/Vis, fluorescence, refractive index, evaporative light scattering, electrochemical, conductivity, and mass detection.

Column Management Options

Heating or heating/cooling that supports columns up to 300 mm in a stable temperature environment for method repeatability from lab-to-lab. Optional and integrated column switching for up to six columns provides unattended column changeover.

Flow-through-needle injector

Supports injection volumes from 0.1 μ L up to 2 mL and an active, user-definable needle wash sequence for consistently low carryover performance.



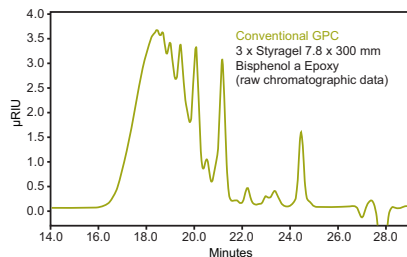
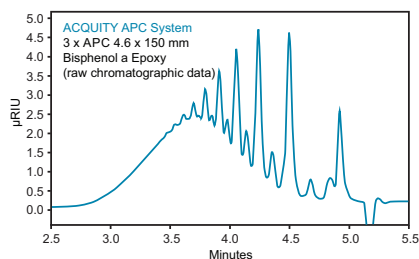
Advanced Chromatography

YOU ARE WORKING SMARTER AND FASTER - SO SHOULD YOUR LABORATORY

How would shorter run times and higher sample throughput improve your laboratory operations?

With the ACQUITY™ Advanced Polymer Chromatography™ (APC™) System, polymer characterization is no longer synonymous with long run times. Harnessing the benefits of advanced polymer chromatography means obtaining accurate and repeatable polymer molecular weight information anywhere between 5 to 20 times faster than before, which translates into direct benefits for your laboratory operations.

- Reduce laboratory turnaround times for polymer samples
- Improve polymer characterization
- Accelerate innovation
- Streamline process monitoring
- Dramatically reduce the analysis cost per sample
- Exceptional system stability ensures precise molecular weight determinations within a 1.1% standard deviation



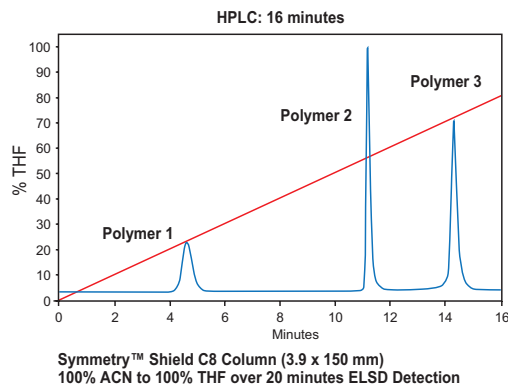
Built-In Sustainability

The ACQUITY APC with p-QSM technology supports your sustainability efforts by using anywhere between 20%–30% less solvent during a standard shift.

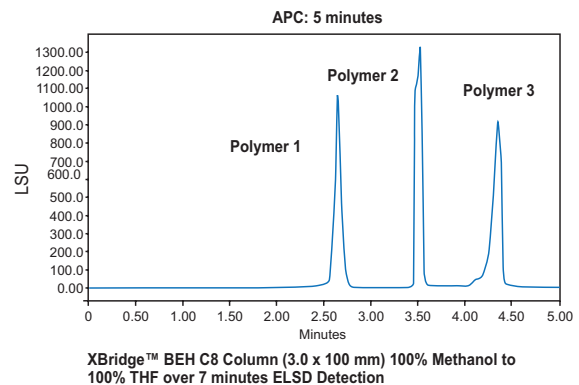
Advanced Chromatography

INCREASE THE SOPHISTICATION OF YOUR RESEARCH BY ADDING p-QSM TECHNOLOGY TO YOUR LABORATORY

Using APC with Polymer Quaternary Solvent Manager (p-QSM) technology provides polymer scientists with the ultimate flexibility to analyze the most complex polymer blends and additives using standard polymer chromatography, GPEC, and reverse phase LC with a single system.



When performing GPEC using HPLC to characterize a mixture of three polymers, full separation of the polymers was achieved in a total of **16 minutes**.



In comparison, separating three polymers using the APC was achieved in a total of **5 minutes**.



Powerful data processing and reporting

Empower 3 Software, our flagship chromatography data software (CDS), makes it easier than ever to run samples and produce meaningful results. Empower 3's interface is designed to maximize your productivity, improving how you collect, process, and print chromatography data.



Advanced Detection

EQUIPPING THE ACQUITY APC SYSTEM WITH ADVANCED DETECTORS CAN PROVIDE POLYMER RESEARCHES WITH VALUABLE DECISION-MAKING INFORMATION THROUGH A SINGLE ANALYSIS

Combining the Waters APC System with advanced detection solutions significantly increases information attainable from SEC analysis through addition of refractive index (RI), ultraviolet PDA (UV), light scattering (LS) and differential viscometry (IV). With third party advanced detection integration options, samples under analysis can now be even more fully characterized to better inform the structure-property relationship of novel complex polymers.

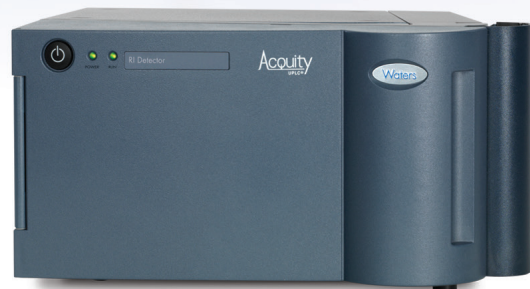


Accurately collect fraction from high-efficiency UPLC and HPLC separations with the Waters Fraction Manager - Analytical (WFM-A)



Waters Fraction Manager - Analytical (WFM-A)

Enabling faster separations, without compromising data quality using the ACQUITY UPLC Refractive Index (RI) Detector



ACQUITY UPLC Refractive Index (RI) Detector

WATERS GLOBAL SERVICES

DELIVERING WORLD RENOWNED SERVICE AND SUPPORT

Our team of experts will support your materials sciences success by providing you with tailored services to help maintain system peak performance, minimize down time, address scientific application challenges, and support stringent compliance requirements.

www.waters.com/apc



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