

Waters Corporation on the Slovak Market

For more than 35 years, the Waters name has been associated with superior quality, innovation, and leadership in high-performance liquid chromatography and related technologies. In August 1994, Waters re-established itself as an independent, privately held corporation. This independent status enables Waters to focus on its core business and bring greater value to customers and suppliers.

As the largest company in the industry devoted exclusively to high-performance liquid chromatography (HPLC) and related technologies, Waters hold more key patents than any other HPLC supplier. Waters is also at the forefront of R&D programs that are revolutionizing the industry. The company's substantial investment in HPLC research is larger than the annual sales volume of most of its competitors. Waters will leverage their strong record of product innovation and their wealth of technological expertise to lead the HPLC industry through the rest of the 1990's and into the next millennium.

Dedicated to following GLP, GMP, GALP, and cGMP processes, Waters manufacturing facilities are ISO 9001 registered. All instruments, chemistries, and data products are shipped with a certificate of performance that assures reliability and quality.

The main Waters instruments and products:

1. HPLC Systems (High-Performance Liquid Chromatography)
2. HPLC Columns
3. CIA System (Capillary Ion Analysis System)
4. GPC System (Gel Permeation and Size Exclusion Chromatography)
5. GPC Styragel Columns
6. LC/MS (Liquid Chromatography/Mass Spectrometry)
7. Data Management Products
8. Sep-Pak Solid Phase Extraction Cartridges

Taking HPLC to a New Level of Performance

The quality and consistency of the results that scientists obtain from their high-performance liquid chromatography systems is critical. For years, enhancements in instrument design have gradually improved performance and reliability. The fundamental design approach, however, has remained basically unchanged. As a result, scientists have come to accept a certain amount of day-to-day and system-to-system variability.

One of the major sources of this variability is the process by which the chromatographic separations are managed. Traditionally, a "system" was comprised of individual components: a solvent pump, an automatic sample injector, a detector, and a data system to record results. While this configuration affords maximum flexibility, trade offs must be made in size, consistency, and performance.

At the 1996 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy in Chicago, Waters has introduced a new line of HPLC systems – Alliance™ HPLC Systems – that takes HPLC a fundamental step forward in giving scientists results of higher quality than they have seen before. Through an innovative design approach to solvent and sample management, Alliance HPLC Systems are more consistent, more compact, and easier to use and maintain than conventional component-based systems. By allowing the scientist to select the most appropriate detector and data system for their application, Alliance HPLC Systems provide chemists with a flexible platform for obtaining predictable and reliable results regardless of whether they work in research, development or quality control environments.

At the heart of each Alliance HPLC System is the industry's first HPLC system platform to integrate solvent and sample management: the Waters 2690 Separations Module. It streamlines all critical separations functions into one easy-to-use, simple-to-maintain unit. This integrated module makes setup, method transfer and method validation straightforward, reducing the chances of operator error and costly downtime. Its integrated design also increases reproducibility and the quality of results.

Functional integration also results in a compact design which saves valuable bench space and minimizes costs.

Alliance HPLC Systems are compatible with the widely-used Millennium 2010 Chromatography Manager, and the 2020 Client/Server Network. This chromatography software platform adapts to the way in which different laboratories use information, and automates the entire system control, data collection, and results management process.

HPLC Versatility – Systems for Every Need

Alliance technology provides automated HPLC solutions for virtually all industry segments including pharmaceutical, industrial chemical, biotechnology, food and beverage and university research. Specific configurations are available for high-throughput analyses, methods development and validation, basic research and positive compound identification. A number of systems options – temperature control, seal wash, and an on-line degasser – are available to maximize performance.

Integrated Solvent and Sample Management: The 2690 Separations Module

Features and Benefits of 2690 Separations Module – Integrated Design

Preconfigured module

- Easy installation and setup
- Easier validation
- less chance of configuration error

Simple maintenance

- Reduces cost of ownership
- less downtime

Intuitive interface

- Easy to set up and change methods

Compact design

- Efficiency
- Maximizes valuable bench space

Single-point programmability

- Complete programming of all parameters affecting the chromatographic separations – all from a single keyboard

Time-stamped data logs

- On-line diagnostics
- cGMP/GLP documentation

Integral floppy disk drive

- Easier methods of archiving and transfer

The 2690 Separations Module integrates solvent and sample management, and features new solvent delivery technology and software-driven control within a compact system. Special features make it easier to maintain, reducing maintenance costs and increasing uptime and productivity.

Because the system is preconfigured and tested at the factory, there is less potential for configuration error, and system validation is more straightforward.

The 2690 Module is optimized for low dispersion operation for high-sensitivity analyses, fast gradient formation and high throughput, and efficient analytical, narrowbore and microbore separations.

An intuitive user interface makes it easy to set up and change methods. Alliance Systems are the only HPLC systems on the market to feature an integral floppy disk drive. Methods can be transferred easily from one Alliance HPLC System to another *via* floppy disk reducing the potential for error and assuring consistency of results from unit to unit and lab to lab.

The system also includes diagnostic capabilities. It can record what is happening in the system at all times, and provides a real-time running log and a permanent record of performance suitable for use in GLP files, or for monitoring preventive maintenance requirements.

The space-efficient design of the 2690 Module makes it about 30 percent smaller than traditional HPLC systems. Detector and eluent bottles are accommodated on top, keeping the instrument compact.

Solvent Management, Simple Maintenance

Features and Benefits of Solvent Management

Independently driven pistons, twin pressure transducers

- Accurate, pulse-free solvent flow

Four-channel in line degasser

- Automatically clears dissolved gases enhancing performance

No-tools maintenance

- High pressure seals and pistons are easily accessed without tools or disconnecting fluid lines

Active, integral seal wash

- Cleans deposits, extends reliability for applications using buffered mobile phases

Four-solvent capability

- Automatically conditions and blends up to four solvents for isocratic, dial a mix, or gradient operation

New solvent delivery technology makes the 2690 Module the first solvent management system with completely independent, digitally-controlled piston drives, for accurate and pulse-free eluent delivery. It compensates for changes in eluent viscosity and an integral in-line degasser automatically purges any gaseous mobile phase, thereby enhancing performance for both isocratic and gradient applications.

Easy to use and maintain, the solvent management system requires no tools for routine maintenance. Operators can access high pressure seals and pistons without breaking fluid connections. Preventative maintenance is simplified allowing for high-throughput operation with minimal downtime.

Autoprime and autopurge functions simplify system setup and eluent purging. An integral seal wash automatically cleans deposits from seals, for higher reliability when using buffered eluents.

Sample Management

Features and Benefits of Sample Management

Superior injection linearity, proven reproducibility and precision

- Inspired by the Waters 717 plus Autosampler
- Ensures accurate performance and ultimate confidence in the results

Sample efficient injector fluids

- No sample loss or waste
- Higher sensitivity detection

Integral needle wash

- Ensures detection sensitivity by minimizing sample carryover

Multiple carousels

- 5 carousels, 24 vials each 120 sample capacity
- Easy preparation
- Perfect for multiple operations or use, multiple separation methods, and more convenient sample preparation

Controlled sample temperature

- 4°C to 40°C

The 2690 Module's sample management system, inspired by the Waters 717 plus Autosampler, assures linearity and precision. Extremely efficient, it handles microvolume samples without loss or waste. The 2690 Module features five, 24-position carousels to provide high capacity sample management capability with the flexibility for multiple operator usage. This means a new level of efficiency and convenience for HPLC laboratories. While Alliance is analyzing one carousel of samples, other samples can be prepared, inserted into carousels which can then be loaded into the system without interrupting ongoing analyses.

Accurate results depend upon strictly controlled sample temperatures. Alliance Systems have integral sample heating and cooling capability to protect sample integrity, control evaporation or enhance sample solubility.

A built-in needle wash assures detection sensitivity by eliminating sample carryover.

Built-In Support for All Waters Detectors

Features and Benefits of Flexible Detection

Supports all Waters detectors

- Flexibility to select the most appropriate technology for the laboratory

Waters 486 Tunable Absorbance Detector

- High performance UV/VIS
- Flexibility
- Easy to use
- High-throughput use

Waters 410 Differential Refractometer

- Superior sensitivity
- High stability
- Automated capabilities

Waters 996 Photodiode Array Detector

- Best PDA sensitivity
- High resolution
- Real-time peak purity assessment for methods

Alliance Systems offer the analyst the flexibility to choose the detector best suited to an application. Options include UV/VIS, photodiode array (PDA), refractive index, fluorescence, electrochemical and conductivity detection.

The Waters Integrity System combines the power of a PDA-based Alliance System with the first mass spectrometer designed as an HPLC detector. It allows analysts to obtain mass spectra themselves and identify compounds, saving time and money.

Supports All Waters Columns

All Waters chromatography columns may be used with Alliance Systems; however, Waters Symmetry Columns are recommended. They deliver superior peak shape across a broad pH range, from 2 through 7, for use in developing sensitive, rugged methods.

Symmetry Columns also set a new industry standard for column-to-column reproducibility, for peak symmetry and sensitivity, and accurate quantitation.

Optimal Systems Control and Results Management

Alliance Systems are compatible with Millennium 2010 Chromatography Manager, for adaptable, flexible control and results management. Adopted by more than 10,000 users worldwide, Millennium software manages the chromatographic process, documents and archives test results for multiple analyses, and formats results to suit individual lab requirements.

For labs requiring lab-wide or corporate-wide Chromatography Information Management Systems, Alliance is completely compatible with Millennium 2020 Client/Server Networking Systems. The network is easily scalable from a single system to the largest network laboratory.

Market Potential

Alliance Systems are designed for a wide range of HPLC applications, and offer configurations for research, methods development, basic research, quality control/assurance and high-throughput testing laboratories. It also provides a simple upgrade path for the current 25,000 users of Waters systems.

The Waters Edge

Waters Corporation, headquartered in Milford, Massachusetts, is the world's largest developer, manufacturer, and distributor of HPLC instruments, columns, and sample preparation products. The Alliance Systems and their novel approach to solvent and sample management delivery are examples of the technical innovation that has distinguished Waters HPLC products for more than 30 years.

The authorized distributor for all Waters products in the Slovak Republic is PCS Bratislava, spol. s r. o., who provides the delivery, support, warranty and post-warranty service of all Waters instruments.

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