Infinitely better purity and recovery

Agilent 1260 Infinity Purification Systems

The Measure of Confidence

Agilent Technologies

Regardless whether you have nanograms or grams of sample

Maximize recovery and purity

Preparative HPLC has never been so easy and efficient

High recovery and purity are key issues for the isolation and purification of valuable pharmaceutical and biological compounds. Agilent offers preparative LC solutions for purification of nanogram to gram quantities of samples. Based on Agilent's industry-leading liquid chromatography portfolio, these systems can be tailored to your sample and detection requirements and are supported by a multitude of application examples. Fraction collection can be triggered by UV, mass or other detection signal, or even by a combination of these. The fraction preview function in Agilent ChemStation software intuitively visualizes changes of fraction trigger values in the chromatogram.

- **Optimum recovery and purity**
- **Scalable systems for nanogram to gram quantities**
- **Highest flexibility through modular design**
- **Patented fraction delay sensor**
- **Superior safety features through leak sensors and forced-fume extraction**

Modular design for maximum flexibility

The modularity of the Agilent 1260 Infinity Purification Systems offers you outstanding flexibility in terms of application and bench space. If your purification needs change, you can easily adapt or upgrade the system to meet the new requirements. A major advantage of the modular stack design is the ability to achieve shortest possible fluidic connections. Combined with optimized tubing diameters for different flow rates, this results in smallest delay volumes, minimal peak dispersion and lowest overlap between fractions.

- **Tubing kits for rapid change when high or low flow needed**
- **Isocratic pumping is easily converted to gradient functionality**
- **UV-based detection can be upgraded to sophisticated mass-triggered fraction collection with active split**
- **Agilent's evaporative light scattering detector as well as third-party detectors are easily integrated for detection and fraction triggering**

Best solution for any application – and any budget!

For utmost flexibility Agilent has created a continuum of products – from compact instruments for routine LC to ultrahigh performance LC/MS systems. Choose the best configuration to optimize every part of your laboratory operations and rest assured that each system can be enhanced as required to meet future challenges.

Highest recovery and purity

Agilent 1260 Infinity Purification Systems offer best-in-class performance in terms of recovery and purity.

Fraction delay sensor

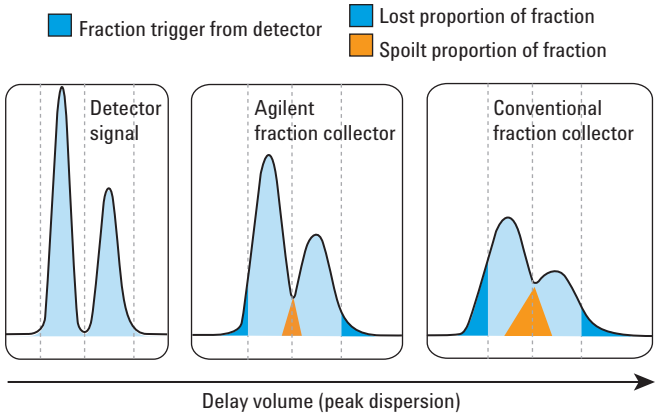
The patented fraction delay sensor technology determines fraction delay volumes automatically and ensures that fractions are collected just-in-time without the need to collect extra volume to be on the safe side.

Signal processing

Time, peak and mass-based fraction collection – or any combination of these – are available and can be triggered by the detector of your choice. Intelligent real time data processing for instantaneous and precise fraction collection is guaranteed through the control area network (CAN).

Intuitive method development and upscaling

The fraction preview function in Agilent ChemStation provides an easy-to-use graphical tool to adapt fraction collection method parameters from a test run to a preparative separation.



The Agilent 1260 Infinity Fraction Collectors are designed for lowest delay volumes to avoid peak dispersion and carry-over between fractions, assuring highest recovery and purity for your fractions.

Scalable systems for tailored solutions

Agilent offers three dedicated fraction collection systems for compound purification and isolation. This allows you to choose a system optimized for your needs. Multiple choices within a system are possible in terms of injectors, pumps, detectors, flow cells and fraction collectors.

Preparative scale purification

The 1260 Infinity Preparative-scale Purification System handles flow rates up to 100 mL/min for purification of up to several grams of compound.

Analytical scale purification

The 1260 Infinity Analytical-scale Purification System handles flow rates from 100 µL/min to 10 mL/min and is best suited for purification of micro- and milligram quantities of compounds. The 1260 Infinity Analytical-scale Fraction Collector is the ideal add-on for any analytical Agilent LC system. Combined with 1260 Infinity Preparative Pumps, the 1260 Infinity Analytical-scale Fraction Collector can be easily upgraded for semi-preparative work at flow rates up to 100 mL/min and for funnel trays to collect unlimited fraction volumes.

Micro-fraction collection and spotting

The 1260 Infinity Micro-scale Purification/Spotting System includes a 1260 Infinity Capillary or Nanoflow Pump for a flow rate range of 100 nL to 100 µL/ min. This system is designed to collect nanogram to low microgram quantities or to spot droplets on MALDI targets from all major vendors.

Flexible fraction collection

The 1260 Infinity Fraction Collectors can be used with an extensive choice of containers including well plates, test tubes, Eppendorf tubes or HPLC vials. Special funnel trays are available for use with user-specific high capacity vessels. For high throughput applications, you can combine up to three fraction collectors in a single system, giving a total maximum capacity of 645 test tubes.

To learn more, visit www.agilent.com/chem/purification

From nanoflow to 100 mL/min

All the performance – all the time

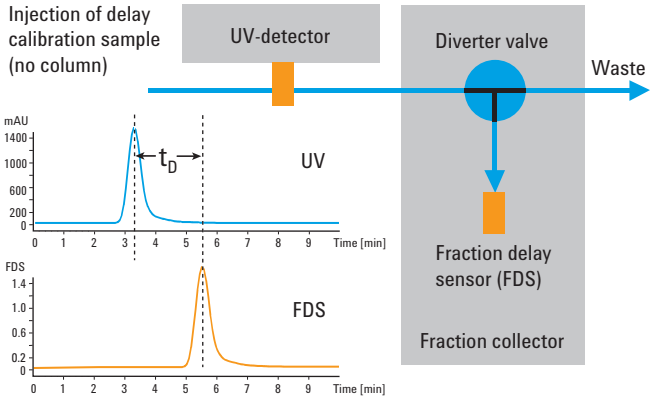
Robustness and ease of use

As the market and technology leader in LC instrumentation Agilent clearly differentiates itself in terms of product quality, robustness and ease of use. The patented fraction delay sensor technology guarantees peak collection just-in-time regardless of your instrument configuration. Temperature control of autosampler and fraction collector prevents deterioration of labile compounds – even during prolonged storage.

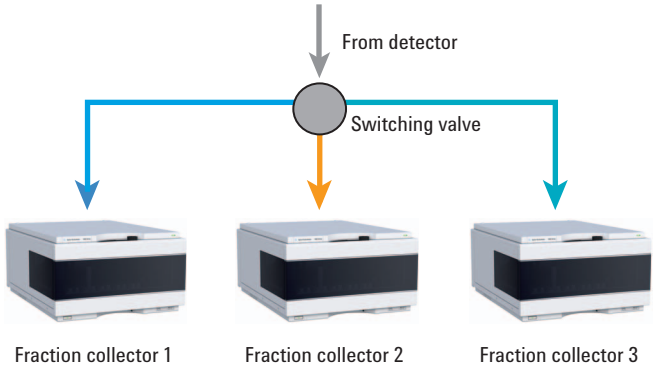
Confidence and safety

All Agilent 1260 Infinity Purification Systems include a suite of functions that provide you with the confidence and safety – for you, your equipment and the environment – that you need for automated unattended purification of your valuable samples. Leak detection and over/under pressure sensing prevent solvent spills and loss of sample. Forced fume extraction allows you to operate your system directly at your bench.

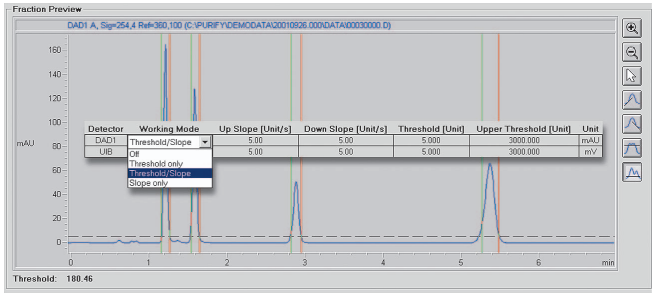
- **Patented fraction delay sensor**
- **Leak sensing with system shutoff functionality**
- **Sample and fraction cooling**
- **Forced fume extraction for bench-top operation**
- **Early Maintenance Feedback (EMF)**



Unique delay sensor determines the delay volume automatically for optimum collection of fractions.



Extend your system's capacity using up to three fraction collectors in parallel.



Multiple collection modes are possible and the Agilent ChemStation fraction preview makes it easy to find the correct trigger parameters.

For purification of milligram to gram quantities of material

Preparative-scale purification system

The Agilent 1260 Infinity Preparative-scale Purification System is designed to handle high flow rates up to 100 mL/min for laboratory-scale purification. This system is the premium choice when milligrams to grams of starting material are available for purification. The flow rate range covered is ideal for columns with internal diameters from 9.4 to 50 mm. The system has a proven track record of robustness and reliability but at the same time it offers a high degree of individual flexibility to tailor the system configuration to meet the needs of your workflow and throughput.

The Agilent 1260 Infinity Preparative-scale Purification System can be deployed as either a **workhorse** to fulfill the automated day-to-day high throughput requirements of combinatorial and medicinal chemistry core facility labs or as a **method scale-up solution** for optimizing the resolution and recovery of your individual compound. This starts with an analytical run and transferring to preparative dimensions.

Solvent delivery

- Dual piston preparative pump – for backpressures up to 400 bar – is available as isocratic or gradient version
- Early Maintenance Feedback (EMF), pooling, recovery collection and leak detection

Sample and fraction management

- Choice of manual and automatic preparative injectors for fastest injection cycles combined with large injection volumes
- Preparative-scale fraction collector – with patented fraction delay sensor for optimum recovery – includes exchangeable trays for a large variety of collection containers
- High capacity extension enabling the usage of up to three fraction collectors in parallel

Compound detection and fraction triggers

- Superior UV detection with a choice of detection cells to cover a large dynamic range
- Simple integration of Agilent evaporative light scattering detector and third-party detectors through universal interface box (UIB)
- Mass-based fraction collection, including accurate active flow splitting
- User-defined combination of fraction triggers based on time, peak and/or mass

UV-based preparative-scale purification system for collection of milligram to gram quantities.

High-end preparative-scale purification system with MS detection and three fraction collectors for demanding applications.

To learn more, visit www.agilent.com/chem/purification

For ultimate flexibility and versatility in purification

Analytical-scale purification system

The Agilent 1260 Infinity Analytical-scale Purification System is **the most flexible and versatile fraction collection system in Agilent's portfolio** and can be easily extended for higher flow rates or converted to a low dispersion version. The standard configuration is designed for flow rates between 100 µL/min and 10 mL/min. It is the system of choice for compound purification in the milligram range and tailored to column internal diameters between 2.1 and 9.4 mm.

For higher flow rates up to 100 mL/min the 1260 Infinity Analytical-scale Purification System can be easily converted for semi-preparative work by adding a 1260 Infinity Preparative Pump and by installing a shorter collection needle in the 1260 Infinity Analytical-scale Fraction Collector. This facilitates the use of larger capacity vessels up to 75 mm height as well as dedicated funnel trays that can be connected to user-defined containers of unlimited size.

If small quantities of material, low flow rates and minimum dispersion are of importance, simply exchanging tubing converts the analytical scale fraction collector to a low-dispersion device, guaranteeing excellent sample recoveries.

Solvent delivery

- Choice of isocratic, binary and quaternary pump
- Preparative pump for semiprep work
- Low dispersion kit

Sample and fraction management

- Automated sample tray recognition
- Trays for a large variety of test tubes, well plates, vials and Eppendorf tubes
- Up to 3 fraction collectors in parallel for high throughput
- Peltier sample/fraction cooling

Compound detection and peak triggers

- Intelligent user-defined combination of fraction triggers
- Compound detection and peak triggering by UV, ELSD, RI, fluorescence and MS detection

UV-based analytical scale purification system for collection of microgram to milligram quantities.

High-end analytical scale purification system with MS detection and three fraction collectors for demanding applications.

For accurate and reliable collection of small fractions

Micro-scale purification and spotting

The Agilent 1260 Infinity Micro-scale Purification/Spotting System for capillary and nanoflow rates (100 nL/min to 100 µL/min) is **the most accurate and reliable instrument on the market.** It is designed for collection of small fractions in 96 and 384 wellplate format, vials and Eppendorf tubes. In addition it is capable to spot nanoliter amounts reliably, precisely and fast onto MALDI targets of all major vendors.

The unique liquid contact control mode for droplet deposition in combination with proprietary tip design of the outlet capillary guarantees reproducible deposition of even the smallest droplets without bubble formation or cross contamination. This feature ensures that even at lowest flow rates combined with fast spotting rates the droplets are exactly positioned where they need to be.

If online matrix addition is used the withdrawal speed of the spotting capillary can be automatically calculated to ensure the precise user-defined droplet size. For offline multi-dimensional separations, MALDI spotting and proteomic applications the Agilent 1260 Infinity Micro-scale Purification/Spotting System is the premium choice.

Micro-fraction collection

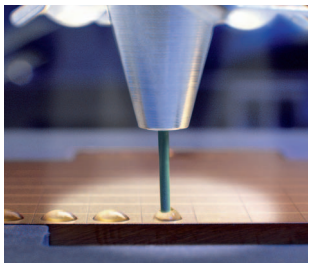
- Flow rate range from 100 nL/min to 100 µL/min (depending on pump)
- Back-pressure independent, best-in-class gradient reproducibility through electronic flow control
- Minimized delay volume and peak dispersion through optimized tubing sets
- High versatility through predefined well plate formats and Eppendorf tubes for up to 768 samples
- User-definable well plate choice for less common formats

MALDI spotting

- Support for all major MALDI targets
- Easy to perform MALDI spotting calibration
- Fast spotting/collection rate (minimum 3 s/spot)
- Online matrix addition kit
- Thermostatted version for degradable bio-samples and to prevent or enhance fast evaporation of small fractions

Collection of micro-fractions.

Spotting on MALDI targets.



To learn more, visit www.agilent.com/chem/purification

1260 Infinity modules for purification

Solvent Preparation and Delivery

Standard Degasser
Flow rate: Up to 10 mL/min
Internal Volume: 12 mL per channel

Micro Degasser
Flow rate: Up to 5 mL/min
Internal Volume: 1 mL per channel

Isocratic Pump
Flow range: 0.001–10mL/min*,
for isocratic analysis

Quatenary Pump
Flow range: 0.001–10mL/min*,
for gradient analysis
(integrated degassing unit)

Binary Pump
Flow range: 0.001–5 mL/min*,
for fast gradient analysis

Preparative Pump
Flow range: 0.001–100 mL/min
(extendable to binary gradient)
for isolation and purification
(column ID: 4.6–50 mm)

Capillary Pump
Flow range: 0.01–100 µL/min
(extendable up to 2.5 mL/min)*,
for gradient analysis
(column ID: 0.18–1 mm)

Nanoflow Pump
Flow range: 0.01–1 µL/min
(extendable up to 2.5 mL/min)*,
for gradient analysis
(column ID: 0.075–0.1 mm)

*(settable flow range)

Injection Systems

Standard Autosampler*
Injection range: 0.1µL–100µL
(extendable up to 5000 µL)
Sample container: vials

Preparative Autosampler*
Injection range: 0.1–5000 µL
Sample container: vials

Dual-Loop Autosampler
Injection range: up to 10 mL
Sample container: vials and
well-plates

Micro Well-Plate Autosampler*
Injection range: 0.01–8 µL
(extendable up 40 µL)
Sample container:
vials and well-plates

*(Also available with thermostat with temperature range 4 – 40°C)

Column compartment

Column Compartment
Temperature range:
10 degrees below ambient to 80 °C

Column/Valves Organizer

Valves

Internal Valves
(built into column compartment)
2-position/6-port valve
2-position/10-port valve

External Valves
2-position/6-port valve
2-position/6-port micro valve
2-position/10-port valve
2-position/10-port micro valve
6-position selection valve
·position/13-port valve

Detectors

Variable Wavelength Detector
for programmable single wavelength analysis,
1 signal,
80 Hz data sampling rate

Multiple Wavelength Detector
for multi-wavelength analysis,
8 signals,
80 Hz data sampling rate

Diode Array Detector
for multi-wavelength and spectral analysis,
8 signals,
80 Hz data sampling rate

Evaporative Light Scattering Detector
Flow range 0.04 – 5 mL/min,
60 Hz data sampling rate

6000 Series LC/MS Systems
6100 Series Quadrupole LC/MS Systems

Fraction Collectors

Micro-scale Fraction Collector/Spotter*
Flow rate: up to 100 µL/min

Analytical-scale Fraction Collector*
Flow rate: up to 10 mL/min

Preparative-scale Fraction Collector*
Flow rate: up to 100 mL/min

*(Also available with thermostat with temperature range 4 – 40°C)

Tailor the software to meet your purification requirements

Flexible software solutions

Modular software for tailored control

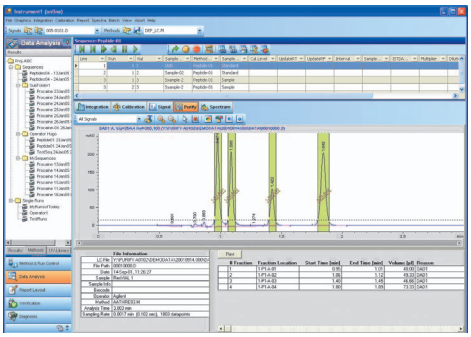
Agilent's concept of a modular instrument structure is not only realized for the hardware but also in the chromatographic data systems. Agilent ChemStation software offers standard functionality and includes all major capabilities for instrument control and data analysis. Agilent Easy Access software facilitates complete system management in a multi-user environment and is ideal for occasional or novice users

STANDARD	WALK-UP
Standard functionality for easy system usage. Security Pack for 21 CFR Part 11 compliance. **Agilent ChemStation Software**	System management for secure access. Ideal for novice users. **Agilent Easy Access Software**

Remote data browsing and purity reports at your desk.
Agilent Data Browser

Software solutions for different user needs.

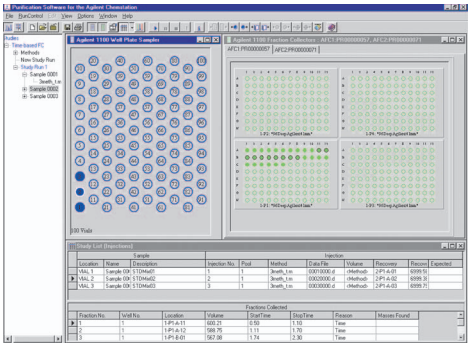
Agilent ChemStation Software – fraction task screen.



Agilent ChemStation

- Full system control for standard purification functionality
- Peak-trigger options
- Fraction preview tool
- Graphical fraction data analysis for data review
- ChemStation Security Pack supporting 21 CFR Part 11 compliance

Agilent Data Browser software – main screen.



Agilent Easy Access Software

- Administrator tools for access, tracking and project management
- Easy sample submission and status review
- E-mail notification
- Rapid identity confirmation (mass-based)

To learn more, visit www.agilent.com/chem/cds

A single-vendor solution for all your purification needs

Wide range of separation columns

Agilent offers a complete single-vendor solution for your purification workflow. The extreme range of flow rates delivered by the Agilent pumps – from nanoflow to preparative – facilitates optimum separation of your analyte mix for maximum recovery and resolution.

Preparative scale separation columns

Agilent's range of columns for preparative HPLC – with internal diameters from 4.6 to 50 mm, covers the complete flow rate range of the Agilent 1260 Infinity Preparative-scale Purification System. The Agilent Prep C18 and normal phase columns enable highest sample loading and exhibit proven stability up to pH 10 as well as extended column lifetime. The highly acclaimed ZORBAX columns – ZORBAX Prep HT for reversed phase separation and normal phase chromatography – facilitate high sample throughput and are ideal for samples that are complex or difficult to separate.

High purity, high recovery and high throughput can be easily achieved with Agilent ZORBAX PrepHT columns, which are available in a variety of bonded phases – Eclipse XDB, StableBond, Bonus-RP, and Extend-C18 – for optimized resolution and loadability under any conditions.

Capillary and nano columns for micro-fraction collection and MALDI spotting

Extremes in sensitivity with limited samples volumes require small column IDs. For your proteomic applications either for one-dimensional or for two-dimensional separation workflows including offline micro-fraction collection, Agilent has a wide variety of column choices. Column IDs start as low as 0.075 µm and 0.1 µm, which are perfectly suited for MALDI spotting applications. Micro-fraction collection is usually performed at capillary flow rates with column IDs of 0.3, 0.5, or 0.8 µm. Agilent offers a broad choice of ZORBAX reversed phase columns for different applications with different bonding chemistries, pore and particle sizes.

Agilent ZORBAX capillary and nano columns are ideal for very sample-limited applications because they provide enhanced sensitivity by reducing on-column sample dilution.

To learn more, visit www.agilent.com/chem/lccolumns

Agilent Value Promise – 10 years of guaranteed value

In addition to continually evolving products, we offer something else unique to the industry – our 10-year value guarantee. The Agilent Value Promise guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model. Not only does Agilent ensure a safe purchase now, we help ensure your investment is as valuable to you in the long run.

Agilent Service Guarantee

Should your Agilent instrument require service while covered by an Agilent service agreement, we guarantee repair or we will replace your instrument for free. No other manufacturer or service provider offers this level of commitment to keeping your laboratory running at maximum productivity.

Further information

For full details of the Agilent 1200 Infinity Series LC systems and application-based LC solutions, ask for a brochure or visit our web site at www.agilent.com/chem/1200

Agilent 1200 Infinity Series Selection Guide
Publication Number
5990-4333EN

Agilent 1200 Infinity Series Portfolio
Publication Number
5990-3333EN

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Published in USA, September 1, 2010
Publication Number 5990-6223EN

Agilent Technologies