



**Agilent 1260 Infinity
Analytical SFC Solutions**

Infinitely better SFC performance



The Measure of Confidence



Agilent Technologies

INFINITELY BETTER SFC PERFORMANCE

Agilent 1260 Infinity Analytical SFC Solutions set higher standards in performance, cost of ownership and reliability to make your laboratory more efficient and environmentally safe. Superior technology in the Agilent 1260 Infinity SFC Control Module helps you to achieve the highest sensitivity ever obtained in supercritical fluid chromatography (SFC). Combined with the trusted quality of the Agilent 1260 Infinity LC you can now perform routine analytical SFC – and significantly reduce your mobile phase expenses. You can even run SFC and UHPLC methods on a single instrument with the new Agilent 1260 Infinity Hybrid SFC/UHPLC System.

Agilent SFC Solutions are an infinitely better choice – for chiral separations and normal phase chromatography!

LC-like sensitivity, UHPLC-like power range

The Agilent 1260 Infinity SFC system combines next generation pre- and post-conditioning of supercritical CO₂ to achieve the lowest detector baseline noise ever measured using SFC. This translates directly into a 10-fold increase in detection sensitivity and opens the door to attractive new applications such as low level impurity analysis for chiral and normal phase applications. The Agilent SFC Solutions are the only SFC systems that offer a power range up to 600 bar, allowing you to use highly viscous co-solvents and small particles to expand your selectivity range and achieve higher separation efficiency.

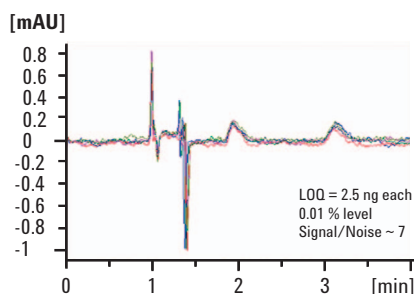
Infinitely more selectivity

The Agilent 1260 Infinity Hybrid SFC/UHPLC system provides full SFC and UHPLC capability in a single system. Alternate between SFC and UHPLC by simply switching a valve – no hardware modification is necessary and only a minimum of equilibration time. With two orthogonal separation techniques, you can detect hidden impurities and obtain more comprehensive information on complex mixtures, for higher productivity and more confidence in your results.

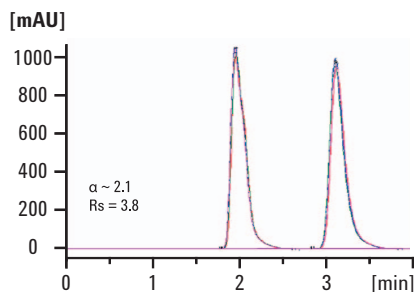
Cost of ownership matters

SFC can significantly reduce the costs for expensive mobile phases such as acetonitrile or for the disposal of organic waste.

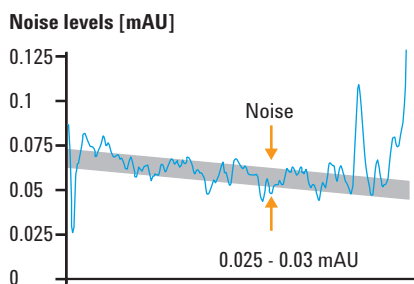
- Consumes low amount of solvents – only low percentages of organic modifiers are used
- Prevents dependencies on shortages as experienced with acetonitrile in 2009 – this solvent is rarely used as modifier
- Generates little waste and avoids costly waste disposal
- Unlike any other solution, Agilent SFC Solutions use low-cost, beverage-grade CO₂ as the major mobile phase component, reducing the costs for CO₂ by a factor of 10.



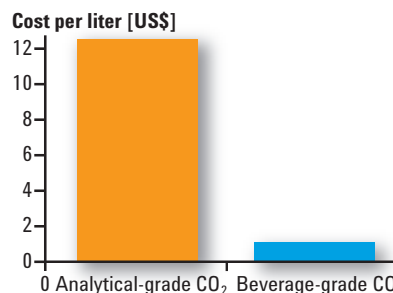
Unprecedented sensitivity for EE determinations shown by five consecutive runs of 0.005 µg of a Racemic mixture of Warfarin.



Unprecedented reproducibility for EE determinations – here five consecutive runs of 50 µg of a Racemic mixture of Warfarin.



Lowest detector noise ever achieved for SFC measurements with noise levels between 0.025 to 0.03 mAU.



The Agilent 1260 Infinity Analytical SFC System uses beverage-grade CO₂ – reducing total CO₂ costs by a factor of 10.



Broadest price-performance range

Based on 1260 Infinity LC technology, Agilent SFC Solutions are available in three different variations:

- An economic upgrade to a current 1100 or 1200 system
- A full 1260 Infinity Analytical SFC system
- A new 1260 Infinity Hybrid SFC/UHPLC system, which allows you to deploy SFC and UHPLC alternately within a sequence of methods with minimum equilibration time and no hardware modification.

Agilent SFC Solutions represent a true milestone of innovative SFC technology.

Easy to use

All modules of the Agilent 1260 Infinity Analytical SFC System are fully integrated in Agilent ChemStation software, making this SFC solution as easy to use as any Agilent LC.

Flexibility for changing analytical requirements

The modularity of the Agilent SFC Solutions allows you to deploy a diode array or multiple wavelength UV detector. You can screen columns to select the optimum stationary separation phase using an additional column selection valve in the column compartment. By adding a second column compartment, you can perform professional method development in an automated fashion using the Agilent Method Development Wizard. You can expand your detection capabilities easily with the Agilent 6100 Series Quadrupole LC/MS or with the Agilent 1260 Infinity Evaporative Light Scattering Detector (ELSD).

FUTURE-PROOF THROUGH SUPERIOR GREEN TECHNOLOGY

LEADERSHIP THROUGH TECHNOLOGY

The front end: the SFC Control Module

With introduction of the 1260 Infinity SFC Control Module, Agilent has set a new benchmark in CO₂ pre- and post-conditioning. Gaseous CO₂ is transformed to the supercritical state and boosted to a pressure that relieves the LC-SFC pump from any compression requirements. The result is the lowest baseline noise ever achieved in SFC measurements, increasing sensitivity by up to a factor of 10. The Agilent 1260 Infinity SFC Control Module contains a highly precise backpressure regulator to control tightly the system pressure and collect the column effluent. To minimize carryover of samples the module cleans the autosampler loop by using an additional wash pump.



The back end: simply a modified UHPLC

The Agilent 1260 Infinity Binary Pump and 1260 Infinity Standard Autosampler have been carefully modified for superior SFC performance. The SFC version of the pump performs precise metering up to flow rates of 5 mL/min. The SFC autosampler is fitted with a 5 µl fixed injection loop to ensure the system is pressurized at all times. The SFC high-pressure detector cell

facilitates UV detection with low noise levels even at high pressures. The modularity and robustness of the Agilent 1260 Infinity LC has been maintained for the SFC system to provide future proof flexibility. Further, all components meet Agilent's high quality standards and all modules are optimized and thoroughly tested at the factory prior to shipment.



**1260 Infinity SFC
Binary Pump**



**1260 Infinity SFC
Standard
Autosampler**



**1290 Infinity Column
Compartment**



**1260 Infinity Diode Array
Detector**



**1260 Infinity Multiple
Wavelength Detector**

SFC IS INFINITELY BETTER – NOT ONLY FOR CHIRAL SEPARATIONS

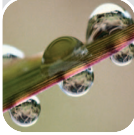


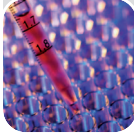


SENSITIVITY AND SPEED FOR YOUR WORKFLOW

Widest application range from small polar molecules up to peptides

The unique selectivity and speed of supercritical fluid chromatography makes it ideal for a wide range of applications in many industries. Whether you are looking for trace impurities in drug development and QA/QC or developing methods for preparative separations of chiral compounds to replace solvent-consuming normal phase separations, the Agilent 1260 Analytical SFC system will help you to boost your lab efficiency.

The Agilent 1260 Infinity Analytical SFC System makes you independent of high acetonitrile solvent costs, boosts the throughput of your lab through low viscosity and superior diffusion characteristics, and helps you to contribute to a better environment through less toxic waste.

The Agilent 1260 Infinity Hybrid SFC/UHPLC System gives you even more application capabilities. Shared components allow you to run both SFC and UHPLC methods on one system, decreasing investment costs and saving bench space.

	Environmental Analysis	Food Safety/Quality	Chemical QA/QC	Drug Discovery	Drug Development	Drug Manufacturing & QA/QC
						
SFC – Super Critical Fluid Chromatography New standards for ease-of-use, performance and reliability	Chiral and achiral compounds	Chiral and achiral small molecules	Chiral and achiral compounds	Chiral and achiral NCEs	Chiral drugs, enantiomeric excess, impurities	Chiral compounds

Where SFC fits in: from non-polar to highly-charged

· Pentane	· Ether · Esters	· Alcohols · Anilines · Amides	· Acids · Primary aliphatic amines	· Amphoterics	· Peptides	· Inorganic ions · Large proteins · DNA/RNA
SFC: pure CO ₂						
SFC: pure CO ₂ + modifier						
SFC: pure CO ₂ + modifier + additives						
SFC: pure CO ₂ + modifier + additives + water						
				Ion pairing		
Reversed Phase HPLC						
Normal Phase HPLC			Ion chromatography			
Ion exchange						

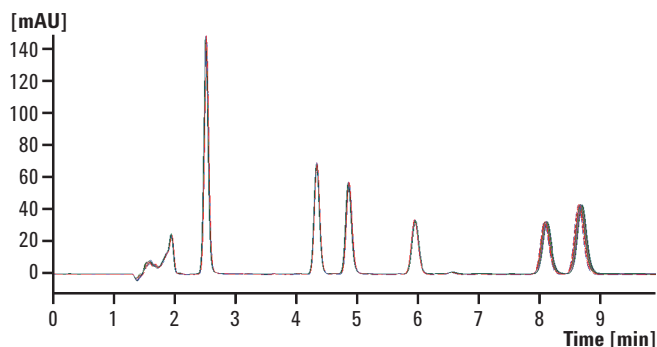
Learn more: www.agilent.com/chem/sfc

BROADEN YOUR APPLICATION RANGE

The Agilent analytical SFC your workhorse for chiral and achiral analysis

SFC has long been acknowledged as the technique of choice for separation of chiral compounds. However, universal deployment in mainstream analysis has been limited for two reasons; lack of repeatability and robustness, and low sensitivity.

The new Agilent 1260 Infinity Analytical SFC System overcomes these hurdles by achieving excellent run-to-run and day-to-day repeatability as well as HPLC-like sensitivity through low UV-detector noise. Agilent's 1260 Infinity-based, single-vendor solution makes SFC a routine, 24/7 tool for almost any of your small molecule applications.

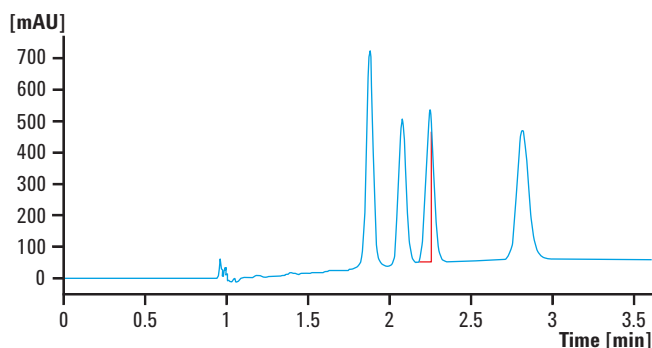


Repeatability of analyses for 10 consecutive runs using the Agilent 1260 Infinity Analytical SFC System.

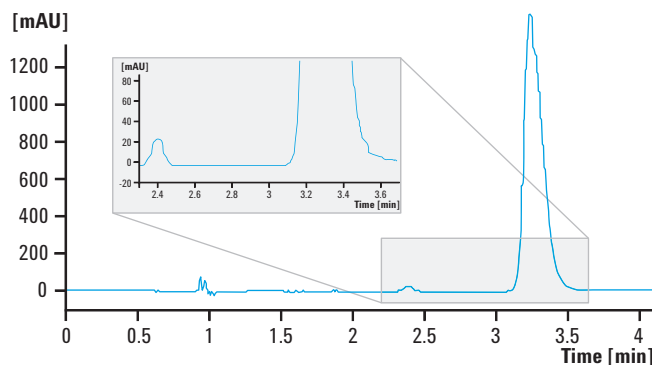
Impurities and enantiomeric excess determination now below 0.1% of your main peak

Even today, the determination of low level impurities is still a challenging task. The lack of impurities below 0.1% of the main component have to be proven in many pharmaceutical assays in order to fulfill regulatory requirements. Technical limitations such as insufficient sensitivity have often excluded SFC as a standard technique of choice to give evidence for drug safety and efficacy.

With an order of magnitude higher sensitivity compared to other available SFC instruments, the Agilent 1260 Infinity Analytical SFC system is capable of helping you to identify impurities in your chiral and achiral drug formulations in a similar way as with your standard HPLC analyses.



Analysis of a compound with two chiral centers, showing full separation of all four stereo-isomers.



Analysis of a compound with two chiral centers contaminated with a single enantiomer, demonstrating detection below 0.05 % of the main peak.

BOOST YOUR LAB PRODUCTIVITY

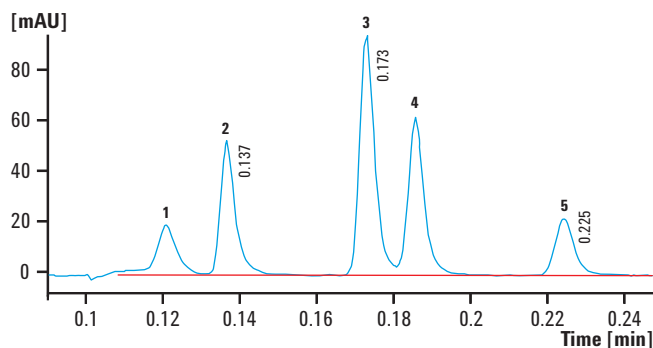
Fast and ultrafast chromatography at moderate pressures

Supercritical fluids possess intrinsically one major advantage over liquid-based mobile phases – they exhibit significantly lower viscosity and increased diffusivity, which provides for improved mass transfer. This facilitates significantly higher flow rates and results in very fast separations.

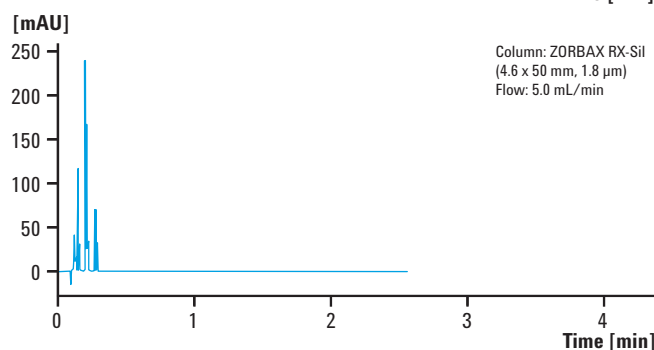
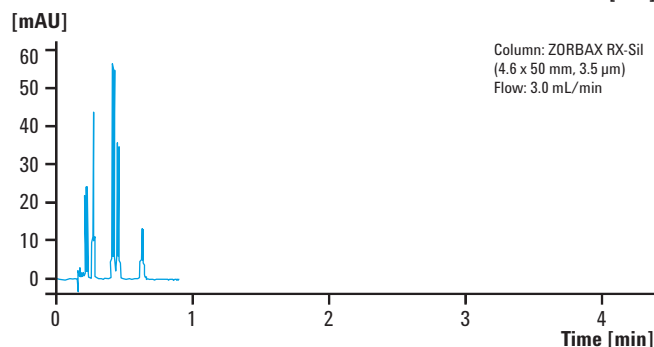
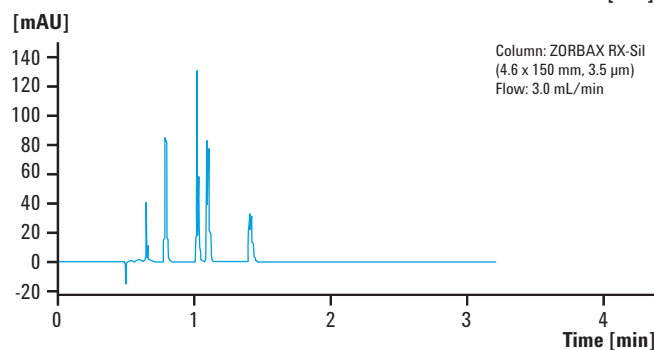
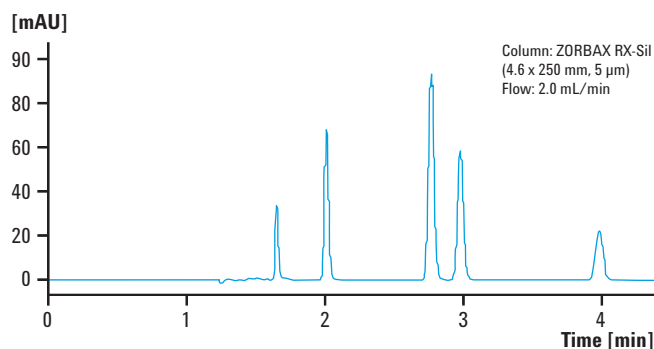
With the Agilent 1260 Infinity Analytical SFC System a standard analysis of a five-component mixture can be transformed from a five minute separation to an assay time significantly below one minute. This demonstrates clearly the power within the new generation of Agilent SFC instrumentation.

Sub-2-micron column technology and extra long columns for better resolution

UHPLC is now widely accepted as the technique to push liquid-based analysis to new levels of productivity or to achieve resolution that previously was difficult to obtain within acceptable time. In contrast, the low viscosity of a supercritical mobile phase enables deployment of small particle columns or extra long columns – without generating excessively high backpressures. With the Agilent 1260 Infinity Analytical SFC System it is now possible to use long and/or small particle columns without exceeding 600 bar and to exploit new column technology for superior resolution.



Ultrafast separation – 14 seconds – of ibuprofen (1), ketoprofen (2), theophylline (3), caffeine (4) and theobromine (5) using an Agilent ZORBAX RX-Sil column (4.6 x 50 mm, 1.8 μ m).



Optimization of resolution and analysis speed using sub-2-micron column technology.

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
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**Agilent 1200 Infinity Series
Portfolio**
Publication Number
5990-3333EN

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