



**Agilent 1260 Infinity  
Analytical SFC Solution**

# Infinitely better SFC performance



The Measure of Confidence



**Agilent Technologies**

## Agilent 1260 Infinity Analytical SFC System

# Infinitely better SFC performance.

The new **Agilent 1260 Infinity Analytical SFC System** sets higher standards in performance, cost of ownership and reliability to make your laboratory more efficient and environmentally safe. Superior technology in the Aurora SFC Fusion A5 module helps you to achieve the highest sensitivity ever obtained in supercritical fluid chromatography (SFC). This technology facilitates low level impurity analysis as well as enantiomeric excess determination. 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.

The Agilent 1260 Infinity Analytical SFC System is an infinitely better choice – not only for chiral separations!

### HPLC-like sensitivity

The Aurora SFC Fusion A5 module combines next generation pre- and post-conditioning of supercritical CO<sub>2</sub> 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 achiral analytes or using SFC as orthogonal separation technology. The new Agilent solution now makes SFC a compelling alternative for any low molecular weight workflow.

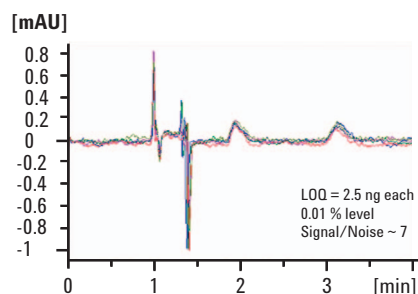
### Infinitely more SFC robustness

Based on well-established Agilent Rapid Resolution LC technology, all components have been factory-optimized for SFC operation, making the Agilent 1260 Infinity Analytical SFC System as reliable and robust as any Agilent 1260 Infinity LC. Now you can deploy SFC as a technique for routine analysis in your lab. And, with one software platform and one world-wide service organization, you get a true single-vendor solution from a name you can trust – Agilent.

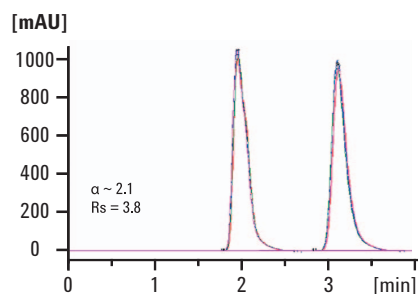
### Cost of ownership matters

The costs for expensive mobile phases such as acetonitrile and for the disposal of organic solvent waste contribute considerably to the overall HPLC operating cost. In contrast, SFC can reduce these costs significantly in many ways:

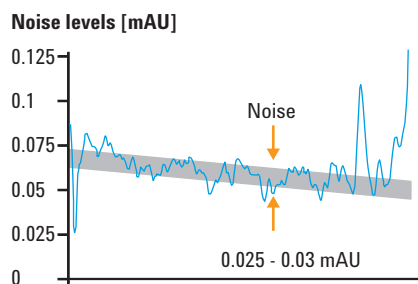
- Consumes low amount of solvents – only low percentages of organic modifiers are used
- Prevents dependencies on shortages as experienced with acetonitrile in 2009 – this solvent is rarely used as modifier
- Facilitates fast chromatography through low solvent viscosity and superior diffusion characteristics
- Generates little waste and avoids costly waste disposal
- Unlike any other solution, the Agilent 1260 Infinity Analytical SFC System uses low-cost, beverage-grade CO<sub>2</sub> as the major component of the mobile phase, reducing the costs for CO<sub>2</sub> by a factor of 10



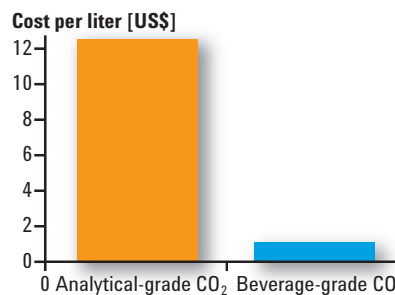
Unprecedented sensitivity for EE determinations shown by five consecutive runs of 0.005 µg of a Racemic mixture of Warfarin.



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 CO<sub>2</sub> – reducing total CO<sub>2</sub> costs by a factor of 10.



### Highest investment protection

Based on 1260 Infinity LC technology – including well-established Rapid Resolution LC technology from the market leader – the 1260 Infinity Analytical SFC System combines with award winning Aurora Fusion A5 technology to give you outstanding performance and highest quality for super critical fluid chromatography. And, if your analytical requirements change in the future, you can convert your system easily to a standard binary UHPLC instrument with 600 bar capability. The Agilent 1260 Infinity Analytical SFC System is 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 1260 Infinity Analytical SFC System 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).

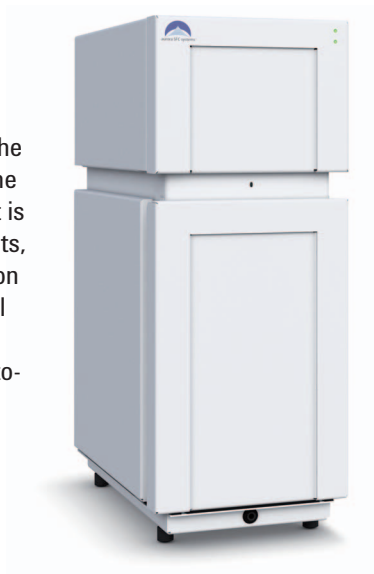
To learn more about the Agilent 1260 Infinity Analytical SFC system, visit [www.agilent.com/chem/1200sfc](http://www.agilent.com/chem/1200sfc)

Future-proof through superior green technology

# Leadership through technology.

## The front end from Aurora

Aurora are the technology trendsetters in SFC and with the Fusion A5 module they have set a new benchmark in CO<sub>2</sub> pre- and post-conditioning. Gaseous CO<sub>2</sub> 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 Aurora Fusion A5 module also contains a backpressure regulator to control tightly the system pressure and collect the column effluent. To minimize carryover of samples the module cleans the auto-sampler loop by using an additional wash pump.



## The back end from Agilent

The standard Agilent 1260 Infinity Binary Pump and 1260 Infinity High Performance 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 High Performance Autosampler**



**1290 Infinity Column Compartment**



**1260 Infinity Diode Array Detector**



**1260 Infinity Multiple Wavelength Detector**

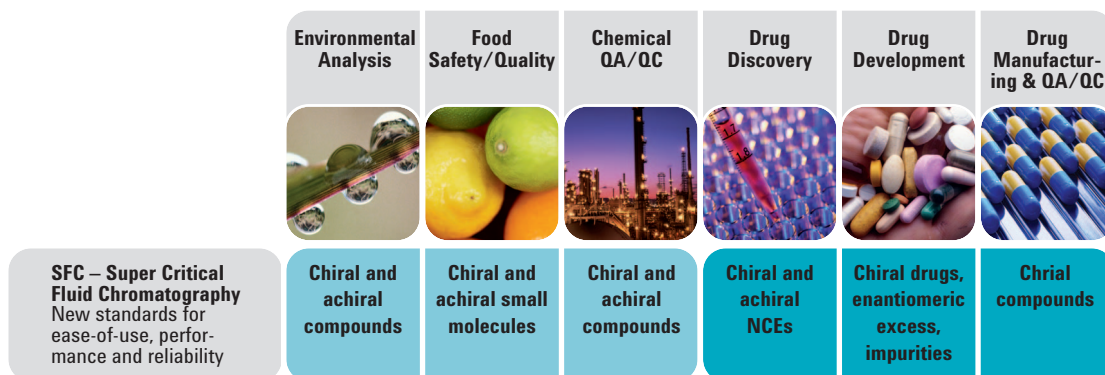
SFC is infinitely better – not only for chiral separations

# Sensitivity and speed for your workflow.

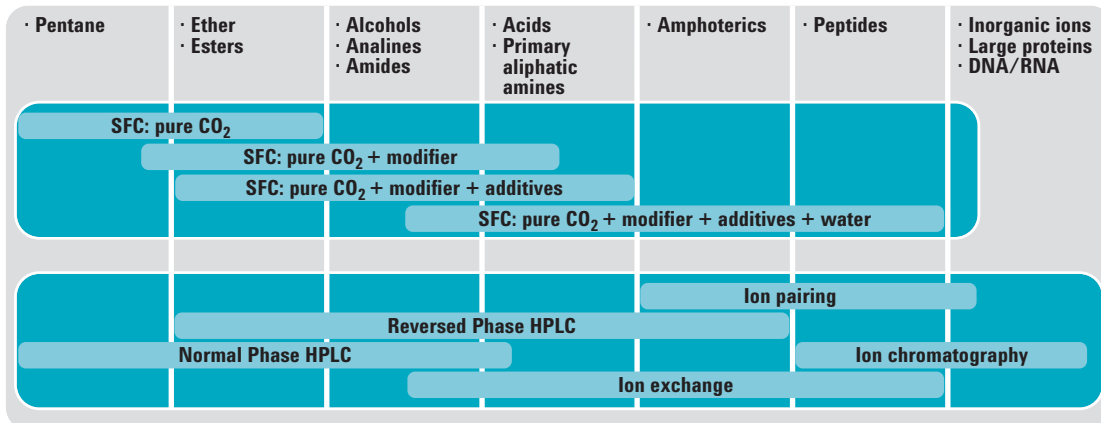
## Widest application range from small polar molecules up to peptides

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 new 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.



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



To learn more about the Agilent 1260 Infinity Analytical SFC system, visit [www.agilent.com/chem/1200sfc](http://www.agilent.com/chem/1200sfc)

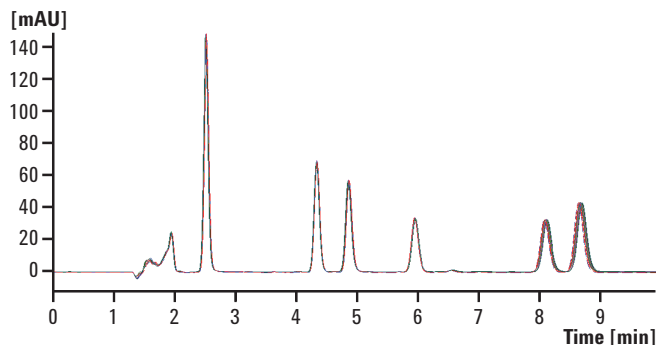
New options to determine impurities and enantiomeric excess

# 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. The cooperative effort of Agilent and Aurora makes SFC a routine, 24/7 tool for almost any of your small molecule applications.

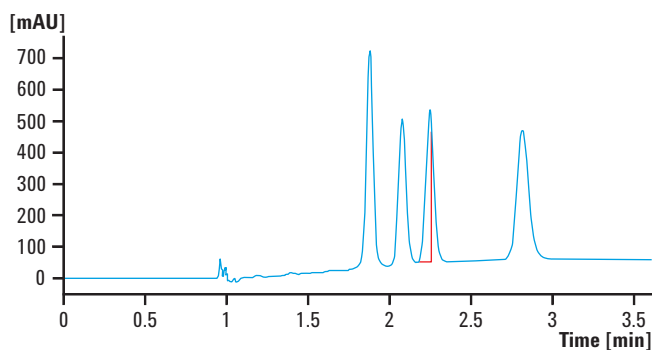


Repeatability of analyses for 10 consecutive runs using the Agilent 1260 Infinity Analytical SFC System.

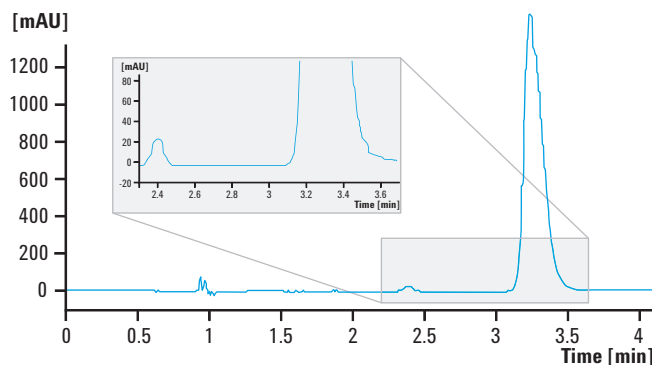
## Impurities and enantiomeric excess determination now below 0.1% of your main peak

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.

UHPLC-like speed for SFC

# Boost your lab productivity.

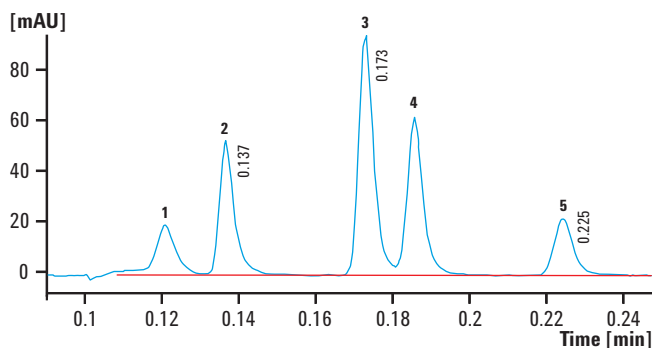
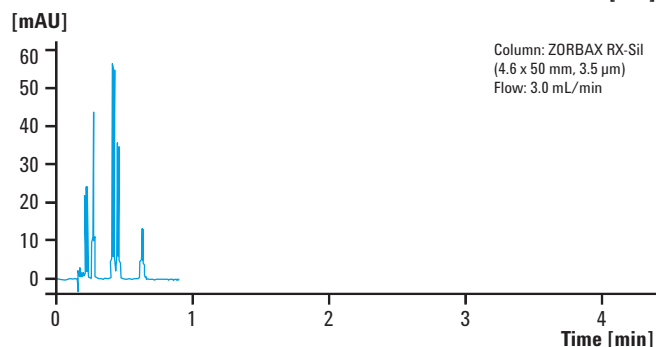
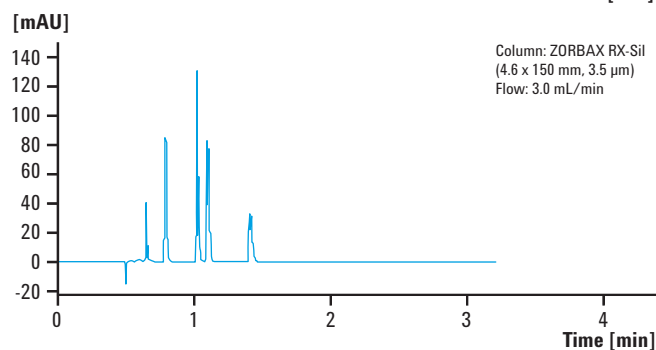
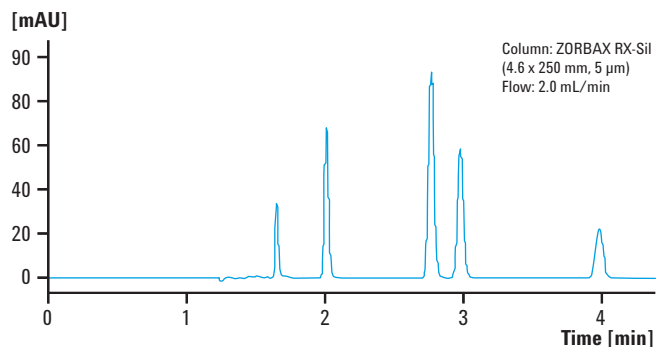
## Fast and ultrafast chromatography at moderate pressures

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.

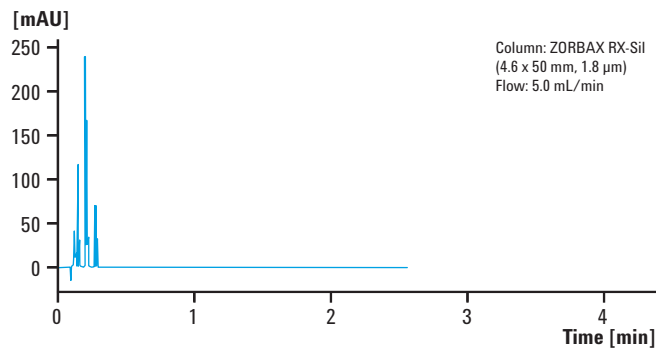
With the Agilent 1260 Infinity Analytical SFC System a standard analysis of a five-component mixture can be transformed from a five minute separation to an assay time significantly below one minute. This demonstrates clearly the power within the new generation of Agilent-Aurora SFC instrumentation.

## 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 400 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 µm).



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

To learn more about the Agilent 1260 Infinity Analytical SFC system, visit [www.agilent.com/chem/1200sfc](http://www.agilent.com/chem/1200sfc)

## 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](http://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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