

# Agilent InfinityLab SFC Solutions

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# The 1260 Infinity II SFC – truly green



# What is SFC?

Discover highest performance at lower operating costs



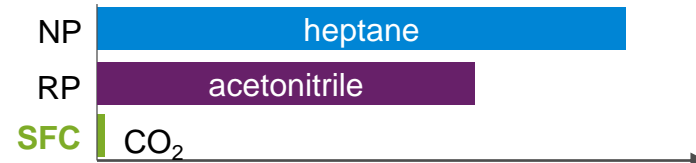
## 3 facts about SFC:

1. Supercritical Fluid Chromatography (SFC) uses supercritical fluids, mainly CO<sub>2</sub>, as a weak mobile phase
2. Lower density of the mobile phases offers the possibility of faster flow rates and ultra-fast separations
3. As a rule of thumb: SFC is the superior choice for molecules that resolve well in MeOH or less polar solvents.

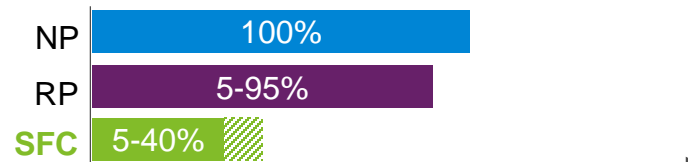
## SFC is truly green

NP					(heptane)
RP					(acetonitrile)
SFC					(+Methanol)

### GHS classification

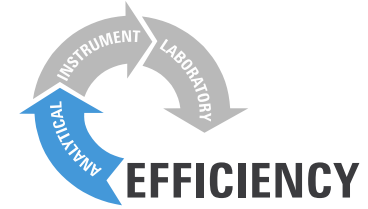


### average price per liter (in US\$)



### Gradient proportion of organic solvents

# 1260 Infinity II SFC



## Which applications may be suitable for SFC?

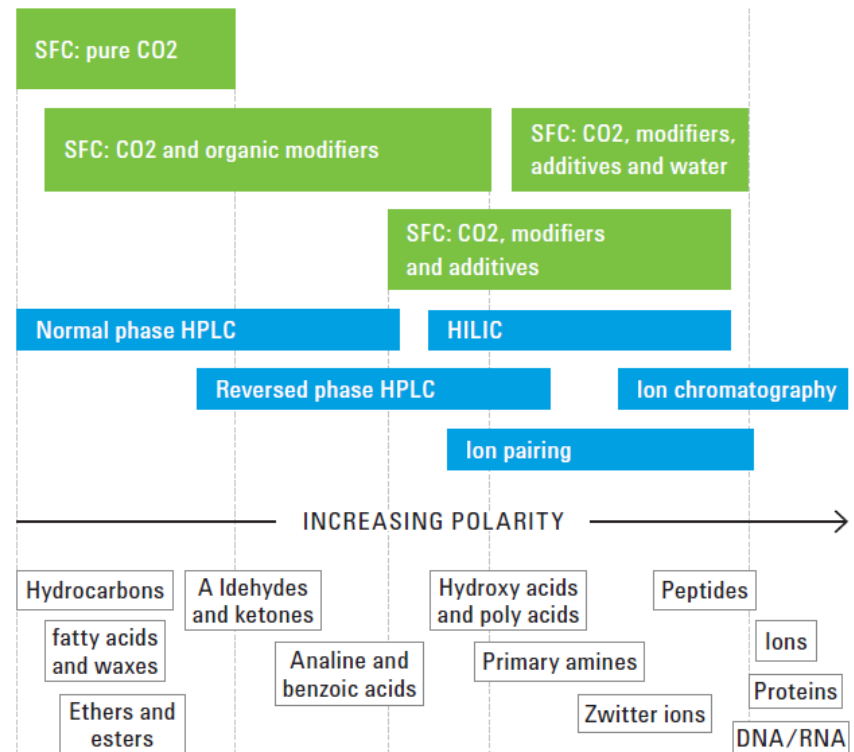
### SFC can also do

- RP, NP and HILIC applications
- Separations on common stationary phases (C3,C8,C18) with alternating selectivity

### What SFC can do additionally

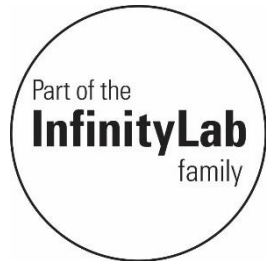
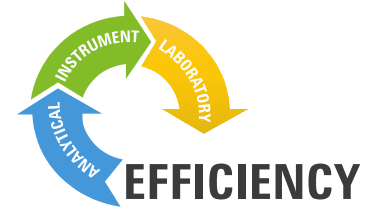
- Separations fully orthogonal to LC and GC
- High speed analyses – even faster than UHPLC!
- Fast chiral separations w/o a need for normal phase solvents
- Lipids, vitamins and everything that is fat soluble

## Where Does SFC Fit Relative to HPLC?



# 1260 Infinity II SFC

SFC technology that makes a difference!



## Infinity II SFC Control Module

- Full flow into ELSD/MS
- Low dispersion nozzle
- Programmable backpressures

## 1260 Infinity II SFC Multisampler

- 0.1-90  $\mu$ l injection volume range
- Innovative **feed injection** principle

## 1260 Infinity II SFC Binary Pump

- up to 600 bar at up to 5 mL/min
- 2-channel degasser, built-in active seal-wash and solvent selection valve

# New 1260 Infinity // SFC Program



Discover innovative **SFC** technology!

1260 Infinity II SFC modules			Modules shared by LC and SFC	
Control Module	Pump	Injector	Thermostat	Detector
<a href="#">G4301A</a>	<a href="#">G4782A</a>	<a href="#">G4767A</a>	G7116A G7116B	G7115A G7165A



1260 Infinity II Control Module

1260 Infinity II SFC Binary Pump

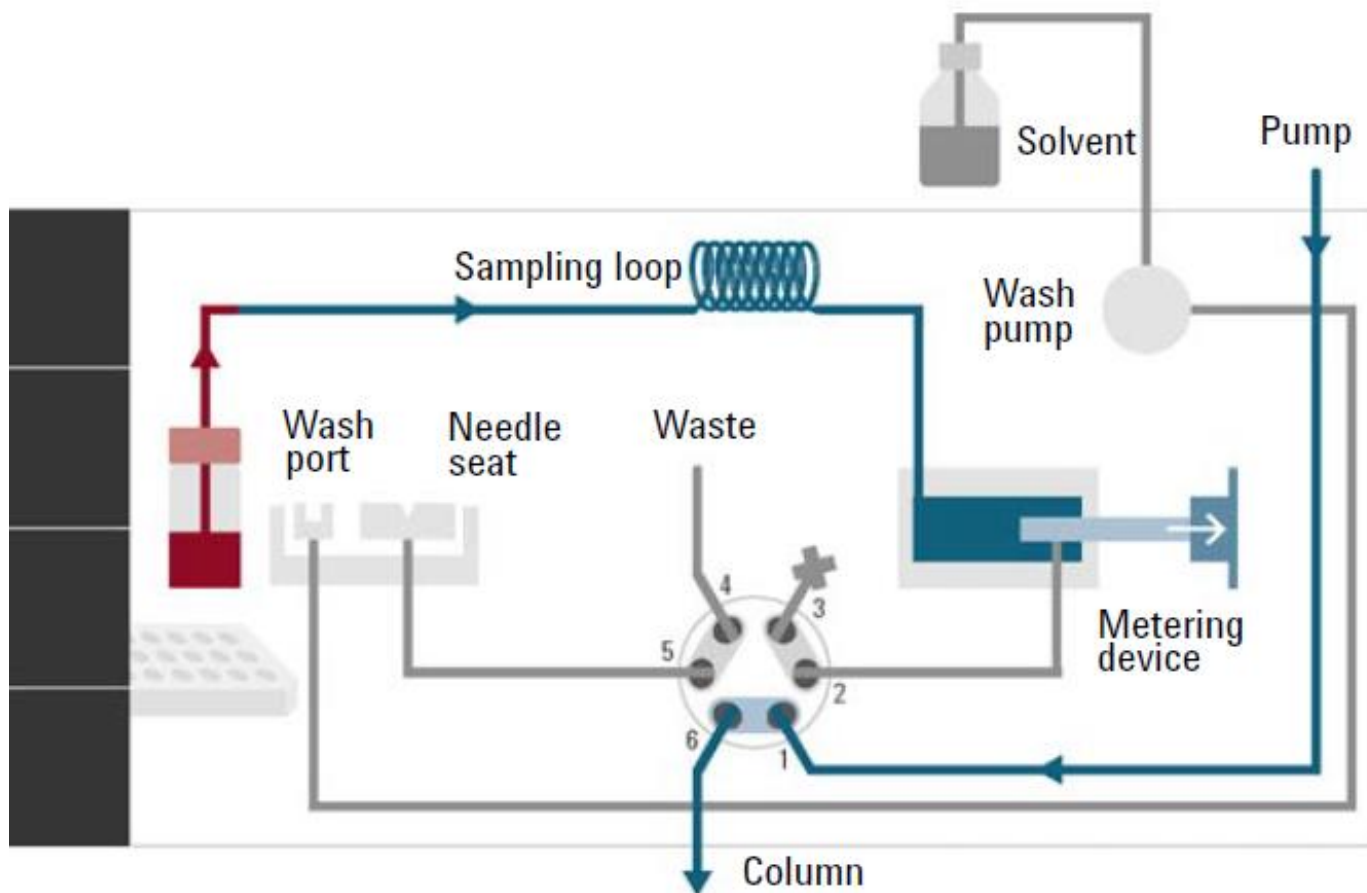
1260 Infinity II SFC Multisampler

1260/1290 Infinity II Multicolumn Thermostat

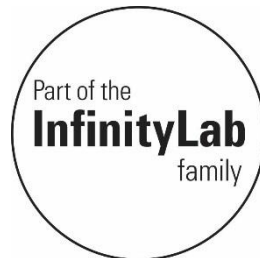
1260 Infinity II DAD-WR  
1260 Infinity II MWD

# 1260 Infinity II SFC

## Feed Injection Principle

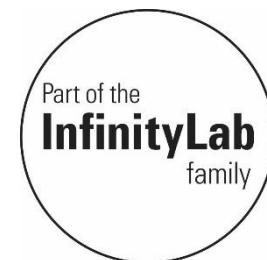


Discover a complete one-vendor solution





# InfinityLab SFC Solutions



Solutions that cover your complete workflow

## Hardware

Discover Agilent's new SFC system that offers pressures up to 600 bar as well as an UHPLC/SFC hybrid configuration.

UHPLC



SFC

## Detector portfolio

Discover full flow connection to SQ- and high end MS detectors, as well as to ELSD and FID\*.



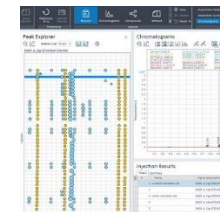
## Columns and Supplies

Choose from our InfinityLab column and supplies repertoire that perfectly suits your SFC system.

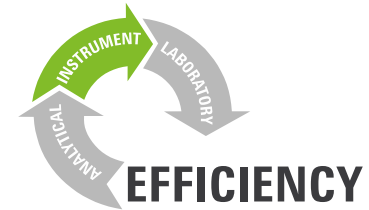


## Data Acquisition and Run Control

Discover intuitive data acquisition using OpenLab ChemStation or Agilent's new OpenLab CDS 2.



# InfinityLab Method Development Solutions



All the best from LC method development now for **SFC!**

## SFC Method Development

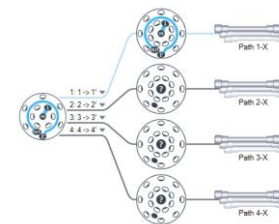
solvents

Select between **12 solvents** and modifiers on channel B



columns

Use up to **32 columns** in four 1290 Infinity II MCTs



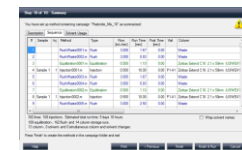
temperatures

Profit by two **independent** heating zones per MCT and separate heat exchangers



software

**Method Scouting Wizard** A.02.07\* is simplifying your SFC method screening campaigns.



## LC Method Development



\* Release planned: End of January 2017

# A perfect match for your SFC applications



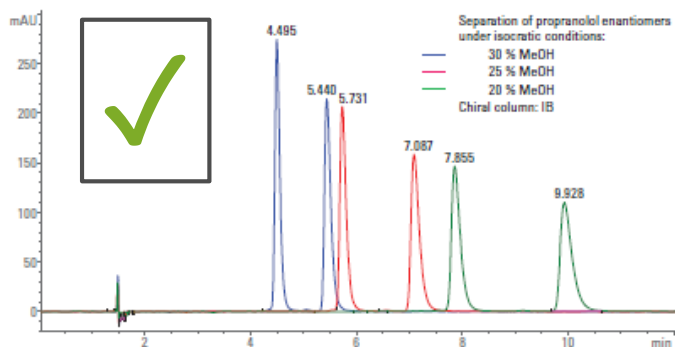
# SFC Applications



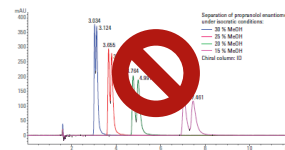
Pharmaceuticals

## Chiral SFC screening campaign using Method Scouting Wizard

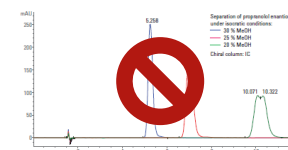
Screening Campaign



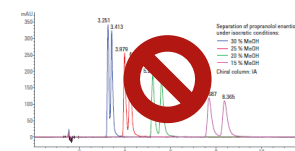
ChiralPak B



ChiralPak A

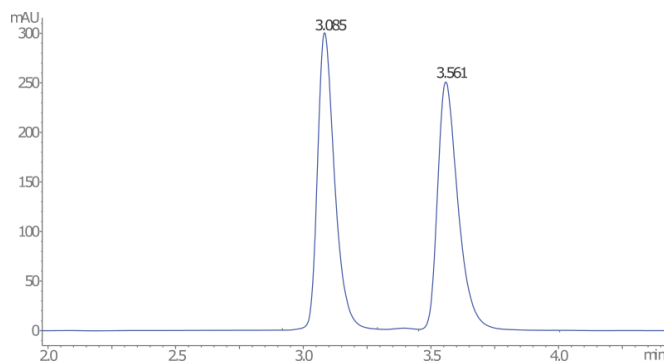


ChiralPak C



ChiralPak D

Refinement Campaign



### Get the gist of the experiment

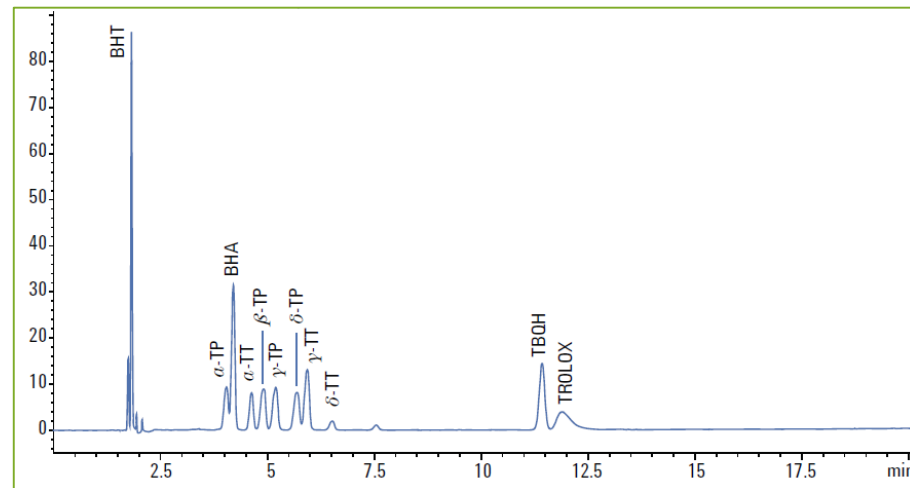
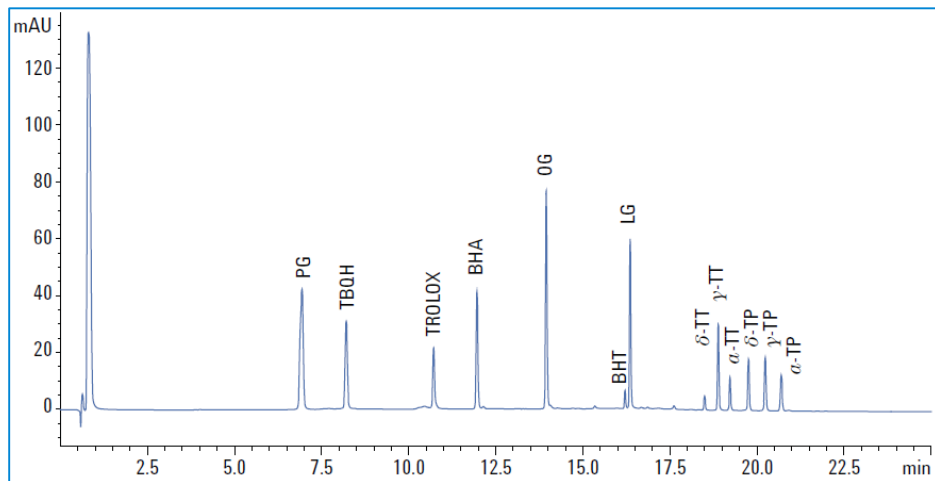
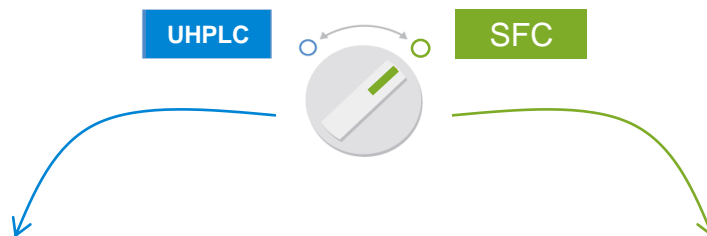
Separation power of the 1260 Infinity II SFC system and automated screening campaign setup using Method Scouting Wizard led to the identification of optimized separation conditions. Propranolol enantiomers were fully separated in under 4 minutes!

# A perfect match for your SFC applications



Food& Environmental

Antioxidants in vegetable oil measured on a 1260 UHPLC/SFC system



## The gist of the experiment

Resolution for separation of tocopherols was increased when using SFC, other antioxidants are reliably separated in UHPLC mode.

# InfinityLab LC SFC Solutions



## 1260 Infinity II SFC

### Core system components

1260 Infinity II DAD WR (G7115A) **OR**  
1260 Infinity II MWD (G7165A)

1260 Infinity II MCT (G7116A)  
**OR** 1290 Infinity II MCT (G7116B)

1260 Infinity II SFC Multisampler (G4767A)

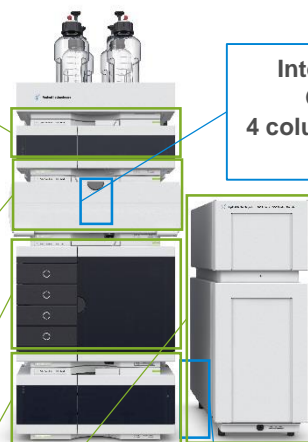
1260 Infinity II SFC Binary Pump (G4782A)

1260 Infinity II SFC Control Module (G4301A)

### Upgrade possibilities

Internal Valve drive  
G7116A/B#058  
4 column selection valve (G4237A)

Solvent selection valve:  
External valve drive (G1170A)  
12pos/13 port valve (G4235A)



## 1260 Infinity II SFC Hybrid

### Core system components

1260 Infinity II DAD WR (G7115A) **OR**  
1260 Infinity II MWD (G7165A)

1260 Infinity II MCT (G7116A)  
**OR** 1290 Infinity II MCT (G7116B)

1260 Infinity II SFC Multisampler (G4767A)

1260 Infinity II SFC Binary Pump (G4782A)

1260 Infinity II SFC Control Module (G4301A)

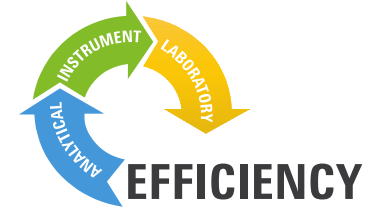
### Hybrid Upgrade

2pos / 10 port vale (G4232D)

1260 Infinity II Quat Pump (G7111B)



# Agilent 1260 Infinity II SFC



## Summary



- up to **600 bar** and at **5ml/min**
- Pump with integrated degasser, SSV and seal wash
- Gain sensitivity with full flow injection to MS and ELSD



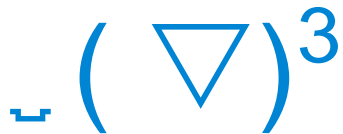
- Variable but precise injections by new **Feed Injection Technology**
- Highest sample capacity in a single module

UHPLC



SFC

- Go **hybrid** and change between UHPLC and SFC runs
- Profit from a dedicated **method development** solution



- A true **one-vendor solution** comprising hard-, software and supplies
- Higher performance for a much cheaper price!