Innovation in Preparative SFC

# SFC-PICLab Hybrid 10-100

## *Combined Method Development and Preparative Supercritical Fluid Chromatograph*

- Develop methods and perform preparative separations on one unit
- Oven holds 9 analytical columns for screening plus one preparative column
- Parallel, optimized analytical and preparative pathways for maximum performance in either mode.
- Simple transition from analytical to preparative mode
- 4+waste fractions with high-efficiency gas-liquid separators for maximum recovery
- $CO_2$ recycle in preparative mode as option

SFC-PICLab Hybrid 10-100

The bench-top SFC-PICLab Hybrid 10-100 incorporates two stations – one analytical and one preparative - in a single unit. Use of common components minimize lab space and costs while chromatographic performance in both modes is maintained by use of parallel channels for analytical and preparative separations. Switching between the channels is performed through the software.

A larger hybrid system, the SFC-PICLab 10-150 is available.

Co-solvent is selected by an automated switching valve. The co-solvent for both analytical and preparative channels is introduced to the mobile phase at a constant pressure, regardless of flow rate, which results in reliable operation and high reproducibility of co-solvent ratio.

The analytical method development station includes an autosampler, an automated column switching valve with up to 9 analytical columns and up to 6 solvents, also selectable through the software. Methods are designed and sequences set up by a user-friendly Windows®-based software which also contains data acquisition and processing modules as well as a unique screening sequence module which allows set-up of complex screening procedures with a minimum of user interactions.

Column Oven

PIC Solution Inc., P O Box 629, West Chester, PA 19381, USA
Tel (484) 319-4281 ; Fax: (484) 639 0118
www.pic-sfc.com E-mail: info@pic-solution.com

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The SFC-PICLab Hybrid 10-100 preparative station allows flow rates up to 100 ml /min, suitable for columns 2 and 3 cm id. Injections in preparative mode with stacked injection capability are made from a large-volume bottle in the autosampler through a valve system separate from the analytical channel.

The control software for the preparative station allows both manual control from the main screen as well as fully automated operation by using loaded methods which contain all operating parameters. Besides the method translation feature (see above) the software includes a preparative method builder function to simplify the creation of a preparative method. Once a separation by single injection has been run, a single click transforms this into a stacked injection, production method.

Reproducibility and reliability of the SFC PICLab Hybrid system are enhanced by the use of a process logic controller (PLC) for operational control of the unit, with the personal computer used as the operator interface and for data display and post-run calculations.

Four fractions plus a waste stream may be collected, using high-efficiency gas-liquid separators which typically result in over 95% recovery of sample. The fractions are collected on a time or a time and UV threshold basis. $CO_2$ recycle is not normally available in this unit but is available as an option.

## Specifications

| | Hybrid 10-100 | Hybrid 10-150 | Analytical Mode |
|---|---|---|---|
| **Production Capacity** | 2-15g/day | 3-25g/day | |
| **Maximum Flow Rate** | 100 ml/min | 150 ml/min | 10 ml/min |
| **Column Size** | 10, 20 & 30 mm id | 10, 20 & 30 mm id | 4.6 mm id |
| **Column Switching** | 1 prep column | 1 prep column | Up to 9 analytical columns |
| **Co-Solvent Flow rate** | max 50 ml/min | max 50 ml/min (33%) | max 10 ml/min (100%) |
| **Co-solvent switching** | Up to 6 solvents | Up to 6 solvents | Up to 6 solvents |
| **Maximum Pressure** | 300 bar | 300 bar | 300 bar |
| **Temperature** | 15 to 60°C | 15 to 60°C | 15 to 60°C |
| **Collection** | 4 fractions plus waste | 4 fractions plus waste | - |
| **$CO_2$ Recycle** | As Option | Yes | No |
| **Format** | Benchtop (140 x 75 x 120 mm) | | |

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