

SFC-PICLab PREP 400

Preparative Supercritical Fluid Chromatograph

- 400 ml/min
- Columns 20 to 50 mm id
- 350 bar maximum operating pressure
- CO₂ Recycle
- Reliable operation – PLC control
- Intuitive, chromatographically friendly user interface
- Fully automated for 24/7 operation
- Reliable, reproducible modifier composition - 4 selectable by software
- Manual or fully automatic operation



The SFC-PICLab PREP 400 is a 400 ml/min preparative SFC system designed for use with 20, 30 and 50 mm id columns. The CO₂ recycle, in which > 85 to 95% of the gas is recycled, reduces the cost and space requirement for CO₂ supply, allowing the unit to replace much smaller systems with no or little CO₂ supply system modification.



Injection is made with a syringe pump for reliability and precision...



...or manually with a syringe for small samples or test injections.

Accurate solvent composition and retention stability regardless of the operating conditions is assured by introducing the co-solvent at a constant pressure. Any one of 4 co-solvents can be selected.





Column Switching

Any of 4 columns – or a by-pass – can be selected.

PLC Control – to ensure reliable operation



Fraction collection (Waste plus 4 fractions) is made by retention time or detector threshold using high-efficiency separators which can result in over 98% recovery of product¹



1. M Villeneuve, R Schmidt and Y Zhao, "Introduction of unique analytical and preparative SFC units", SFC 2011 (5th International Conference on Packed Column SFC, New York, NY, 2011)

CO₂ recycle – CO₂ recycle not only reduces the day-to-day operating costs², but also eliminates the need for costly CO₂ supply systems; the PICLab PREP 400 typically recycles 90 to 95% of the CO₂ used.

2. R Schmidt, M Villeneuve, C Ponder & L Miller, Poster, ISSF 2012, San Francisco, May 2012

Software

The control software, developed by experienced chromatographers, gives an intuitive user interface which allows easy set-up of preparative methods, translating data generated using single injection mode to a fully automated preparative process including stacked injections and fraction collection points

The main screen shows the major separation parameters, the current status of the separation, the chromatogram and the system schematic. In automated separations the fractions are collected by time or by time and detector threshold – or combinations of these. Important parameters such as injection volume, number of runs and collection points can be changed on-the-fly.

For convenience, the software calculates the end time (and date, if needed) of the preparative run, the required co-solvent volume as well as the fraction volumes.

At the end of the separation, the DataManager allows display, processing, overlays and printing of the chromatograms.

Specifications			
Production Capacity	15-600g/day	Maximum Pressure	350 bar
Maximum Flow Rate	400 ml/min	Temperature	15 to 60°C
Column Size	30, 50 & 76.5 mm id	Collection	4 fractions plus waste
Column Switching	4 columns	CO ₂ Recycle	Standard
Co-Solvent Flow rate	max 250 ml/min	Format	Stand-alone skid
Co-solvent switching	Up to 4 solvents	Power Requirements	208 V 3-Phase / 40 A
Control	Siemens PLC	Dimensions:	170 x 80 x 180 cm