

PREP SFC M5

Versatile SFC System for Chiral and Achiral Separations



PREP SFC M5 SYSTEM

Sepiatec's new Prep SFC M5 system is a preparative system for separating chiral and achiral samples using supercritical fluid chromatography.

The Prep SFC M5 system consists of the main module and the collector module. Both modules form a functional unit that can be configured in a variety of ways with different equipment.

The **main module** can be equipped with up to three high pressure pumps, a CO₂ pump, a modifier pump and an optional add-on pump for separations with low modifier portions. The available options include:

- Pumps with 100 ml pump heads, flow rates 0.2 – 100.0 ml/min, 400 bar
- Pumps with 30 ml pump heads, flow rates 0.1 – 30.0 ml/min, 400 bar
- Add-on-pumps with 30 ml pump heads, flow rates 0.1 – 30.0 ml/min, 400 bar

The integrated auto sampler can accommodate two standard or deep-well microtiter plates or racks with up to 60 sample vials with a volume of 1.5 ml each.

The column oven contains up to 10 separation columns with internal diameter of 4 to 30 mm and a length of up to 250 mm. The columns are

switched using two integrated column switching valves. The column oven is heatable up to 70° Celsius. Standard equipment in the main module is a UV detector for measuring in the range of 190 – 500 nm. Additional detectors, such as an ELSD, can also be connected. An optional compact mass spectrometer is available for separations with mass directed fractionation.

An integrated control computer and 10" TFT touch screen is used to input all data for sample separations. No additional computer is required, reducing the space required for the Prep SFC M5 system to a width of just 91.5 cm.

The **collector module** has a continuously-operating gas-liquid separator that makes a vertical movement when switching to a new fraction vessel. A valve closes the outlet of the gas-liquid separator while the vessel is being changed. A new collection simply involves lowering a short capillary into the opening of the fraction vessel, which virtually precludes the risk of carry-over.

The easily exchangeable round holder for the fraction collector vials provides ideal overview. It is available in several models: 38 vials each of 10 ml volume, 22 vials with 40 ml or 12 flasks with 100 ml volume each. The collector module has a removable and transparent protective cover and comes with a connector port for an aspirator that facilitates use at a standard laboratory bench.





PREP SFC M5 SYSTEM WITH SORTER MODULE

Possibilities for collecting and processing fractions using the Prep SFC M5 system can be expanded with the optional sorter module.

The **sorter module** is a handling robot designed for interacting with the collector module of the Prep SFC M5 system. It is available in a variety of different sizes and can be equipped with various gripper arms. A wide range of variants and functions is possible with the addition of various components:

- Continuous removal of vials from the collector module with sorting according to pre-selected criteria
- Continuous placement of new empty vials into the holder of the collector module, thus expanding the collection capacity to several hundred fractions
- Weighing of vials that are removed from the collector module, which are then to be dried in an evaporator, automatic preparation of a “counter vial” with identical weight, positioning of both vials in the holding tray of the evaporator
- A variety of other sample preparation processes for further analysis of collected fractions

PREP SFC M5 SOFTWARE

The Prep SFC M5 system is controlled entirely by means of the Prep SFC control software which offers a clear menu structure enabling simple and intuitive operation. All input options are presented on just a few screens. The software includes a sequence editor for inputting separation parameters for different samples, functions such as stack injection with automatic

suggestions for stack times and multiple options for fractionation. A computer at a separate work site can also be connected.

If an optional mass spectrometer is used, control and data acquisition also take place directly via the Prep SFC control software.



TECHNICAL DATA

PREP SFC M5 SYSTEM

Operating mode	1 analytical, semi-preparative or preparative column
CO ₂ pump, optionally 30 ml or 100 ml	30 ml heads, flow rates 0.1 – 30.0 ml/min, 400 bar, 100 ml heads, flow rates 0.2 – 100.0 ml/min, 400 bar
Modifier pump, optionally 30 ml or 100 ml	30 ml heads, flow rates 0.1 – 30.0 ml/min, 400 bar, 100 ml heads, flow rates 0.2 – 100.0 ml/min, 400 bar
Add-on pump, 30 ml (optionally)	30 ml pump head, flow rates 0.1 – 30.0 ml/min, 400 bar
Number of modifier solvents	1 standard, max. 4 solvents with optional selection valve
Backpressure range	Up to 300 bar, adjustable online backpressure control
Sample injection	Partial loop with syringe pump
Auto sampler	2 MTP or 2 deep well plates 96 well or 60 vials 1.5 ml
Number of columns and size	Max. 10 columns, 4 to 30 mm ID, up to 250 mm length
Column oven	Ambient temperature to 70°C, integrated flow cell
UV Detector	Standard, wavelength 190 to 500 nm
ELSD	Optionally available
Mass spectrometer	Optionally available
Fraction collector	Holders for 38 vials 10 ml, 22 vials 40 ml or 12 flasks 100 ml
Software	Prep SFC control software, Sequence Editor M5 software
System controller	Integrated PC, Windows, 10" TFT touch-screen
Connections	3 USB ports, Ethernet, HDMI
Dimensions, weight	91.5 x 60 x 88 cm (W x D x H), 148 kg

Technical data of the **Prep SFC M5 sorter module** available on request