Waters

THE SCIENCE OF WHAT'S POSSIBLE.™

Prep 100q SFC System

Waters' suite of supercritical fluid chromatography (SFC) bulk purification systems offers the optimal solution to meet your purification needs, from milligrams to kilograms. When higher throughput and more cost-effectiveness mean sustainable business operations, SFC makes the difference.

PREP 100q SFC SYSTEM SPECIFICATIONS*

Operating pressure range	100 to 200 bar outlet setting (1450 to 2900 psi)
Liquid CO_2 inlet pressure	55 bar (797 psi)
Maximum pressure setpoint	200 bar (2900 psi)
Liquid CO_2 inlet temperature	5 °C to 25 °C
Cooling	Circulating coolant
Total flow rate range (CO_2 + co-solvent)	70 to 100 mL/min
Preparative/collection mode flow rate range	70 to 100 mL/min
Co-solvent percentage range (flow dependent)	1% to 55%
Software control	MassLynx™ and FractionLynx™ Software

*Individual component specifications may allow operation outside the total system defined parameters.

The system is designed and tested only for the ranges defined in system specifications.

FLUID DELIVERY MODULE

The Fluid Delivery Module (FDM) is a state-of-the-art pumping system specifically designed to meet the demanding needs of supercritical fluid chromatography.

CO_2 flow rate range	30 to 100 mL/min
Co-solvent flow rate range	5 to 55 mL/min

HIGH PRESSURE CO_2 PUMP (P-200) AND CO-SOLVENT PUMP (2545 QGM)

High pressure pumps are ideal for high pressure, supercritical fluids, and pulseless flow applications.

STANDARD EQUIPMENT

Standard equipment includes the following: dual stainless steel heads, driven sapphire piston assembly, check valves, pressure sensor, pressure gauge, brushless motor, rupture disc assembly, and organizer rack assembly.

2767 SAMPLE INJECTION AND FRACTION COLLECTION

Waters® 2767 Sample Manager is a high-capacity sample processing system that automatically manages sample aspiration, injection, collection, and fraction analysis on a single platform. Designed to be controlled easily with MassLynx Software, it is configured with separate analytical and preparative injectors to allow alternating between analytical and preparative scale isolation and purification without hardware changes.

ANALYTICAL-2-PREP COLUMN OVEN

The Analytical-2-Prep™ Column Oven is a thermally controlled module designed for use with both analytical and preparative SFC columns. The column oven's unique drawer design gives the user unprecedented flexibility.

Temperature range	Ambient +5.0 to 70.0 °C
Maximum heat rate	~6.0 °C/min
Temperature accuracy	±0.5 °C
Maximum column specifications	Six 20 x 250 mm columns

2998 PHOTODIODE ARRAY (PDA) DETECTOR

Waters 2998 PDA Detector delivers no-compromise chromatographic and spectral sensitivity, reliability, and ease-of-use for analytical separations. Advanced spectral analysis enhances component recognition and homogeneity assessment.

AUTOMATED BACK PRESSURE REGULATOR (ABPR)

The ABPR valve assembly is motor-driven and temperature controlled to compensate for cooling during depressurization. A built-in pressure sensor provides closed loop feedback for control and pressure alarm monitoring.

Flow rate	100 maximum mL/min
Maximum pressure	200 bar (2900 psi)

TRAILING HEAT EXCHANGER

After exiting the Automated Back Pressure Regulator, the Trailing Heat Exchanger is incorporated to ensure a phase separation in the mobile phase between the CO_2 and the co-solvent. This Trailing Heat Exchanger is used to vaporize the CO_2 from the mobile phase so that the Gas-Liquid Separator is collecting only a sample-enriched solvent mixture.

Wetted material	316 stainless steel

GAS-LIQUID SEPARATOR

Collecting in the same tubes or racks used in LC is achieved by eliminating the majority of the carbon dioxide, directing only the liquid phase along with the collected fraction to the fraction collector.

MANUAL BACK PRESSURE REGULATOR

The Manual Back Pressure Regulator is used to maintain pressure on the Gas-Liquid Separator for efficient collection, and to minimize any freezing that may occur during depressurization.

Wetted material	316 stainless steel and PEEK
Pressure	40 to 100 psi

TUNEABLE SPLITTER

The Tuneable Splitter (patent pending) has a wide dynamic range of split ratio to the MS, to accommodate the diverse nature of compounds or samples to be processed on the system. Split ratio is customizable with the MS signal to ensure highly efficient collection triggering to obtain satisfactory recovery and purity.

SQ DETECTOR 2

Waters SQ Detector 2 is a single quadrupole mass detector enabled by easy-to-use IntelliStart™ Technology, and provides a simple route to more selectivity, sensitivity, and throughput with faster scan speeds. It provides unique benefits for purification by decreasing the number of fractions to be handled in the post-purification phase while providing online mass confirmation.

VENTING

Carbon dioxide (CO_2) is a non-toxic gas. However, it will displace the air in the room which requires that the system be properly vented. The system provides for venting to a fume hood through a 1/8-inch compression fitting and line for the Prep 100q SFC System.

SOFTWARE CONTROL

Control of the system is managed using MassLynx Software v 4.1 or higher with the most recent SCN for this system.

Waters

THE SCIENCE OF WHAT'S POSSIBLE.™