Quaternary HPLC System - Liquid Chromatograph - 4-Solvent Gradient - 1024-Diode DAD

Model **MSHPLC-6000SWISS** | Brand **Master Science**







The Master Science Quaternary HPLC System is a liquid chromatograph designed for laboratories that need steady flow, clean injections and reliable gradient performance every day. Its four-channel pump mixes solvents at high frequency, which keeps pulsation and baseline noise low without relying on a large mixing chamber.

KEY HIGHLIGHTS

- Lower baseline noise
- Reproducible retention times
- Less sample carryover
- Stable column temperature
- Quick routine maintenance

AT A GLANCE

UV detector or DAD
DETECTOR OPTIONS

Continuous internal air circulation
OVEN AIR FLOW

Request a Quotation
Contact us for pricing, configuration options and delivery details.

support@themsci.com
www.themsci.com

Scan to view online

Overview

The autosampler, column oven and detector are matched to the pump, so the complete system delivers reproducible retention times for assay, impurity and method development work.

For volatile compounds that are better suited to gas phase separation, see the Master Science gas chromatograph with FID and TCD detectors.

Frequent problems in HPLC labs and how the Master Science Quaternary HPLC System addresses them:

Key Benefits

Lower baseline noise
high-frequency solvent mixing reduces mixing bubbles and pulsation, giving cleaner baselines for low-level peaks.

Reproducible retention times
curve cam drive and real-time pressure control keep flow constant across long gradient runs.

Less sample carryover
direct injection and fresh needle wash solution help keep results free of ghost peaks.

Stable column temperature
the Master Science Quaternary HPLC System uses a Peltier oven that can both heat and cool, with mobile-phase preheating for sharp, symmetrical peaks.

Quick routine maintenance
pump wear parts are changed from the front panel without moving the stack.

Technical Specifications

GENERAL

General	Key configuration details of the Master Science Quaternary HPLC System are listed below.
Brand	Master Science
Model Number	MSHPLC-6000SWISS
SKU	MSHPLC-6000SWISS
Pump Type	Quaternary (four-solvent) gradient pump
Gradient Mixing	HFM high-frequency proportional valve switching
Plunger Drive	Special curve cam with real-time pressure feedback
Check Valves	Two-stage cascade inlet and outlet valve cores
Degasser	Built-in
Pump Maintenance	Seals, check valves and plunger replaceable from the front
Injection Method	Direct injection with high-precision drive unit (FTN)
Needle Wash	External needle wall wash; wash solution not reused
Sample Cooling	Optional Peltier-cooled sample tray
Column Oven	Peltier heating and cooling with mobile-phase preheating
Oven Air Flow	Continuous internal air circulation
Optional Valves	3-column switching valve; 2-position 6-port valve
DAD Array	1024 diodes with mechanically ruled grating

OPTICAL PERFORMANCE

Detector Options	UV detector or DAD
Noisy baselines in gradient runs	high-frequency mixing and low pulsation keep the baseline quiet.

COMMON LABORATORY PROBLEMS AND HOW THIS HPLC HELPS

Retention time drift	pressure feedback and a Peltier column oven hold conditions steady.
Carryover between samples	direct injection and single-use wash solution reduce residue.
Degradation of sensitive samples	the optional cooled sampler keeps vials at a set temperature.
Long downtime for pump service	front-access seals and valves shorten maintenance.

Applications

The Master Science Quaternary HPLC System is used for
Pharmaceutical assay and related-substance testing
Food additive, preservative and contaminant analysis
Environmental analysis of phenols and other organic pollutants Chemical product purity and quality control
Method development and column screening in research labs

Pump System

- Four-solvent gradient with HFM high-frequency mixing
- Small delay volume without a large mixer
- Special curve cam and real-time motor speed control
- Cascade check valve cores for steady delivery

Autosampler

- Direct injection for accurate, repeatable volumes
- Outer needle wash to reduce carryover
- Optional Peltier sample cooling for temperature-sensitive samples
- Rack design that limits condensation inside the unit

Column Oven and Valves

- Peltier heating and cooling for a wide temperature range
- Mobile-phase preheating before the column
- Optional three-column switching valve for method screening
- Optional 6-port valve for online clean-up, enrichment and 2D LC

Detectors

- High-sensitivity UV detector for trace analysis
- DAD with 1024-element array for spectral and purity checks

Optional Accessories

- Peltier-cooled sample tray
- Three-column switching valve
- Two-position six-port valve
- UV detector or diode array detector