

Break free from routine sample prep Samplicity™ Filtration System





Breaking the sample prep bottleneck:

Doing more with less

The overall trend in chromatography is to do more with less—more samples, more complex analyses, more analyses per sample, with less volume, lower concentrations, in less time, with fast analytical techniques such as Ultra-High Pressure Liquid Chromatography (UHPLC).

Even though efficient, high quality sample prep is crucial in obtaining reliable data from these ultrasensitive techniques, there have been few recent advances in sample prep technology. As a result, it's often sample preparation, not analysis, that's the rate-limiting bottleneck in chromatography.

The Solution:

Merck Millipore's Smplicity Filtration System

The ideal sample prep system for most chromatographers

The first vacuum-driven system with the designed in flexibility to filter 1 to 8 samples directly into standard HPLC sample vials, the Smplicity Filtration System has the potential to break the sample prep bottleneck. Just attach a vacuum pump, load your samples, and flip the lever. Recover your particulate-free samples in seconds.

Built upon decades of our membrane filtration expertise, the system's Millex Smplicity™ filters have a unique funnel shape for easy pipette loading and are provided in strips of four for faster loading. The filter strips are perforated for use with fewer samples.



Over 60% of Chromatographers process 10 – 100 samples a day

Most chromatographers (65%, according to a recent Merck Millipore survey) process 10-100 samples a day into vials. For them, single-sample syringe filters, robotics and plate-based filtration systems are equally impractical. The Samplicity Filtration System eliminates the tedium of syringe filtration and the space requirements and expense of robotics.

The Samplicity Filtration System is ideal for QC and R&D labs along with users in diverse fields, including:

- **Drug dissolution testing** – mandatory evaluation of the dissolution rate of solid dosage forms in the digestive tract
- **Food safety** – testing foods and beverages for unknown and known toxins, including glycol, melamine, and cyanobacteria
- **Cosmetics** – separation and detection of cosmetic ingredients and formulations
- **Biofuels** – analysis and extraction of lipids from algae and other biomass
- **Pharmacokinetic/pharmacodynamic (PK/PD) testing** – quantification of interactions of drugs with the body with respect to time

Low Throughput (1 – 10 Samples/Day)



Medium Throughput (10 – 100 Samples/Day)

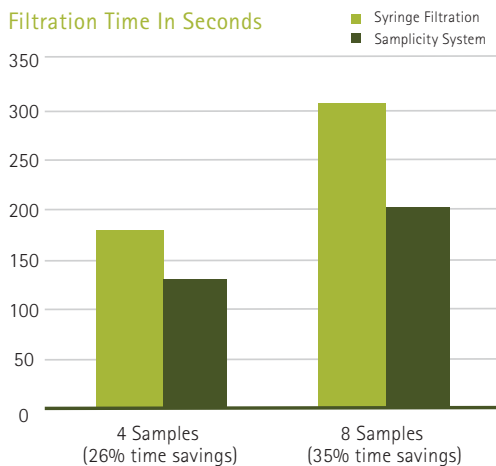


High Throughput (>96 Samples/Day)



The Smplicity Filtration System outperforms manual filtration.

Faster processing time:
Up to eight samples in seconds.

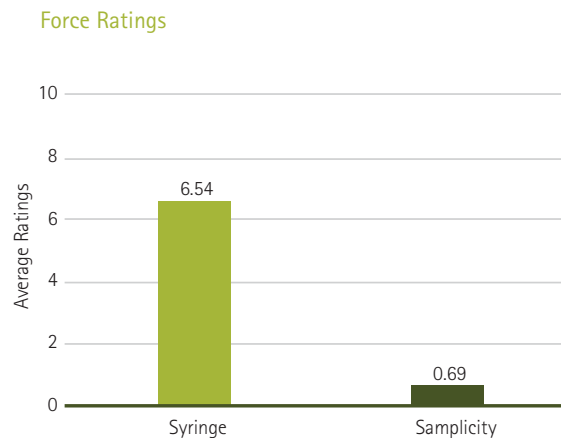


To compare the speed of the Smplicity system with syringe filtration, either four or eight 1.0 mL samples of 1% Pepto-Bismol (viscosity 7-10 cP) were filtered by 13 users. On average, the Smplicity system accelerated four-sample filtration by 26%, and it accelerated eight-sample filtration by 35%.*

No sample foaming or bubbles, for better sample recovery and accurate autosampling.

In the Smplicity system's unique design, the vials are held at an angle and the tip of the filter touches the side of the vial as the sample is being filtered. These features reduce foaming and sample spillover and trapping of air bubbles at the bottom of vials. This is especially important when working with vials containing low volumes or conical inserts.

Ergonomic benefits: Less force, more comfort.



Average user ratings of manual force required and comfort levels for operating syringe filters vs. the Smplicity Filtration System show the Smplicity system requires virtually no manual force for filtration.*



*The information presented is based on preliminary development results. Device performance in specific applications may be different.

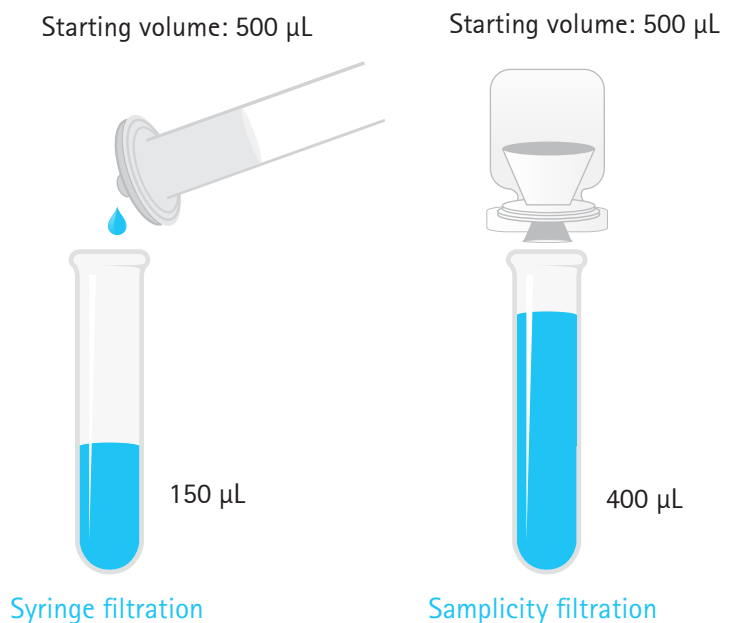
Millex Smplicity Filters

provide maximum versatility with highest quality.

Built on over 40 years of
membrane expertise,

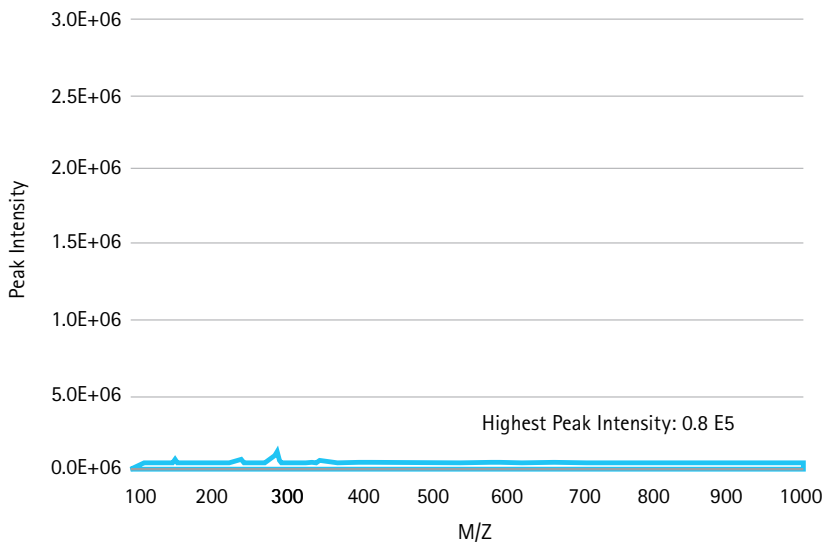
Millex Smplicity filters were designed with the best, most versatile membrane for filtering chromatography samples—our hydrophilic polytetrafluoroethylene (PTFE) filters retain >95% of particulate impurities.

Higher yields for small sample volumes: low holdup volume enables you to do more analyses with each precious sample.

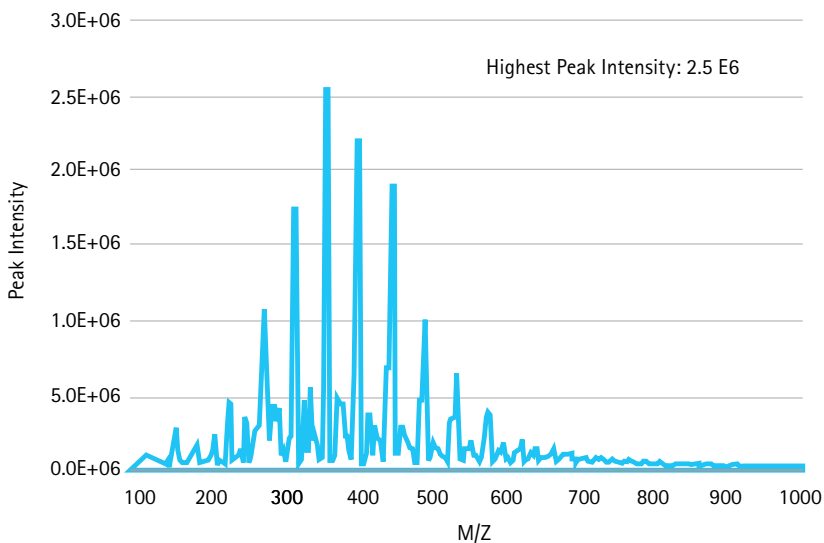


Low extractables from hydrophilic PTFE: broad chemical compatibility of hydrophilic PTFE means fewer leached impurities can contaminate the sample for downstream analysis.

A. Millex® Filter Unit, PTFE



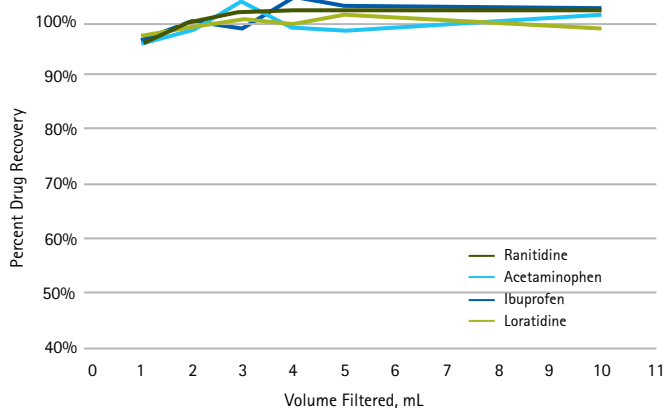
B. Non-Millipore, Polypropylene



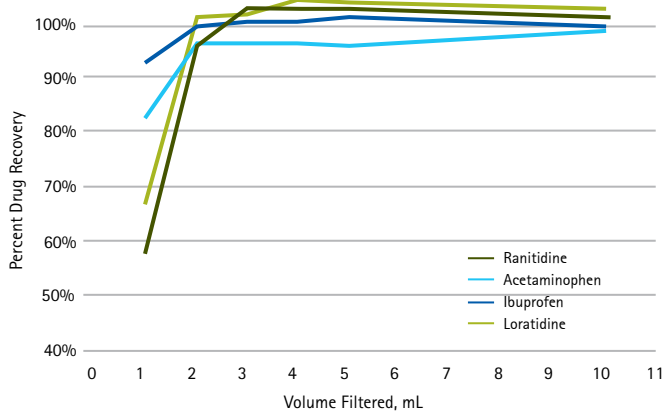
Mass spectrometry detects few extractable impurities from Millex syringe filter (A) containing a 0.45 μm pore, hydrophilic PTFE membrane. In contrast, a syringe filter containing 0.45 μm pore polypropylene membrane (non-Millipore, B) shows significant extractables.

Low analyte binding: waste less sample during filtration so you can accurately quantitate low levels of analytes present in the sample.

A. PTFE



B. Nylon



Hydrophilic PTFE membrane consistently provides greater than 90% drug recovery in the first mL of filtrate, indicating low drug binding to PTFE compared to nylon. Four drug samples were filtered through Millex filters containing PTFE or nylon.

Pre-washing Millex Smplicity Filters is easy.

If your application requires pre-washing filters prior to final filtration and analysis, a waste tray can be inserted into the Smplicity system to facilitate this step. When pre-washing filters using the Smplicity system, the waste tray is placed on the base in place of the vial tray and the solvent or sample is filtered through the Millex Smplicity filters using vacuum, similar to normal operation. Once the filters are pre-washed, the same filters would be used for sample filtration and collection into vials.



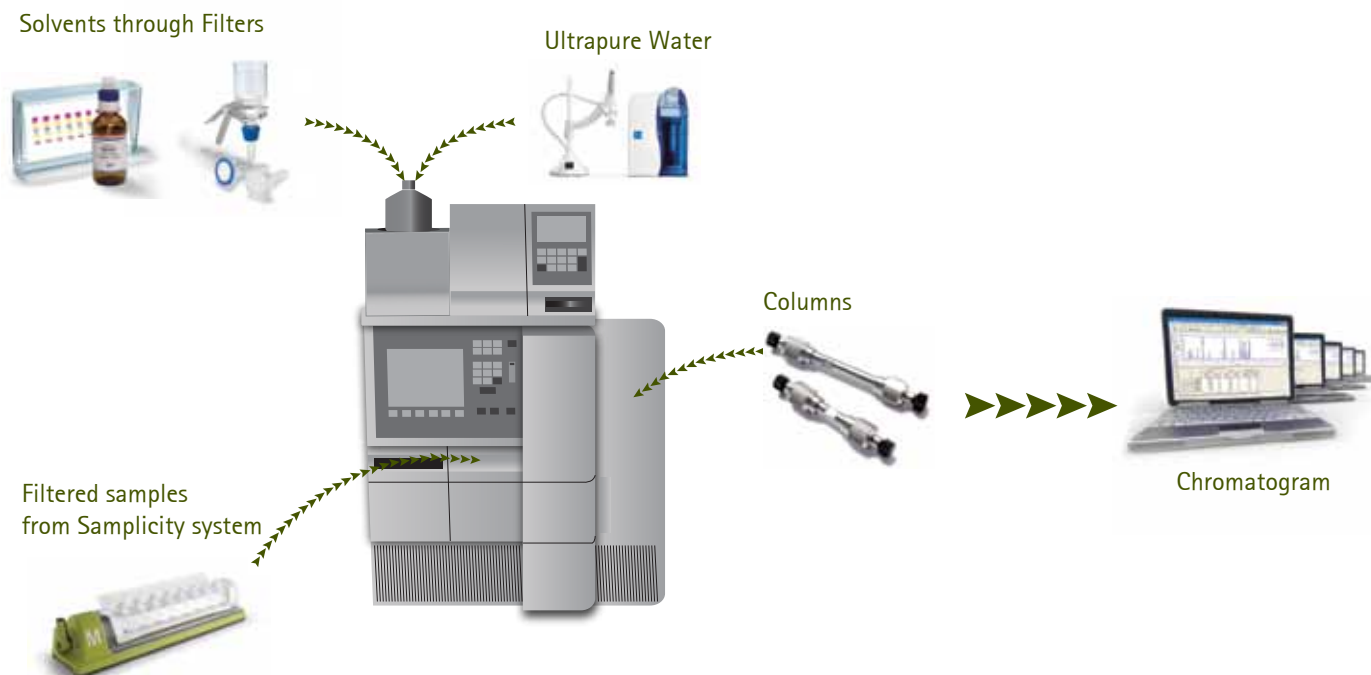
Break free from routine sample prep and enjoy successful chromatography.

Now you can truly do more with less.

Combine the Smplicity Filtration System with state-of-the-art separation technologies.

The Smplicity system provides higher yields with low hold-up volume, fast processing, and ease of use. And in addition to ergonomic benefits, the system creates less waste than syringe filtration and eliminates the need to segregate syringe waste.

Together with Merck Millipore's mobile phases, solvent filtration systems, columns, and water purification systems, the Smplicity Filtration System is the key to staying on the cutting edge of chromatographic separation.



Samplicity Filtration System

Choose the unit color to fit your lab – bold blue or glossy green!

Samplicity Systems and Accessories	Catalogue Number
Samplicity Filtration System, Glossy Green	SAMPSYSGR
Samplicity Filtration System, Bold Blue	SAMPSYSBL
Samplicity Filtration System Vial Trays, 2/pack	SAMVIALTR
Samplicity Filtration System Waste Trays, 5/pack	SAMWASTTR
Samplicity Filtration System Tube Set Assembly	SAMTUBING
Samplicity Filtration System Replacement Lid	SAMSYSLID



Millex Samplicity Filters	Catalogue Number
Millex Samplicity Filters, 0.20 µm Hydrophilic PTFE, 96/pack	SAMPLG001
Millex Samplicity Filters, 0.45 µm Hydrophilic PTFE, 96/pack	SAMPLCR01
Millex Samplicity Filters, 0.20 µm Hydrophilic PTFE, 384/pack	SAMPLG004
Millex Samplicity Filters, 0.45 µm Hydrophilic PTFE, 384/pack	SAMPLCR04



Required Accessories for Samplicity Filtration System

Description	Catalogue Number
Chemical Duty Pump, 115 V/60 Hz	WP6111560
Chemical Duty Pump, 220 V/50 Hz	WP6122050
Chemical Duty Pump, 100 V/50–60 Hz	WP6110060



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Description	Catalogue Number or URL
Acetonitrile, LiChrosolv® Gradient Grade	1.00030
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Acetonitrile, LiChrosolv Hypergrade for LC-MS	1.00029
Methanol, LiChrosolv Hypergrade for LC-MS	1.06035
Purospher® STAR RP-18 Endcapped UHPLC Columns	1.50650
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Related Products: Mobile Phase Filtration

Disc Filters

Available from www.millipore.com

Description	Catalogue Number
0.2 µm Durapore® PVDF Membrane Filter, 47 mm	GVWP04700
0.2 µm Durapore PVDF Membrane Filter, 90 mm	GVWP09050
0.2 µm Millipore Express® PLUS PES membrane Filter, 47 mm	GPWP04700
0.2 µm Millipore Express PLUS PES membrane Filter, 90 mm	GPWP09050
0.2 µm Omnipore™ PTFE Membrane Filter, 47 mm	JGWP04700
0.2 µm Omnipore PTFE Membrane Filter, 90 mm	JGWP09025
0.2 µm Nylon Membrane Filter, 47 mm	GNWP04700
0.2 µm Fluoropore™ Membrane Filter, 47 mm	FGLP04700
Stericup®-GP Filter, 500 mL	SCGPU05RE
Steritop®-GP Filter, 500 mL	SCGPS05RE



Filter Holders

Description	Catalogue Number
47 mm, all glass filter holder with 250 mL funnel	XX1504700
90 mm glass filter holder with stainless steel screen, with 1 L funnel	XX1009020
Filter forceps, blunt-tipped, sterilizable	XX6200006P



High Quality Ultrapure Water Can Improve Chromatographic Performance

Use Milli-Q® ultrapure water purification systems to ensure that your mobile phases are free of organic contaminants, for the best, most reproducible chromatographic results. Especially when fitted with a 0.2 µm final filter, Milli-Q systems are the ideal water source for UHPLC, LC-MS, and other ultrasensitive analyses.



Laboratory Water Systems for Chromatography

Learn more at www.millipore.com/labwater

Description	Catalogue Number
Milli-Q Integral 15 Pure (15 L/hour) and Ultrapure Water Production Unit with built-in resistivity and TOC meter	ZRXQ015T0*
Milli-Q Advantage A10® Ultrapure Water Purification System	Z00Q0V0WW*
LC-Pak™ point-of-use polisher for the production of at least 500 L of ultrapure water for organic trace analysis	LCPAK0001*

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