For Research Use Only. NOT for Use in Diagnostic Procedures.

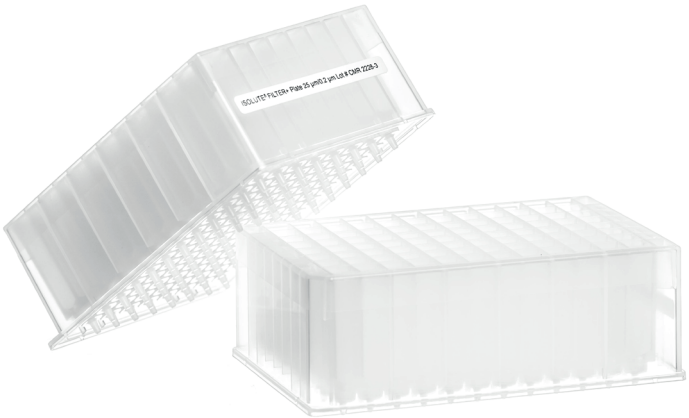
ISOLUTE® FILTER+

High Performance Filtration Plates

Protection for Your UPLC-MS/MS System

Versatile filtration for multiple sample matrices, including:

- Urine samples
- Centrifuged tissue homogenates
- Pre-precipitated, centrifuged blood samples



ISOLUTE® FILTER+ plates provide effective, workflow friendly filtration of diverse biological samples, and are ideal for use with urine prepared by 'dilute and shoot' prior to UPLC-MS/MS analysis. ISOLUTE FILTER+ plates are designed to prevent sample particulates from reaching the analytical UPLC column, protecting the analytical system from particulate build up over time. Increased back pressures due to particulate accumulation necessitate frequent downtime for replacement or regeneration of the expensive analytical column.

The plates contain a wettable 0.2 µm membrane filter for high performance particulate removal, topped by a depth filter to prevent blocking of the membrane, and can be processed using manual or automated positive pressure or vacuum manifold processing systems. The plate outlet penetrates into the collection plate to prevent sample cross talk.

Filtered samples will be particulate free and visually clearer.

Frequently Asked Questions

Q: What sample types can be filtered using ISOLUTE® FILTER+ high performance filtration plates?

ISOLUTE FILTER + plates are suitable for filtration of many types of aqueous biological sample, for example: urine, diluted urine, hydrolyzed urine, plasma, serum, pre-precipitated, centrifuged whole blood, cell cultures, homogenized centrifuged tissue samples.

Q: Do ISOLUTE FILTER+ plates need to be pre-wetted prior to use?

No, good flow characteristics are achieved without pre-wetting, as the low porosity membrane is naturally hydrophilic.

Q: What analytes can be extracted using ISOLUTE FILTER+ plates?

ISOLUTE FILTER+ plates can be used to filter aqueous samples containing a wide range of acidic, basic and neutral analytes, with widely differing polarity/hydrophobicity. During development, non-specific binding was found to be low.
For those analytes which may be lost on the filter materials, addition of a small amount of water soluble solvent (methanol, acetonitrile) to the aqueous sample may improve recovery.

Biotage®

Q: What detection limits should I expect?

This is highly dependent on the analyte and analytical system employed. ISOLUTE® FILTER + plates do not offer any sample pre-concentration.

Q: What filtration performance can I expect?

ISOLUTE FILTER+ plates contain a 25 µm depth filter stacked above a 0.2 µm wettable membrane. This allows samples with high particulate levels to be filtered efficiently, without blocking. Final sample is suitable for direct injection into UPLC-MS/MS systems.

Figure 1.
Sample: whole blood following zinc sulfate precipitation and centrifugation. Left vial unfiltered; right vial filtered using ISOLUTE® FILTER+ plate.

Q: What solvents can be used with ISOLUTE FILTER+ plates?

All typical solvent systems compatible with reversed phase HPLC/UPLC can be used, including methanol, acetonitrile, acid / base modified aqueous samples / solvents.

Q: What solvents are incompatible?

Extended contact time with acetone is not recommended.

Q: What vacuum or pressure levels should I use to process ISOLUTE FILTER+ plates?

ISOLUTE FILTER + plates can be processed using vacuum or positive pressure based systems.

The high performance filter design incorporating a 25 µm depth filter prevents blocking and allows the use of lower pressure/ vacuum conditions than other products.

Typical processing conditions for 1 mL diluted (1:9, v/v) urine sample (per well):

Method	Pressure/Vacuum
Biotage® Pressure+96	10 psi coarse control for 2 minutes
Biotage® Extrahera™	5 bar for 2 minutes.
Vacuum manifold (Biotage® VacMaster™-96)	-0.35 bar for 2 minutes

These are guidelines only. Optimum conditions are highly dependent on sample type.

Q: How much sample can I load?

This depends on the amount of particulate in the sample, and should be determined experimentally based on a range of typical samples.

Maximum liquid load volume per well is ~1.5 mL (to prevent wicking/cross talk). Do not exceed 1.5 mL sample volume per well.

The minimum load volume is ~50 µL. This ensures complete coverage of the filtration system and therefore allows processing by vacuum or positive pressure.

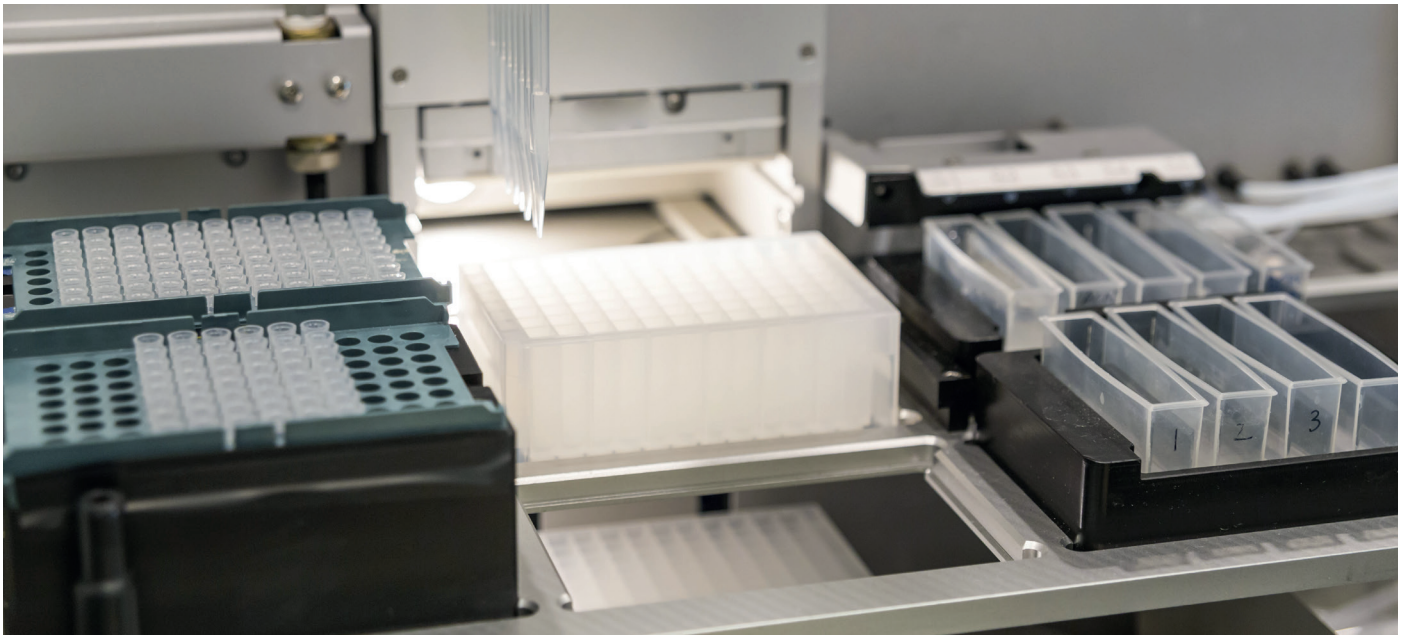
Q: What is the dead volume of each well of an ISOLUTE FILTER+ plate?

The dead volume of each well is ~10 µL. This means that at the minimum recommended processing volume (50 µL), approximately 40 µL of filtered sample will be recovered.

Q: What if I don't have enough samples to utilize an entire 96-well plate?

No problem using positive pressure processing, just make sure you clearly mark the used section for future reference!

You can process a partial ISOLUTE FILTER+ plate under ***vacuum*** by sealing the unused wells with a piercable sealing cap (P/N 121-5204) or sealing tape.



Q: What collection plates are compatible with ISOLUTE® FILTER+ plates?

ISOLUTE FILTER+ plates conform to industry standard 96-well plate dimensions (meaning they are fully compatible with processing equipment and relevant consumables). Choose a collection plate compatible with your sample volume and analytical system requirements.

High purity collection plates from Biotage

Part Number	Description	Pack Size
121-5201	Collection plate, 350 µL, Square	50
121-5202	Collection plate, 1 mL, Square	50
121-5203	Collection plate, 2 mL, Square	50
121-5213	Collection plate, 2 mL, Round	50

Q: What if my analyte or sample type or volume is Incompatible with ISOLUTE FILTER+ filtration plates?

If your analytes or sample size requirements are not amenable to clean up using ISOLUTE FILTER+ plates, we recommend evaluation of an alternative sample preparation technique such as supported liquid extraction (using ISOLUTE® SLE+ plates or columns), protein precipitation (using ISOLUTE® PPT+), phospholipid depletion (using ISOLUTE® PLD+) or solid phase extraction (using EVOLUTE® EXPRESS or ISOLUTE® SPE products). Contact Biotage for more details.

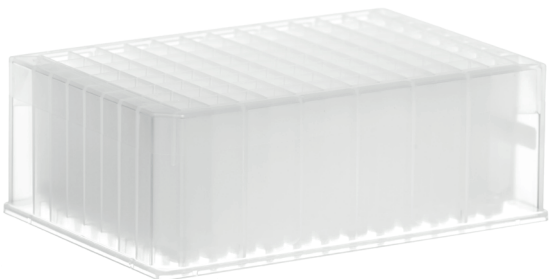
Q: What if I need cleaner sample extracts?

ISOLUTE FILTER+ plates provide sample clean up by physical filtration only.

If you need cleaner samples to achieve lower LOQs or reduce matrix effects, we recommend evaluation of an alternative sample preparation technique such as supported liquid extraction (using ISOLUTE SLE+ plates or columns), protein precipitation (using ISOLUTE PPT+), phospholipid depletion (using ISOLUTE PLD+) or solid phase extraction (using EVOLUTE EXPRESS SPE products). Contact Biotage for more details.

Q: Can I re-use ISOLUTE FILTER+ plates?

We do not recommend re-use of ISOLUTE FILTER+ plates.



Ordering Information

Part Number	Description	Pack Size
120-2000-P25	ISOLUTE® FILTER+ Plate 25 µm/0.2 µm	25

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Part Number: PPS452.V.2

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