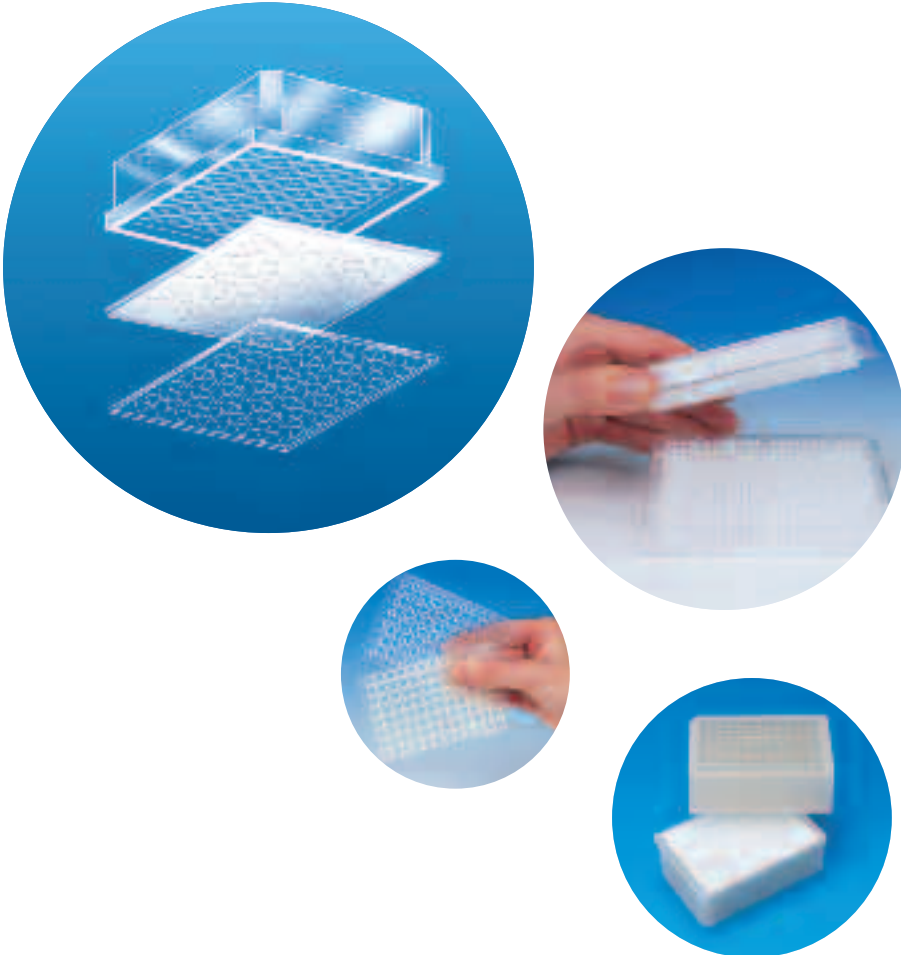


# Microplate product guide

Your high-throughput sample preparation resource



# Microplate product guide

## Your high-throughput sample preparation resource

At Whatman, our primary focus is the application of filtration separation technology in multiwell devices. We utilize a proprietary process to encapsulate the filter media which ensures no crosstalk or contamination between wells. This proprietary technology allows us to use a variety of Whatman filter media, as well as high quality media from other manufacturers. In addition, to further optimize Whatman UNIFILTER™ microplates for specific applications, we incorporate novel polymers, surface treatments, well densities, profiles, and accessories.

Whatman also manufactures an assortment of microplates for sample collection, analysis, storage, and reservoir applications. As a result, we can offer the widest selection of microplates available from a single source. UNIFILTER microplates are available in 24, 96, and 384 well configurations. Collection/storage microplates are available in 24, 48, 96, and 384 well configurations in various well designs as well as polymers. Most Whatman microplates with or without filters conform to ANSI/SBS<sup>1</sup> standards.

Our focus on microplate technology is applied by a team of engineers, scientists, polymer engineers, and filtration experts to ensure we are at the leading edge of new developments. In terms of technology, we are your high throughput sample preparation resource.

<sup>1</sup>ANSI is the American National Standards Institute and SBS is the Society of Biomolecular Screening.

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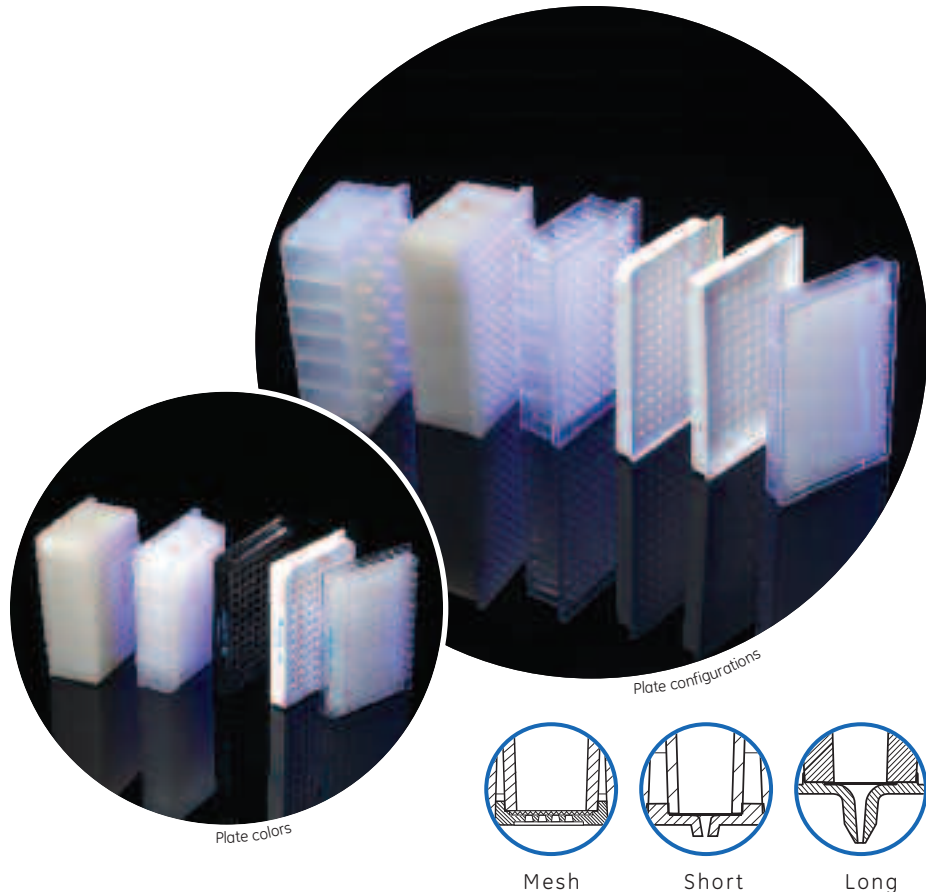
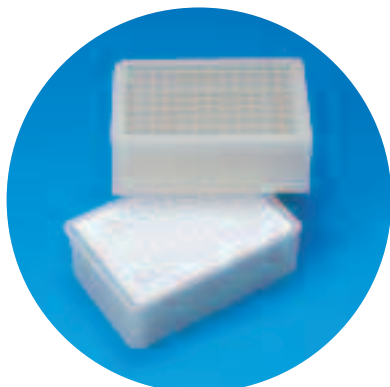
## UNIFILTER Filtration microplates

(p. 14-17)

Whatman UNIFILTER filtration microplates, which are produced in standard 24, 96 or 384 well formats, have a filter or membrane encapsulated in the base of each well. All filtration microplates are available with matched collection plates and a range of accessories for sample preparation, handling, and storage.

Whatman offers filtration microplates produced from clear as well as white polystyrene for use in high throughput biological assay screening applications. These plates have a shallow well so that the encapsulated filter or membrane is close to the detection system. This is important for sensitivity, particularly with weak or short-range events. A wide range of filtration media to suit most biological assays is available.

The following filtration microplates are available for sample preparation and cleanup: 100 µl for 384 well, 150 µl, 350 µl, 800 µl and 2 ml for 96 well and 10 ml for 24 well. These microplates are available in Barex™ or polystyrene for biological samples and glass filled polypropylene for organic samples. The properties of these chemically resistant polypropylene plates are increasingly important to meet the demands of solid and solution-phase synthesis.



### Well format and well volume

Well format	Well volume
384	100 µl
96	150, 350, and 800 µl, 2 ml
24	10 ml

### Drip director

Director type	Filtration process
Mesh	Filter to waste
Short	Filter to waste with vacuum or filter to collect with centrifuge
Long	Filter to collect with vacuum or centrifuge

### Plate materials

Plate materials	Description
Clear polystyrene	Well contents can be seen
White polystyrene	Suitable for chemiluminescence and radioactivity
Barex	Suitable for radioactivity Better chemical compatibility than polystyrene
Black polystyrene*	Suitable for fluorescence
Natural polypropylene	Semi-clear. Well contents can be seen Better chemical compatibility than polystyrene
Glass-filled polypropylene	Better chemical compatibility than natural polypropylene
MultiChem	Use with aggressive organic solvents

\* Black polystyrene is available only by custom order, starting from 1000 plates/order.

## UNIPLATE Collection and analysis microplates

(pp. 18 to 19)

Whatman microplates for collection and analysis are available in 24, 48, 96 and 384 well formats, all novel to Whatman. These microplates are manufactured from polystyrene, polypropylene and Multi-Chem™ materials to accommodate a wide range of sampling and storage applications.



## Accessories

(pp. 24 to 25)

Whatman offers a comprehensive range of accessories for use with its filtration and collection microplates including vacuum manifolds for waste and collection, lids, seals, capmats and pierceable capmats.



## Application specific microplate systems

(pp. 7 to 13)

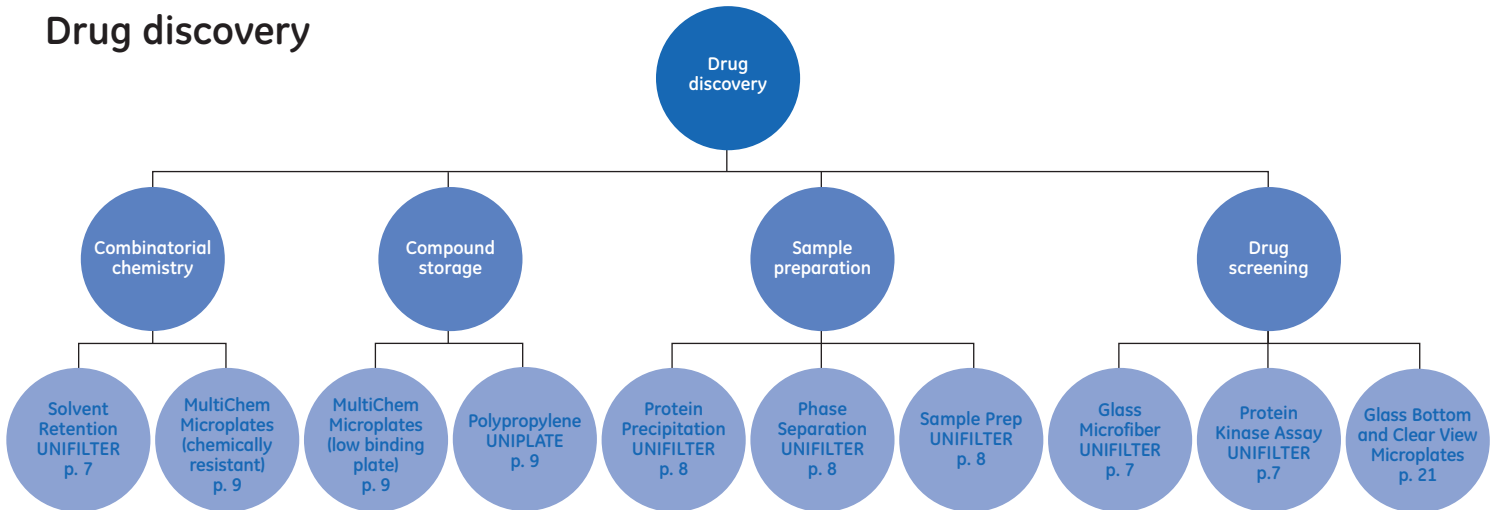
Whatman has developed microplates and microplate systems to improve throughput and reduce costs for a number of biological sample preparation and cleanup procedures. Comprehensive protocols along with confirming proof statements are provided to enable implementation by all types of users. The proactive Whatman R&D department continues to develop new applications for microplates. It may also be possible to incorporate your own membrane or process into a microplate.

## Engineered for batch processing

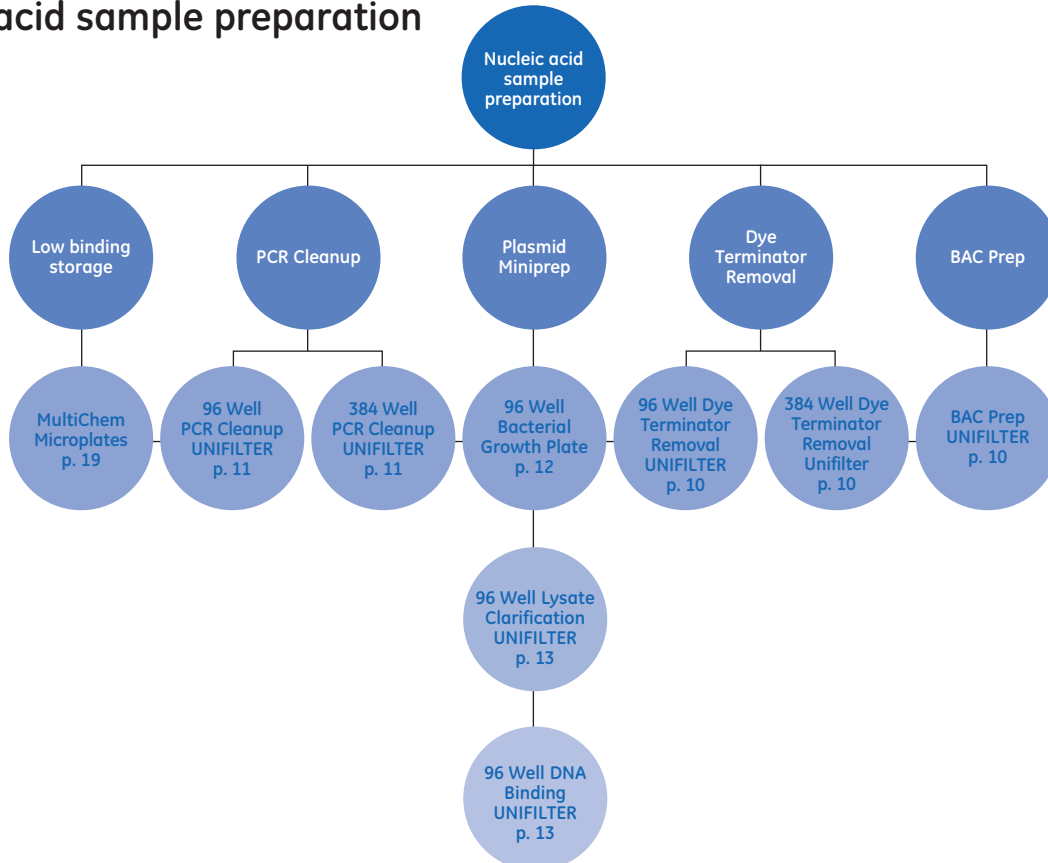
Most Whatman microplates conform to the ANSI/SBS standards and are engineered for fast and convenient batch processing applications. These robust, high-quality microplates offer consistency and reproducibility, and are available in a wide range of polymers to suit your application requirements. All Whatman microplate products are suitable for automated robotic handling and centrifuge carriers.

# Microplate selection guide

## Drug discovery

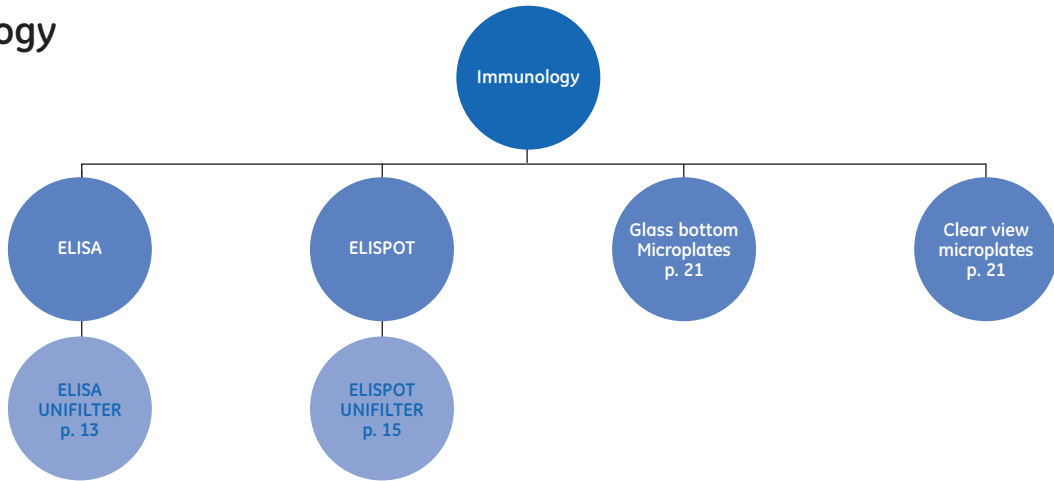


## Nucleic acid sample preparation

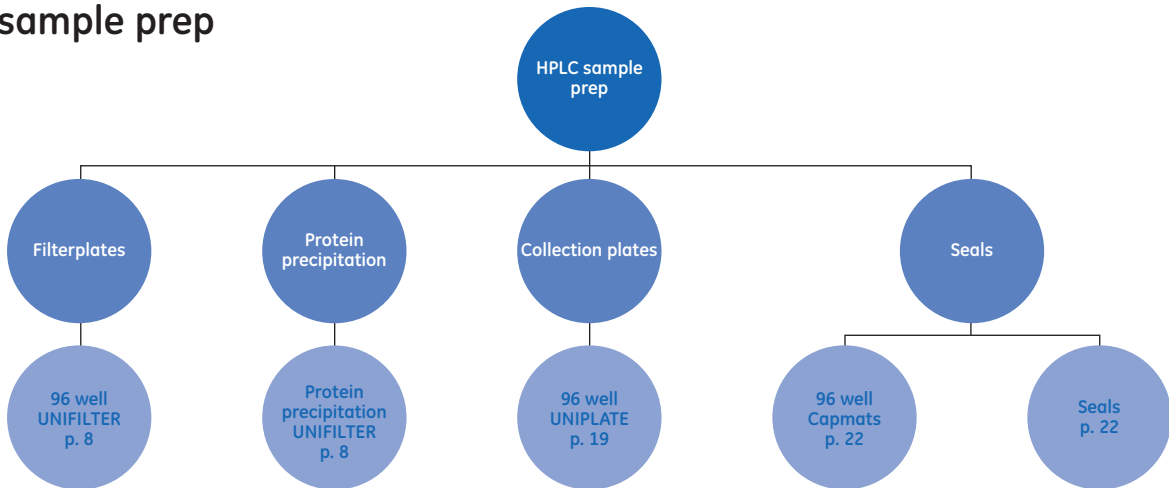


# Microplate selection guide (continued)

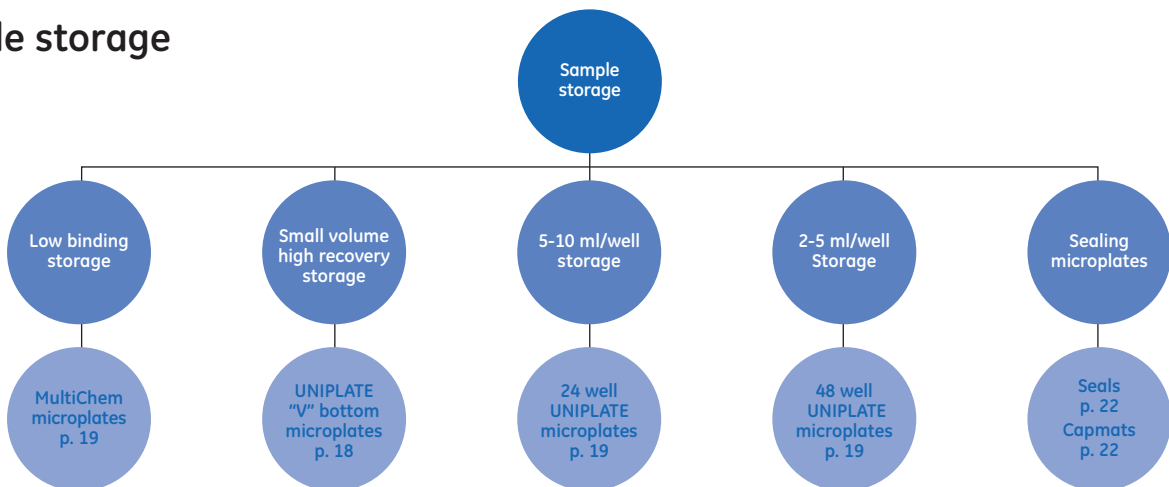
## Immunology



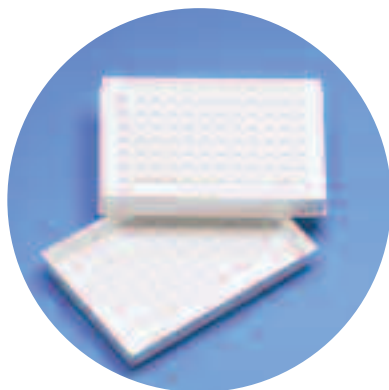
## HPLC sample prep



## Sample storage

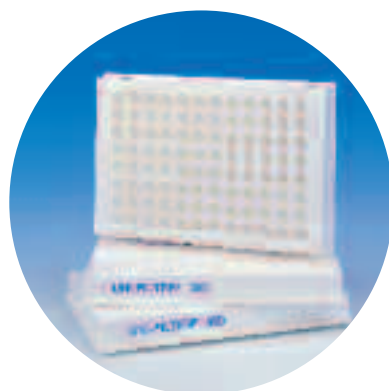


# Drug discovery



## Protein Kinase Assay UNIFILTER

The Whatman Protein Kinase Assay filter plate incorporates a P81 filter in each well. P81 is a cation exchanger that binds peptides but does not bind unincorporated ATP, resulting in low nonspecific background noise and high sensitivity in kinase assay. The filter plate is produced to ANSI/SBS standards in rigid white polystyrene or Barex to eliminate optical crosstalk problems during Liquid Scintillation Counting. The 150 µl UNIFILTER has shallow wells enabling higher detection sensitivity.



## Glass Microfiber UNIFILTER

Whatman GF/C (1.2 µm) and GF/B (1.0 µm) Glass Microfiber Filters are widely used for liquid scintillation assay and cell harvest. The Whatman Glass Microfiber UNIFILTER has a 350 µl well volume and mesh bottom configuration.



## Solvent Retention UNIFILTER for combinatorial chemistry

The Solvent Retention UNIFILTER, which is constructed from rigid and chemically resistant polypropylene, incorporates a novel oleophobic PKP filter which aids the process of parallel synthesis. The PKP filter has been treated to retain a large number of organic solvents as well as water without leakage, so there is no need for bottom clamping procedures.

### Features and benefits:

- Solvent retaining filter bottom—no clamping necessary.
- Filtration achieved only upon the application of vacuum or centrifugation.
- Long drip directors ensure no contamination from well to well.

### Liquid retained:

Water, Concentrated Ammonium Hydroxide, DMSO, Methanol, Ethanol, 1-Propanol, Iso-Propanol, 1-Butanol, AcN, DMF, n-Hexadecane, Mineral Oil, Toluene, p-Xylene, DCM, Chloroform, 1,1,2,2-Tetrachloroethane

### Liquid partially retained:

Acetone, MEK, Heptane

### Liquid not retained:

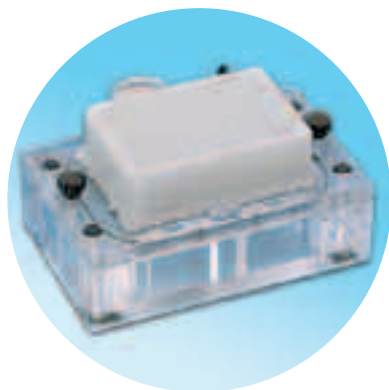
THF, Ethyl Acetate, Pentane, Hexanes, Iso-Octane

### Ordering information

Catalog number	Well format	Well volume	Plate material	Filter media	Drip director	Quantity/case
<b>Protein kinase assay UNIFILTER</b>						
7700-3312	96	350 µl	White polystyrene	Whatman P81	Short	50
7700-4312	96	350 µl	White polystyrene	Whatman P81	Mesh	50
7700-0512	96	150 µl	White barex	Whatman P81	Mesh	50
<b>Glass microfiber UNIFILTER</b>						
7700-4301	96	350 µl	White polystyrene	GF/C	Mesh	50
7700-4303	96	350 µl	White polystyrene	GF/B	Mesh	50
<b>Solvent retention UNIFILTER</b>						
7700-7228	96	2 ml	Glass filled polypropylene	Whatman oleophobic PKP	Long	10
7701-6200*	96	2 ml	Multi-Chem	—	—	10
7701-5200*	96	2 ml	polypropylene	—	—	25

\* Collection Plates

# Drug discovery



## Protein precipitation UNIFILTER

The Whatman Protein Precipitation UNIFILTER is optimized for **removing acetonitrile-precipitated proteins from plasma or serum samples**. The Whatman Protein Precipitation UNIFILTER is both robust and chemically resistant because it is made with 2 ml of a 96-well rigid glass-filled polypropylene.

The plates contain specially formulated dual membranes with two distinct layers. The top layer acts as a prefilter to remove coarse particulates. The bottom layer is oleophobic for retaining the well contents without dripping. This provides a final filter for removing fine particulate matter when vacuum or centrifugation is applied. Now available in two models: Fast Flow (7720-7236) and Standard (7720-7235).

### Reference Literature:

- Application note, Whatman protein precipitation UNIFILTER Fast Flow, #S9036-773
- Download at [www.whatman.com](http://www.whatman.com)

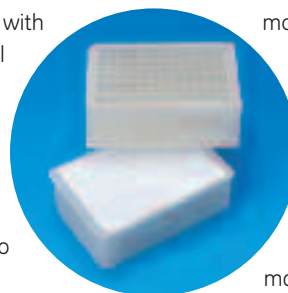
## Phase separation UNIFILTER

The Whatman Phase Separation Plate allows for **a quick separation of halogenated solvents from an aqueous phase**, with no carryover and no close manual contact. The plate consists of a 2 ml, 96 well, rigid glass-filled polypropylene body. It has long drip directors to ensure accurate dispensing of the filtrate. Whatman 1PS media is sealed into each well.

Whatman 1PS is a silicone-treated medium which remains impervious to aqueous solvents but allows the unimpeded passage of organic solvents. Provided that the solvent layer is in contact with the 1PS, the organic solvent layer will drain under gravity until the aqueous interface is reached, when flow will stop automatically. If subsequent harvesting of the aqueous layer is required, a vacuum can then be applied to remove this layer.

## Sample prep UNIFILTER

Because most HPLC autosamplers can now accommodate 96 well plates, it makes more sense **to prepare samples using 96 well filterplates instead of 96 syringe filters**.



The Sample Prep UNIFILTER incorporates a 0.45 µm PVDF membrane and is suitable for automated and robotic handling. The UNIFILTER is matched to its own UNIPLATE collection plate, which is available in both inert polypropylene and chemically resistant Multi-Chem material. The collection plate can be sealed with pierceable capmats or heat sealed. The samples can be filtered either by centrifugation or vacuum.

### Ordering information

Catalog number	Well format	Well volume	Plate material	Filter media	Well bottom	Quantity/case
<b>Protein precipitation UNIFILTER</b>						
7720-7235	96	2 ml	Glass polypropylene	Standard	—	1
7720-7236	96	2 ml	Glass polypropylene	Fast flow	—	5
7701-5750*	96	750 µl	Natural polypropylene	—	Round bottom	25
7701-5200*	96	2 ml	Natural polypropylene	—	Round bottom	25
<b>Phase separation UNIFILTER</b>						
7720-7229-01	96	2 ml	Glass-filled polypropylene	1PS	—	1
7701-5750*	96	750 µl	Natural polypropylene	—	Round bottom	25
7701-5200*	96	2 ml	Natural polypropylene	—	Round bottom	25
<b>Sample prep UNIFILTER</b>						
7700-7206	96	2 ml	Glass-filled polypropylene	0.45 µm Hydrophilic PVDF	—	25
7701-5200*	96	2 ml	Polypropylene	—	Round bottom	25
7701-6200*	96	2 ml	Multi-Chem	—	Round bottom	10
7701-5750*	96	750 µl	Polypropylene	—	Round bottom	25
7701-6750*	96	750 µl	Multi-Chem	—	Round bottom	10
7704-0104	96	—	Silicone capmats for 2 ml microplates	—	—	50
7704-0105	96	—	Silicone capmats for 750 µl microplates	—	—	50
7704-0002	—	—	Aluminum foil heat seals	—	—	100

\* Collection Plates

## UNIPLATE for compound storage

UNIPLATE microplates are suitable for compound storage. Whatman offers a wide range of UNIPLATE microplates from 24 to 384 well and from 80 µl/well to 10 ml/well. Lids, capmats and seals are also available to cover the microplate. (see p.22)



## Multi-Chem microplates

Multi-Chem is a **chemically-resistant material** that exhibits extremely useful properties over a wide range of applications. Providing an excellent choice for storage applications, Multi-Chem microplates are ideal for aggressive organic solvents such as DMF, TFA, THF, acetonitrile, chloroform and methylene chloride. **Nonbinding properties** of Multi-Chem microplates also make them ideal for storage of biological materials.

### UNIPLATE Ordering information

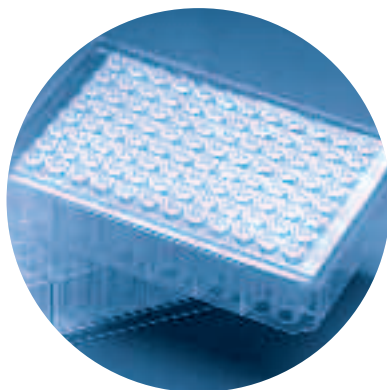
Catalog number	Well format	Well volume	Plate material	Well bottom	Quantity/case
7701-5102	24	10 ml	Natural polypropylene	Round	25
7701-5500	48	5 ml	Natural polypropylene	Flat (rectangular well)	25
7701-5350*	96	300 µl	Natural polypropylene	Flat	50
7701-5750	96	750 µl	Natural polypropylene	Round	25
7701-5200	96	2 ml	Natural polypropylene	Round	25
7701-5400	384	400 µl	Natural polypropylene	Square to round	25
7701-5250*	96	250 µl	Natural polypropylene	"V"	50
7701-5101	384	80 µl	Natural polypropylene	"V"	50

\*Does not comply with ANSI/SBS standards.

### Multi-chem microplates ordering information

Catalog number	Well format	Well volume	Plate material	Well bottom	Quantity/case
7701-6102	24	10 ml	Multi-Chem	Round	10
7701-6250	96	250 µl	Multi-Chem	"V"	10
7701-6750	96	750 µl	Multi-Chem	Round	10
7701-6200	96	2 ml	Multi-Chem	Round	10
7701-6101	384	80 µl	Multi-Chem	"V"	10

# Nucleic acid purification



## 96 well dye terminator removal UNIFILTER

This UNIFILTER is used with gel filtration media for high throughput sequencing reaction cleanup. **Protocol provides long and readable fragments, eliminating common “dye blob” problem.** The protocol is optimized for applied biosystems BigDye™ Terminator chemistry.

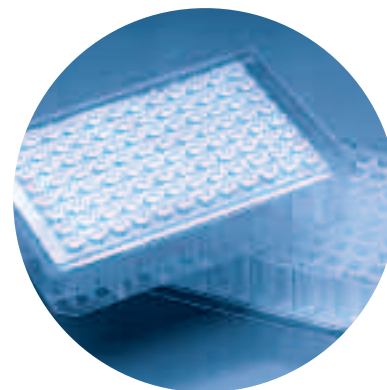
Reference Literature:

- Application Note, Whatman 96-Well Dye Terminator Removal UNIFILTER, #51656
- Download at [www.whatman.com](http://www.whatman.com)



## 384 well dye terminator removal UNIFILTER

A 384 well version is also available for Dye Terminator removal.



## BAC prep UNIFILTER

With ever-increasing demand for simple and fast methods to purify DNA from bacterial cultures, the BAC Prep UNIFILTER is the ideal solution for the clarification of lysates containing large insert vectors.

This UNIFILTER has a Cellulose Acetate membrane with a special support, which clears nonchaotropic bacterial lysates, and has long drip directors to prevent cross-talk.

Without further purification, the DNA is clean enough for further enzymatic manipulation. Cellulose acetate acts as both a depth filter and a fine particle filter. The 0.45 µm pores do not block because of the depth effect of the filter and does not bind either DNA or protein.

Reference literature:

- Technical Note, High Throughput Genomics Microplate: BAC, PAC, Fosmid and Cosmid DNA Isolation, #S9036-726
- Download at [www.whatman.com](http://www.whatman.com)

### Dye terminator removal UNIFILTER ordering information

Catalog number	Well format	Well volume	Plate material	Well bottom	Quantity/case
<b>96 Well dye terminator removal UNIFILTER</b>					
7700-2801	96	800 µl	Polystyrene	Filter, LDD*	25
7701-5750**	96	750 µl	Natural polypropylene	Round	25
<b>384 Well dye terminator removal UNIFILTER</b>					
7700-1101	384	100 µl	Polystyrene	Filter, LDD*	50

### BAC prep UNIFILTER ordering information

Catalog number	Well format	Well volume	Plate material	Filter media	Well bottom	Quantity/case
7700-2808	96	800 µl	Clear polystyrene	0.45 µm Cellulose acetate	Filter, LDD*	25
7701-5200**	96	2 ml	Natural Polypropylene	N/A	Round	25

\* Long drip director  
 \*\* Collection plate

## 96 well PCR cleanup UNIFILTER

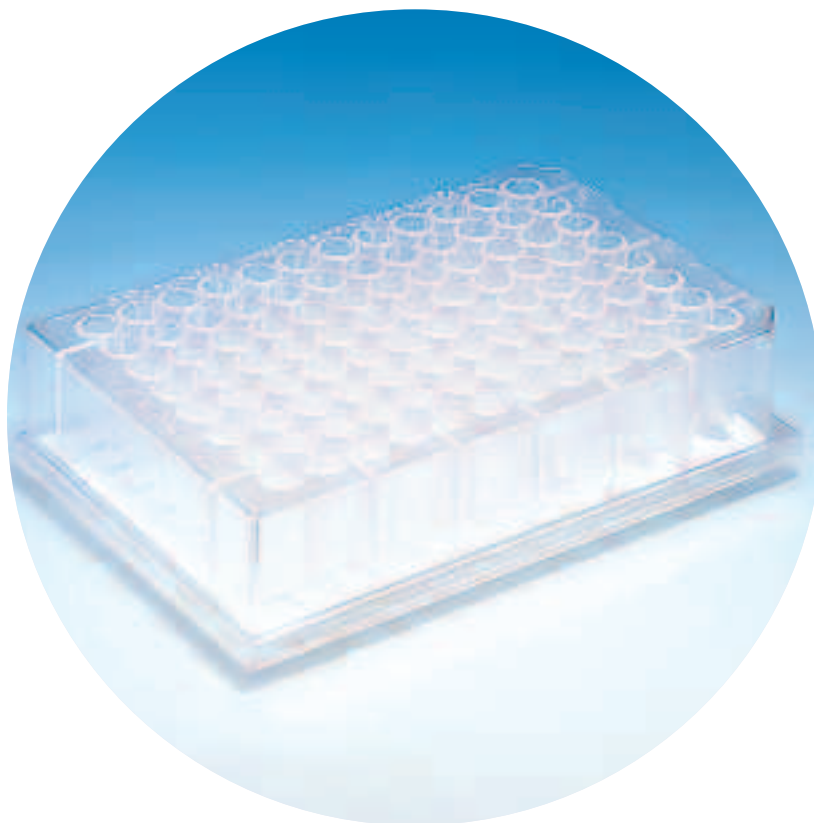
**Process 96 samples in 10 min with greater than 85% recovery.** The Whatman PCR cleanup UNIFILTER eliminates time consuming precipitations and labor-intensive resin purifications. Purified DNA is ready for sequencing, hybridization assays, restriction digests, ligations, and microarrays.

### Features:

- Removes > 99% of proteins
- Cleanup PCR products from 100 bp to 10 kb
- Can be used with both vacuum and centrifuge techniques
- No need to remove mineral oils
- Easy to automate (protocol for Biomek™ 2000 is available)

### Reference Literature:

- Protocol, 96 well PCR Cleanup Manual for Non-Kit Users, #6910030019.
- Data Sheet, Adaptor Collars and Accessories for Biomek 2000, #51602
- Download at [www.whatman.com](http://www.whatman.com)



## 384 well PCR cleanup UNIFILTER

A 384 well version is also available for PCR cleanup. Centrifugation is recommended.

### Reference Literature:

- Data Sheet, PCR Cleanup with 384 Well DNA Binding Filter Plates, #S9036-729
- Application Note, 384 Well PCR Purification Using the DNA Binding Filter Plate, #S9036-731
- Protocol, Whatman 384 Well PCR Cleanup Protocol for Centrifuge
- Download at [www.whatman.com](http://www.whatman.com)

### PCR cleanup UNIFILTER ordering information

Catalog number	Well format	Well volume	Plate material	Filter media	Drip director	Quantity/case
<b>96 Well PCR cleanup UNIFILTER</b>						
7700-2810	96	800 µl	Clear polystyrene	DNA binding	Long	25
7701-5250*	96	250 µl	Polypropylene	—	—	50
7701-5200*	96	2 ml	Polypropylene	—	—	25
7704-0001	—	—	Clear polyester adhesive seals	—	—	100
<b>384 Well PCR cleanup UNIFILTER</b>						
7700-2110	384	100 µl	Clear polystyrene	DNA binding	Long	50
7701-5400*	384	400 µl	Polypropylene	—	—	25
7701-1100*	384	100 µl	Clear polystyrene	—	—	50

\* Collection Plate

# Nucleic acid purification

## Plasmid miniprep system

The preparation of plasmid DNA from bacterial culture is an extremely common procedure. The Whatman Plasmid Miniprep System simplifies the process, increasing throughput and improving the purity of plasmid DNA. The system consists of a few basic steps, each with an optimized microplate.

### Features:

- High purity DNA ready for sequencing, cloning, transformations and PCR. Each 1.5 ml bacterial culture can yield 5 to 8 µg of high-quality DNA
- Can be used with both vacuum and centrifuge techniques
- Easy to automate (Protocol for Biomek 2000 is available at [www.whatman.com](http://www.whatman.com).)

Sample Results	
Average yield per well	6.0 µg
A260/A280	1.94
EcoR1 Digest	Yes
Sequencing accuracy (BLAST)	97% over 600 bp

### Reference literature:

- Protocol, 96 well Plasmid Miniprep Manual for Non-Kit Users, #6910030018
- Data Sheet, Adaptor Collars and Accessories for the Biomek™ 2000, #51602
- Download at [www.whatman.com](http://www.whatman.com)

## 96 Well bacterial growth plate

The Whatman High Throughput Bacterial Growth plate can simplify and accelerate the growth of 96 individual 1.5 ml bacterial cultures. It is used for both overnight cultivation and the initial “spin down” of bacteria. Made of medical grade polypropylene with a clear polystyrene lid, this gamma-irradiated plate eliminates the need to grow multiple, discrete cultures. 96 well Bacterial Growth Plate, 96 well Lysate Clarification UNIFILTER and 96 well DNA Binding UNIFILTER are the components of “Plasmid Miniprep System.”



96 well bacterial growth plate

### Plasmid miniprep ordering information

Catalog number	Well format	Well volume	Plate material	Well bottom	Filter media	Irradiated with lid	Quantity/case
7701-5205	96	2 ml	Natural polypropylene	Round	—	Yes	25
7720-2830	96	800 µl	Clear polystyrene	Filter, LDD**	Lysate clarification	No	25
7700-2810	96	800 µl	Clear polystyrene	Filter, LDD**	DNA binding	No	25
<b>Collection plate</b>							
7701-5200	96	2 ml	Natural polypropylene	Round	—	No	25
7701-5750	96	750 µl	Natural polypropylene	Round	—	No	25
7701-5250*	96	250 µl	Natural polypropylene	“V”	—	No	50

### Vacuum manifold ordering information

Catalog number	Description	Quantity/case
7705-0102	UniVac™ 3 vacuum/collect manifold	1

### 96 well bacterial growth plate ordering information

Catalog number	Well format	Well volume	Plate material	Irrated with lid	Quantity/case
7701-5205	96	2 ml	Natural polypropylene	Yes	25 (individually bagged)

\* Does not comply with SBS standards

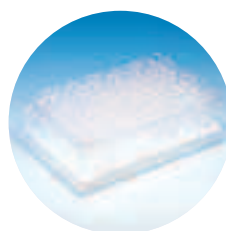
\*\* LDD = Long Drip Director

## 96 well lysate clarification UNIFILTER

The Whatman Lysate Clarification (and Lysate Clarification 2 UNIFILTER plates) can utilize either vacuum or a centrifuge. The vacuum process is significantly easier to automate with consistency across all wells. **It also has an average DNA recovery rate 10 to 30% higher than the manual centrifuge method.** This method filters out cell debris to obtain plasmid DNA in the aqueous phase. Whatman filter technology results in high particle retention and fast flow rates while producing a clean lysate. (The Lysate Clarification 2 UNIFILTER contains a unique dual membrane for faster flow and more precise clarification of bacterial lysates.) The Lysate Clarification plates are important tools for high throughput plasmid DNA purification.

## 96 well DNA binding UNIFILTER

Whatman Plasmid DNA Binding UNIFILTER works either as a stand-alone or as part of our high throughput miniprep system. **Plasmid DNA is bound to the filter under chaotropic conditions, washed twice and then vacuumed dry on a vacuum manifold.** The plasmid DNA is eluted by vacuum in a final volume of 100 µl into a non-binding polypropylene collection plate using water or TE<sup>-1</sup> Buffer (10mM Tris



0.1mM EDTA pH 8). The DNA is ready to use and further ethanol precipitation is unnecessary. The final concentration is 50 to 100 ng/µl, depending on the original culture. The OD<sub>260/280</sub> ratio is 1.9 and the yield in all 96 wells "max out" at 6 µg. Protocol available on website [www.whatman.com](http://www.whatman.com).

The Plasmid DNA Binding plate can be used with both vacuum and centrifuge techniques, making it a vital and flexible tool in every high throughput laboratory.

### 96 well lysate clarification Unifilter ordering information

Catalog number	Well format	Well volume	Plate material	Filter media	Quantity/case
7720-2830	96	800 µl	Clear polystyrene	Lysate clarification	25
7770-0062	96	800 µl	Clear polystyrene	Lysate clarification 2 0.45 µm filter	25

### 96 well DNA binding Unifilter ordering information

Catalog Number	Well Format	Well Volume	Plate Material	Filter Media	Quantity/Case
7700-2810	96	800 µl	Clear polystyrene	DNA binding	25

# Immunology

## ELISA UNIFILTER

Traditional ELISA is performed in plastic microplates. **Whatman offers speed, sensitivity, and simple washing protocols with nitrocellulose filterplates.** ELISA performed with the Whatman ELISA UNIFILTER takes less time than traditional methods using regular microplates. Coating the nitrocellulose filter with antibody takes only minutes, compared with overnight procedures employed for coating polystyrene microplates. Also, the use of vacuum filtration greatly reduces the time required and enables quantitative collection of filtrate into a collection plate.



### ELISA Unifilter ordering information

Catalog number	Well format	Well volume	Plate material	Filter media	Drip director	Well bottom	Quantity/case
7700-3307	96	350 µl	White polystyrene	0.45 µm Cellulose nitrate	Short	Filter	50
<b>Collection plate</b>							
7701-1350	96	300 µl	Clear polystyrene	—	—	Flat	50
7701-5200	96	2 ml	Natural polypropylene	—	—	Round	25
7701-1800	96	800 µl	Clear polystyrene	—	—	Flat	25
<b>Accessories</b>							
7705-0107	—	—	UniVac vacuum to collect manifold	—	—	—	1
7704-0001	—	—	Clear polyester adhesive backing seal	—	—	—	100

#### Reference Literature:

- Technical Note, Filterplate for Standard ELISA, #51615
- Download at [www.whatman.com](http://www.whatman.com)

# UNIFILTER filtration microplates

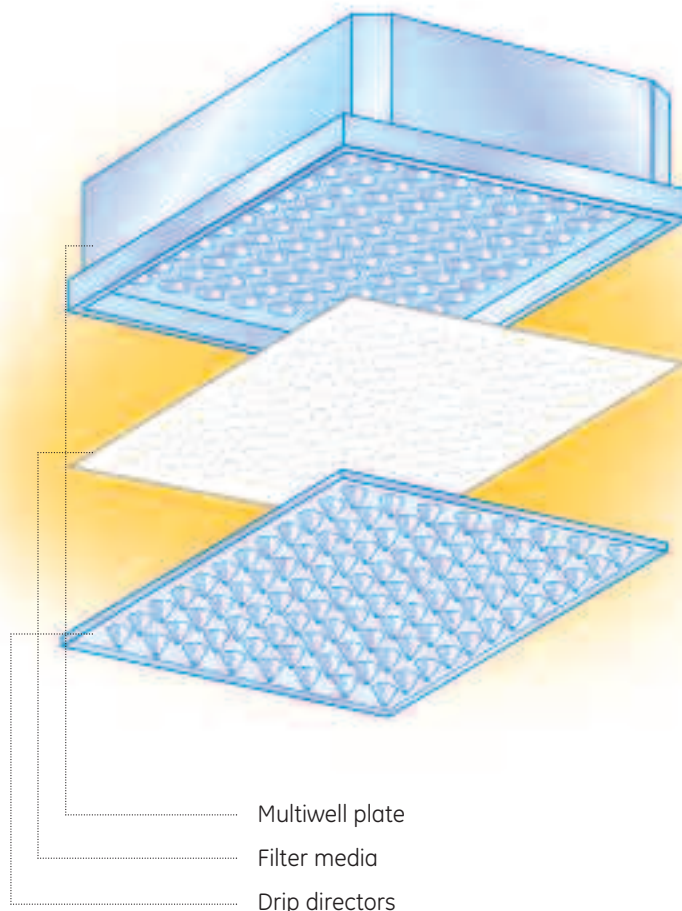
The Whatman UNIFILTER microplates with filter-bottom wells are convenient and ready to use. Available in 24, 96, and 384 well formats, UNIFILTER microplates offer a choice of filter media to meet exact application requirements.

The unique drip director design of Whatman UNIFILTER microplates ensures precise collection of the filtrate or retentate to allow for further processing and analysis.

UNIFILTER microplates are available in a range of well volumes from 100 µl to 10 ml.

## Features and benefits:

- **No crosstalk**  
Patented integral filter design prevents well-to-well crosstalk.
- **Economical**  
Wide range of well volume options ensures efficient use of materials.
- **Better control**  
Choice of filter media allows control of the flow rate and retention characteristics.
- **Versatile**  
A broad range of filtration media is available including glass fiber, polypropylene, cellulose nitrate, cellulose acetate, nylon and ion exchange cellulose.



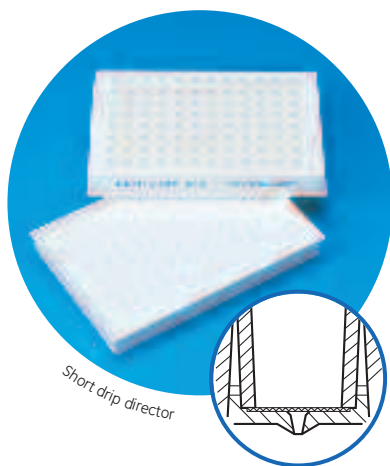
## 384 well 100 µl UNIFILTER

The 100 µl UNIFILTER is the only 384 well filter microplate with a 100 µl well volume to allow a large enough sample for recovery after filtration. Beneath the filter plate are long drip directors designed to eliminate well-to-well contamination during the filtration process.

The 384 well filter plate has been successfully used for DNA template clean-up, cell capture and for the removal of unwanted debris.

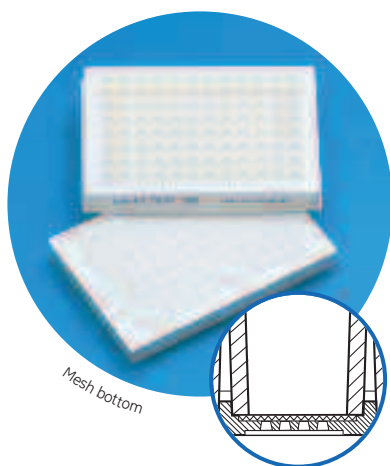
### Ordering information

Catalog number	Well format	Well volume	Plate material	Drip director	Filter media	Quantity/case
7700-1101	384	100 µl	Clear polystyrene	Long	Whatman GF/C	50
7700-1102	384	100 µl	Clear polystyrene	Long	Hydrophobic GF/C	50
7700-2106	384	100 µl	Clear polystyrene	Long	0.45 µm hydrophilic PVDF	50
7700-2110	384	100 µl	Clear polystyrene	Long	DNA binding	50
7700-2117	384	100 µl	Clear polystyrene	Long	10 µm melt-blown polypropylene	50



## 96 well 350 µl UNIFILTER

The 350 µl UNIFILTER is the plate of choice for filter-based HTS assays. It is available in opaque white polystyrene for efficient use with liquid scintillation, fluorescence and chemiluminescence detection methods. The dimensions are compatible with most microplate readers for screening procedures.



## 96 well UNIFILTER mesh bottom

Mesh bottom UNIFILTER plates with 150 and 350 µl wells are designed to accommodate rapid flow rates when vacuuming solutions to waste for scintillation counting or other analysis of the trapped cells or particles. All plates come with 55 backing seals.

### Ordering information

Catalog Number	Well Format	Well Volume	Plate Material	Drip Director	Filter Media	Quantity/Case
7700-3301	96	350 µl	White polystyrene	Short	Whatman GF/C	50
7700-3302	96	350 µl	White polystyrene	Short	Whatman hydrophobic GF/C	50
7700-3303	96	350 µl	White polystyrene	Short	Whatman GF/B	50
7700-3304	96	350 µl	White polystyrene	Short	25-30 µm melt-blown polypropylene	50
7700-3305	96	350 µl	White polystyrene	Short	0.45 µm PP membrane	50
7700-3306	96	350 µl	White polystyrene	Short	0.45 µm hydrophilic PVDF	50
7700-3356	96	350 µl	White polystyrene	Short	0.45 µm hydrophobic PVDF	50
7700-3307	96	350 µl	White polystyrene	Short	0.45 µm Cellulose nitrate	50
7700-3308	96	350 µl	White polystyrene	Short	0.45 µm Cellulose acetate	50
7700-3310	96	350 µl	White polystyrene	Short	Whatman GF/F	50
7770-0001	96	350 µl	White polystyrene	Short	0.45 µm PVDF (phobic) + 0.45 µm PP with lid	50
7770-0006*	96	350 µl	White polystyrene	Short	0.45 µm PVDF (phobic) + 0.45 µm PP irradiated with lid	50
7700-3312	96	350 µl	White polystyrene	Short	Whatman P81	50
7700-1301	96	350 µl	Clear polystyrene	Short	Whatman GF/C	50
7700-1303	96	350 µl	Clear polystyrene	Short	Whatman GF/B	50
7700-1305	96	350 µl	Clear polystyrene	Short	0.45 µm PP membrane	50
7700-1306	96	350 µl	Clear polystyrene	Short	0.45 µm hydrophilic PVDF	50
7700-1356	96	350 µl	Clear polystyrene	Short	0.45 µm hydrophobic PVDF	50
7700-1308	96	350 µl	Clear polystyrene	Short	0.45 µm Cellulose acetate	50
7920-8365**	96	350 µl	Clear polystyrene	Closed bottom	0.2 µm Cellulose nitrate with lid	50

\*Recommended for ELISPOT assays.

\*\* Closed bottom ELISPOT plate with membrane.

### Ordering information

Catalog number	Well format	Well volume	Plate material	Drip director	Filter media	Quantity/Case
7700-0512	96	150 µl	White barex	Mesh*	Whatman P81	50
7700-0567	96	150 µl	White barex	Mesh	Whatman DE81	50
7700-4301	96	350 µl	White polystyrene	Mesh	Whatman GF/C	50
7700-4302	96	350 µl	White polystyrene	Mesh	Whatman hydrophobic GF/C	50
7700-4303	96	350 µl	White polystyrene	Mesh	Whatman GF/B	50
7700-4312	96	350 µl	White polystyrene	Mesh	Whatman P81	50
7700-4313	96	350 µl	White polystyrene	Mesh	Whatman DE81	50

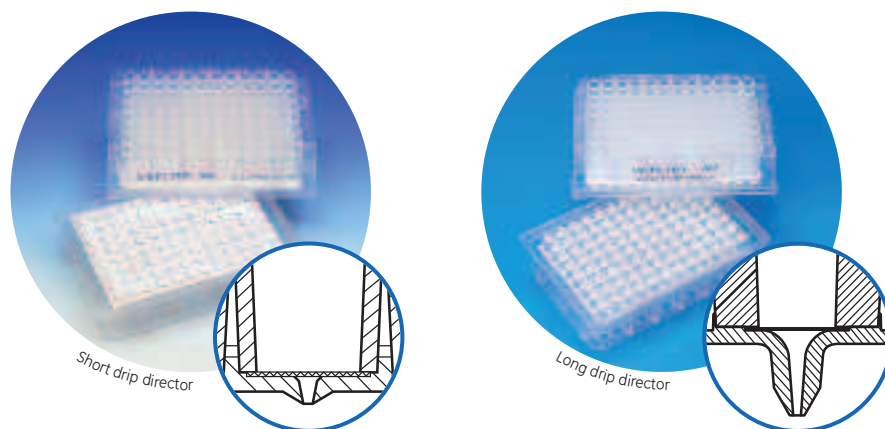
\*Mesh bottom UNIFILTER comes with 55 backing seals

# UNIFILTER filtration microplates

## 96 well 800 µl UNIFILTER

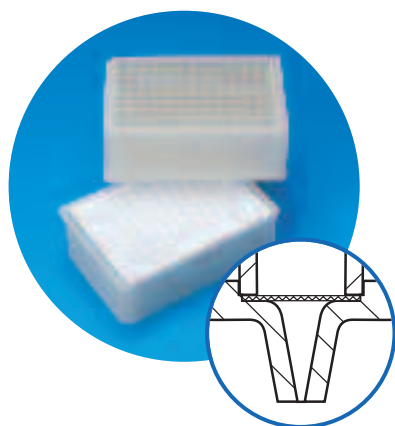
We have both short drip and long drip directors for 800 µl UNIFILTER. Short drip should be used if you do not want drip directors to touch the bench top. If you use short drip UNIFILTER and if you need to collect the filtrate, we recommend centrifugation for filtration. If you want to use a vacuum for filtration, we recommend long drip UNIFILTER.

The 800 µl long drip UNIFILTER is typically used in purifications, isolations and separation of biomolecules, particularly DNA. The well volume 800 µl is ideal for standard DNA plasmid miniprep (see page 12).



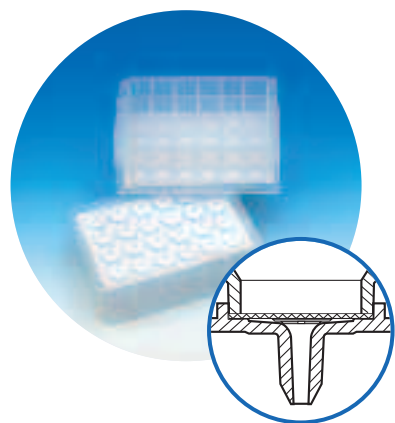
### Ordering information

Catalog number	Well format	Well volume	Plate material	Drip director	Filter media	Quantity/case
<b>800 µL UNIFILTER, 96 Wells, clear polystyrene with short drip director</b>						
7700-1801	96	800 µl	Clear polystyrene	Short	Whatman GF/C	25
7700-1804	96	800 µl	Clear polystyrene	Short	25-30 µm melt-blown polypropylene	25
7700-1806	96	800 µl	Clear polystyrene	Short	0.45 µm hydrophilic PVDF	25
7700-1808	96	800 µl	Clear polystyrene	Short	0.45 µm Cellulose acetate	25
7700-1818	96	800 µl	Clear polystyrene	Short	5-7 µm melt-blown polypropylene	25
<b>800 µL UNIFILTER, 96 Wells, clear polystyrene with long drip director</b>						
7700-2801	96	800 µl	Clear polystyrene	Long	Whatman GF/C	25
7700-2803	96	800 µl	Clear polystyrene	Long	Whatman GF/B	25
7700-2804	96	800 µl	Clear polystyrene	Long	25-30 µm melt blown polypropylene	25
7700-2805	96	800 µl	Clear polystyrene	Long	0.45 µm PP membrane	25
7700-2806	96	800 µl	Clear polystyrene	Long	0.45 µm hydrophilic PVDF	25
7700-2808	96	800 µl	Clear polystyrene	Long	0.45 µm Cellulose acetate	25
7700-2809	96	800 µl	Clear polystyrene	Long	0.45 µm Nylon Positive	25
7700-2810	96	800 µl	Clear polystyrene	Long	DNA binding	25
7700-2811	96	800 µl	Clear polystyrene	Long	Whatman GF/D	25
7700-2817	96	800 µl	Clear polystyrene	Long	10-12 µm melt blown polypropylene	25
7720-2830	96	800 µl	Clear polystyrene	Long	Lysate clarification	25
7770-0062	96	800 µl	Clear polystyrene	Long	25 µm melt blown polypropylene over 0.45 µm PP membrane	25



## 2 ml UNIFILTER

The 2 ml UNIFILTER microplate is widely used for applications that require larger sample or reagent volumes. Typically these applications include biomolecular purification by solid phase extraction and organic synthesis in combinatorial chemistry library generation. The glass-filled polypropylene construction of the 2 ml UNIFILTER microplate enables chemical and heat resistant operation. The long drip directors facilitate collection of filtrate without crosstalk.



## 10 ml UNIFILTER

The 10 ml UNIFILTER microplate is widely used for applications that require very large sample or reagent volumes. Typically these applications include biomolecule purification by solid phase extraction and organic synthesis in combinator-

### Ordering information

Catalog number	Well format	Well volume	Plate material	Drip director	Filter media	Quantity/case
<b>2 ML UNIFILTER, 96 Wells, glass-filled polypropylene with long drip director</b>						
7700-7201	96	2 ml	Glass-filled polypropylene	Long	Whatman GF/C	25
7700-7202	96	2 ml	Glass-filled polypropylene	Long	Whatman hydrophobic GF/C	25
7700-7203	96	2 ml	Glass-filled polypropylene	Long	Whatman GF/B	25
7700-7204	96	2 ml	Glass-filled polypropylene	Long	25-30 µm melt blown polypropylene	25
7700-7206	96	2 ml	Glass-filled polypropylene	Long	0.45 µm hydrophilic PVDF	25
7700-7210	96	2 ml	Glass-filled polypropylene	Long	Whatman GF/F	25
7700-7211	96	2 ml	Glass-filled polypropylene	Long	Whatman GF/D	25
7700-7224	96	2 ml	Glass-filled polypropylene	Long	10 µm PP membrane	25
7700-7228	96	2 ml	Glass-filled polypropylene	Long	Whatman oleophobic PKP	10
7720-7229-01	96	2 ml	Glass-filled polypropylene	Long	Phase separation Whatman 1PS	1
7720-7235	96	2 ml	Glass-filled polypropylene	Long	Protein precipitation plate	1
7700-7236	96	2 ml	Glass-filled polypropylene	Long	Protein precipitation fast flow	5
<b>10 ML UNIFILTER, 24 Wells, natural polypropylene (in caps) with long drip director</b>						
7700-9901	24	10 ml	Natural polypropylene	Long	Whatman GF/C	25
7700-9904	24	10 ml	Natural polypropylene	Long	25-30 µm melt blown polypropylene	25
7700-9905	24	10 ml	Natural polypropylene	Long	1.0 µm PTFE	25
7700-9917	24	10 ml	Natural polypropylene	Long	10-12 µm melt blown polypropylene	25

ial chemistry library generation. The polypropylene construction of the filter plate permits chemical and heat-resistant operation. The long drip directors facilitate the collection of filtrate without crosstalk.

# UNIPLATE collection and analysis microplates

## Collection and analysis microplates

Whatman offers a wide range of UNIPLATE collection microplates including well profiles, well volumes and well densities in diverse polymer materials. Most UNIPLATE microplates conform to ANSI/SBS microplate standards and fit most microplate readers and automated plate handling devices. Whatman UNIPLATE collection microplates are suitable for a wide range of applications including simple filtrate collection when used in conjunction with our UNIFILTER microplates, as well as homogeneous assay techniques utilized in HTS.

### Features and benefits:

- **Widest selection from a single source**

Choice of well volumes ranging from 80 µl to 10 ml, well densities from 24 to 384 wells with round or "V" bottom for maximum recovery.

- **Chemical compatibility**

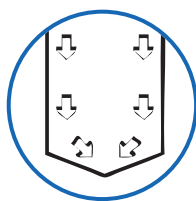
Available in chemically resistant polymers capable of withstanding low temperatures for long term storage. Opaque plates prevent optical crosstalk in light emitting assays.

- **Conforms to ANSI/SBS microplate standards**

Guaranteed for use with robotic handlers and centrifuge carriers.

## UNIPLATE "V" bottom microplates

The 96 well format UNIPLATE with "V" bottom is particularly suited for applications with small sample volumes. The vertical sides of the well, combined with the "V" design at the base of each well, ensure that all the material runs down the side walls and is channeled into the well base. The "V" bottom ensures maximum sample recovery typically  $\geq 99\%$  liquid sample recovery is attained.



### UNIPLATE "V" bottom microplates ordering information

Catalog number	Well format	Well volume	Plate material	Well bottom	Quantity/case
7701-1250	96	250 µl	Clear polystyrene	"V"	50
7701-3250	96	250 µl	White polystyrene	"V"	50
7701-2250	96	250 µl	Black polystyrene	"V"	50
7701-5250*	96	250 µl	Natural polypropylene	"V"	50
7701-5101	384	80 µl	Natural polypropylene	"V"	50
7701-6250	96	250 µl	Multi-Chem	"V"	10
7701-6101	384	80 µl	Multi-Chem	"V"	10

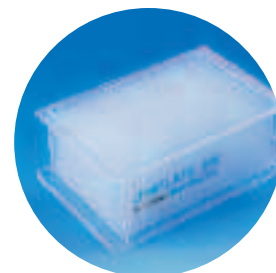
\* Does not comply with ANSI/SBS standards.

## UNIPLATE microplates

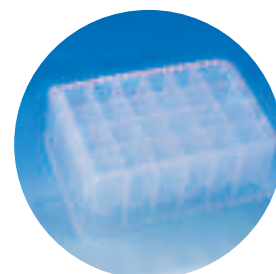
### UNIPLATE microplates ordering information

Catalog number	Well format	Well volume	Plate material	Well bottom	Irradiated with lid	Quantity/case
7701-0176	Single	75 ml	Clear polystyrene	Flat with grid	No	50
7701-7300*	24	3 ml	Black polystyrene	Flat (square well)	No	50
7701-5102	24	10 ml	Natural polystyrene	Round	No	25
7701-5110	24	10 ml	Natural polystyrene	Round	Yes	25
7701-1150	48	1.5 ml	Clear polystyrene	Flat	No	50
7701-5500	48	5 ml	Natural polystyrene	Flat (rectangular well)	No	25
7701-5505	48	5 ml	Natural polystyrene	Flat	Yes	25
7701-1350	96	300 µl	Clear polystyrene	Flat	No	50
7701-3350	96	300 µl	White polystyrene	Flat	No	50
7701-2350	96	300 µl	Black polystyrene	Flat	No	50
7701-5350*	96	300 µl	Natural polystyrene	Flat	No	50
7701-4350*	96	300 µl	White polystyrene	Flat	No	50
7701-7350*	96	300 µl	Black polystyrene	Flat	No	50
7701-1651	96	650 µl	Clear polystyrene	Flat (square well)	No	50
7701-1750	96	750 µl	Clear polystyrene	Round	No	25
7701-5750	96	750 µl	Natural polystyrene	Round	No	25
7701-1800	96	800 µl	Clear polystyrene	Flat	No	25
7701-5200	96	2 ml	Natural polystyrene	Round	No	25
7701-5205	96	2 ml	Natural polystyrene	Round	Yes	25
7701-1100	384	100 µl	Clear polystyrene	Flat	No	50
7701-3100	384	100 µl	White polystyrene	Flat	No	50
7701-2100	384	100 µl	Black polystyrene	Flat	No	50
7701-5400	384	400 µl	Natural polystyrene	Square to round	No	25

\* Does not comply with ANSI/SBS Standards.



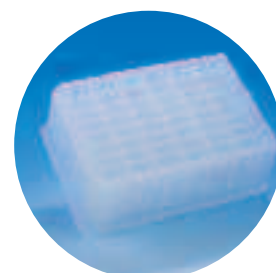
7701-5400



7701-5102



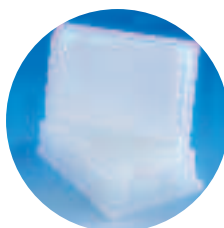
7701-5200



7701-5500

## Multi-Chem microplates

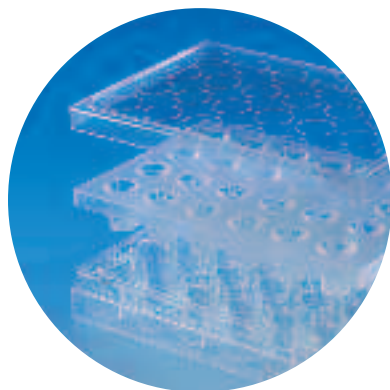
Multi-Chem is a **chemically resistant material** which exhibits extremely useful properties over a wide range of applications. Providing an excellent choice for storage applications, Multi-Chem microplates are ideal for aggressive organic solvents such as DMF, TFA, THF, acetonitrile, chloroform and methylene chloride. **Nonbinding properties** of Multi-Chem microplates also make them ideal for storage of biological materials.



### Multi-Chem microplates ordering information

Catalog number	Well format	Well volume	Plate material	Well bottom	Quantity/case
7701-6102	24	10 ml	Multi-Chem	Round	10
7701-6250	96	250 µl	Multi-Chem	"V"	10
7701-6750	96	750 µl	Multi-Chem	Round	10
7701-6200	96	2 ml	Multi-Chem	Round	10
7701-6101	384	80 µl	Multi-Chem	"V"	10

# Specialty microplates



## UniCell™

The UniCell 24 microplate is a versatile product that is specifically designed for cell culture. The UniCell 24 consists of three components:

- 24 well filtration microplate containing a polycarbonate membrane with a pore size of 0.4  $\mu\text{m}$
- 24 well feeder tray with round wells which have a volume of 3.5 ml
- Polystyrene lid cover

The polycarbonate membrane is ideal for cell culture because it is not toxic to cells and will not inhibit cell growth. It is the ideal material to allow formation of a confluent monolayer of mammalian cells. The membrane retains its strength when wet, allowing for the harvesting of cells either by sloughing or by mechanical removal off the membrane. The growth well, contained in the top microplate, sits neatly inside the feeder tray. Each well is completely sealed and sits in its own individual feeder well. The complete UniCell 24 is supplied irradiated and tissue culture treated.

### UniCell microplate ordering information

Catalog number	Well format	Plate material	Filter material	TC Treated/irradiated	Quantity/case
7703-1400	24	Polystyrene	0.4 $\mu\text{m}$ polycarbonate membrane	Yes	5

## Glass bottom microplates

Whatman Glass Bottom microplates are designed for high-sensitivity detection including fluorescent and luminescent detection and scintillation counting, where extremely low backgrounds with no crosstalk are needed. The plates are suitable for FRET and GFP techniques.

The plates offer a choice of clear or black polystyrene plate bodies that have a premium quality coverslip glass of a uniform 0.175 mm thickness. The uniformity of the glass is important to ensure a uniform background and focal plane irrespective of the position of the well within the plate. Our expertise in multiwell plate manufacturing allows us to create products with exceptionally tight tolerances.

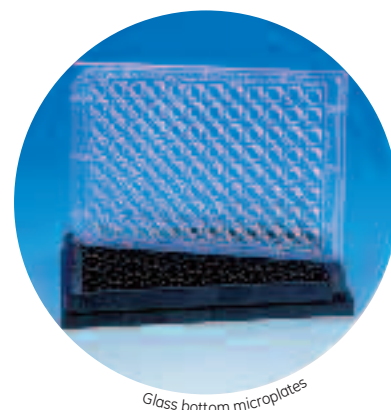
A further modification to the plate, which enhances its use for these applications, is the inclusion of "skirtless" plates. Normally the microplate skirt lifts the well base slightly and the skirt isolates the wells from outside light energy. Skirtless plate allows direct contact of the glass bottom with the optics of the microscope or reader.



Skirtless glass bottom microplate

## Clear view microplates

Whatman Clear View Microplates have optically clear polymer bottoms. They eliminate the need for numerous transfer steps by providing the means to grow, observe, count and assay cells in a single device. Tissue culture treatment facilitates cell adhesion. Whatman Clear View Microplates have a very low visible absorbance background.



### Clear view microplate ordering information

Catalog number	Well format	Well volume	Plate material	Quantity/case
<b>No surface treatment, no lid</b>				
7706-2380	96	300 µl	Black polystyrene	50
7706-2103	384	100 µl	Black polystyrene	50
7706-3103	384	100 µl	White polystyrene	50
<b>Tissue culture treated, irradiated with lid</b>				
7716-2380	96	300 µl	Black polystyrene	50
7716-3380	96	300 µl	White polystyrene	50

### Glass bottom microplate ordering information

Catalog number	Well format	Well volume	Plate material	Characteristics	Quantity/case
<b>Tissue culture treated, irradiated with lid, standard skirt</b>					
7716-2375	96	300 µl	Black polystyrene	Glass	5
<b>Tissue culture treated, irradiated with lid, skirtless for microscopy</b>					
7716-2370	96	300 µl	Black polystyrene	Glass	5
<b>No surface treatment, standard skirt</b>					
7706-2375	96	300 µl	Black polystyrene	Glass	5
<b>No surface treatment, skirtless for microscopy</b>					
7706-1365	96	300 µl	Clear polystyrene	Glass	5
7706-2370	96	300 µl	Black polystyrene	Glass	5

# Seals and lids

## Capmats

Whatman flexible capmats individually seal the top of each well. Capmats may be used on either filter or collection microplates.

Reference Literature:

- Datasheets, Pierceable Microplate Capmats, #51588
- Download at [www.whatman.com](http://www.whatman.com)

## Lids

The lids are suitable for use as dust covers and to prevent splashing or contamination when plates are being moved around the laboratory.

## Seals

Seals are used to control humidity and reduce evaporation of samples. They prevent spills and contamination. Cold seals are self-sticking with inert adhesive. Heat seals are available in a clear polypropylene or aluminum foil. Heat seals are for polypropylene microplates only and are applied with heat and pressure.

### Capmats microplate ordering information

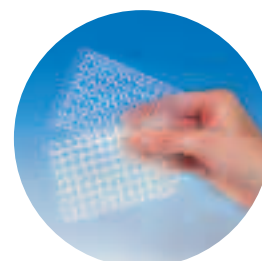
Catalog number	Well format	Capmat material	Microplate compatibility	Quantity/case
<b>Capmats</b>				
7704-0004	96	Square format EVA	2 ml microplates	100
7704-0005	96	Round format EVA	750 and 800 µl microplates	100
7704-0006	48	Rectangular format EVA	5 ml microplates	100
7704-0007	24	Square format santoprene	10 ml microplates	100
7704-0015	384	Square format santoprene	400 µl microplates	100
<b>Pierceable Capmats</b>				
7704-0104	96	Square format silicone	2 ml microplates	50
7704-0105	96	Round format silicone	300, 750 and 800 µl microplates	50
7704-0115	384	Square format silicone	100 and 400 µl microplates	50
<b>Venting Capmats (autoclavable)</b>				
7705-0014	24	BugStopper venting	10 ml microplates	5

### Lids ordering information

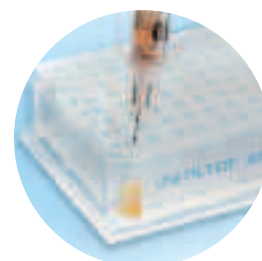
Catalog number	Lid material	Quantity/case
7704-1001	Clear polystyrene universal lid	100
7704-1002	Natural polypropylene lid	100

### Seals ordering information

Catalog number	Description	Quantity/case
7704-0001	Clear Polyester Thin Cold Sealing Film, adhesive backing, 0.05 mm thick	100
7704-0009	Clear Polypropylene Cold Sealing Film, adhesive backing, 0.05 mm thick	100
7704-0002	Aluminum Foil, applied with heat and pressure	100
7704-0003	Clear Polypropylene Film, applied with heat and pressure	100



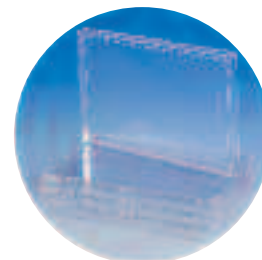
Capmat



Pierceable Capmat



Capmat



Lid

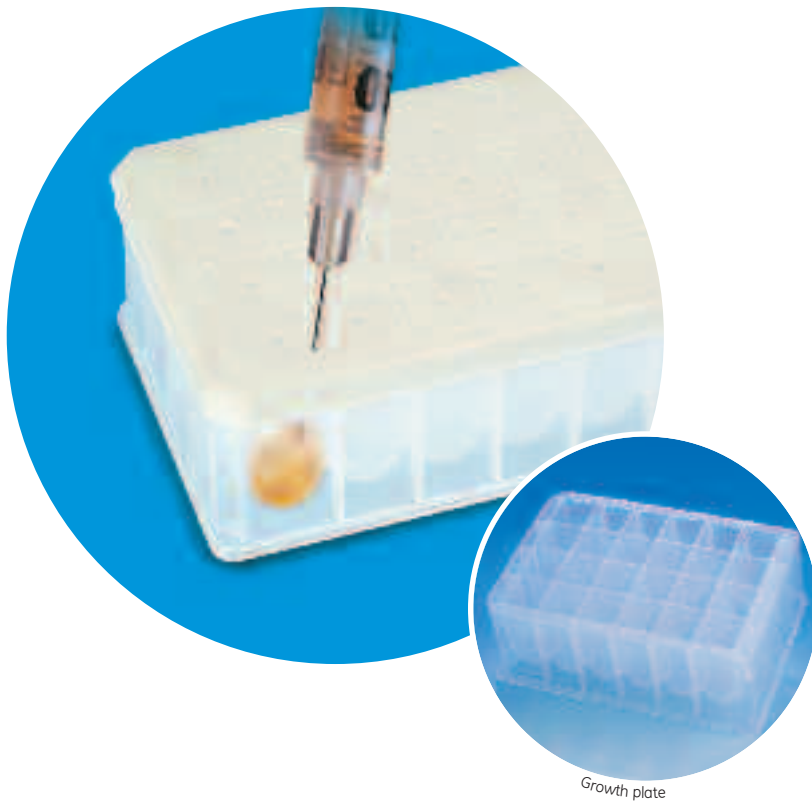


Seal

# BugStopper™ Microplate Capmat:

## Sterile venting closures for microplate cultures

Whatman BugStopper Capmats provide a simple and reliable method for venting cultures being grown in a 24 well microplate. This reusable sterile closure, which is produced using chemically-resistant biosafe silicone rubber, incorporates hydrophobic microfilters which provide an ideal vent for each well. More efficient than plastic lids, test comparisons confirm that BugStopper Capmats improve cell growth and significantly reduce evaporation. The silicone rubber portion of the capmat reseals after puncture, keeping cell cultures sterile during inoculation or aspiration.



### Features and benefits:

- More efficient than plastic lids**  
 Perfect for extended growth of slow growing bacteria and fungi.
- Positive seal for every well**  
 Significantly reduces evaporation rate and eliminates well-to-well cross-contamination.
- Autoclave and re-use**  
 Cost-effective. Repeated autoclave cycles do not affect gas exchange or retention capabilities.
- Rated 99.9% efficient for bacteria and viruses**  
 Restricts microorganisms while allowing O<sub>2</sub> and CO<sub>2</sub> to pass through the membrane.
- Prevents aerosol formation**  
 Suitable for growth of infectious microorganisms.

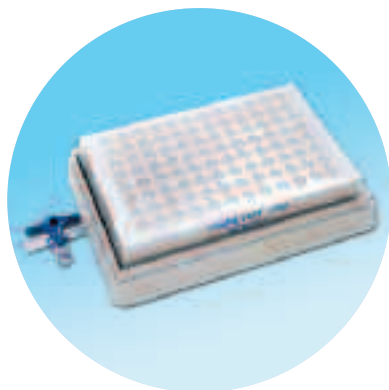
### Bugstopper Microplate Capmats ordering information

Catalog number	Well format	Item	Material	Quantity/case
7704-0014	24	BugStopper Venting Capmat	Silicone rubber for 10 ml Microplates	5
7701-5102	24	Growth Plate, 10 ml, round bottom	Polypropylene	25

#### Reference Literature:

- Datasheet, BugStopper Microplate Capmats, #S9036-703
- Download at [www.whatman.com](http://www.whatman.com)

# Accessories



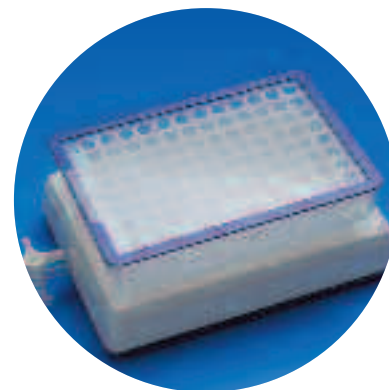
## UniVac 1 vacuum to waste manifold

The Whatman UniVac™ 1 is a single station unit, which can be used for evacuating all liquid from a filter plate to waste, when the filtrate is not required for further analysis.



## UniVac 3 vacuum to collect manifold

The Whatman UniVac™ 3 is a universal filter/ collection manifold designed to hold all the UNIPLATE formats from 100 µl up to 10 ml. The specially designed drip directors beneath the UNIFILTER plate ensure that the filtrate is directed into the corresponding well of the receiving UNIPLATE. The UniVac 3 comes complete with vacuum gauge, regulator and two-way control valve.



## VacAssist vacuum assist frame

The Whatman VacAssist™ is a thin, transparent PTFE film stretched inside a light metal frame that fits on top of the UNIFILTER during the vacuuming process. If one well empties before the others, this device automatically seals the mouth of the empty well, allowing the other wells to evacuate. One VacAssist is supplied with each UniVac 3.

### Accessories ordering information

Catalog number	Description	Quantity/case
<b>UNIVAC 1 Vacuum to waste manifold</b>		
7705-0101	Polyurethane vacuum manifold for filtering to waste	1
<b>UNIVAC 3 Vacuum to collect manifold</b>		
7705-0102	Teflon™ coated aluminum filter/collect vacuum manifold for volumes from 100 µl to 10 ml	1
7705-0106	Solid Teflon filter/collect vacuum manifold for volumes from 100 µl to 10 ml	1
7705-0107	Acrylic filter/collect vacuum manifold for volumes from 100 µl to 10 ml	1
7705-0108	Replacement Viton™ gaskets for filter/collect manifold	5
7705-0109	Replacement Viton o-rings for filter/collect manifold	5
<b>VACASSIST Vacuum assist frame</b>		
7705-0112	Vacuum assist (PTFE film) with frame	1
7705-0205	Vacuum assist (PTFE/silicone) without frame	6

## Biomek accessories

Designed specifically for the Biomek 2000 and FX liquid handling systems from Beckman-Coulter, Whatman Adapter

Collars eliminate many of the problems common to generic vacuum systems such as cross contamination, unnecessary collection steps and the need for spacer plates. The adapter collars are offered in two sizes, small and medium, to accommodate the wide range of Whatman specialty filter and collection plates. Small collars enable collection into standard 300  $\mu$ l collection and filter plates (~14 mm high) and medium collars accommodate collection into 800  $\mu$ l collection and filter plates (~30 mm high). Chemically resistant and easy to install, Whatman Adapter Collars ensure that quality is maintained in a wide range of high throughput applications. When vacuuming to waste during wash steps, the 96 well Filtrate Director assures crosstalk-free filtration by isolating the flow from each well without collecting it.

### Reference Literature:

- Datasheet, Adapter Collars and Accessories for the Biomek 2000, #51602
- Download at [www.whatman.com](http://www.whatman.com)



### Biomek accessories ordering information

Catalog number	Description	Quantity/case
7705-0120	Small Whatman Collar	1
7705-0121	Medium Whatman Collar	1
7725-0118	96 Well Filtrate Director	25
Protocol*	PCR Cleanup 96 Biomek Protocol CD	1
Protocol*	Plasmid Miniprep 96 Biomek Protocol CD	1

\*Note: Downloadable protocols are available at [www.whatman.com](http://www.whatman.com) (click on Support and on Protocols). CD-ROMs may be obtained from Technical Support (1-800-942-8626).

# Filter selection guide

## Filter media characteristics

Filter media	Flow rate*	Protein binding	Hydrophilic	Solvent resistance	Physical strength	Thermal resistance	General comments
Cellulose Nitrate (CN)	4	High	Yes	Poor	Brittle	< 125°C	Highly adsorptive membrane typically used for DNA/RNA/protein hybridization, also for ELISA and RIA based assays.
Cellulose Acetate (CA)	3	Low	Yes	Poor	Moderate	< 120°C	Typically used for low protein binding applications, good strength. General purpose microbiological filter.
Polypropylene (PP)	2	Negligible	No	Very good	Good	< 80°C	Typically used for prefiltration. Sensitive to gamma sterilization. Very low extractables, chemically inert.
Polyvinylidene fluoride (PVDF) Hydrophilic**	4	Low	Yes	Good	Good	< 135°C	Low protein binding, good chemical resistance.
Glass Microfiber (GF)	5	Moderate	Yes	Very good	Poor	High	Wide range available. Typically used as absorptive or adsorptive wicking media and prefilters. Excellent particle retention and resistance to clogging. Used for DNA binding.

\* Flow rate: 1 = low, 5 = high

\*\* Hydrophobic variants available for high protein binding.

## Plate material chemical compatibility

Plate material	Polystyrene	Polypropylene	Multi-Chem
Acetic acid	R	R	R
Amino acids	R	R	R
Butyl alcohol	R	R	R
Ethanol	R	R	R
Hydrochloric acid	R (30%)	R	R
Methanol	R	R	R
Acetonitrile	NR	R	R
Chloroform	NR	R	R
Dichloromethane	NR	R	R
DMSO	NR	R	R
DMF	NR	R	R
Dioxane	NR	R	R
Methylene chloride	NR	R	R
Piperidine	NR	R	R
THF	NR	R	R
Toluene	NR	R	R
TFA	NR	R*	R

R = Recommended

NR = Not Recommended

\* Room Temperature, Short Term Resistant

## Filter media chemical compatibility

Solvent	CA	CN	PC	PE	GMF	NYL	PP	PSU	PES	PTFE	PVDF
Acetic Acid 5%	L	R	R	+	R	R	R	R	R	R	R
Acetic Acid, Glacial	NR	NR	+	+	R	LR	R	R	R	R	R
Acetone	NR	NR	NR	R	R	R	R	NR	NR	R	NR
Acetonitrile	NR	NR	+	+	LR	R	R	NR	R	R	R
Ammonia 6M	+	NR	NR	LR	R	R	R	R	R	R	LR
Amyl Acetate	NR	NR	R	R	R	R	R	NR	LR	R	LR
Amyl Alcohol	R	+	+	R	R	R	R	R	NR	R	R
Benzene*	R	R	LR	R	R	LR	LR	NR	R	R	R
Benzyl Alcohol*	LR	LR	LR	R	R	LR	R	NR	NR	R	R
Boric Acid	R	R	R	R	R	LR	R	R	+R	R	+
Butyl Alcohol	R	R	R	R	R	R	R	R	R	R	R
Butyl Chloride*	+	+	+	+	R	NR	NR	+	+	R	R
Carbon Tetrachloride*	NR	R	LR	R	R	LR	LR	NR	R	R	R
Chloroform*	NR	R	NR	R	R	NR	LR	NR	NR	R	R
Cyclohexanone	NR	NR	+	+	R	NR	R	NR	NR	R	R
Chlorobenzene	+	R	+	+	R	+	+	+	NR	R	R
Citric Acid	+	+	+	+	R	LR	+	+	R	R	R
Cresol	NR	R	+	+	R	NR	R	NR	NR	R	NR
Cyclohexane	R	R	R	R	R	R	R	R	R	R	R
Diethyl Acetamide	R	NR	+	+	R	R	R	NR	+	R	NR
Dimethyl Formamide	NR	NR	+	+	R	R	R	NR	NR	R	NR
Dioxane	NR	NR	NR	R	R	R	R	NR	LR	R	LR
DMSO	NR	NR	NR	R	R	R	R	NR	NR	R	LR
Ethanol	R	NR	R	R	R	R	R	R	R	R	R
Ethers	LR	LR	R	R	R	R	R	R	R	R	LR
Ethyl Acetate	NR	NR	LR	R	R	R	R	NR	NR	R	LR
Ethylene Glycol	LR	LR	R	R	R	R	R	R	R	R	R
Formaldehyde	LR	R	R	R	R	R	R	R	R	R	R
Freon TF	R	R	R	R	R	R	R	R	R	R	R
Formic Acid	LR	LR	+	+	R	NR	R	LR	R	R	R
Hydrochloric Acid Conc	NR	NR	+	NR	R	NR	LR	R	R	R	R
Hydrofluoric Acid	NR	NR	+	+	NR	NR	LR	+	R	R	R
Hexane	R	R	R	R	R	R	R	R	R	R	R
Isobutyl Alcohol	R	LR	R	R	R	R	R	R	+	R	R
Isopropyl Alcohol	R	LR	R	R	R	NR	+	R	R	+	+
Methanol	R	NR	R	R	R	R	R	R	R	R	R
Methyl Ethyl Ketone	LR	NR	LR	R	R	R	R	NR	NR	R	R
Methylene Chloride*	NR	LR	+	+	R	NR	LR	NR	NR	R	R
Nitric Acid Conc	NR	NR	R	NR	R	NR	NR	NR	NR	R	NR
Nitric Acid 6N	LR	LR	+	+	R	NR	LR	LR	LR	R	LR
Nitrobenzene*	NR	NR	NR	R	R	LR	R	LR	NR	R	R
Pentane	R	R	R	R	R	R	R	R	R	R	R
Perchloroethylene	R	R	+	+	R	R	R	NR	NR	R	R
Pyridine	NR	NR	NR	R	R	LR	R	NR	NR	R	R
Phenol 0.5%	LR	R	+	+	R	R	R	NR	NR	R	R
Sodium Hydroxide 6N	NR	NR	NR	NR	NR	LR	R	R	R	R	NR
Sulfuric Acid, Conc	NR	NR	NR	NR	R	NR	NR	NR	NR	R	NR
Tetrahydrofuran	NR	NR	+	+	R	R	LR	NR	NR	R	R
Toluene*	LR	R	LR	R	R	LR	LR	NR	NR	R	R
Trichloroethane*	NR	LR	NR	R	R	LR	R	NR	R	R	R
Trichloroethylene*	+	R	+	+	R	NR	R	NR	NR	R	R
Water	R	R	R	R	R	R	R	R	R	R	R
Xylene	R	R	+	+	R	LR	LR	NR	LR	R	R

R = Resistant; LR = Limited Resistance; NR = Not Recommended; + = Insufficient Data; \* = Short Term Resistance of Housing.

The above data is to be used as a guide only. Testing prior to application is recommended.

For local office contact information, visit  
[www.gelifesciences.com/whatman](http://www.gelifesciences.com/whatman)

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