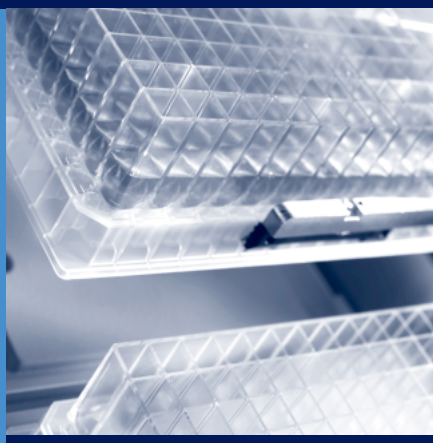
MILLIPORE

DATA SHEET



MultiScreen® Solvinert and MultiScreen Deep Well Solvinert Filter Plates

96-well chemically compatible sample prep platforms

- *Automation-compatible plate designs*
- *Low binding and low extractables*
- *Membrane offerings accommodate solvents and aqueous samples*
- *Designed for extended incubations*

High Performance Plate Designs

Automation-compatible MultiScreen Solvinert filter plates are available in 96-well deep well (2 mL) and standard (500 µL) formats. The one-piece plate designs incorporate rigid sidewalls to facilitate use with robotic gripper arms and provide space for barcode labels.

All MultiScreen Solvinert plate materials are selected for broad chemical compatibility and enable extended in-plate incubations with no leaking.

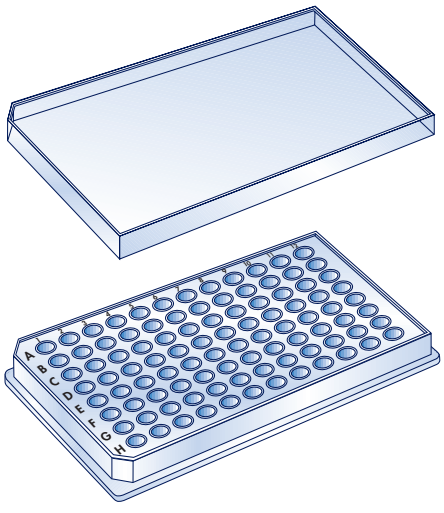
Optimized for Drug Discovery and HPLC Sample Prep

MultiScreen Solvinert filter plates – both deep well and standard – are optimized for drug discovery applications including total drug analysis, NCE cleavage from solid phase libraries, and sample preparation prior to HPLC or LC/MS/MS. The plates and membranes demonstrate low binding, low extractables and high recoveries. For chromatography separations, the MultiScreen Column Loader accessory can be used to create 96 mini-columns per plate.

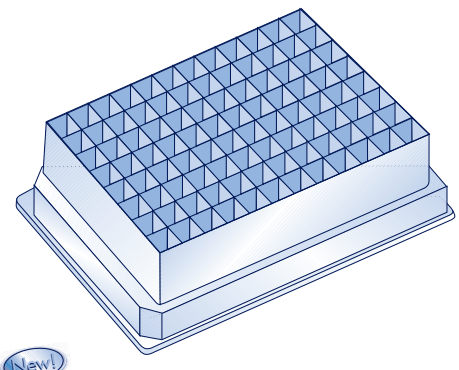
Maximum Assay Versitility

MultiScreen Solvinert Filter Plates

- Solvent-resistant plate and membrane materials
- Rigid sidewalls designed for robotic gripper arms
- Plastic skirt protects contact with filtration zone and enables easy stacking
- Plates accommodate bar code labels
- One piece design for reliable incubations
- Deep well plate features clear top wells for visual inspection



MultiScreen Solvinert Filter Plate holds up to 500 µL/well.



New!

MultiScreen Deep Well Solvinert Filter Plate holds up to 2 mL/well.

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MultiScreen Deep Well with hydrophobic membrane and prefilter is also well suited for total drug analysis in plasma by protein precipitation. An optimized protocol is available from Millipore for this application (Millipore Protocol Note AN1218EN00).

Hydrophilic and Hydrophobic PTFE Membranes Available

MultiScreen Solvinert filter plates are available with chemically-resistant hydrophilic and hydrophobic membranes to accommodate aqueous and non-aqueous samples. MultiScreen Deep Well Solvinert filter plates are also available with an optional pre-filter to use with highly particulate media. Both membranes are highly retentive (>99% retention of acid precipitated BSA).

For the broadest chemical resistance, **hydrophobic PTFE** membrane is recommended. Designed for extended sample incubation times and the lowest extractables, hydrophobic PTFE membrane is ideal for NCE cleavage and cleanup. It is also suitable for in-plate protein precipitation and sample recovery following in-plate compound cleavage from solids or beads. The plates are also used for peptide synthesis.

Hydrophilic PTFE membrane is optimized for low drug and protein binding with excellent throughput in typical aqueous and solvent sample preparation. High sample recoveries and low extractables provide for optimum analysis by HPLC and LC/MS/MS. The membrane is suitable for applications including natural product screening, aqueous solubility testing and total drug analysis.

Filter Selection by Application Needs

MultiScreen Solvinert filter plates are available with hydrophobic and hydrophilic 0.45 µm PTFE membrane. Deep well plates are available with an optional pre-filter with either membrane type. This quick selection table details optimum performance recommendations. For additional selection help, contact your local Millipore office.

Application Need	Hydrophilic 0.45 µm	Hydrophobic 0.45 µm
Highest protein recovery	Y	—
Low drug binding	Y	Y
Low solvent extractables (HPLC/UV)	Y	Y
Aqueous vacuum filtration without prewetting	Y	—
Chemical compatibility	Y	Y
Centrifugal Filtration	Y	Y
Precipitate and particle retention	Y	Y
In-plate protein precipitation with ACN	—	Y
Extended solvent incubations	—	Y
High particulate load*	Y (Deep Well with pre-filter)	Y (Deep Well with pre-filter)

*MultiScreen Deep Well Solvinert filter plates are available with an optional pre-filter.

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Performance

Broad Chemical Compatibility

MultiScreen Solvinert and MultiScreen Deep Well Solvinert Filter Plates

Solvent	Filter Plate
Acids	
Acetic acid, glacial	R
Hydrochloric acid (37%)	R
Hydrochloric acid (1 N)	R
Hydrochloric acid (6 N)	R
Hydrochloric acid (conc.)	R
Nitric acid (30%)	R
Nitric acid (6 N)	R
Nitric acid (conc.)	R
Sulfuric acid (conc.)	R
Trifluoroacetic acid	R
Alcohols	
Ethyl Alcohol	R
Isopropyl Alcohol	R
Methyl Alcohol	R
Bases	
Sodium Hydroxide (70%)	R
Sodium Hydroxide (3 N)	R
Sodium Hydroxide (conc.)	R
Ammonium Hydroxide (conc.)	R
Glycols	
Glycerine (Glycerol)	R
Aromatic Hydrocarbons	
Benzene	R/TST*
Ketones	
Acetone	R
Cyclohexanone	R
Oils	
Cottonseed oil	R
Miscellaneous	
Acetonitrile (ACN)	R
Dimethylformamide	R
Dimethyl Sulfoxide (DMSO)	R
Dioxane	R/TST*
Formaldehyde (35%)	R
Hexane	R/TST*
Methylene Chloride	L
Pyridine	R

* Dioxane, Hexane and Benzene are not recommended for use in Deep Well plates

R = Recommended: No significant change was observed in flow rate, nor was there any visible indication of chemical attack.

L = Limited Recommendation: Do not expose for long periods of time. The plate did not show significant physical change after a one-hour incubation.

TST = Testing Recommended

Note: The storage lid does not have the same solvent resistance properties as the filter plate and can be damaged by exposure to some solvent vapors.

Table 1. *The data presented in this chart are a compilation of testing by Millipore with certain chemicals and manufacturers' compatibility recommendations. These data are intended to provide expected results when filtration devices are exposed to chemicals under static conditions for 48 hours at 25 °C (77 °F), unless otherwise noted.*

Extended Incubation Times With No Leaking

Solution	24-hour Incubation Performance Hydrophilic PTFE Membrane	Hydrophobic PTFE Membrane
Milli-Q 18 MΩ Water	●	●
EtOH, 100%	●	●
MeOH, 100%	●	●
$MeCl_2$	○	●
DMSO/PBS (5%/95% v/v	●	●
ACN, 100%	●	●
ACN/H_2O (75%/25% v/v)	●	●
TFA/ACN (80%/20% v/v)	○	●
DMSO, 100%	●	●
DMF, 100%	●	●
NaOH, 1.75N	●	●

● Recommended

○ Not Recommended. Some wells exhibited partial or complete drip out in 24 hour testing. May be compatible for shorter incubation times.

Table 2. *MultiScreen Solvinert Filter Plates are designed to support extended incubations. This solvent compatibility table shows results for 200 µL of liquid incubated for 24 hours at room temperature.*

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Reliable Particle Capture for In-plate Plasma Protein Precipitation and Removal

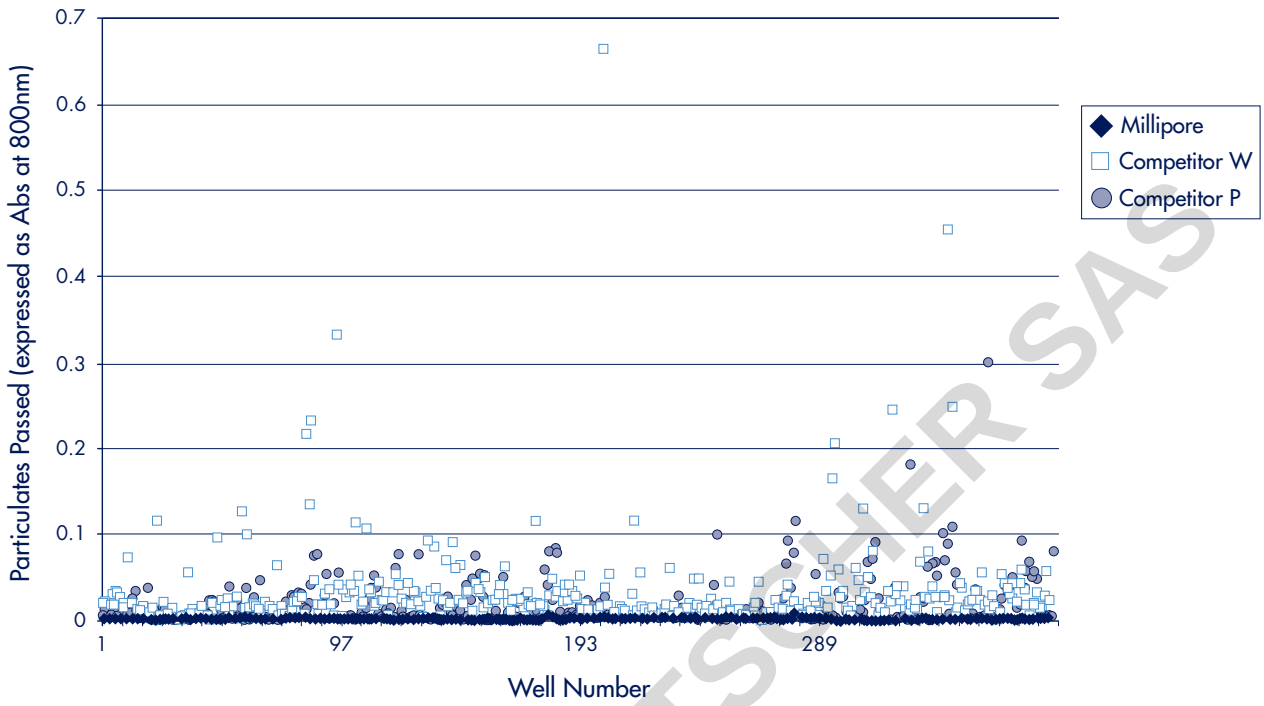


Figure 1. *A 1 mL 4:1 mixture of acetonitrile and plasma was incubated by shaking in the plate for 10 minutes followed by vacuum filtration to remove precipitated protein and other insoluble materials. The clarified filtrate was then analyzed for particulates by scattering of visible light at 800 nm. The results are graphed as the -log (%T). Millipore has reliable membrane retention for all wells where competitive plates show inconsistent results including passage of measurable amounts of precipitated protein that would harm a HPLC column.*

High Recovery of Drug in Solvent-based Preparations

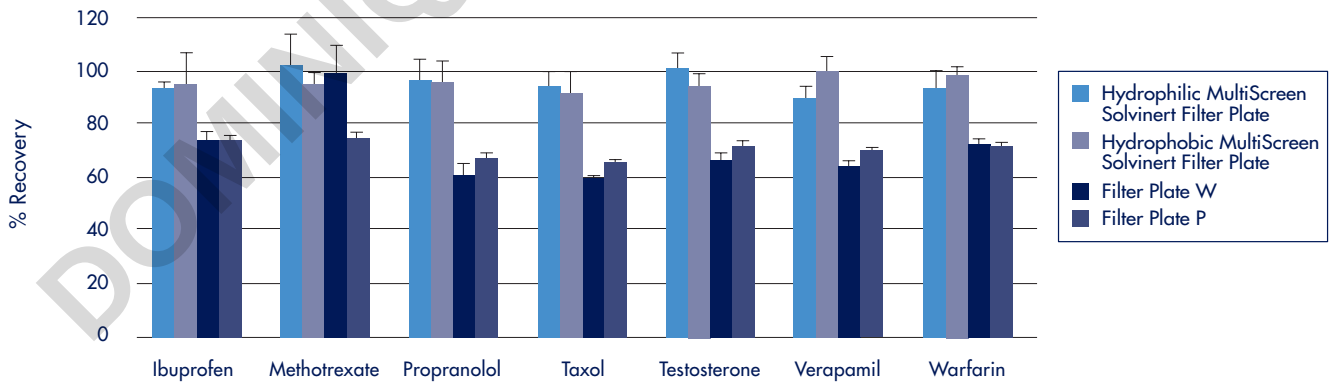


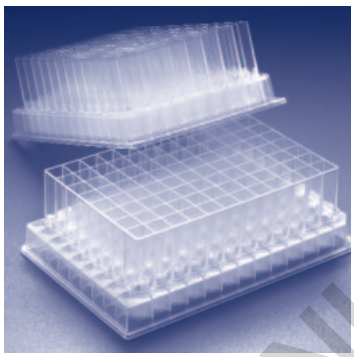
Figure 2. *Seven drugs were tested for percent recovery by acetonitrile plasma precipitation. Plasma stock samples (5 mL) were spiked with drug (100 µM stock and tritiated) to a final 5 µM drug concentration followed by 1-hour incubation. Protein was precipitated by the addition of acetonitrile (15 mL) and the solution was vortexed vigorously. For each drug a 300 µL aliquot of the supernatant was added to 8 wells per plate. The samples were filtered by vacuum filtration (12" Hg) and filtrates were collected. Percent recovery was determined by comparing an aliquot (100 µL) of filtrate to an aliquot of the precipitated stock (cpm filtrate/cpm precipitated stock). Results show superior drug recovery (>90%) for both hydrophilic and hydrophobic MultiScreen Solvinert filter plates.*
(The sample was pre-precipitated by the addition of ACN followed by vigorous mixing.) Equivalent results are seen with MultiScreen Deep Well Solvinert filter plates.

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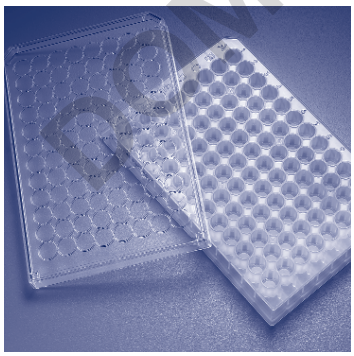
Specifications

	MultiScreen Deep Well Solvinert Filter Plate	MultiScreen Solvinert Filter Plate
Materials of Construction		
Base plate:	Polyolefin	Polyolefin
Membrane:	PTFE	PTFE
Pre-filter	PP (optional)	N/A
Dimensions		
Plate length:	127.8 mm	127.8 mm
Plate width:	85.5 mm	85.5 mm
Plate depth:	40.7 mm	14.6 mm
Sample Volume Per Well		
Recommended:	50 µL – 1.8 mL	50 µL – .45 mL
Maximum:	1.9 mL	0.5 mL
Filtration Parameters		
Maximum relative centrifugal force (RCF):	3000 x g	3000 x g
Maximum vacuum:	24" Hg	24" Hg
Membrane Area	0.28 cm^2	0.28 cm^2

Ordering Information



MultiScreen Deep Well Solvinert Filter Plates



MultiScreen Solvinert Filter Plates

Description		Qty/Pk	Catalogue No.
MultiScreen Deep Well Solvinert Filter Plates (2 mL wells)			
Hydrophobic membrane		5	MDRP N04 05
		10	MDRP N04 10
	With prefilter	5	MDRP NP4 05
		10	MDRP NP4 10
Hydrophilic membrane		5	MDRL N04 05
		10	MDRL N04 10
	With prefilter	5	MDRL NP4 05
		10	MDRL NP4 10
MultiScreen Solvinert Filter Plates (500 µL wells)			
Hydrophobic PTFE membrane		10	MSRP N04 10
		50	MSRP N04 50
Hydrophilic PTFE membrane		10	MSRL N04 10
		50	MSRL N04 50
Accessories			
MultiScreen Vacuum Manifold			MAVM 096 0R
MultiScreen Vacuum Manifold Deep Well Collar			MAVM 096 0T
MultiScreen Vacuum/Pressure Pump	115 Volts, 60 Hz		WP61 115 60
	220 Volts, 50 Hz		WP61 220 50
MultiScreen Column Loader, 25 µL			WP61 220 50
MultiScreen Column Loader, 45 µL			MACL 096 45
MultiScreen Column Loader, 80 µL			MACL 096 80
MultiScreen Column Loader, 100 µL			MACL 096 00
MultiScreen Deep Well Plate Lid (5 pk)			MALI DPP 05
Plate Sealing Tape			MATA HCL 00
Vacuum Flask, 1L			XX10 047 05

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