

ULTRA CLEAN POLYPROPYLENE STORAGE PLATES CATALOGUE



Porvair Sciences has developed a number of storage/collection plates to help in the fields of cell biology, molecular biology, drug discovery, combinatorial chemistry, screening and genomics. The plates are manufactured under clean room conditions and a significant number are DNase/RNase free. They are mainly made from polypropylene, an inert material giving heat and solvent resistant qualities. Porvair Sciences offers the largest combination of well shape, number of wells and well volume on the market. Each is made to the ANSI/SLAS format for compatibility with most readers/washers and automated equipment.



Are your plates whiter than white? Or do they harbour a dirty secret?

Deep well polypropylene microplates are commonly used for sample storage in life science laboratories. An essential aspect of the manufacture of these plates is the selection of clean raw materials for injection moulding. Polypropylene is an inert and heat resistant material, ideal for sample storage. However, all grades of polypropylene are not the same, for example, Injection moulding grades of polypropylene often have high concentrations of chemicals to aid the moulding process.

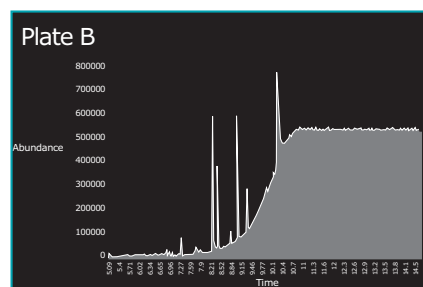
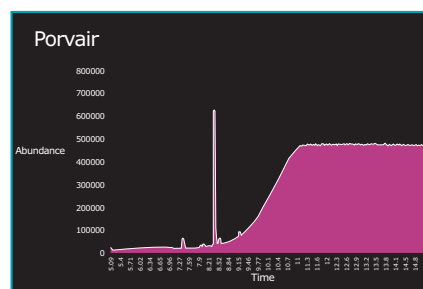
This allows rapid production of plates and lower costs, but may compromise the integrity of samples or compounds which are stored in such plates for extended periods. The problem is particularly acute where compounds are stored as solutions in solvents such as methanol or DMSO, as these excellent solvents have a tendency to extract from the polypropylene base material any added extractable compounds such as mould release agents or polymer flow improvers.

Porvair Sciences has carried out tests on many manufacturers' deep well plates to establish levels of extractables in each. A typical example is illustrated. Extractables testing was performed by adding a volume of methanol, sufficient to half fill the wells to each test plate. An internal standard comprising methanol spiked with 10 mg/ml of caffeine was used to give a consistent peak. Samples were taken from each well and subjected to analysis on a GC-MS system with splitless injection @ 250°C, using an HP - 5MS capillary column. A temperature gradient was programmed such that:

Ramp	30°C/min
Initial temp	70°C Hold 2 min
Final temp	310°C Hold 5 min

Results from the GC-MS showed good performance from the Porvair microplate, with a clean caffeine peak and no significant levels of leachable or extractable compounds. Plate B shown here, is a typical example of the other commercial microplates tested, which included two major German manufacturers and several other well-known suppliers. These variously displayed extra peaks with a variety of retention times across the run, indicating several different contaminants. Further analysis of these extra peaks revealed that they were, indeed, mostly recognized chemicals used as additives in the polypropylene to assist the injection moulding process.

From this it can be seen that it is essential to select the correct grade of polypropylene material for storage plate manufacture. The full report can be downloaded from our website.

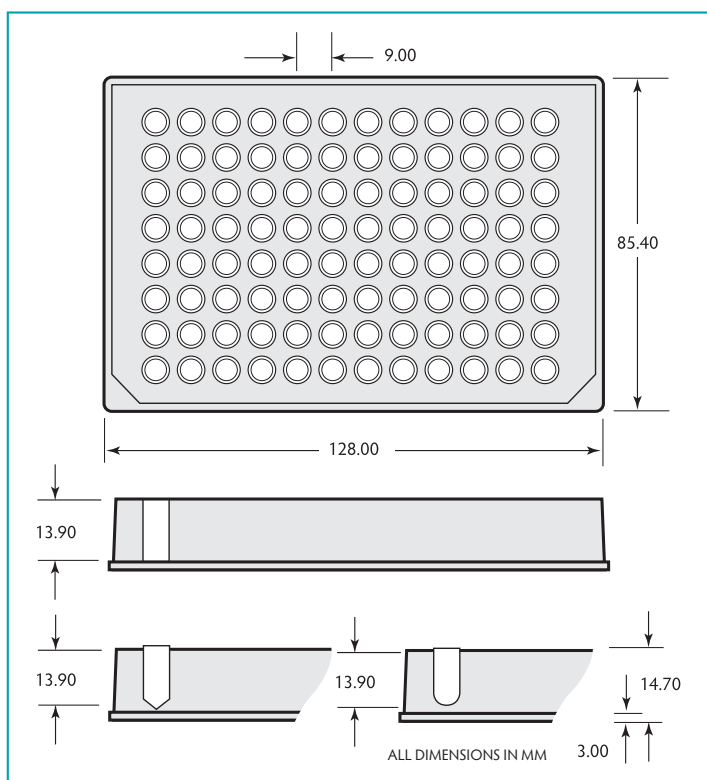
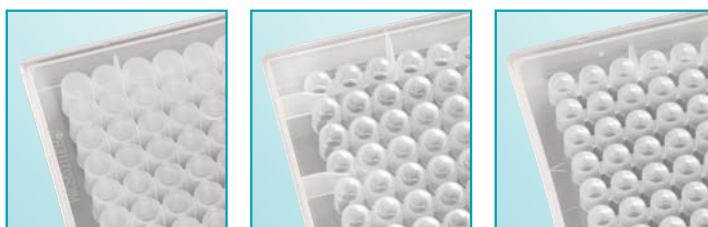


96-well shallow round

14.7mm height

Porvair Sciences offers three plates with well capacities of 350µl, 270µl and 220µl. They have flat-, round- or V-bottoms and can be used for compound storage and culturing.

- *Manufactured in polypropylene*
- *Alphanumeric grid reference*
- *Round and V-bottom allow greater liquid removal and particulate collection*
- *Raised rims improve sealing and stop cross contamination*



Storage plates round

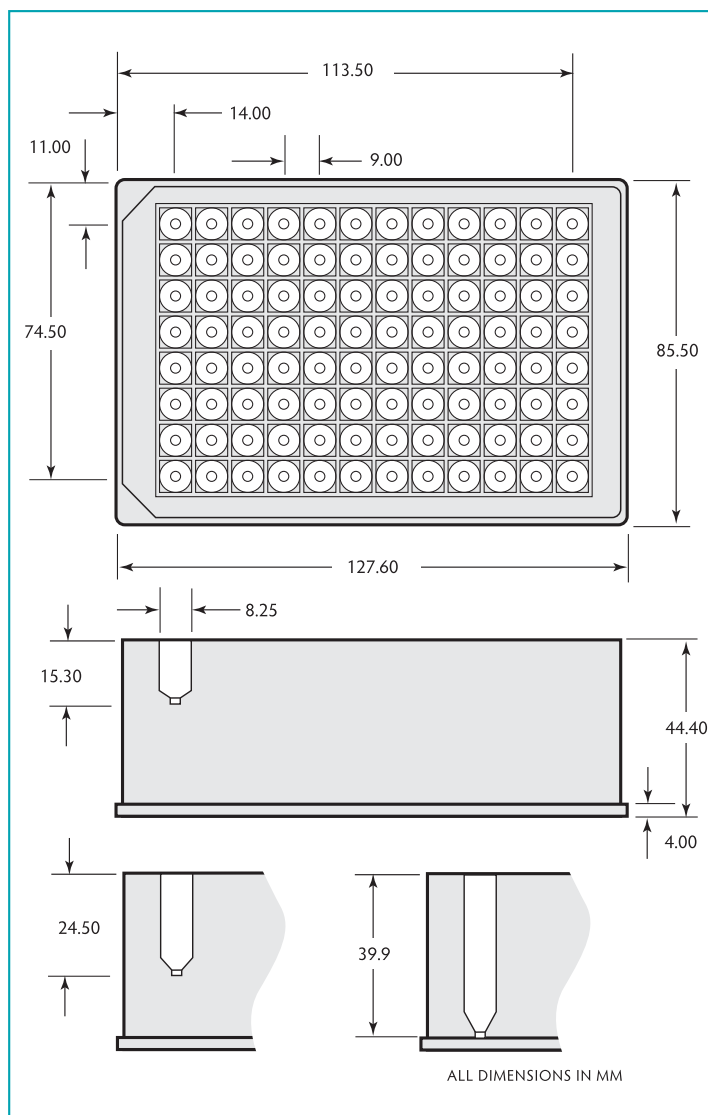
Rim and bottom well shape	Material	Well volume	Sterile	Quantity/case	Cat. no.
No rim, flat	Polypropylene	350µl	–	100	208003
Raised-round	Polypropylene	270µl	–	100	209003
Raised-V	Polypropylene	220µl	–	100	210003

96-well deep square

44mm height

The family of 96 square well plates was designed so that it would make the interchange of plates simpler in automated systems. All three plates have the same geometry and the only variable is the well depth.

- Made from virgin polypropylene
- Tested for low extractables
- Tight specification levels
- V bottom to allow total liquid removal, partial collection and to aid re-suspension
- No inner edges to allow better collection of magnetic beads
- Manufactured under DNase/ RNase free environment
- Working volumes of 350µl, 1ml, 1.6ml and 2ml
- Raised well rims to improve heat sealing
- Conical base which aids sample concentration, reconstitution and centrifugation
- Sterile and non-sterile versions available



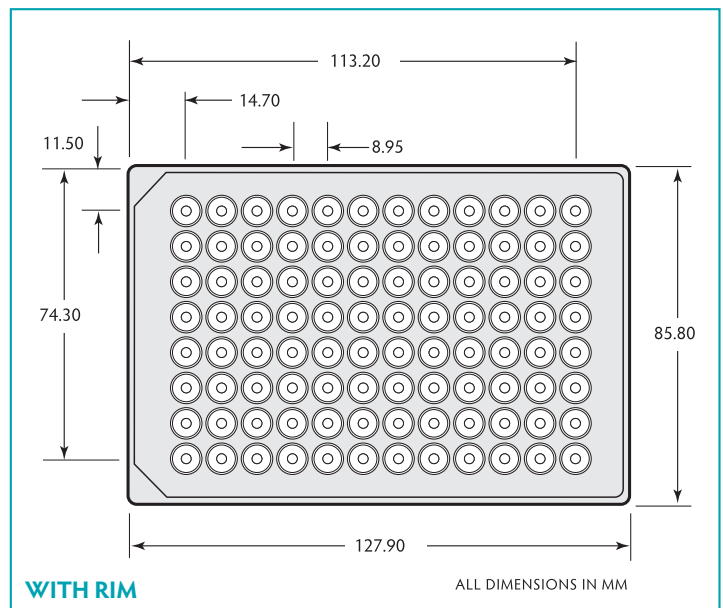
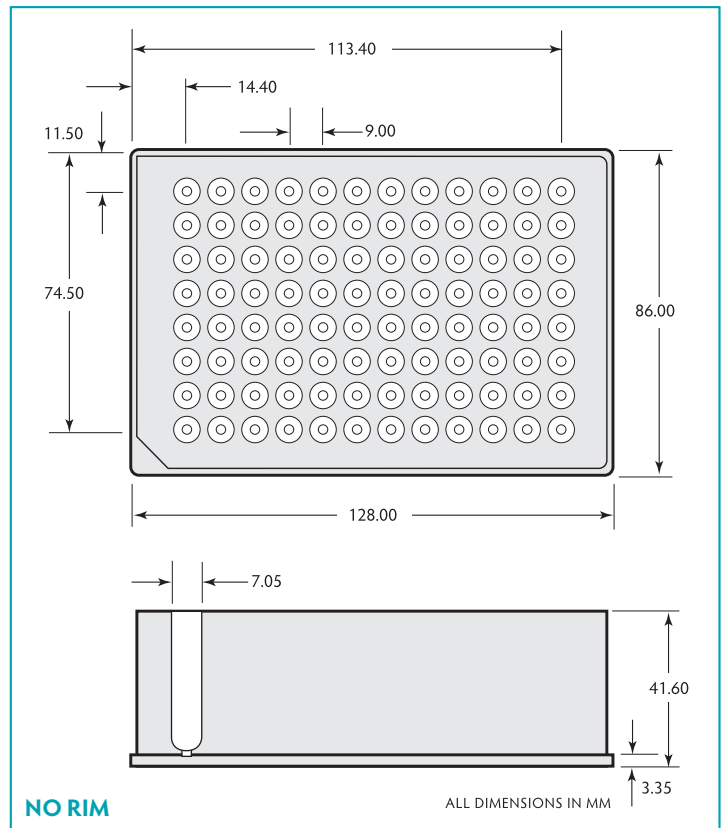
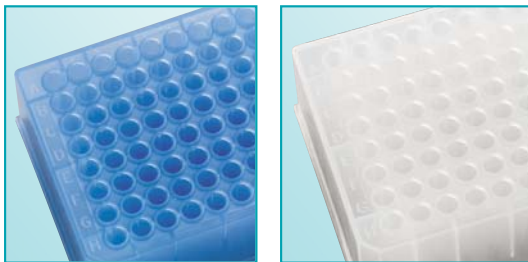
Storage plates 96 square well

Description	Well volume	Sterile	Use cap mat	Quantity/case	Cat. no.
Polypropylene, pyramid bottom	2.0ml	–	219004	50	219009
Polypropylene, pyramid bottom, sterile, inner bag of 5	2.0ml	✓	219019	50	219027
Polypropylene, pyramid bottom	1.0ml	–	219004	50	219008
Polypropylene, pyramid bottom, sterile, inner bag of 5	1.0ml	✓	219019	50	219026
Polypropylene, pyramid bottom	350µl	–	219004	50	219006
Polypropylene, pyramid bottom, sterile, inner bag of 5	350µl	✓	219019	50	219025

96-well deep round 42mm height

The plates are made in virgin polypropylene to minimise extractables. Working volume is 1ml per well and total volume is 1.1ml. Coloured plates aid identification when retrieving from storage. Black plates are suitable for storing light sensitive compounds.

- Manufactured from pre-tested polypropylene for low extractables
- Alphanumeric grid-referencing
- DNase/ RNase free
- Packed in sealed sleeves of 5 plates
- Rimmed version to stop cross contamination and enable a better seal
- Non rimmed version to allow insertion of vials, or where the seal is not crucial
- Cylindrical well with round bottom for optimal mixing and recovery
- Very easy to use with automated sample handling systems
- Can be stored at -80°C



Polypropylene storage plates round

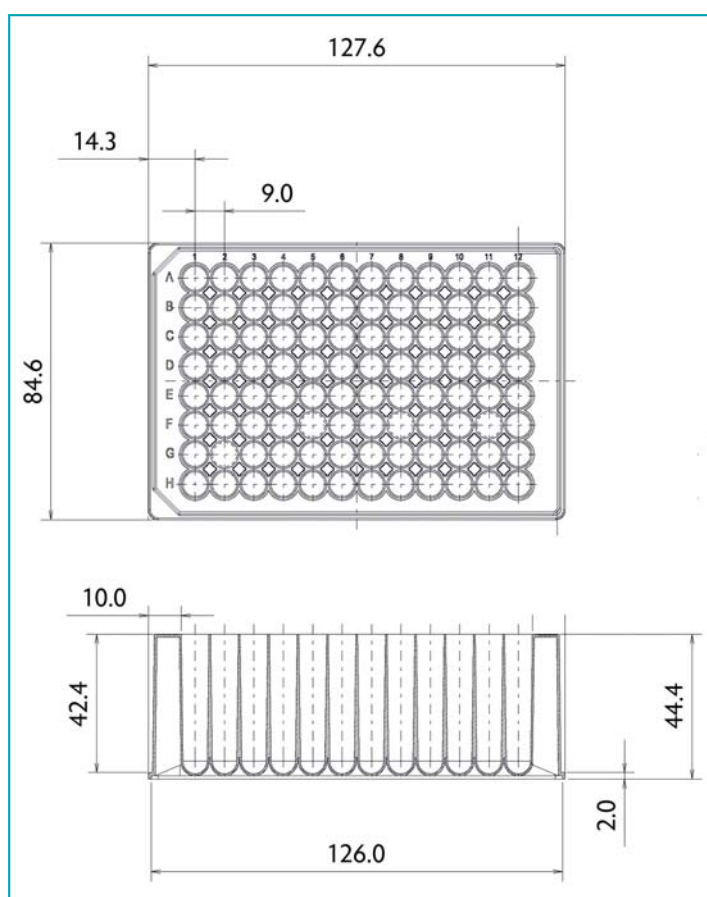
Rim and bottom well shape	Colour	Well volume	Sterile	Use cap mat	Quantity/case	Cat. no.
Raised- round	Natural	1ml	–	219036	50	219002
Raised- round	Natural	1ml	✓	219042	50	219012
No rim- round	Natural	1ml	–	219036	50	219037
Raised- round	Blue	1ml	–	219036	50	219432
Raised- round	Red	1ml	–	219036	50	219422
Raised- round	Black	1ml	–	219036	50	219412

96-well deep round 'common wall' 45mm height

These revolutionary plates are made in virgin polypropylene to minimise extractables. Maximum volume is 2.075ml per well and working volume is a useful 1.85ml, more than any other comparable '2ml Round Well' plate in this class. The 'common wall' design allows the highest possible volume to be used whilst maintaining an overall height of just 45mm, complete with ANSI/SLAS standard base and footprint. Extra working volume is thus assured in a convenient round bottom, round well format.



- Manufactured from pre-tested polypropylene for low extractables
- Alphanumeric grid-referencing
- DNase/ RNase free
- Packed in sealed sleeves of 5 plates
- Cylindrical well with round bottom for optimal mixing and recovery
- Very easy to use with automated sample handling systems
- Can be stored at -80°C
- Easily sealed with matching Cap Mat or heat seal
- Fits Waters AcQuity™ autosamplers



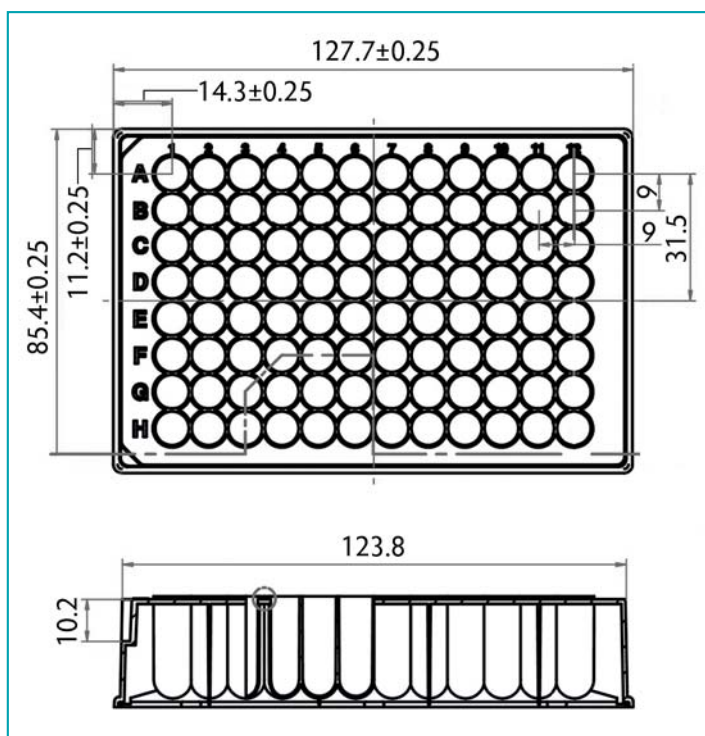
96-well deep round 'common wall'

Description	Pk/Qty	Part No.
96 Deep well, 2ml/well Polypropylene round well rimless DNA/RNAase free, inner bag of 5	50	219020
96 Deep well, 2ml/well Sterile Polypropylene round well rimless DNA/RNAase free, inner bag of 5	50	219021

96-well round low profile

A new introduction to the Porvair range is a low profile 1.1ml 96-well round plate with a height of just 27mm. This allows more plates to be stored or stacked in a given space. The plates are made with extractable-free polypropylene for excellent results. A specific anti-evaporation cap mat is also available for this plate manufactured from thermoplastic elastomer.

- Allows stacking in higher densities
- Minimises space needed for compound storage
- Pure virgin polypropylene
- Matching snug-fitting cap mat



Dimensioned drawing available on request.

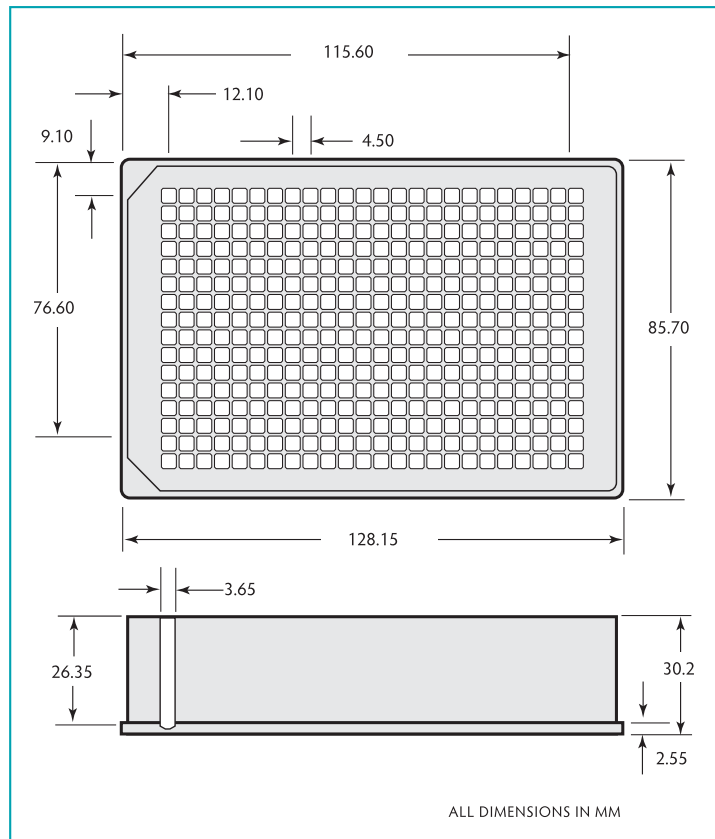
96-well round low profile

Description	Working well vol	Sterile	Qty/case	Cat. no.
96-well round low profile plate	1ml	–	50	219250

384-well deep square

Porvair Sciences has a selection of 384-well polypropylene plates to suit most applications. All of them are made from pre-tested polypropylene in Class 100000 clean rooms.

- Manufactured for high density sample collection / storage
- Two sizes: 58µl and 300µl per well working volume
- Each are designed to allow almost total removal of liquid sample
- Extra flat – allows plate sealing
- Storage temperature down to -80°C
- Available sterile and non sterile
- All manufactured to ANSI/SLAS specifications



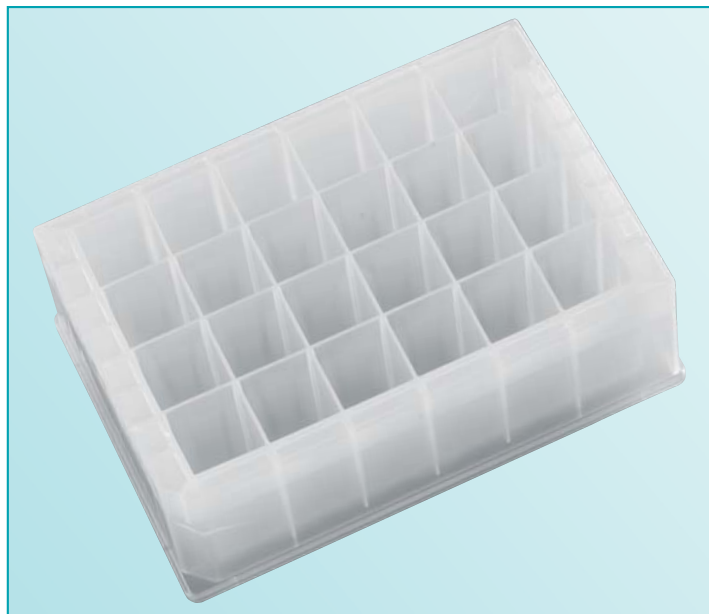
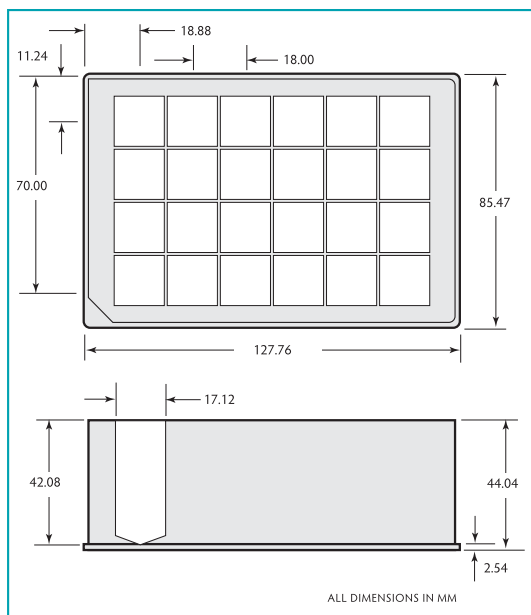
Storage plates 384-well

Well shape, top & bottom	Working well vol	Sterile	Qty/case	Cat. no.
Square-round	58µl	–	60	224001
Square-V	300µl	–	48	219040
Square-V	300µl	✓	48	219041

- 24 wells with a working capacity of 10ml/well
- Standard height (44mm) of a deep well plate
- Sterile or non sterile versions
- Lidded version available

Large volume

The range of large volume plates is designed to meet special requirements. Focused on the combinatorial, environmental and food technology markets, it allows large volumes of samples to be transported in recognised ANSI/SLAS format microplates, to allow greater automation. Plates will accept the Porvair universal lid (see page 10). All plates are manufactured from virgin polypropylene, can be heat sealed and stored for prolonged periods at -80°C.



High volume deep well microplates

Well shape, bottom shape	No of wells	Working well vol	Sterile	Lid	Qty/ case	Cat. no.
Rectangle, V-bottom	24	10ml	–	–	25	360013
Rectangle, V-bottom (bulk pack)	24	10ml	✓	–	25	360115
Rectangle, V-bottom	24	10ml	–	✓	25	360077
Rectangle, V-bottom (single pack)	24	10ml	✓	✓	25	360079
Rectangle, V-bottom (with bar code)	24	10ml	✓	✓	25	360080
Rectangle, round-bottom	24	10ml	–	–	25	360117

Centrifuge support plate

The support plate is designed to fit into the skirt of the deep well plates. This then allows the plate to be used in a centrifuge without the risk of the plate distorting and causing the well to leak.

- Available for the 2ml and 1ml square deep well plates
- Easily fitted below plates

Deep well microplate accessories

Description	Quantity/pack size	Cat. no.
Centrifuge impact support plate for 219008 & 219026	2	500150
Centrifuge impact support plate for 219009 & 219027	2	500114

Bacti-growth plates

Bacti-growth plates are specially packaged plates to allow the growth of bacteria, yeast, mammalian or insect cell lines.

Using only the highest-grade raw materials, our plates are tested to ensure no moulding or polymer contaminants leach out into the samples. This guarantees reproducibility and maintains customer confidence. Each Bacti-growth plate consists of a deep well plate and a tight fitting lid, packed sterile in bags.

- Plate well configuration available from 24- through to 384-well
- Well volumes from 300µl through to 10ml per well
- Round and square well available
- Sealed in sterile bags of 5 plates
- Robot friendly
- Manufactured to the highest specifications
- Conform to the ANSI/SLAS format



Bacti-growth plates

Description	Sterile	Lid	Qty/Pack	Cat. no.
24 x 10ml square wells, polypropylene with lid	✓	✓	25	219115
96 x 1ml round wells, polypropylene with lid	✓	✓	25	219101
96 x 2ml square wells, polypropylene with lid	✓	✓	25	219102
384 x 300µl square wells, polypropylene with lid	✓	✓	20	219103

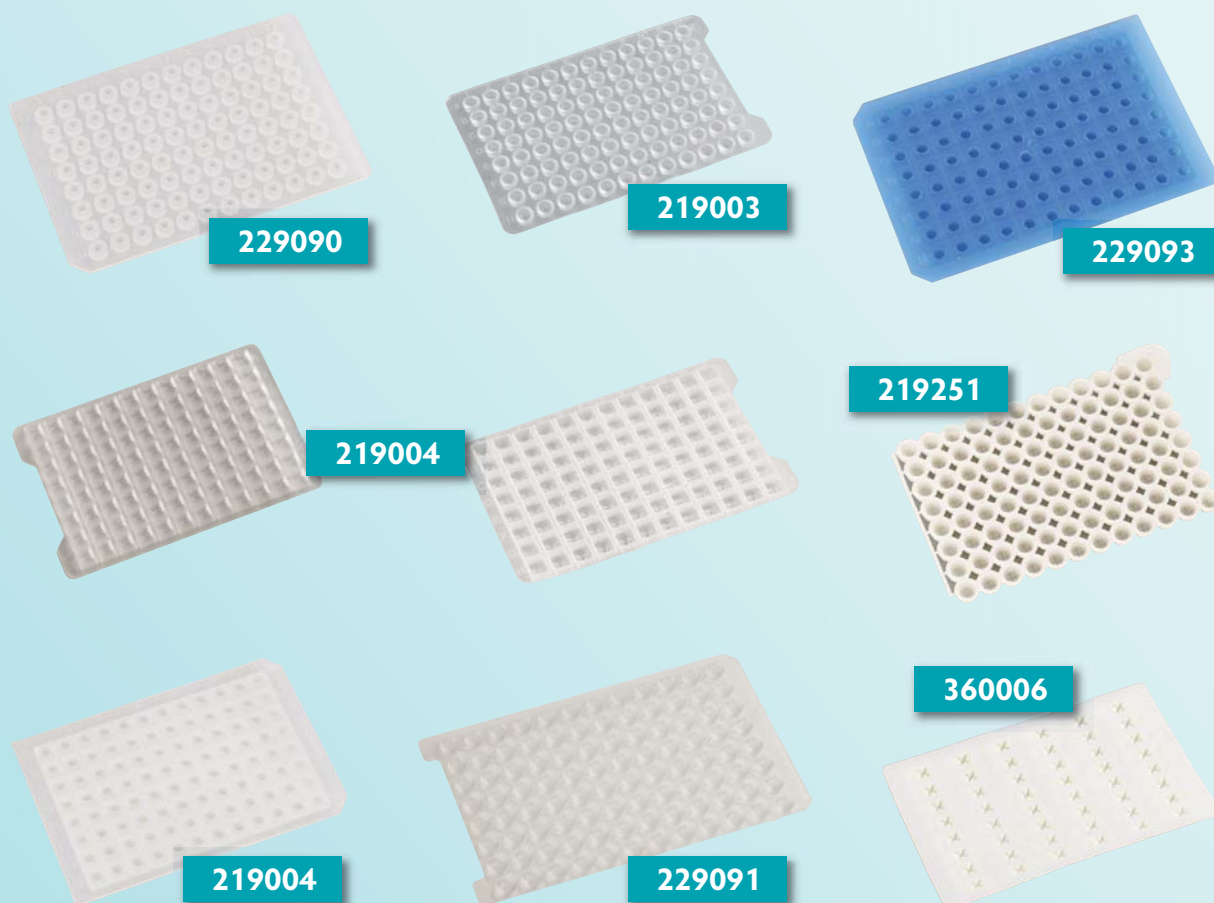
For schematics of 219101 see 219002 (page 5), for 219102 see 219009 (page 4), for 219103 see 219040 (page 8), for 219115 see 360013 (page 9).

Plate lids

Polystyrene and polypropylene lids are available for all 96-well SBS standard plates. See 229125 and 229128 in the table opposite.



Friction seals and cap mats



Friction seals (cap mats)

Description	Cross reference to Porvair Sciences plates	Qty/pack	Cat. no.
Silicone sealing mat to fit 384-well plates	219040, 219041	50	380001
EVA sealing mat to fit 96-square well plates	219006, 219008, 219009	50	219004
EVA sealing mat to fit 96-square well plates, sterile	219025, 219026, 219027	50	219019
Pierceable Santoprene mat for 96-square well plates	219006, 219008, 219009	100	360010
EVA sealing mat for 96-round well plates	219002, 219032	50	219036
EVA sealing mat for 96-round well plates, black	219002, 219032	50	219038
EVA sealing mat for 96-round well plates, sterile	219012	50	219042
Pierceable Santoprene seal strip to fit 24-well plates	360013	100	360014
Pierceable Santoprene seal strip to fit 96-well plates	360001	400	360007
Pierceable sealing cap, round 96-well	219002	50	219044
Mat for round 96-well plates (standard silicone)	219002 and round well plates	5	229090
Mat for square 96-well plates (standard silicone)	229230 and square well plates	5	229091
Mat for round 96-well plate (PTFE coated silicone)	219002 and round well plates	5	229092
Mat for square 96-well plate (PTFE coated silicone)	229230 and square well plates	5	229093
Polystyrene clear lid for all 96-well SBS standard plates	Fits all plates	100	229125
Polypropylene lid for all 96-well SBS standard plates	Fits all plates	100	229128
Cap mat for 1.1ml and 2ml common wall storage plates	219020, 219021, 219250	5	219251