Azenta Life Sciences

4titude PCR/Microplate Consumables and Instruments

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4titude Manufacturing & Quality Standards

Azenta is ISO 13485:2016 certified to manufacture and supply microplates and associated consumables for the life sciences sector. We also provide complete custom design solutions from prototyping to tool design and contract manufacturing.

Manufacturing Standard for Microplate and Associated Consumables

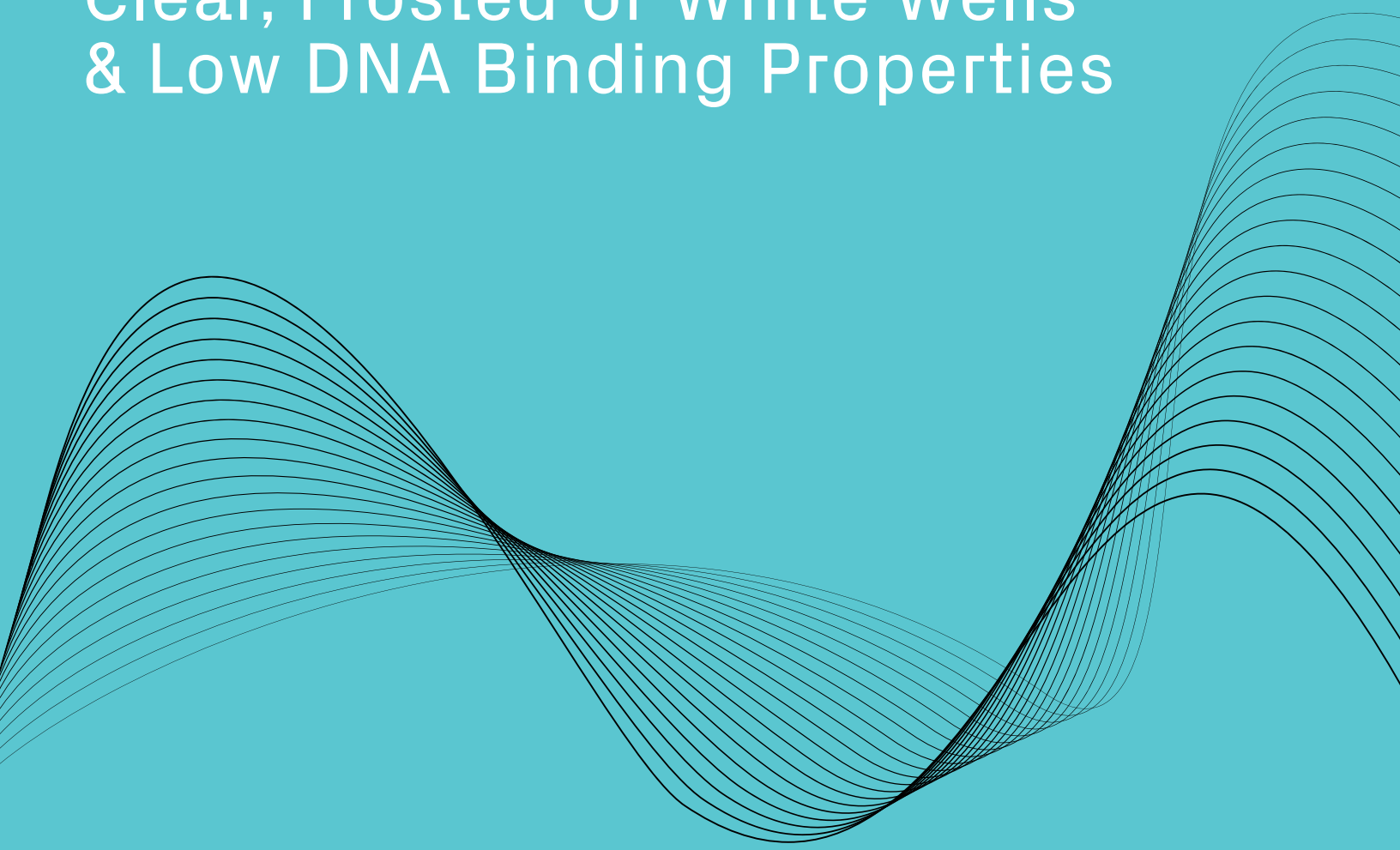
- ISO 13485:2016 certified
- Process validation & mapping
- Fully document controlled manufacturing processes
- Statistical analysis of production processes
- Continuous improvement programs
- Injection molding in ISO class 7 cleanrooms
- Virgin, medical grade polymers

Quality Standard

Azenta performs visual, physical and biological tests to ensure the integrity of our PCR/Microplate consumables and that they are contamination free at all times.

- Consumables are certified free from human genomic DNA, nucleases and pyrogens
- Skirted microplates and PCR plates meet the SBS standard footprint
- PCR inhibition tests are performed on polymers used
- Leak tests are performed on every well of every PCR plate
- White-well plates are checked for background fluorescence

4titude PCR Plates: Clear, Frosted or White Wells & Low DNA Binding Properties



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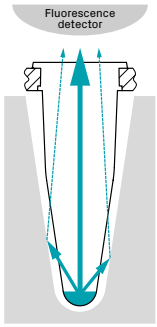
4titude Clear, Frosted or White Wells & Low DNA Binding Properties

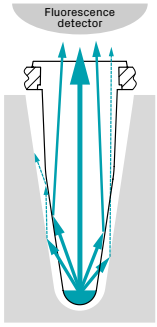
Selection of the right plastic material of your PCR consumables has a measurable effect on your (q)PCR results. Azenta has carried out extensive research and development into our PCR consumables to offer customers a range of products suitable for the diverse applications and instruments they are required for.

Well color options - A question of sensitivity

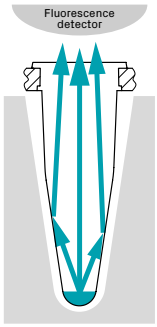
Well color is often not considered when choosing a PCR plate, but can in fact have a significant impact on results. PCR plates are available in three color options: clear, frosted and white, each of which has specific advantages and disadvantages.



Clear wells reflect very little LOWEST SENSITIVITY Easy visualisation of liquid for pipetting

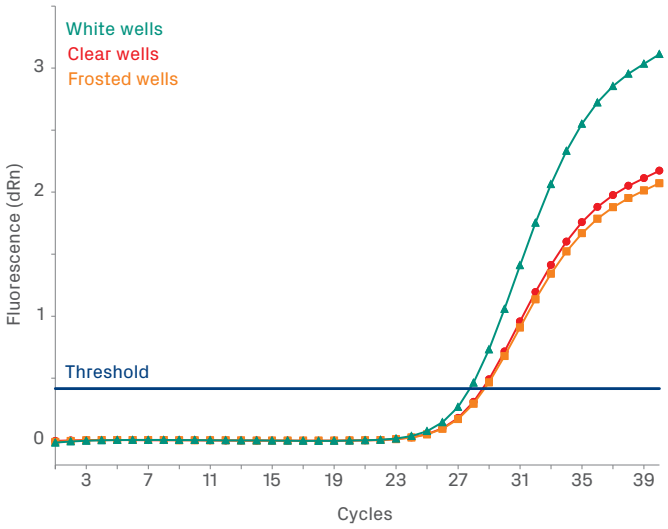


Frosted wells reflect some light MEDIUM SENSITIVITY Liquid visible for pipetting



White wells reflect most of the light HIGHEST SENSITIVITY & CONSISTENCY Greatest fluorescent levels

Greater sensitivity in a qPCR reaction enables earlier Ct values and higher fluorescence readings.



Identical qPCR assays in plates with clear, frosted and white wells (4ti-0770/C, 4ti-0772 and 4ti-0771, respectively). Clear and frosted wells perform similarly whereas white wells gave earlier Ct values and higher fluorescence intensity.

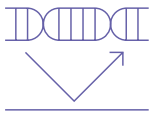
Azenta recommends the use of white wells, where possible, to achieve the greatest sensitivity and consistency of qPCR reactions. Another point to consider are well color recommendations from (q)PCR instrument manufacturers, for example, Roche recommend the use of white wells on their instruments and, ABI® recommend the use of frosted wells. In addition to using the recommended well color for your instrumentation, this must be combined with thin walled tubes for optimal heat transfer and optimal sealing to prevent evaporation.

Low DNA binding - Smarter plastics for advanced applications

Polypropylene (PP) is the best material for PCR tubes as PP is chemically inert, resistant to solvents and well suited for injection molding, allowing for production of thin-walled tubes for optimum PCR results.

DNA has been shown to bind PP, especially at high ionic strength, despite the very hydrophobic nature of this material. This has typically not been an issue but due to progressing miniaturisation of reaction volumes and the introduction of new technologies such as NGS, ultra-low DNA binding consumables have become essential for use in sensitive assays.

Please see our dedicated application note on low DNA binding products which can be found on our website for information outlining the characteristics of our selected low bind polymer and for the range of low-binding PCR consumables available.



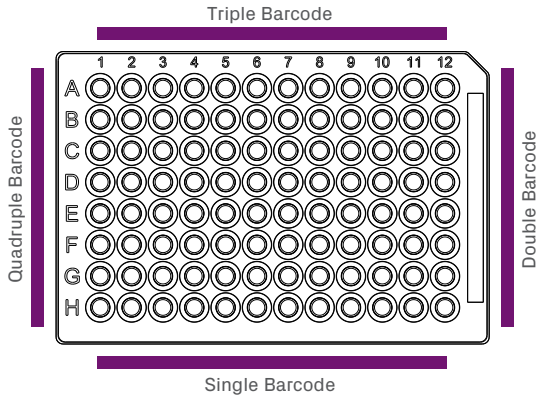
Ultra-Low DNA Binding

Coding Options & Ethylene Oxide Treatment

Linear and 2D datamatrix coding – Sample tracking made easy

All skirted and semi-skirted plates are available with linear Code 128 format barcodes for identification and traceability of your samples.

The labels are highly scratch-resistant and can withstand cold storage (-80°C), temperatures of up to 100°C, and solvents such as DMSO. Single, double, triple or quadruple barcodes are available, and a variety of custom options.



Position of standard barcode labels

8 Well PCR Tube Strip with PC Frame with off-the-shelf 2D code

2D datamatrix coding uses a defined number of fields to encode alphanumerical information. The code uses data redundancy so even if codes become partly destroyed, the information will be retained. Azenta offers 2D coding on several products including 8 Well PCR Tube Strips with PC Frame and PCR tubes with flat caps.

Should additional customizations not covered by our standard barcoding and 2D coding service be required, further information and our custom linear barcode request form can be found on our website.

Ethylene Oxide Treatment – Reliable consumables for forensic applications

Azenta has a stringently controlled clean-room production facility, for production of PCR consumables free from DNA and RNA contamination. However, some applications require the absolute highest quality of consumables such as forensic workflows and tissue culture.

For these applications, Azenta offer treatment of selected products with Ethylene Oxide, a technique proven to reduce traces of amplifiable DNA, for peace of mind in your reactions. Additional plate types can be treated on request.

4titude FrameStar 2-Component PCR Plates

FrameStar® PCR plates prevent sample loss by minimizing thermal expansion during PCR, enabling reductions in PCR volumes and cost savings on reagents.

The 2-component design combines the advantages of thin walled polypropylene (PP) tubes, for optimum PCR results, with a rigid polycarbonate (PC) frame for highest thermal stability and rigidity, making them the plates of choice for any robotic workflows.

- **Multiple frame color options with clear, frosted, white or black tubes are available**

  Flexible solutions for every application
- **No warping due to stable polycarbonate frame**

  Reliable use with stackers and liquid handlers
- **Minimizing thermal expansion**

  Better sealing properties & reduced evaporation for improved PCR consistency
- **Downscaling of reaction volumes possible**

  Cost saving
- **Standard and custom barcoding options available**

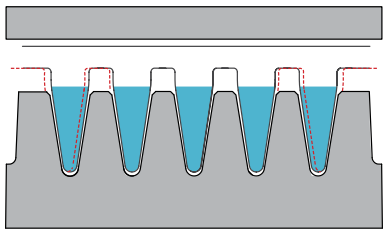
  Error-free sample tracking
- **Plates with ultra-low DNA binding properties and processing options such as ethylene oxide treatment available**

  Tailor-made solutions

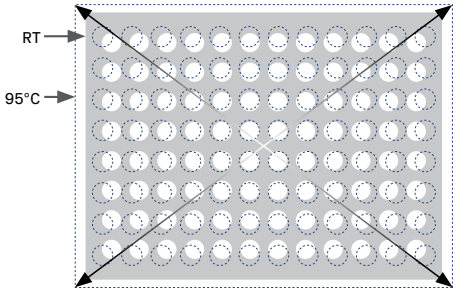
Evaporation from standard PCR plates vs. FrameStar plates

Thermal expansion of polypropylene (PP) plates leads to greater risk of evaporation from outer wells.

PP is the optimum material for PCR tubes. It provides the most efficient heat transfer, as well as an inert surface with low binding affinity to nucleic acids, proteins and other molecules. However, the material is not thermally stable in plate format, causing it to expand and contract during each PCR cycle. Such thermal expansion will weaken the plate seal and lead to sample evaporation, mainly from corner and outer wells.



Side-on view of a PCR plate in a thermal cycler. The sealed plate is sandwiched between the cycler block and the heated lid but it is only partly fixed in position at the bottom of tubes, allowing the plate to expand horizontally at the top.



Standard polypropylene plates expand by up to 2 mm during thermal cycling which leads to movement of wells away from the plate centre. This movement is most significant in corner and outer wells.

FrameStar 2-component technology allows for reduction of assay volumes and cost.

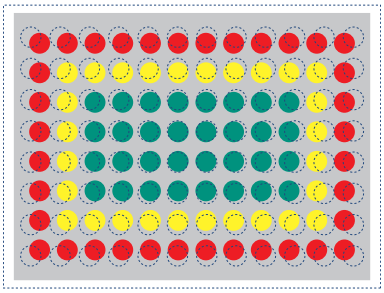
Due to the much improved seal integrity, reaction volumes can often be reduced when using FrameStar plates. Such downscaling of experiments can be successfully implemented without any loss of assay sensitivity or consistency and, reagent savings can be considerable.

Evaporation from standard PP plates is highest in the outer wells

Since thermal expansion and movement of wells in standard PP plates is greatest around the edges of the plates, evaporation is highest from the two outer rows of wells. The adjacent figure illustrates the level of risk of sample evaporation from different areas of PP plates. The inner 32 wells of a standard 96 well plate have low risk of evaporation whilst the risk of sample loss is much higher in the outer two rows which contain 65 per cent of the wells.

"FrameStar plates led to significantly better results and reduced evaporation compared to standard PCR plates."

Dr. Andreas Dahl, MPI f. Molekulare Genetik, Berlin, Germany

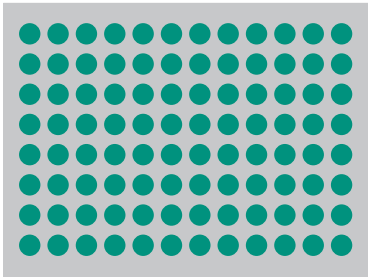


Risk of evaporation from the outer rows (red) of a standard PP PCR plate is highest, medium level evaporation occurs in the second row (yellow) and sample loss from the inner 32 wells (green) is lowest (the dotted line represents an expanded standard PP plate).

FrameStar 2-component plates improve consistency of PCR results

We have compared the degree of evaporation from different areas of standard PP and FrameStar PCR plates. First, the 64 outer wells (two outer rows - above, red and yellow area) of both plate types were filled with 10 µl H_2O. Plates were then sealed with a qPCR adhesive seal (code 4ti-0560) and their total weight determined before and after PCR. The experiment was repeated with a set of plates of which the inner 32 wells (green area) were filled. Table 1 shows that evaporation from outer wells of standard PP plates was 65 higher than from inner wells. As a result, evaporation causes varying changes in reaction volume across standard PP plates.

The results below show that reaction volumes remain consistent across the 96 wells (or 384 wells, data not shown) in FrameStar plates. In contrast, the reaction volumes in standard plates differ significantly between wells during PCR. Reagent concentrations in outer rows will increase dramatically, resulting in sub-optimal reaction efficiency. In extreme cases samples may fully evaporate.



The polycarbonate frame of FrameStar plates is more heat resistant than standard polypropylene plates which reduces thermal expansion to a minimum. For this reason seal integrity remains intact even at elevated temperatures during PCR.

FrameStar minimizes sample loss across the plate

Plate Type	Well position	Starting weight (g)	Weight post PCR (g)	Weight loss (g)	Volume loss	
					Total	Per well
FrameStar 4ti-0710	outer 64 wells	26.230	26.193	0.037	37 µl	0.57 µl
Standard PP	outer 64 wells	17.299	17.118	0.181	181 µl	2.8 µl
FrameStar 4ti-0710	inner 32 wells	25.841	25.824	0.017	17 µl	0.53 µl
Standard PP	inner 32 wells	17.132	17.078	0.054	54 µl	1.69 µl

Table 1: Weight and volume loss from different sections of 96 well PCR plates. Results shown are averages from 5 plates of each plate type. Volume loss from the outer wells of standard PP plates was 5-times higher than from FrameStar plates.

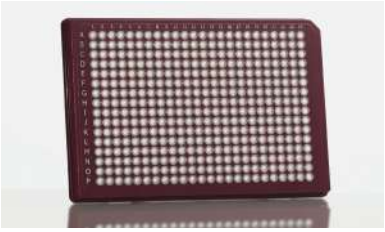
Evaporation has a significant effect on the reaction conditions resulting in noticeable effects, especially for qPCR. Identical samples can exhibit significant differences in their Ct values, depending on their position on the plate.

A solution to the problem of evaporation related qPCR inaccuracies is the use of 2-component plates.

4titude FrameStar 384 Well Skirted PCR Plate

Polypropylene wells, polycarbonate frame, cut corner A24; working volume: <30 µl, total well capacity: 55 µl; designed for use on standard thermal cyclers

- Our FrameStar 384 Well Skirted PCR Plates are designed for high-throughput PCR
- Compatible with the majority of 384 well block PCR, qPCR and sequencing instruments
- Rigid 2-component design eliminates warping and distortion during PCR making it ideal for use with robotic systems
- The skirt allows for labeling or barcoding
- Ultra-low DNA binding option available



Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Stackable

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <30 µl working volume, 55 µl total well capacity

Frame

- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of the frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems
- Compatible with the majority of 384 well block PCR, qPCR and sequencing instruments

Options

- Available with the following frame color options for the clear well variety: purple, blue, clear, green, red, and black
- Also available as a black frame with white wells (for optimum signal-to-noise ratio when using fluorescent based assays) and as a black frame with black wells (for minimal light diffusion and interference)
- Also available as a clear frame with frosted wells for use with ABI®/LifeTechnologies® qPCR instruments
- Available barcoded upon request

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	10.30 ± 0.05 mm
Well depth	9.20 ± 0.10 mm
Well diameter	3.00 ± 0.10 mm
Distance to center of A1 from top edge	8.99 ± 0.25 mm
Distance to center of A1 from left edge	12.13 ± 0.25 mm
Pitch (distance between A1 and A2)	4.50 mm

Ordering Information

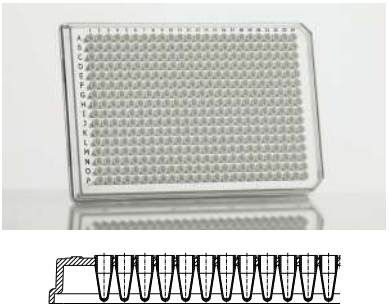
4ti-0384	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, purple PC frame**, cut corner A24, 50 plates per case
4ti-0384/B	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, blue PC frame,** cut corner A24, 50 plates per case
4ti-0384/C	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, clear PC frame,** cut corner A24, 50 plates per case
4ti-LB0384/C	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, clear PC frame,** low binding, cut corner at A24, 50 plates per case
4ti-0384/G	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, green PC frame,** cut corner A24, 50 plates per case
4ti-0384/R	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, red PC frame,** cut corner A24, 50 plates per case
4ti-0384/X	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, black PC frame,** cut corner A24, 50 plates per case
4ti-0384/RIG	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, black PC frame,** extra rigid, low profile, cut corner A24, 50 plates per case
4ti-LB0384/RIG	**FrameStar 384 Well Skirted PCR Plate, clear PP wells, black PC frame,** extra rigid, **low binding,** low profile, cut corner A24, 50 plates per case
4ti-0385	**FrameStar 384 Well Skirted PCR Plate, white PP wells, black PC frame,** cut corner A24, 50 plates per case
4ti-0386	**FrameStar 384 Well Skirted PCR Plate, black PP wells, black PC frame,** cut corner A24, 50 plates per case
4ti-0387	**FrameStar 384 Well Skirted PCR Plate, frosted PP wells, clear PC frame,** cut corner A24, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar 384 Well Skirted PCR Plate, Roche Style

Polypropylene wells, polycarbonate frame, cut corners A24 and P24; working volume: <30 µl, total well capacity: 55 µl; designed for use on the Roche LightCycler® 480 with 384 well block

- The dimensions of these plates are designed for optimum compatibility with the Roche LightCycler® 480, and are in a 384 well format for reaction volumes of up to 30 µl
- The rigid two-component design eliminates warping and distortion during the PCR process, making it ideal for use with robotic systems



Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Stackable

Wells

- Ultra-smooth, uniform, thin-walled polypropylene wells for optimum PCR and real-time (RT-qPCR) results
- <30 µl working volume, 55 µl total well capacity

Frame

- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with Roche LightCycler® 480
- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems

Options

- Available as a clear polycarbonate frame with clear polypropylene wells
- Also available with white wells for optimum signal-to-noise ratio when using fluorescent based assays
- Available barcoded upon request
- Combi packs available with qPCR Seal (4ti-0560)

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	10.60 ± 0.25 mm
Well depth	9.20 ± 0.10 mm
Well diameter	3.00 ± 0.10 mm
Distance to center of A1 from top edge	8.99 ± 0.25 mm
Distance to center of A1 from left edge	12.13 ± 0.25 mm
Pitch (distance between A1 and A2)	4.50 mm

Ordering Information

4ti-0380/C	**FrameStar 384 Well Skirted PCR Plate, Roche style, clear PP wells, clear PC frame,** cut corner A24/P24, 50 plates per case
4ti-0381	**FrameStar 384 Well Skirted PCR Plate, Roche style, white PP wells, clear PC frame,** cut corner A24/P24, 50 plates per case
Combi Pack	
4ti-0382	**FrameStar 384 Well Skirted PCR Plate, Roche style, plus qPCR Seal, 4ti-0381 plus 4ti-0560, combi pack,** 50 plates and seals per case
4ti-0383	**FrameStar 384 Well Skirted PCR Plate, Roche style, plus qPCR Seal, 4ti-0380/C plus 4ti-0560, combi pack,** 50 plates and seals per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar 96 Well Skirted PCR Plate

Low profile, 0.1 ml polypropylene wells, polycarbonate frame, cut corner H1; working volume: <100 µl, total well capacity: 200 µl

- The low profile wells of this plate are shorter than “standard” profile wells, which decrease the “dead space” between the heated lid of the thermal cycler and the sample in the well
- Eliminates condensation forming on the side wall of the tubes, preventing reduction in PCR volume and increasing the efficiency of the reaction
- Especially recommended for reaction volumes below 20 µl
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR, and makes it ideal for use with robotic systems
- Ultra-low DNA binding option available

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Stackable

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.1 ml (100 µl) working volume, 0.2 ml (200 µl) total well capacity

Frame

- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Recommended for low volume PCR
- Ideal for use with robotic systems
- Compatible with standard multichannel pipettes

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

Options

- Available with the following frame color options for the clear well variety: purple, blue, clear, green, red, black, and white
- Also available with a black frame and with a clear frame for the white well variety, for optimum signal-to-noise ratio when using fluorescent based assays
- Also available as a black frame with black wells for non-PCR fluorescent applications
- Extra rigid skirt option (4ti-0960/RIG) for use with Perkin-Elmer® Sciclone, Beckman, Hamilton, and other automation systems: eliminates the robotic grip picking up more than one plate at a time
- Ethylene oxide treated option available (4ti-OX960C/SBC) for forensic use
- Ultra-low DNA binding option available (4ti-LB0960/RIG) for sensitive applications with ultra-low DNA input and for maximum DNA recovery after low temperature storage and high temperature incubation
- Available barcoded on request
- Combi packs available (for 4ti-0960) with Optically Clear Windowed qPCR Seal (4ti-0565)
- Clear Polystyrene Lid (4ti-0287) compatible with PCR plates & robotics

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	16.10 ± 0.05 mm
Well depth	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0960	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, purple PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0960/B	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, blue PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0960/C	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, clear PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0960/G	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, green PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0960/R	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, red PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0960/X	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, black PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0960/W	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, white PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0961	**FrameStar 96 Well Skirted PCR Plate, white PP wells, black PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0961/C	**FrameStar 96 Well Skirted PCR Plate, white PP wells, clear PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0966	**FrameStar 96 Well Skirted PCR Plate, black PP wells, black PC frame,** low profile, cut corner H1, 50 plates per case
4ti-OX960C/SBC	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, clear PC frame,** with upstand, ethylene oxide treated, single barcoded, low profile, cut corner H1, 20 plates per case
4ti-0960/RIG	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, black PC frame,** extra rigid, low profile, cut corner H1, 50 plates per case
4ti-LB0960/RIG	**FrameStar 96 Well Skirted PCR Plate, clear PP wells, black PC frame,** extra rigid, **low binding,** low profile, cut corner H1, 50 plates per case
Combi Pack	
4ti-0960/0565	**FrameStar 96 Well Skirted PCR Plate, plus Optically clear windowed qPCR seal, 4TI-0960 plus 4TI-0565, combi pack,** 50 plates and seals per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar 96 Well Skirted Optical Bottom PCR Plate

Low profile, flat optical bottom, 0.1ml clear polypropylene wells, clear polycarbonate frame, cut corner H1, working volume: <100µl, total well capacity: 180µl

- The FrameStar 96 Well Skirted Optical Bottom PCR Plates (next to their counterpart within our Individual Access range, 4ti-0970/RA) are currently unique in the market, being suitable for use in both microscopy and PCR
- Optical bottom plates are ideal for applications requiring single cell sorting followed by molecular biology techniques such as (q)PCR and sequencing
- The flat bottoms enable excellent stackability, making these plates well suited for small sample volume storage such as compound libraries, with no risk of damaging the seal of the plate below
- Additionally, the small well volume enables excellent sample recovery
- The low profile wells of this plate are shorter than “standard” profile wells, which decreases the “dead space” between the heated lid of the thermal cycler and the reagents in the well
- This reduces condensation forming on the side wall of the tubes, moderating changes in PCR volume and increasing the efficiency of the reaction
- This is especially recommended for reaction volumes below 20µl
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR, and makes it ideal for use with robotic systems

Key Features

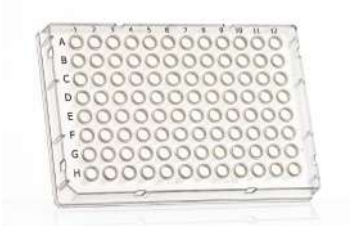
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Stackable

Well

- Ultra-smooth, uniform, thin-walled polypropylene wells for optimum PCR and real-time (RT-qPCR) results
- <0.1ml (100µl) working volume, 0.18ml (180µl) total well capacity

Frame

- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification



Use

- Suitable for microscopy and small volume sample storage
- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems

Options

- Also available as an Individual Access plate (4ti-0970/RA) with individually detachable and sealable wells
- Available barcoded upon request

Specifications

Parameter	Value
Plate length	127.70 ± 0.25mm
Plate width	85.48 ± 0.25mm
Plate height	16.10 ± 0.25mm
Well depth	12 ± 0.10mm
Well diameter	5.46 ± 0.10mm
Distance to center of A1 from top edge	11.24 ± 0.25mm
Distance to center of A1 from left edge	14.38 ± 0.25mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0970	**FrameStar 96 Well Skirted Optical Bottom PCR Plate, clear PP wells, clear PC frame,** low profile, cut corner H1, 50 plates per case

4titude FrameStar 96 Well Semi-Skirted PCR Plate, Roche Style

Low profile, 0.1ml polypropylene wells, polycarbonate frame, cut corner H12; working volume: <100µl, total well capacity: 200µl; designed for use on Roche LightCycler® 96 and 480 (with 96 well block

- Our FrameStar Roche Style plates are designed to achieve optimized assay conditions on the Roche LightCycler® 96 and 480 (with 96 well block)
- This particular style of plate is in a low profile 96-well format; perfect for reaction volumes of 10-100µl
- The wells are shorter than "standard" profile wells, which decrease the "dead space" between the heated lid of the thermal cycler and the sample in the well
- This eliminates condensation forming on the side wall of the tubes, preventing reduction in PCR volume and increasing the efficiency of the reaction
- This is especially recommended for reaction volumes below 20µl
- The semi-skirted frame allows for labeling or barcoding

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Well

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.1ml (100µl) working volume, 0.2ml (200µl) total well capacity

Frame

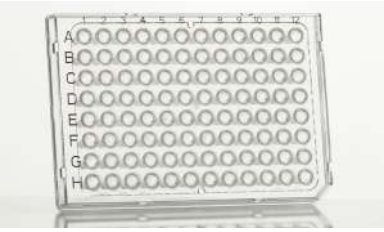
- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with the Roche LightCycler® 96 and 480 (with 96 well block)
- Recommended for low volume PCR
- Ideal for use with robotic systems
- Compatible with standard multichannel pipettes

Options

- Standard plate comes with clear polypropylene wells on a clear polycarbonate frame
- Also available with white wells for optimum signal-to-noise ratio when using fluorescent based assays



- Available barcoded upon request
- Combi packs available with qPCR adhesive seal (4ti-0560) and (for 4ti-0951) with Optically Clear Windowed qPCR Seal (4ti-0564)

Specifications

Parameter	Value
Plate length	127.70 ± 0.25mm
Plate width	85.48 ± 0.25mm
Plate height	15.60 ± 0.25mm
Well depth	15.10 ± 0.10mm
Well diameter	5.50 ± 0.10mm
Distance to center of A1 from top edge	11.24 ± 0.25mm
Distance to center of A1 from left edge	14.38 ± 0.25mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0950/C	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, clear PP wells, clear PC frame,** low profile, cut corner H12, 50 plates per case
4ti-0951	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, white PP wells, clear PC frame,** low profile, cut corner H12, 50 plates per case
Combi Packs	
4ti-0952	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, plus qPCR Seal, 4TI-0951 plus 4TI-0560, combi pack,** 50 plates and seals per case
4ti-0953	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, plus qPCR Seal, 4TI-0950/C plus 4TI-0560, combi pack,** 50 plates and seals per case
4ti-0951/0565	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, plus Optically clear windowed qPCR seal, 4TI-0951 plus 4TI-0565, combi pack,** 50 plates and seals per case

4titude FrameStar 96 Well Semi-Skirted PCR Plate, Roche Style, High Sensitivity

Low profile, 0.1 ml polypropylene wells, polycarbonate frame, cut corner H12, working volume: <100 µl, total well capacity: 200 µl; designed for use on Roche LightCycler® 96 and 480 (with 96 well block); extra white wells for improved sensitivity in fluorescent assays

- Our FrameStar Roche Style plates are designed to achieve optimized assay conditions on the Roche LightCycler® 96 and 480 (with 96 well block)
- This particular style of plate is in a low profile 96-well format; perfect for reaction volumes of 10-100 µl
- The wells are shorter than "standard" profile wells, which decrease the "dead space" between the heated lid of the thermal cycler and the sample in the well. This eliminates condensation forming on the side wall of the tubes, preventing reduction in PCR volume and increasing the efficiency of the reaction
- Especially recommended for reaction volumes below 20 µl
- The extra white wells allow for increased sensitivity in fluorescent assays
- The semi-skirted frame allows for labeling or barcoding

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.1 ml (100 µl) working volume, 0.2 ml (200 µl) total well capacity

Frame

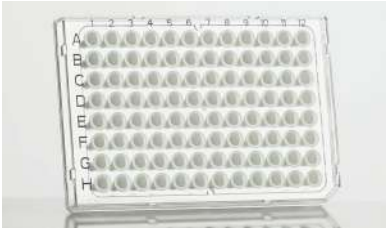
- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with the Roche LightCycler® 96 and 480 (with 96 well block)
- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems

Options

- Plates are available with a clear polycarbonate frame and extra white wells for improved sensitivity when using fluorescent based assays
- Combi packs available with qPCR Adhesive Seal (4ti-0560)
- Available barcoded upon request



Specifications

Parameter	Value
Plate length	127.70 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.60 ± 0.05 mm
Well depth	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ct values Comparison

FrameStar Roche Style, High Sensitivity Plate	
Ct value	17.23
Δ Ct	-3.05
Competitor R equivalent plates	
Ct value	20.28
Δ Ct	0

Ordering Information

4ti-0954	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, High Sensitivity,** extra **white PP wells, clear PC frame,** low profile, cut corner H12, 50 plates per case
Combi Pack	
4ti-0954/0560	**FrameStar 96 Well Semi-Skirted PCR Plate, Roche style, High Sensitivity, extra white PP wells, plus qPCR Seal, 4TI-0954 plus 4TI-0560, combi pack,** 50 plates and seals per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

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4titude FrameStar 96 Well Semi-Skirted PCR Plate, ABI® FastPlate Style

Low profile, 0.1 ml polypropylene wells, polycarbonate frame with upstand, cut corner A1, working volume: <100 µl, total well capacity: 200 µl; designed for use on ABI® Fast Block cyclers

- This semi-skirted low profile plate is recommended for use with ABI® Fast block thermal cyclers
- The low profile wells of this plate are shorter than "standard" profile wells, which decrease the "dead space" between the heated lid of the thermal cycler and the sample in the well
- This eliminates condensation forming on the side wall of the tubes, preventing reduction in PCR volume and increasing the efficiency of the reaction
- Especially recommended for reaction volumes below 20 µl
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR, and makes it ideal for use with robotic systems. Its skirt also allows for labeling or barcoding

Key Features

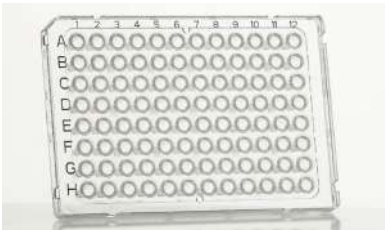
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Stackable

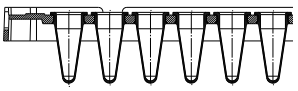
Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.1 ml (100 µl) working volume, 0.2 ml (200 µl) total well capacity

Frame

- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results





- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with ABI® Fast block thermal cyclers
- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems

Options

- Standard plate comes with clear polypropylene wells with a clear polypropylene frame
- Also available with white wells for optimum signal-to-noise ratio when using fluorescent based assays
- Also available as a clear frame with frosted wells for use with ABI®/LifeTechnologies® qPCR instruments
- Combi packs available (for 4ti-0910/C) with Optically Clear Windowed qPCR Seal (4ti-0565)
- Available barcoded upon request

Ordering Information

4ti-0910/C	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Fastplate style, clear PP wells, clear PC frame,** with upstand, low profile, cut corner A1, 50 plates per case
4ti-0910/C/10P	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Fastplate style, clear PP wells, clear PC frame,** with upstand, low profile, cut corner A1, 10 plates per case
4ti-0911	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Fastplate style, white PP wells, clear PC frame,** with upstand, low profile, cut corner A1, 50 plates per case
4ti-0912	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Fastplate style, frosted PP wells, clear PC frame,** with upstand, low profile, cut corner A1, 50 plates per case
4ti-0912/10P	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Fastplate style, frosted PP wells, clear PC frame,** with upstand, low profile, cut corner A1, 10 plates per case
Combi Pack	
4ti-0910/C/ 0565	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Fastplate style, plus Optically clear windowed qPCR seal, 4TI-0910/C plus 4TI-0656, combi pack,** 50 plates and seals per case

Specifications

Parameter	Value
Plate length	127.70 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	16.70 ± 0.10 mm
Well depth	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

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4titude FrameStar 96 Well Semi-Skirted PCR Plate With Upstand, ABI® Style

High profile, 0.2 ml polypropylene wells, polycarbonate frame with upstand, cut corner A12, working volume: <200 µl, total well capacity: 300 µl; designed for use on ABI® instruments

- This ABI® Style PCR plate offers the benefits of our 2-component design to ABI® standard block users
- This design combines the advantages of ultra-thin wall polypropylene tubes for optimum PCR results with a rigid polycarbonate skirt and deck for the highest thermal stability
- We recommend this semi-skirted plate for use with ABI® thermal cyclers and sequencers; it can be used directly with ABI® instruments with no adapters necessary
- The only case where this is not true is with the ABI Fast Block thermal cyclers; in this case, using our FrameStar Fast Plate is recommended instead

Key Features

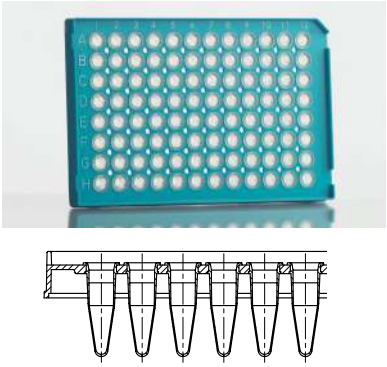
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time quantitative PCR (RT-qPCR) results
- <0.2 ml (200 µl) working volume, 0.3 ml (300 µl) total well capacity

Frame

- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification



Use

- Ideal for use with ABI® thermal cyclers & sequencers
- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems

Options

- Available with the following frame color options for the clear well variety: purple, blue, clear, green, red, and black
- Also available as a black frame with white wells for optimum signal-to-noise ratio when using fluorescent based assays
- Ethylene oxide treated option available for forensic use
- Available barcoded upon request
- Combi packs available (for 4ti-0730/C) with Optically Clear Windowed qPCR Seal (4ti-0565)

Specifications

Parameter	Value
Plate length	124.26 ± 0.25 mm
Plate width	83.97 ± 0.25 mm
Plate height	23.20 ± 0.05 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	10.495 ± 0.25 mm
Distance to center of A1 from left edge	12.63 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

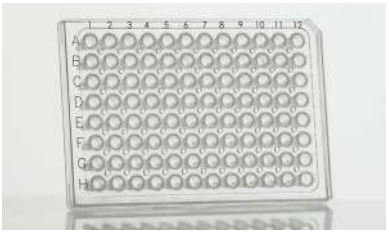
4ti-0730	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, purple PC frame,** with upstand, high profile, cut corner A12, 50 plates per case
4ti-0730/B	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, blue PC frame,** with upstand, high profile, cut corner A12, 50 plates per case
4ti-0730/C	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame,** with upstand, high profile, cut corner A12, 50 plates per case
4ti-0730/C/10P	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame,** with upstand, high profile, cut corner A12, 10 plates per case
4ti-0730/G	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, green PC frame,** with upstand, high profile, cut corner A12, 50 plates per case
4ti-0730/R	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, red PC frame,** with upstand, high profile, cut corner A12, 50 plates per case
4ti-0730/X	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, black PC frame,** with upstand, high profile, cut corner A12, 50 plates per case
4ti-OX730C/SBC	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI Style, clear PP wells, clear PC frame,** with upstand, **ethylene oxide treated**, **single barcoded**, high profile, cut corner A12, 20 plates per case
Combi Pack	
4ti-0730/C/0565	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame,** with upstand, high profile, cut corner A12, 50 plates per case **plus 4ti-0565**

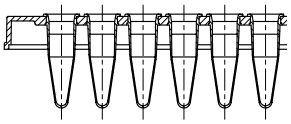
For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar 96 Well Semi-Skirted PCR Plate, ABI® Style

High profile, 0.2 ml polypropylene wells, polycarbonate frame, cut corner A12; working volume: <200 µl, total well capacity: 300 µl; designed for use on all major cyclers, including ABI® instruments with standard 96 well blocks

- Specifically designed to be directly compatible with all major thermal cyclers, this plate can be used directly in ABI® 96 well instruments without the need for any adapters
- The rigid FrameStar 2-component design eliminates warping and distortion during PCR, making it ideal for use with robotic systems
- The semi-skirt allows for labeling or barcoding for sample tracking





Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.2 ml (200 µl) working volume, 0.3 ml (300 µl) total well capacity

Frame

- Cut corner at A12
- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Perfect for ABI® thermal cyclers & sequencers
- Recommended for low volume PCR
- Ideal for use with robotic systems
- Compatible with standard multichannel pipettes

Options

- Available with the following frame color options for the clear well variety: purple, blue, clear, green, red, and black
- Also available as a black frame with white wells for optimum signal-to-noise ratio when using fluorescent based assays
- Also available as a clear frame with frosted wells for use with ABI®/LifeTechnologies® qPCR instruments
- Ultra-low DNA binding option available (4ti-LB0770/C) for sensitive applications with ultra-low DNA input and for maximum DNA recovery after low temperature storage and high temperature incubation; learn more about our low binding range
- Ethylene oxide treated option available (4ti-OX770C/SBC) for forensic use
- Available barcoded upon request
- FrameStar 96 Lid (4ti-0289) available

Specifications

Parameter	Value
Plate length	124.26 ± 0.25 mm
Plate width	83.97 ± 0.25 mm
Plate height	20.70 ± 0.10 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	10.495 ± 0.25 mm
Distance to center of A1 from left edge	12.63 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

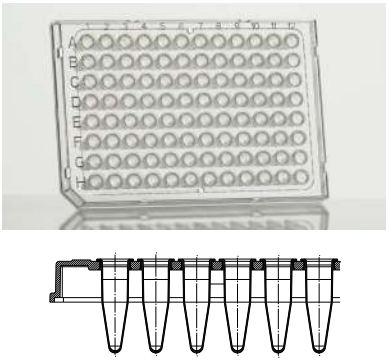
Ordering Information

4ti-0770	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, purple PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0770/B	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, blue PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0770/C	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0770/C/10P	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame,** high profile, cut corner A12, 10 plates per case
4ti-0770/G	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, green PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0770/R	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, red PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0770/X	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, black PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0771	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, white PP wells, black PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0772	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, frosted PP wells, clear PC frame,** high profile, cut corner A12, 50 plates per case
4ti-0772/10P	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, frosted PP wells, clear PC frame,** high profile, cut corner A12, 10 plates per case
4ti-OX770C/SBC	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame,** with upstand, **ethylene oxide treated, single barcoded**, high profile, cut corner A12, 20 plates per case
4ti-LB0770/C	**FrameStar 96 Well Semi-Skirted PCR Plate, ABI style, clear PP wells, clear PC frame, low binding**, high profile, cut corner A12, 50 plates per case

4titude FrameStar 96 Well Semi-Skirted PCR Plate

High profile, 0.2 ml polypropylene wells, polycarbonate frame, cut corner H1, working volume: <200 µl, total well capacity: 300 µl; universal semi-skirted plate designed for use on standard thermal cyclers

- The rigid FrameStar 2-component design eliminates warping and distortion during PCR, making it ideal for use with robotic systems
- The semi-skirted allows for labeling or barcoding for sample tracking



Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.2 ml (200 µl) working volume, 0.3 ml (300 µl) total well capacity

Frame

- Cut corner at H1
- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Recommended for low volume PCR
- Compatible with standard multichannel pipettes
- Ideal for use with robotic systems

Options

- Also available with white wells for optimum signal-to-noise ratio when using fluorescent based assays
- Available barcoded upon request
- Similar plate with a cut corner at A12 for use with ABI® thermal cyclers and sequencers available: FrameStar 96 Well Semi-Skirted PCR Plate, ABI® Style

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	20.70 ± 0.25 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0900/C	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, clear PC frame,** high profile, cut corner H1, 50 plates per case
4ti-0901	**FrameStar 96 Well Semi-Skirted PCR Plate, white PP wells, clear PC frame,** high profile, cut corner H1, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar 96 Well Non-Skirted PCR Plate

High profile, 0.2 ml polypropylene wells, polycarbonate frame, cut corner H1, working volume: <200 µl, total well capacity: 300 µl; universal non-skirted plate designed for use on all major thermal cyclers

- The rigid FrameStar 2-component design eliminates warping and distortion during PCR, meaning seal integrity is not compromised and less of your sample is lost through evaporation

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Greatest compatibility with different thermal cyclers

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.2 ml (200 µl) working volume, 0.3 ml (300 µl) total well capacity

Frame

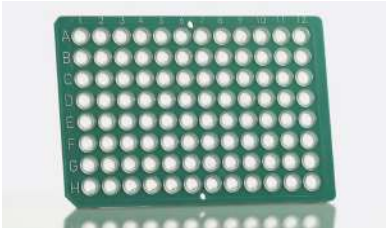
- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

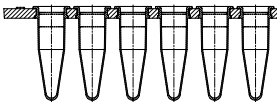
Use

- Recommended for low volume PCR
- Compatible with standard multichannel pipettes

Options

- Available with the following frame color options for the clear well variety: purple, blue, clear, green, red, and black
- Also available as a black frame with white wells for optimum signal-to-noise ratio when using fluorescent based assays





Specifications

Parameter	Value
Plate length	120.00 ± 0.25 mm
Plate width	80.00 ± 0.25 mm
Plate height	20.70 ± 0.10 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	8.50 ± 0.25 mm
Distance to center of A1 from left edge	10.50 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0710	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, purple PC frame,** high profile, cut corner H1, 50 plates per case
4ti-0710/B	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, blue PC frame,** high profile, cut corner H1, 50 plates per case
4ti-0710/C	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, clear PC frame,** high profile, cut corner H1, 50 plates per case
4ti-0710/G	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, green PC frame,** high profile, cut corner H1, 50 plates per case
4ti-0710/R	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, red PC frame,** high profile, cut corner H1, 50 plates per case
4ti-0711	**FrameStar 96 Well Non-Skirted PCR Plate, white PP wells, black PC frame,** high profile, cut corner H1, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar 96 Well Non-Skirted PCR Plate, Low Profile

Low profile, 0.1 ml polypropylene wells, polycarbonate frame, cut corner H1, working volume: <100 µl, total well capacity: 200 µl; universal non-skirted, low profile plate designed for use on all major thermal cyclers

- The low profile wells of this plate are shorter than "standard" profile wells, which decrease the "dead space" between the heated lid of the thermal cycler and the sample in the well
- This eliminates condensation forming on the side wall of the tubes, preventing reduction in PCR volume and increasing the efficiency of the reaction
- This is especially recommended for reaction volumes below 20 µl
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR, meaning seal integrity is not compromised and less of your sample is lost through evaporation

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Greatest compatibility with different thermal cyclers

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- <0.1 ml (100 µl) working volume, 0.2 ml (200 µl) total well capacity

Frame

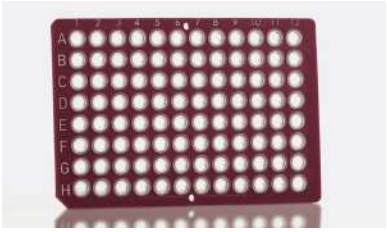
- Rigid polycarbonate frame for added mechanical stability
- Significantly reduced thermal expansion and sample evaporation for improved consistency in PCR results
- Improved seal integrity due to thermal stability of frame
- Alphanumeric grid reference to aid well and sample identification

Use

- Recommended for low volume PCR
- Compatible with standard multichannel pipettes

Options

- Available with the following frame color options for the clear well variety: purple, blue, and clear
- Also available as a black frame with white wells for optimum signal-to-noise ratio when using fluorescent based assays



Specifications

Parameter	Value
Plate length	120.00 ± 0.25 mm
Plate width	80.00 ± 0.25 mm
Plate height	15.60 ± 0.05 mm
Well depth	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	18.50 ± 0.25 mm
Distance to center of A1 from left edge	10.50 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0720	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, purple PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0720/B	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, blue PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0720/C	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, clear PC frame,** low profile, cut corner H1, 50 plates per case
4ti-0721	**FrameStar 96 Well Non-Skirted PCR Plate, clear PP wells, black PC frame,** low profile, cut corner H1, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar Breakable PCR Plates

FrameStar Breakable PCR Plates

FrameStar Breakable PCR Plates can be easily divided into smaller plate sections, ensuring no tubes are wasted.

The plates combine the advantages of the FrameStar and 8 Well PCR Tube Strip with PC Frame range as well as single tube formats. The result is PCR consumables with thin-walled polypropylene (PP) tubes for optimal PCR results with a rigid polycarbonate frame for easy and reliable handling.

The two-component design minimizes evaporation allowing for the downscaling of reaction volumes and the breakability of the plates offers flexibility to suit your experiment size. Once broken down, strips remain straight and stable for ease of handling and to enable effortless sample tracking if 2D coded.

FrameStar Breakable PCR Plates - Division brings flexibility!

- Dividable vertically, or both vertically and horizontally
- Flexible solutions for every application
- Available as high and low profile plates to suit your reaction volume and instrument format
- Highest instrument compatibility
- Seven frame colors with clear or white tubes available
- Color coding for different workflows
- 2D coded options available
- Error-free sample tracking
- Plate segmentation can be automated
- Also available as pre-cut strips, see 8 Well PCR Tube Strip with PC Frame, page 136

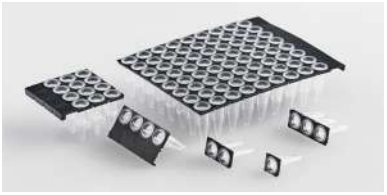
Sealing options

Plates can be sealed with standard heat or adhesive seals and then cut to produce individually sealed strips of wells.

Alternatively, perforated seals or Individual access seals can be used depending on individual tube, 8 or 12 well strips required . Please refer to azenta.com for information on semi-automated, fully automated and individual access heat sealers.

FrameStar Vertically Breakable & Vertically and Horizontally Breakable PCR Plates can be easily divided into smaller plate sections, ensuring no tubes are wasted.

FrameStar Breakable PCR Plates offer you all the flexibility of tube strips, in a plate format



FrameStar Breakable PCR Plates, dividable both horizontally and vertically

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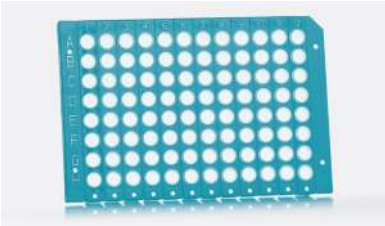
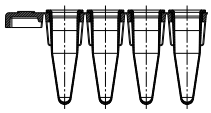
4titude FrameStar Vertically Breakable PCR Plate



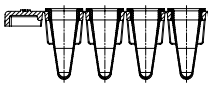
High profile

0.2 ml PP wells, working volume: <200 µl, total well capacity: 300 µlAC



Low profile

0.1 ml PP wells, working volume: <100 µl, total well capacity: 200 µl



96 well semi-skirted plate, vertically scored, snaps easily into strips of 8 tubes or part plates, cut corner A12

- Our FrameStar Vertically Breakable PCR Plates utilize the 2-component design of the FrameStar range, which combines the advantages of thin-walled polypropylene tubes for optimum PCR results and a rigid frame portion for easy and reliable handling

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- 2-component design prevents distortion of tube strips

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Standard 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Low profile 0.1ml (100µl) working volume, with a 0.2ml (200µl) total well capacity when used with sealing options

Frame

- End tabs for easy handling and labeling
- Eliminates strip breakage
- Alphanumeric grid reference to aid well and sample identification

Use

- Rigid PCR plate that can be broken into smaller plate sections
- Fits majority of thermal cyclers
- Compatible with standard multichannel

Options

- Available with the following frame color options for the clear well variety: purple, blue, clear, green, red, black, and white
- Also available as a black frame with white wells for use with optical assays such as qPCR
- 2D coding option
- 2D code reader available

Specifications

Parameter	Value (High Profile)	Value (Low Profile)
Plate length	125.11 ± 0.25 mm	125.11 ± 0.25 mm
Plate width	83.22 ± 0.25 mm	83.22 ± 0.25 mm
Plate height	20.80 ± 0.05 mm	15.60 ± 0.25 mm
Well depth	20.30 ± 0.10 mm	15.10 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm	5.50 ± 0.10 mm
Distance to center of A1 from top edge	10.11 ± 0.25 mm	10.11 ± 0.25 mm
Distance to center of A1 from left edge	13.06 ± 0.25 mm	13.06 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm	9.00 mm

2D coding is available for this product. Contact us for more information

Ordering Information

FrameStar Vertically Breakable PCR Plate High profile

4ti-1000/P	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, purple PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1000/B	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, blue PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1000/C	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, clear PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1000/G	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, green PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1000/R	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, red PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1000/X	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, black PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1000/W	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, white PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case
4ti-1001	**FrameStar 96 Well Semi-Skirted PCR Plate, white PP wells, black PC frame,** vertically breakable, high profile, cut corner A12, 50 plates per case

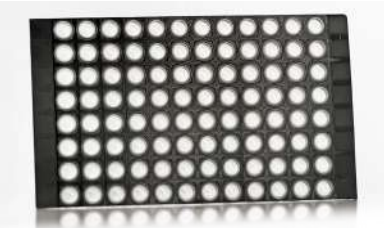
FrameStar Vertically Breakable PCR Plate Low profile

4ti-1200/P	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, purple PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1200/B	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, blue PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1200/C	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, clear PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1200/G	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, green PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1200/R	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, red PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1200/X	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, black PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1200/W	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, white PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case
4ti-1201	**FrameStar 96 Well Semi-Skirted PCR Plate, white PP wells, black PC frame,** vertically breakable, low profile, cut corner A12, 50 plates per case

FrameStar Breakable PCR plates are not compatible with the ABI 9700 dual block thermal cycler.

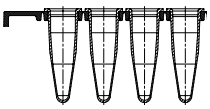
For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude FrameStar Vertically and Horizontally Breakable PCR Plate



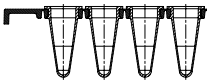
High profile

0.2 ml PP wells, working volume: <200 µl, total well capacity: 300 µl



Low profile

0.1 ml PP wells, working volume: <100 µl, total well capacity: 200 µl



96 well rigid plate, vertically and horizontally scored, snaps easily into part plates, 8 well strips, 12 well strips, part strips or individual tubes

- Azenta's FrameStar Vertically and Horizontally Breakable PCR Plates allow for the most flexible, efficient and cost-effective use of FrameStar PCR plates, ensuring not a single tube is wasted
- Our Vertically and Horizontally Breakable PCR Plates utilize the 2-component design of the FrameStar range, which combines the advantages of thin-walled polypropylene tubes for optimum PCR results and a rigid frame portion for easy and reliable handling

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Standard 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Low profile, 0.1ml wells, <100µl working volume, with a 200 µl total well capacity when used with sealing options

Use

- Plates can be broken up in both 8-strip vertical and 12-strip horizontal directions, resulting in individual strips, part strips, or even individual tubes, giving you the highest range of flexibility
- Breaking a plate is more accurate, more convenient, and safer than cutting it with scissors, as it avoids damaging the sealing rings and contamination of the wells
- Plates can be filled, sealed and separated for storage, processing or distribution
- Easy to break at any temperature
- The plate can be adapted to individual pipetting schemes without the need to waste empty wells
- Separated strips or tubes can be used for the positive control to avoid contamination of the samples
- Compatible with all instruments that fit non-skirted, high profile plates
- NB: In some cases you may have to break off the end tabs for it to fit
- Compatible with standard multichannel pipettes

Options

- 2D coding option
- 2D code reader available

Specifications

Parameter	Value (High Profile)	Value (Low Profile)
Plate length	125.00 ± 0.25 mm	125.00 ± 0.25 mm
Plate width	72.0 ± 0.25 mm	72.0 ± 0.25 mm
Plate height	20.70 ± 0.05 mm	15.60 ± 0.15 mm
Well depth	20.20 ± 0.10 mm	15.10 ± 0.15 mm
Well diameter	5.46 ± 0.10 mm	5.50 ± 0.10 mm
Distance to center of A1 from top edge	4.5 ± 0.25 mm	4.50 ± 0.25 mm
Distance to center of A1 from left edge	8.5 ± 0.25 mm	8.50 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm	9.00 mm

Ordering Information

4ti-1300/X	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, black PC frame,** breakable vertically and horizontally, high profile, 50 plates per case
4ti-1400/X	**FrameStar 96 Well Semi-skirted PCR Plate, clear PP wells, black PC frame,** breakable vertically and horizontally, low profile, 50 plates per case

In some cases it may be required to break off the end tabs to allow for a perfect fit.

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

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4titude FrameStar Individual Access 96 Well PCR Plates

FrameStar is our superior technology of making PCR plates with ultra-thin polypropylene wells fitted into a robust polycarbonate frame that provides excellent stability. Our Individual Access plates develop this technology further to supply a novel 96 well plate with individually removable wells combining both flexibility and robustness.

Individual Access plates provide flexibility and robustness for your assay setups. 96 well plate format is suitable for high throughput reagents dispensing on liquid handling robots, while individually sealable and removable wells provide flexibility to end users to accommodate varying throughputs.

The wells are made from medical grade polypropylene which is perfectly suited for use in PCR as well as for long term storage. The exact number of wells required can be used, meaning no wastage of consumables or reagents. Empty frames are also available for tubes to be transferred to, however, frames can be re-used multiple times, depending on their application.

Each well clicks into place within the frame, holding it securely for use with automation and for transport. Additionally, the fit of the tubes is not compromised following a PCR run due to resistance of the rigid frame to thermal expansion.

- **SBS footprint –** suitable for automation
- **Rigid frame –** does not expand during PCR cycles allowing for individual tubes to fit tightly in the frame before and after PCR
- **PP wells –** low binding to nucleic acids and high solvent resistance, ideal for both PCR and storage
- **Thin walled tubes –** optimal heat transfer during PCR
- **Individually sealed using individual seals, specifically designed individual plates –** tubes can be filled, sealed and then single tubes removed
- **Tubes can be removed and inserted again –** ultimate flexibility

Invidual Access plates provide the greatest flexibility in PCR plates, affording handling of individual wells in a 96 well plate format.

Individual Access 96 Well Skirted PCR Plate

4titude Individual Access 96 Well Skirted PCR Plates

Low profile, individually removable 0.1 ml polypropylene wells, rigid polycarbonate frame, cut corner H1, working volume: <100 µl, total well capacity: 200 µl

- 96 well, fully skirted, low profile format with each tube inserted separately into the plate frame, allowing for selection and removal of individual tubes from the plate
- Each tube clicks into place in the frame ensuring tubes are secure once inserted
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR
- Together with the SBS footprint, this makes the plate suitable for use with robotic systems, ideal for both small to high throughput labs
- Empty frames are available for tubes to be transferred to
- The frames can be re-used multiple times, depending on the application

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

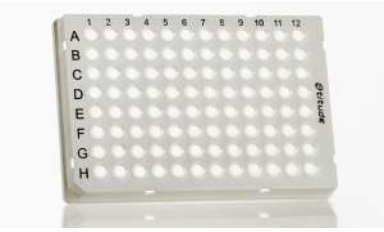
- Individually removable from the rigid frame, while the rest of the tubes can remain in storage, reducing freeze-thawing of the whole plate
- Thin walled tubes are made from PP for optimal results in (q)PCR whilst also being suitable for storage and incubation
- <100 µl working volume, <200 µl total well capacity

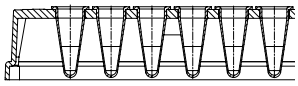
Frame

- Rigid polycarbonate frame provides mechanical stability of the plate
- Alphanumeric grid reference to aid well and sample identification

Use

- Ideal for use with robotic systems
- Fewer transfer steps as the same tube can be used for both (q)PCR and storage
- Each tube can still be separated after sealing
- Each tube can be individually heat sealed using the Individual Access Pierce Heat Seal Strong, such as the contents of each tube is left secure from cross contamination and evaporation for storage and transfer





Options

- Empty frames are available for tubes to be transferred to; frames can be re-used multiple times, depending on the application
- The plate can be sealed in one step using our range of Individual Access Heat Seals on on our fully or semi-automated heat sealers (using the 4ti-0613 Individual Access adapter), resulting in individually sealed tubes with pierceable seals to allow for sample access
- Available barcoded upon request
- We also offer customization of the Individual Access Plates such as color coding of the individual wells; please contact us for details

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.50 ± 0.25 mm
Well depth	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0960/RA	**Individual Access 96 Well Skirted PCR Plate, clear PP wells, white rigid PC frame,** individually removable wells, low profile, cut corner H1, 50 plates per case
4ti-0960/RA/F	**Individual Access 96 Well Skirted PCR Plate Frame, for individually removable wells, white rigid PC frame,** cut corner H1, 10 frames per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude Individual Access 96 Well Skirted Optical Bottom PCR Plates

Low profile, flat optical bottom, 0.1 ml clear polypropylene tubes, black rigid polycarbonate frame, cut corner H1, working volume: <100 µl, total well capacity: 180 µl

- 96 well, fully skirted, low profile format with each tube inserted separately into the plate frame, allowing for selection and removal of individual tubes from the plate
- Each tube clicks into place in the frame ensuring tubes are secure once inserted
- The Individual Access 96 Well Skirted Optical Bottom PCR Plates (next to their counterpart within our FrameStar range, 4ti-0970) are currently unique in the market, being suitable for use in both microscopy and PCR, for example, when single cell sorting is followed by molecular biology applications such as qPCR and sequencing
- Due to their flat bottoms and stackability, these plates are well suited for small sample volume storage (such as compound libraries), with no risk of damaging the seal of the plate below
- Additionally, the small well volume enables excellent sample recovery
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR
- Together with the SBS footprint, this makes the plate suitable for use with robotic systems, ideal for both small and high-throughput labs
- Empty frames are available for tubes to be transferred to. The frames can be re-used multiple times, depending on the application

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

- Individually removable from the rigid frame, while the rest of the tubes can remain in storage, reducing freeze-thawing of the whole plate
- Thin walled tubes are made from PP for optimal results in (q)PCR whilst also being suitable for storage and incubation
- <100 µl working volume, <180 µl total well capacity

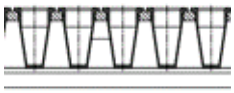
Frame

- Rigid polycarbonate frame provides mechanical stability of the plate
- Alphanumeric grid reference to aid well and sample identification

Use

- Suitable for microscopy and small volume sample storage
- Ideal for use with robotic systems
- Fewer transfer steps as the same tube can be used for microscopy, (q)PCR and storage
- Each tube can still be separated after sealing

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.



- Each tube can be individually heat sealed using the Individual Access Pierce Heat Seal Strong, such as the contents of each tube is left secure from cross contamination and evaporation for storage and transfer

Options

- Also available as a FrameStar plate (4ti-0970) with fixed wells
- Empty frames are available for tubes to be transferred to; frames can be re-used multiple times, depending on the application
- We also offer customization of the Individual Access Plates such as color coding of the individual wells; please contact us for details
- Available barcoded upon request, please contact us for details
- The plate can be sealed in one step using our range of Individual Access Heat Seals on our Automated Individual Access Heat Sealer (see page 211) or or our Semi-Automated Sheet Heat Sealer (see page 213) (using the 4ti-0613 Individual Access adapter), resulting in individually sealed tubes with pierceable seals to allow for sample access

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.50 ± 0.25 mm
Well depth	12.00 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0970/RA	**Individual Access 96 Well Skirted Optical Bottom PCR Plate, clear PP wells, black PC frame,** individually removable wells, low profile, cut corner H1, 50 plates per case
4ti-0970/RA/F	**Individual Access 96 Well Skirted PCR Plate Frame, for individually removable wells, black rigid PC frame,** cut corner H1, 10 frames per case

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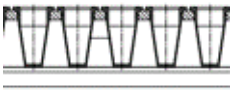
4titude Individually Removable Well 96 Well Skirted Flat Bottom PCR Plate, 2D Coded

Low profile, flat bottom 2D coded, 0.1 ml clear polypropylene tubes, white rigid polycarbonate frame, linear barcoded, cut corner H1, working volume: <100 µl, total well capacity: 180 µl

- 96 well, fully skirted, low profile format with each tube inserted separately into the plate frame, allowing for selection and removal of individual tubes from the plate
- Each tube clicks into place in the frame ensuring tubes are secure once inserted
- We have now extended our Individual Access range to include PCR plates with 2D coded flat bottoms for applications that require superior sample tracking
- In applications where it is essential for samples to be tracked throughout their processing, e.g. for clinical samples, tube labeling is a far safer and reliable method compared to cap or seal labeling (which can be misplaced, damaged or rendered unreadable after piercing)
- Our plates have a unique 2D code printed on the bottom of the well and a linear barcode on the side of the plate to allow for identification of both the plate and individual tubes within
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR
- Together with the SBS footprint, this makes the plate suitable for use with robotic systems, ideal for both small and high throughput labs
- Empty frames are available for tubes to be transferred to
- The frames can be re-used multiple times, depending on the application
- Sample tubes can be identified by the unique 2D code on the base of the wells, removed from the Individual Access plate quickly and easily, and moved to another Individual Access frame for downstream processing or storage
- Quick selection of desired tubes reduces the time needed for the sample plate to be out of the freezer and therefore reduces the chance of other wells defrosting in the meantime
- Flat bottom PCR plates can be stacked, allowing for optimal use of freezer space as multiple plates can be housed in the same space as a storage rack
- The 2D codes on the bottom of the wells can be read by most 2D data-matrix readers including Azenta Rack Readers
- The codes are highly scratch resistant and can withstand cold storage (-80°C), temperatures up to 100°C and solvents such as DMSO
- 2D data-matrix codes utilize data redundancy so even if codes are partly destroyed, the information will still be retained
- Each code is tested for readability and guaranteed to be unique



Key Features

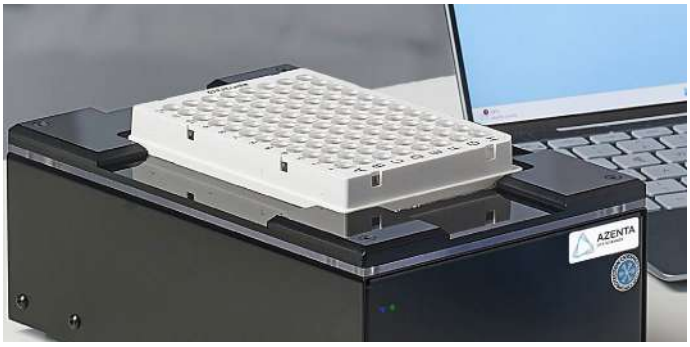
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

- Individually removable from the rigid frame, while the rest of the tubes can remain in storage, reducing freeze-thawing of the whole plate
- Thin walled tubes are made from PP for optimal results in (q)PCR whilst also being suitable for storage and incubation
- <100 µl working volume, <180 µl total well capacity

Frame

- Rigid polycarbonate frame provides mechanical stability of the plate
- These plates are labeled with linear Code 128-format barcodes to aid identification and traceability for your samples
- Alphanumeric grid reference to aid well and sample identification



4titude Individually Removable Well 96 Well Skirted Flat Bottom PCR Plate, 2D Coded

Use

- Suitable for small volume sample storage, allowing for optimal use of freezer space as multiple plates can be housed in the same space as a storage rack
- Ideal for use with robotic systems
- Fewer transfer steps as the same tube can be used for microscopy, (q)PCR and storage
- Each tube can be individually heat sealed using the Individual Access Pierce Heat Seal Strong, such as the contents of each tube is left secure from cross contamination and evaporation for storage and transfer
- Each tube can still be separated after sealing

Options

- Also available as a Individual Access optical bottom plate (4ti-0970/RA) with black frame, ideal for microscopy and PCR
- Empty frames are available for tubes to be transferred to; frames can be re-used multiple times, depending on the application
- We also offer customization of the Individual Access Plates such as color coding of the individual wells; please contact us for details
- The plate can be sealed in one step using our range of Individual Access Heat Seals on our Automated Individual Access Heat Sealer (see page 211) or on our Semi-Automated Sheet Heat Sealer (see page 213) (using the 4ti-0613 Individual Access adapter), resulting in individually sealed tubes with pierceable seals to allow for sample access

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.50 ± 0.25 mm
Well depth	12.00 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm
Code	
Size	12 x 12 px; 2 x 2 mm
Format	white on black
Content	8 digit numeric

Ordering Information

4ti-0975/RA	**Individual Access 96 Well Skirted Flat Bottom PCR Plate, clear PP wells, white PC frame,** individually removable wells, 2D coded, low profile, cut corner H1, 50 plates per case
4ti-0960/RA/F	**Individual Access 96 Well Skirted PCR Plate Frame, for individually removable wells, white rigid PC frame,** cut corner H1, 10 frames per case

**Please note, /SBC must be added to 4ti-0960/RA-F to include a standard single barcode.*

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude Individual Access 96 Well Non-Skirted PCR Plate

Low profile, individually removable 0.1 ml polypropylene wells, rigid polycarbonate frame, non-skirted, cut corner H1, working volume: <100 µl, total well capacity: 200 µl

- 96 well, fully skirted, low profile format with each tube inserted separately into the plate frame, allowing for selection and removal of individual tubes from the plate.
- Each tube clicks into place in the frame ensuring tubes are secure once inserted
- The rigid polycarbonate skirt of this design eliminates warping and distortion during PCR
- SBS footprint,
- When used with Non-Skirted PCR Plate Adapter (4ti-0373), it is suitable for use with robotic systems
- Empty frames are available for tubes to be transferred to
- The frames can be re-used multiple times, depending on the application

Specifications

Parameter	Value
Format	96 Well
Plate length	120.00 ± 0.20 mm
Plate width	80.00± 0.20 mm
Plate height	15.60 mm
Well diameter	5.50 mm
Color (frame)	White
Color (tube)	Clear

Ordering Information

4ti-0720/RA	**Individual Access 96 Well Non-Skirted PCR Plate, clear PP individually removable wells, white PC frame,** low profile, cut corner H1, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

Individual Access Sealing Options

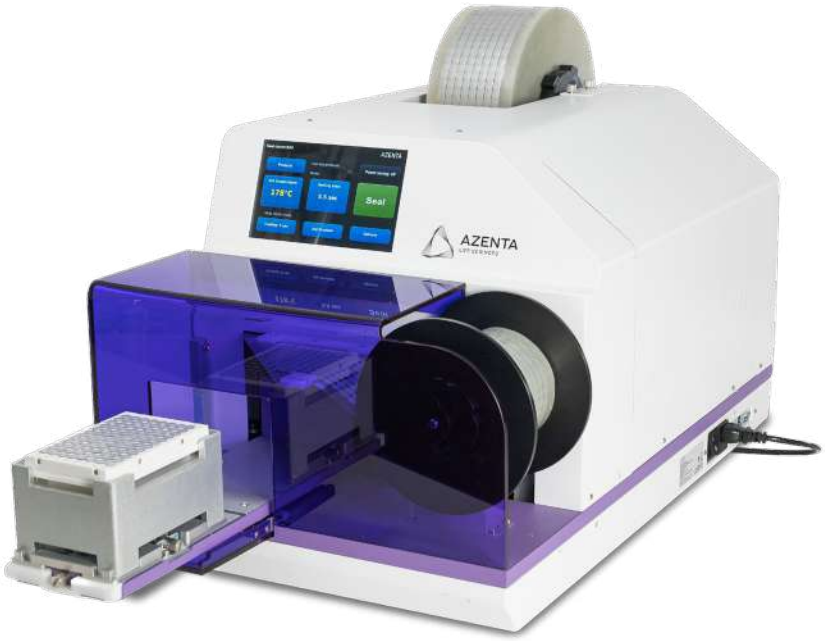
The 96 well Individual Access plate can be sealed in one step using Individual Access seals. These seals result in individually sealed tubes that can be pierceable, allowing for sample access.

Automated Individual Access Heat Sealing

The roll-fed Automated Individual Access Heat Sealer allows for automatic sealing of Individual Access plates using Individual Access Heat Seal rolls.

The roll with the indexed groups of 96 individual sealing discs is automatically fed through the heat sealer. The accurate sealing is controlled by a sensor which gets activated by optical windows in the material feed but can also be adjusted. Sealing temperature, time of sealing and exit delay (for cooling) can be controlled via the instrument's touchscreen.

Custom versions of instrument and sealing material are possible.



The Automated Individual Access Heat Sealer enables researchers to leverage the benefits of the Azenta Individual Access plate and seal range whilst maintaining the gold standard heat sealing.

- Compatible with a wide range of 96 well plate types and tube racks, allowing for the sealing of individually accessible wells and tubes
- Flexibility of seal material choice: Azenta offers a wide range of sealing materials
- Ability to seal custom shapes with custom seals
- Reproducible sealing: fixed pressure and accurate time and temperature controls ensure consistent sealing
- No compressed air required offering flexibility in labs

Semi-Automated Individual Access Heat Sealing

Individual Access Heat Seals are currently available in sheet format for use with the Semi-Automated Sheet Heat Sealer (using the 59-2005 Individual Access adapter).

Individual Access Sealing Procedure using the Semi-Automated Sheet Heat Sealer (59-2000)

1. Place adapter in open drawer of Sealer
2. Place Individual Access Plate on adapter
3. Place Individual Access Seal onto the plate
4. Plate is automatically sealed, remove plate
5. Remove the backing liner from the seal

Cap Mats for PCR Plates

- 96 individual caps in sheet format, blue TPE, pierceable; suitable for sealing all of our 96 well PCR plates
- The caps can be individually applied and removed once detached from the backing liner, making the mats ideally suited for use with our flexible PCR consumables, including Individual Access and divisible plates
- The mats offer an alternative to adhesive and heat sealing, in particular as a temporary solution when samples need to be repeatedly accessed
- They are easily pierceable with pipette tips to access samples, and they are easily removable using 1- and 8-way decappers or, alternatively, using the Azenta Automated Plate Seal Remover if a seal is overlaid on top of the caps

Ordering Information

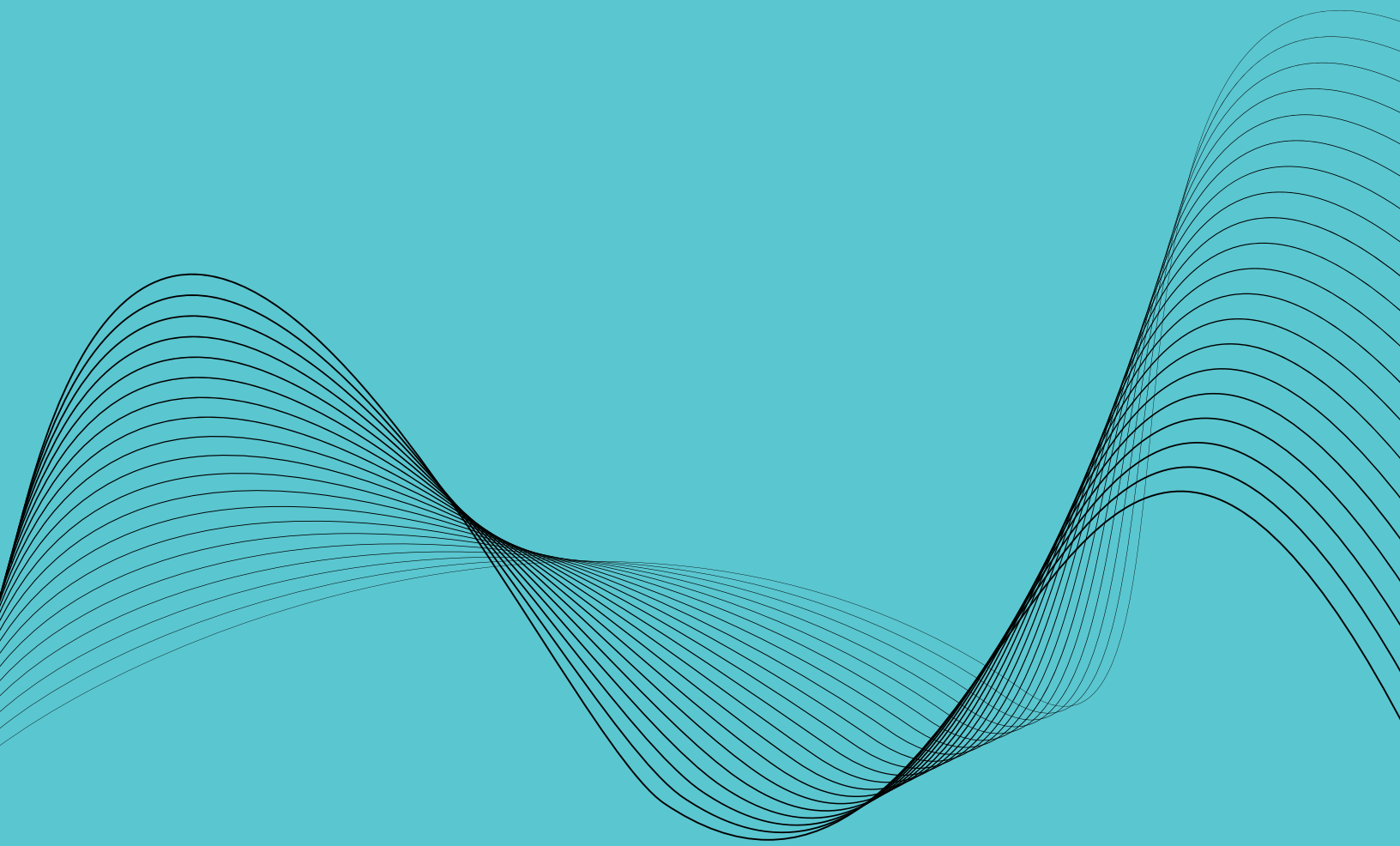
Semi-Automated Individual Access Heat Sealing

59-2000	**Semi-Automated Sheet Heat Sealer,** includes adapter (59-2001)
59-2005	**Semi-Automated Sheet Heat Sealer Adapter,** for Indvidual Access plates, 1 adapter per case
4ti-05381/RA	**Individual Access Pierce Heat Seal Strong,** strong heat sealing foil, 96 individual seals in sheet format, 100 sheets (127 x 100mm) per case
4ti-0531/RA	**Individual Access Pierce Heat Seal,** pierceable heat sealing foil, 96 individual seals in sheet format, 100 sheets (127 x 100mm) per case
4ti-0521/ RA-TAB	**Individual Access Peel Heat Seal, with tabs,** peelable heat sealing foil, 96 individual seals with tabs, sheet format, 100 sheets (127 x 100mm) per case
4ti-0521/RA-8	**Indvidual Access Peel Heat Seal, peelable heat sealing foil,** 12 strips, each covering 8 wells, sheet format, 100 sheets (127 x 100mm) per case
4ti-0960/RA	**Individual Access 96 Well Skirted PCR Plate, clear PP wells, white rigid PC frame,** individually removable wells, low profile, cut corner H1, 50 plates per case
4ti-0753/757	**96 Well Skirted PCR Plate with Removable 8 Well Strips, white PP wells, white PC frame,** low profile, 50 plates per case
4ti-1200/P	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, purple PC frame,** breakable vertically, low profile, cut corner A12, 50 plates per case
4ti-1400/X	**FrameStar 96 Well Semi-skirted PCR Plate, clear PP wells, black PC frame,** breakable vertically and horizontally, low profile, cut corner A12, 50 plates per case

Automated Individual Access Heat Sealing

59-1000	**Automated Individual Access Roll Heat Sealer, for heat sealing of individual tubes or custom shaped consumables,** for use with individual seals in roll format, includes adapter A (59-1004)
4ti-0539/RA	**Individual Access Pierce Heat Seal Strong,** strong heat sealing foil, 96 individual seals in roll format, 1 roll (420m x 100mm)
4ti-0532/RA	**Individual Access Pierce Heat Seal,** pierceable heat sealing foil, 96 individual seals in roll format, 1 roll (420m x 100mm)
4ti-0522/RA-TAB	**Individual Access Peel Heat Seal,** with tabs, peelable heat sealing foil, 96 individual seals with tabs, roll format, 1 roll (420m x 100mm)
4ti-0522/RA-8	**Individual Access Peel Heat Seal,** peelable heat sealing foil, 12 strips of 8 individual seals in roll format, 1 roll (420m x 100mm)
4ti-0960/RA	**Individual Access 96 Well Skirted PCR Plate, clear PP wells, white rigid PC frame,** individually removable wells, low profile, cut corner H1, 50 plates per case
4ti-0753/757	**96 Well Skirted PCR Plate with Removable 8 Well Strips, white PP wells, white PC frame,** low profile, 50 plates per case
4ti-1200/P	**FrameStar 96 Well Semi-Skirted PCR Plate, clear PP wells, purple PC frame,** breakable vertically, low profile, cut corner A12, 50 plates per case
4ti-1400/X	**FrameStar 96 Well Semi-skirted PCR Plate, clear PP wells, black PC frame,** breakable vertically and horizontally, low profile, cut corner A12, 50 plates per case

PCR Tubes & Strips



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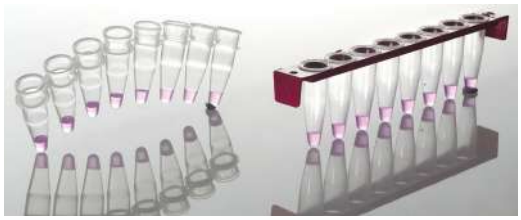
4titude PCR Tubes, Strips & Caps

Strips of 8, clear polypropylene PCR tubes (0.2 mL or 0.1 mL) held in a rigid polycarbonate frame.

By molding the frame portion in a more rigid polymer, the mechanical stability is greatly improved compared with traditional single piece products, as seen here.

For color coding of experiments, we offer strips with clear wells in 6 different frame colors. Additionally, for optical assays such as qPCR, we supply strips with white wells in black frames. White wells increase the signal-to-noise ratio by maximizing reflection of light in fluorescent based assays.

PCR Tubes & Strips are available either with cap strips (domed or optically flat) or without cap strips, and are compatible with the majority of thermal cyclers. End tabs allow for easy handling and labelling of the strips and some products are also available with an off-the-shelf 2D code, offering a vast supply of unique code combinations.

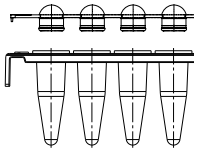


Unlike standard tube strips, the PCR Tubes & Strips will remain straight and stable, even at elevated temperatures and when filled with liquid.

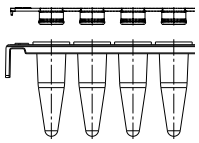
8 Well PCR Tube Strips

Features

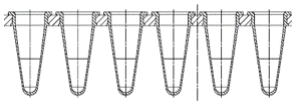
- 2-component design in an 8 well strip format
- Compatible with the majority of thermal cyclers
- Available with either domed cap strips or with flat, optically clear cap strips
- Available with off-the-shelf 2D code



8 Well PCR Tube Strips, Plus Strips of Domed Caps



8 Well PCR Tube Strips, Plus Strips of Flat Optical Caps



8 Well PCR Tube Strips, Low Profile

8 Well PCR Tube Strips feature a rigid polycarbonate frame for highest mechanical stability

Ordering Information

High profile + Domed Caps

4ti-0785/P	**8 Well PCR Tube Strips, clear PP wells, purple PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/G	**8 Well PCR Tube Strips, clear PP wells, green PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/B	**8 Well PCR Tube Strips, clear PP wells, blue PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/R	**8 Well PCR Tube Strips, clear PP wells, red PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/X	**8 Well PCR Tube Strips, clear PP wells, black PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/X/2D	**8 Well PCR Tube Strips, clear PP wells, black PC frame,** 2D coded, high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/W/2D	**8 Well PCR Tube Strips, clear PP wells, white PC frame,** 2D coded, high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/XW	**8 Well PCR Tube Strips, white PP wells, black PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/M	**8 Well PCR Tube Strips, clear PP wells, assorted colors PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case
4ti-0785/C	**8 Well PCR Tube Strips, clear PP wells, clear PC frame,** high profile, plus strips of domed caps, 120 tube strips and cap strips per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

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Ordering Information

High profile + Flat Caps

4ti-0786/P	**8 Well PCR Tube Strips, clear PP wells, purple PC frame,** plus strips of flat caps, high profile, 120 tube strips and cap strips per case
4ti-0786/G	**8 Well PCR Tube Strips, clear PP wells, green PC frame,** plus strips of flat caps, high profile, 120 tube strips and cap strips per case
4ti-0786/B	**8 Well PCR Tube Strips, clear PP wells, blue PC frame,** high profile, plus strips of flat caps, 120 tube strips and cap strips per case
4ti-0786/R	**8 Well PCR Tube Strips, clear PP wells, red PC frame,** plus strips of flat caps, high profile, 120 tube strips and cap strips per case
4ti-0786/X	**8 Well PCR Tube Strips, clear PP wells, black PC frame,** plus strips of flat caps, high profile, 120 tube strips and cap strips per case
4ti-0786/X/2D	**8 Well PCR Tube Strips, clear PP wells, black PC frame,** plus strips of flat caps, high profile, 2D coded, 120 tube strips and cap strips per case
4ti-0786/W/2D	**8 Well PCR Tube Strips, clear PP wells, white PC frame,** plus strips of flat caps, high profile, 2D coded, 120 tube strips and cap strips per case
4ti-0786/XW	**8 Well PCR Tube Strips, white PP wells, black PC frame,** plus strips of flat caps, high profile, 120 tube strips and cap strips per case
4ti-0786/M	**8 Well PCR Tube Strips, clear PP wells, assorted colors PC frame,** plus strips of flat caps, high profile, 120 tube strips and cap strips per case
4ti-0786/C	**8 Well PCR Tube Strips, clear PP wells, clear PC frame,** high profile, plus strips of flat caps, 120 tube strips and cap strips per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

Low Profile (no caps)

4ti-0789/B	**8 Well PCR Tube Strips, clear PP wells, blue PC frame,** low profile, 120 tube strips per case
4ti-0789/XW	**8 Well PCR Tube Strips, white PP wells, black PC frame,** low profile, 120 tube strips per case
4ti-0789/W	**8 Well PCR Tube Strips, clear PP wells, white PC frame,** low profile, 120 tube strips per case

High profile (no caps)

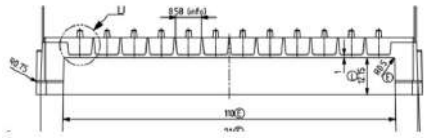
4ti-0775/P	**8 Well PCR Tube Strips, clear PP wells, purple PC frame,** high profile, 120 tube strips per case
4ti-0775/G	**8 Well PCR Tube Strips, clear PP wells, green PC frame,** high profile, 120 tube strips per case
4ti-0775/B	**8 Well PCR Tube Strips, clear PP wells, blue PC frame,** high profile, 120 tube strips per case
4ti-0775/R	**8 Well PCR Tube Strips, clear PP wells, red PC frame,** high profile, 120 tube strips per case
4ti-0775/X	**8 Well PCR Tube Strips, clear PP wells, black PC frame,** high profile, 120 tube strips per case
4ti-0775/X/2D	**8 Well PCR Tube Strips, clear PP wells, black PC frame,** 2D coded, high profile, 120 tube strips per case
4ti-0775/W/2D	**8 Well PCR Tube Strips, clear PP wells, white PC frame,** 2D coded, high profile, 120 tube strips per case
4ti-0775/XW	**8 Well PCR Tube Strips, white PP wells, black PC frame,** high profile, 120 tube strips per case
4ti-0775/M	**8 Well PCR Tube Strips, clear PP wells, assorted color PC frame,** high profile, 120 tube strips per case
4ti-0775/C	**8 Well PCR Tube Strips, clear PP wells, clear PC frame,** high profile, 120 tube strips per case

4titude 8 Well PCR Tube Strip with PC Frame Adapter Lid

A 96 format frame that fits both 8 Well PCR Tube Strips and FrameStar Breakable plates, enabling our flexible PCR consumables to be handled in SBS format; ideal for use in automated or manual manufacturing processes.

Grippers on a robotic deck grip the 8 Well PCR Tube Strip adapter, allowing it to be handled as if it were a plate. The high profile Tube Strips have a push fit with the adapter, ensuring they are held within the plate and do not move around or fall out during handling, thereby ensuring samples are secure throughout the lifecycle.

- SBS footprint for use with robotics – loaded frames can be handled by robotics, increasing efficiency and accuracy during kit assembly
- Dedicated lid with interference fit – samples are securely protected avoiding damage to kits during transport
- Interference fit with high profile tubes – tubes are stable in the frame making them easier to handle and reducing the chance of errors when used with robotics
- Full Breakable plates or individual 8 Well PCR Tube Strips – suitable for use in both high and low throughput environments
- Ability to 2D code end tabs – sample can be tracked from kit manufacture all the way to processing at the end user site
- Locator pins on the deck ensure 8 Well PCR Tube Strips are always loaded in the correct orientation
- Reduces human error
- Adapters can be customized into different colors for custom/OEM opportunities.



Important note: the adapters cannot be placed directly into PCR cyclers due to the height of the skirt. These adapters are designed to provide an automation friendly strip/plate support during processing, after which, the strips/plates can be removed from the adapter and placed into a PCR block.

Specification Adapter

Feature	Information
Format	96 well
Length	127.76mm ± 0.25mm
Width	85.48mm ± 0.25mm
Height (without lid)	21.25mm
Height (with lid)	24.00mm
Color (adapter)	White
Color (lid)	Clear

Ordering Information

4ti-0370	**8 Well PCR Tube Strip Adapter, 96 well skirted frame, with lid,** white PC, cut corner H1, 18 adapters and lids per case
4ti-0371	**8 Well PCR Tube Strip Adapter, 96 well skirted frame,** white PC, cut corner H1, 18 adapters per case
4ti-0292	**8 Well PCR Tube Strip Adapter Lid,** without condensation rings, clear PS, low profile, no cut corner, 10 lids per case

Non-Skirted PCR Plate Adapter

A 96 format frame that fits non-skirted PCR plates to allow for easy handling and use with automation.

- Cost and space saving design
- Clear polycarbonate
- Universal fit with non-skirted PCR plates
- Compatible with the Universal Microplate Lid
- Non-skirted PCR plates have the widest application range, fitting most cyclers
- However, they don't offer the same level of compatibility with robotic platforms and are not as multichannel pipetting friendly as fully- or semi-skirted plates are
- The Azenta Non-Skirted PCR Plate Adapter was developed to address all that, improving the overall ease of use of non-skirted plates
- Azenta adapters are manufactured in class 7 ISO certified cleanroom, and all lids are certified free of DNase, RNase, human DNA, bacterial and eukaryotic cells, dust and endotoxins/pyrogens

Key Features

- Accommodates both low and high profile non-skirted plates
- No locator pins, ensuring compatibility with all non-skirted plates and tubestrips
- Compatible with the Universal Microplate Lid, for a quick and easy sealing solution to protect samples from contamination and evaporation

Specification Non-Skirted PCR Plate Adapter

Feature	Information
Format	96 well
Length	127.76mm ± 0.25mm
Width	85.48mm ± 0.25mm
Height (without lid)	21.2mm
Height (with lid)	24.00mm
Color	Clear

Ordering Information

4ti-0373	**Non-Skirted PCR Plate Adapter,** 96 well skirted frame, clear PC, cut corner H1, 18 adapters per case
Combi Pack	
4ti-0372	**Non-Skirted PCR Plate Adapter,** 96 well skirted frame, **with lid**, clear PC, cut corner H1, 18 adapters and lids per case
Compatible lids	
4ti-0290	**Universal Microplate Lid,** without condensation rings, clear, low profile, no cut corner, 50 lids per case

4titude 96 Well PCR Plates with 8 Well Removeable Tube Strips

PCR tube strips in frames - excellent flexibility

The 96 Well PCR Plates with 8 Well Removeable Tube Strip system offers total flexibility in plate usage. It allows the user to insert or remove strips of 8 tubes from a 96 well plate frame.

- 8 Well Removeable Tube Strips can be used as a stand-alone product or inserted in one of two PCR plate frames for ease of handling
- 96 Well PCR Plate frames are available for use on Roche LightCycler® 480 and for universal use
- Pre-loaded frames are available
- Sealable using cap strips, adhesive seals or heat seals

8 Well Removeable Tube Strips can be used as a stand-alone product or with a frame for ease of handling.

8 Well PCR Tube Strips

Low profile, 0.1 ml polypropylene wells, working volume: <100 µl, total well capacity: 200 µl; can be used as a stand-alone product or inserted in any of the 96 Well PCR Plate frames available for ease of handling

- These low profile PCR tube strips are molded from virgin polypropylene under cleanroom conditions
- They are available in either clear polypropylene for standard PCR techniques, or in white polypropylene for use in fluorescent detection applications like qPCR, as they give the highest sensitivity and consistency as all the fluorescence signal is reflected back to the detector

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Low profile 0.1 ml (100 µl) working volume, with a 0.2 ml (200 µl) total well capacity when used with sealing options
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

Specifications

Parameter	Value
Strip length	82.00 ± 0.10 mm
Strip width	8.20 mm
Strip height	15.60
Well depth	14.20 mm
Well diameter	5.50 ± 0.10 mm
Pitch (distance between A1 and A2)	9.00 mm

Use

- Can be used as individual strips, or in a 96 Well PCR Plate frame for easier handling
- Compatible with standard multichannel pipettes

Use

- 8 Well Removeable Tube Strips are available with clear wells
- 8 Well Removeable Tube Strips also available with white wells, giving the highest sensitivity and consistency for fluorescent detection during qPCR
- Combi packs available with strips of 8 flat optical caps
- 8 Well Removeable Tube Strips can be ordered separately or pre-loaded on 96 Well PCR Plate frames

Ordering Information

4ti-0753	**8 Well PCR Tube Strips, white PP wells, low profile**, 120 tube strips per case
4ti-0753/C	**8 Well PCR Tube Strips, clear PP, low profile,** 120 tube strips per case
Combi Pack	
4ti-0754/C	**8 Well PCR Tube Strips, clear PP,** low profile, plus cap strips, 4ti-0753 plus 4ti-0751 combi pack, 120 tube strips and cap strips per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

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4titude 96 Well Skirted PCR Plate Frame for Removable 8 Well Tube Strips

Rigid polycarbonate frame, for use with Removable 8 Well Tube Strips available for use on Roche LightCycler® 480 and for universal use

- These 96 Well Skirted PCR Plate frames are molded from rigid polycarbonate for use with our polypropylene Removable 8 Well Tube Strips
- The Removable 8 Well Tube Strips are inserted into the 96 Well Skirted PCR Plate frames to form a complete plate, part plate, or individual strip with an easy-to-handle frame
- As the Removable 8 Well Tube Strips are interchangeable with the 96 Well Skirted PCR Plate frames, the frames themselves are re-usable; simply purchase more Removable 8 Well Tube Strips to use
- 96 Well Skirted PCR Plate frames can be purchased separately, or pre-loaded with Removable 8 Well Tube Strips

Key Features

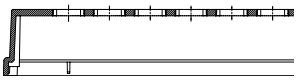
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Frames

- Rigid polycarbonate frames, which reduce thermal expansion and sample evaporation during PCR, leading to improved consistency in PCR results
- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with standard multichannel pipettes



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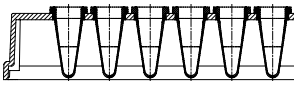

4ti-0753/757 &
4ti-0753/C/757

Options

- Available as a 96 Well Skirted Frame for universal use
- Also available as a 96 Well Semi-Skirted Frame, Roche Style for use with the Roche LightCycler® 480
- Frames can be purchased on their own or pre-loaded with Removable 8 Well Tube Strips
- Removable 8 Well Tube Strips are available with clear wells
- Removable 8 Well Tube Strips also available with white wells, giving the highest sensitivity and consistency for fluorescent detection during qPCR
- Available barcoded upon request

Specifications

Parameter	Value	
	96 Well Skirted PCR Plate Frame	**96 Well Semi-Skirted PCR Plate Frame, Roche Style**
Plate length	127.76 ± 0.25 mm	127.70 ± 0.25 mm
Plate width	85.48 ± 0.25 mm	85.48 ± 0.25 mm
Plate height	16.10 ± 0.25 mm	15.60 ± 0.25 mm
Well depth	15.10 ± 0.10 mm	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm	9.00 mm

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

Ordering Information

96 Well Skirted PCR Plate Frame

4ti-0757-F	**96 Well Skirted PCR Plate for Removable 8 Well Strips, white PC frame,** 50 plates per case
4ti-0753/757	**96 Well Skirted PCR Plate with Removable 8 Well Strips, white PP wells, white PC frame,** low profile, 50 plates per case
4ti-0753/C/757	**96 Well Skirted PCR Plate with Removable 8 Well Strips, clear PP wells, white PC frame,** low profile, 50 plates per case

96 Well Semi-Skirted PCR Plate Frame, Roche Style

4ti-0950W-F	**96 Well Semi-Skirted PCR Plate for Removable 8 Well Strips, Roche style, white PC frame,** low profile, cut corner H12, 10 frames per case
4ti-0753/950W	**96 Well Skirted PCR Plate with Removable 8 Well Strips, Roche style, white PP wells, white PC frame,** low profile, 50 plates per case

AZENTA
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4titude Standard PCR Plates, Strips & Tubes

Azenta offers a wide range of PCR consumables for low to medium throughput applications. Our standard one-piece PCR consumables are manufactured from virgin polypropylene in our Class 7 ISO certified clean-room production facility, and comply to the same stringent QC requirements as our FrameStar range.

The ultra-thin walled tubes of our standard PCR plates maximize heat transfer and the raised rims facilitate sealing. Our range of plates includes fully skirted, semi-skirted, and non-skirted plates, available in clear or white (for qPCR), with additional colors for non-skirted plates available.

All our PCR consumables are certified free from RNase, DNase, and human genomic DNA.

These plates fit most thermal cyclers; for a complete list please see the compatibility table.

- **Clean-room Injection Molding - Class 7 ISO Certification**

  No contamination and 10 fold lower amount of air particles compared to most PCR plate manufacturers
- **Virgin, Medical Grade Polymers**

  No leakage of substances which may have a detrimental effect on product purity
- **Certified RNase-, DNase-, DNA, and Pyrogen-free**

  Inhibitor free consumables
- **Ultra-thin and consistent wall thickness**

  Fast and precise thermal transfer

Azenta's standard PCR plates, strips and tubes are manufactured from virgin polypropylene under ISO certified cleanroom conditions.

4titude 384 Well Skirted PCR Plate

Polypropylene, cut corner A24, working volume: <30 µl, total well capacity: 55 µl; designed for use on standard 384 well thermal cyclers

- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time quantitative PCR (RT-qPCR) results
- <30 µl working volume, 55 µl total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

Frame

- Alphanumeric grid reference to aid well and sample identification

Use

- Recommended for low volume PCR
- Compatible with blocks designed for 384 well PCR plates
- Compatible with standard multichannel pipettes

Options

- Super clear well option available to maximize sample visibility
- Also available as a frosted plate for increased qPCR signal intensities and improved detection sensitivity
- Available barcoded upon request
- Available as a FrameStar 2-component PCR plate with the same dimensions, but with the added benefits of a polycarbonate frame that eliminates plate distortion and warping during the PCR process, leading to less evaporation and sample loss

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	10.30 ± 0.05 mm
Well depth	9.20 ± 0.10 mm
Well diameter	3.00 ± 0.10 mm
Distance to center of A1 from top edge	8.99 ± 0.25 mm
Distance to center of A1 from left edge	12.13 ± 0.25 mm
Pitch (distance between A1 and A2)	4.50 mm

Ordering Information

4ti-1384	**384 Well Skirted PCR Plate, clear PP,** cut corner A24, 50 plates per case
4ti-1387	**384 Well Skirted PCR Plate, frosted PP,** cut corner A24, 50 plates per case
4ti-1385	**384 Well Skirted PCR Plate, white PP,** cut corner A24, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 384 Well Skirted PCR Plate, Roche Style

White polypropylene, cut corners A24 and P24; working volume: <30 µl, total well capacity: 55 µl; designed for use on the Roche LightCycler® 480 with 384 well block

- The dimensions of these plates are designed for optimum compatibility with the Roche LightCycler® 480, and are in a 384 well format for reaction volumes of up to 30 µl
- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions, and as such comply with the same stringent requirements as our FrameStar range

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene wells for optimum PCR and real-time (RT-qPCR) results
- <30 µl working volume, 55 µl total well capacity when used with sealing options
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling

Frame

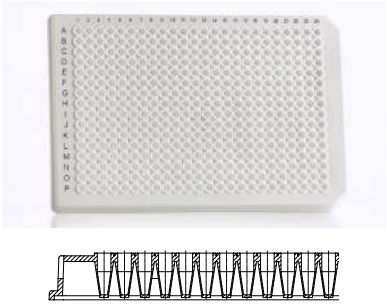
- Alphanumeric grid reference to aid well and sample identification

Use

- Recommended for low volume PCR
- Compatible with Roche LightCycler® 480 with 384 well block
- Compatible with standard multichannel pipettes

Options

- Available as a plate made from white polypropylene for optimum signal-to-noise ratio when using fluorescent based assays
- Available barcoded upon request
- Also available as a FrameStar 2-component PCR plate with the same dimensions, but with the added benefits of a polycarbonate frame that eliminates plate distortion and warping during the PCR process, leading to less evaporation and sample loss



Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	10.30 ± 0.05 mm
Well depth	9.20 ± 0.10 mm
Well diameter	3.00 ± 0.10 mm
Distance to center of A1 from top edge	8.99 ± 0.25 mm
Distance to center of A1 from left edge	12.13 ± 0.25 mm
Pitch (distance between A1 and A2)	4.50 mm

Ordering Information

4ti-1381	**384 Well Skirted PCR Plate, Roche style, white PP,** cut corner A24/P24, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 96 Well Skirted PCR Plate

Low profile, 0.1 ml wells, polypropylene, cut corner H1, working volume: <100 µl, total well capacity: 200 µl; universal 96 well skirted plate, designed for use on standard thermal cyclers

- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range.

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Low profile 0.1 ml (100 µl) working volume, with a 0.2 ml (200 µl) total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

Frame

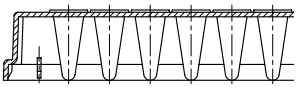
- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with blocks designed for skirted PCR plates
- Compatible with standard multichannel pipettes

Options

- Super clear wells maximize sample visibility
- Also available as a white plate, ideal for qPCR, giving optimal signal-to-noise ratio for fluorescence-based assays
- Available barcoded upon request
- Available as a FrameStar 2-component PCR plate with the same dimensions, but with the added benefits of a polycarbonate frame that eliminates plate distortion and warping during the PCR process, leading to less evaporation and sample loss



Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.50 ± 0.05 mm
Well depth	15.00 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0740	**96 Well Skirted PCR Plate, clear PP,** low profile, cut corner H1, 50 plates per case
4ti-0741	**96 Well Skirted PCR Plate, white PP,** low profile, cut corner H1, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 96 Well Semi-Skirted PCR Plate

High profile, 0.2 ml wells, polypropylene, cut corner A12, working volume: <200 µl, total well capacity: 300 µl; universal semi-skirted plate, designed for use on standard thermal cyclers

- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range.

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Standard 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

Frame

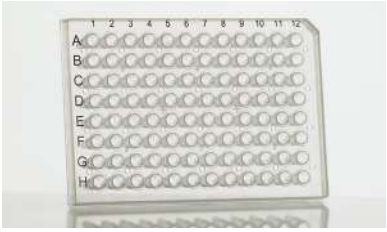
- Alphanumeric grid reference to aid well and sample identification

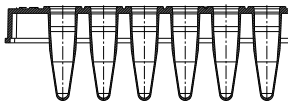
Use

- Compatible with universal standard block thermal cyclers and sequencers
- Compatible with standard multichannel pipettes

Options

- Super clear wells maximize sample visibility
- Also available as a white plate, ideal for qPCR, giving optimal signal-to-noise ratio for fluorescence-based assays
- Available barcoded upon request
- Available as a FrameStar 2-component PCR plate with the same dimensions, but with the added benefits of a polycarbonate frame that eliminates plate distortion and warping during the PCR process, leading to less evaporation and sample loss





Specifications

Parameter	Value
Plate length	124.42 ± 0.25 mm
Plate width	84.02 ± 0.25 mm
Plate height	20.70 ± 0.25 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	10.51 ± 0.10 mm
Distance to center of A1 from left edge	12.71 ± 0.10 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0760	**96 Well Semi-Skirted PCR Plate, clear PP,** high profile, cut corner A12, 50 plates per case
4ti-0761	**96 Well Semi-Skirted PCR Plate, white PP,** high profile, cut corner A12, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 96 Well Semi-Skirted PCR Plate, Roche Style

Low profile, 0.1 ml wells, polypropylene, cut corner H12, working volume: <100 µl, total well capacity: 200 µl; designed for use on Roche LightCycler 480®

- This Roche Style plate is designed to achieve optimized assay conditions on the Roche LightCycler® 480
- This particular style of plate is in a low profile 96-well format, perfect for reaction volumes of 10-100 µl
- The wells are shorter than "standard" profile wells, which decrease the "dead space" between the heated lid of the thermal cycler and the sample in the well
- This eliminates condensation forming on the side wall of the tubes, preventing reduction in PCR volume and increasing the efficiency of the reaction
- This is especially recommended for reaction volumes below 20 µl

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Low profile 0.1 ml (100 µl) working volume, with a 0.2 ml (200 µl) total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling

Frame

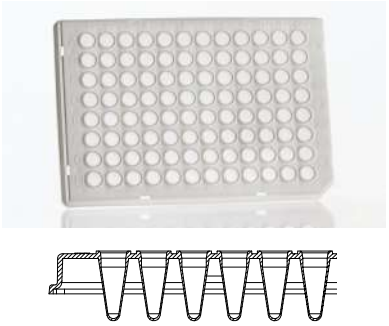
- Alphanumeric grid reference to aid well and sample identification

Use

- Optimized for use with the Roche LightCycler® 480
- Recommended for low volume PCR
- Compatible with standard multichannel pipettes

Options

- Available with white wells give optimum signal-to-noise ratio when using fluorescent-based assays
- Combi packs available with qPCR Seal (0560)
- Available barcoded upon request
- Available as a FrameStar 2-component PCR plate with the same dimensions, but with the added benefits of a polycarbonate frame that eliminates plate distortion and warping during the PCR process, leading to less evaporation and sample loss



Specifications

Parameter	Value
Plate length	127.70 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.60 ± 0.10 mm
Well depth	15.10 ± 0.10 mm
Well diameter	5.50 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0955	**96 Well Semi-Skirted PCR Plate, Roche style, white PP,** low profile, cut corner H12, 50 plates per case
Combi packs	
4ti-0955/0560	**96 Well Semi-Skirted PCR Plate, Roche style,** plus qPCR Seal, 4TI-0955 plus 4TI-0560, combi pack, 50 plates and seals per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 96 Well Semi-Skirted PCR Plate with Upstand ABI® Style

High profile, 0.2 ml wells, polypropylene, cut corner A12, working volume: <200 µl, total well capacity: 300 µl; designed for use on ABI® thermal cyclers

- We recommend this semi-skirted plate for use with ABI® thermal cyclers and sequencers
- It can be used directly with ABI® instruments with no adapters and no re-calibration of the instruments necessary
- The only case where this is not true is with the ABI Fast Block thermal cyclers, in which case using our FrameStar FastPlate is recommended instead
- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

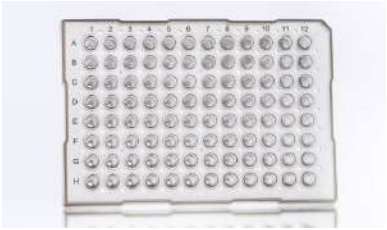
- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time qPCR results
- Standard 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

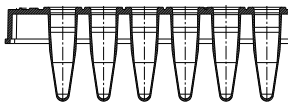
Frame

- Alphanumeric grid reference to aid well and sample identification

Use

- Designed for and compatible with ABI® thermal cyclers and Real Time PCR instruments
- Compatible with standard multichannel pipettes





Options

- Clear version has super clear wells for maximum sample visibility
- Also available with frosted wells for increased qPCR signal intensities and improved detection sensitivity
- Available barcoded upon request
- Available as a FrameStar 2-component PCR plate with the same dimensions, but with the added benefits of a polycarbonate frame that eliminates plate distortion and warping during the PCR process, leading to less evaporation and sample loss

Specifications

Parameter	Value
Plate length	126.00 ± 0.25 mm
Plate width	86.00 ± 0.25 mm
Plate height	22.10 ± 0.10 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	11.50 ± 0.10 mm
Distance to center of A1 from left edge	13.50 ± 0.10 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0735	**96 Well Semi-Skirted PCR Plate, ABI style, clear PP,** with upstand, high profile, cut corner H12, 50 plates per case
4ti-0736	**96 Well Semi-Skirted PCR Plate, ABI style, frosted PP,** with upstand, high profile, cut corner H12, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 96 Well Non-Skirted PCR Plate

High profile, 0.2 ml wells, polypropylene, cut corner H12, working volume: <200 µl, total well capacity: 300 µl; universal non-skirted plate, designed for use on standard thermal cyclers

- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range

Key Features

- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

Frame

- Alphanumeric grid reference to aid well and sample identification

Use

- Compatible with universal standard block thermal cyclers and sequencers
- Compatible with standard multichannel pipettes

Specifications

Parameter	Value
Plate length	120.00 ± 0.25 mm
Plate width	80.00 ± 0.25 mm
Plate height	20.20 ± 0.10 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	8.75 ± 0.25 mm
Distance to center of A1 from left edge	10.75 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Options

- Available with the following color options: clear, blue, red, green, yellow, purple, and white
- Super clear well version maximizes sample visibility
- White plate ideal for qPCR, giving optimal signal-to-noise ratio for fluorescence-based assays

Ordering Information

4ti-0750	**96 Well Non-Skirted PCR Plate, clear PP,** high profile, cut corner H12, 50 plates per case
4ti-0750-25	**96 Well Non-Skirted PCR Plate, clear PP,** high profile, cut corner H12, 25 plates per case
4ti-0750/P	**96 Well Non-Skirted PCR Plate, purple PP,** high profile, cut corner H12, 50 plates per case
4ti-0750/B	**96 Well Non-Skirted PCR Plate, blue PP,** high profile, cut corner H12, 50 plates per case
4ti-0750/G	**96 Well Non-Skirted PCR Plate, green PP,** high profile, cut corner H12, 50 plates per case
4ti-0750/R	**96 Well Non-Skirted PCR Plate, red PP,** high profile, cut corner H12, 50 plates per case
4ti-0750/W	**96 Well Non-Skirted PCR Plate, white PP,** high profile, cut corner H12, 50 plates per case
4ti-0750/Y	**96 Well Non-Skirted PCR Plate, yellow PP,** high profile, cut corner H12, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude Non-Skirted PCR Plate Segments

High profile, 0.2 ml wells, polypropylene, cut corner H12, working volume: <200 µl, total well capacity: 300 µl; 96 Well Non-Skirted PCR Plate divided into 8 well, 16 well, 24 well, 32 well or 48 well segments

- These plates are produced by dividing our 96 Well Non-Skirted PCR Plate into smaller segments, a versatile solution for when a whole PCR plate may not be needed
- All of our PCR plates are molded from virgin polypropylene under ISO certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range

Key Features

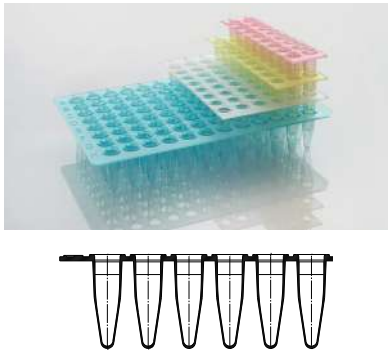
- Subject to a strict QC procedure which includes a visual check and leak testing of every tube
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Standard 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Maximum thermal conductivity for efficient heat transfer and precise thermal cycling
- Raised well rims prevent cross contamination and facilitate effective sealing for reduced evaporation

Frame

- Alphanumeric grid reference to aid well and sample identification



Use

- Compatible with universal standard block thermal cyclers and sequencers
- Compatible with standard multichannel pipettes

Options

- Available with the following color options: clear, blue, red, green, yellow, and purple
- Super clear well version maximizes sample visibility

Specifications

Parameter	Value
Plate length	120.00 ± 0.25 mm
Plate width	80.00 ± 0.25 mm
Plate height	20.20 ± 0.10 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	8.75 ± 0.25 mm
Distance to center of A1 from left edge	10.75± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

Clear 8 Well Non-Skirted PCR Plate Segment

4ti-0750/8	**8 Well Non-Skirted PCR Plate Segment, clear PP,** high profile, 600 segments per case
4ti-0750/16	**16 Well Non-Skirted PCR Plate Segment, clear PP,** high profile, 300 segments per case
4ti-0750/24	**24 Well Non-Skirted PCR Plate Segment, clear PP,** high profile, 200 segments per case
4ti-0750/32	**32 Well Non-Skirted PCR Plate Segment, clear PP,** high profile, 150 segments per case
4ti-0750/48	**48 Well Non-Skirted PCR Plate Segment, clear PP,** high profile, 100 segments per case

Blue 8 Well Non-Skirted PCR Plate Segment

4ti-0750/8/B	**8 Well Non-Skirted PCR Plate Segment, blue PP,** high profile, 600 segments per case
4ti-0750/16/B	**16 Well Non-Skirted PCR Plate Segment, blue PP,** high profile, 300 segments per case
4ti-0750/24/B	**24 Well Non-Skirted PCR Plate Segment, blue PP,** high profile, 200 segments per case
4ti-0750/32/B	**32 Well Non-Skirted PCR Plate Segment, blue PP,** high profile, 150 segments per case
4ti-0750/48/B	**48 Well Non-Skirted PCR Plate Segment, blue PP,** high profile, 100 segments per case

Purple 8 Well Non-Skirted PCR Plate Segment

4ti-0750/8/P	**8 Well Non-Skirted PCR Plate Segment, purple PP,** high profile, 600 segments per case
4ti-0750/16/P	**16 Well Non-Skirted PCR Plate Segment, purple PP,** high profile, 300 segments per case
4ti-0750/24/P	**24 Well Non-Skirted PCR Plate Segment, purple PP,** high profile, 200 segments per case
4ti-0750/32/P	**32 Well Non-Skirted PCR Plate Segment, purple PP,** high profile, 150 segments per case
4ti-0750/48/P	**48 Well Non-Skirted PCR Plate Segment, purple PP,** high profile, 100 segments per case

Yellow 8 Well Non-Skirted PCR Plate Segment

4ti-0750/8/Y	**8 Well Non-Skirted PCR Plate Segment, yellow PP,** high profile, 600 segments per case
4ti-0750/16/Y	**16 Well Non-Skirted PCR Plate Segment, yellow PP,** high profile, 300 segments per case
4ti-0750/24/Y	**24 Well Non-Skirted PCR Plate Segment, yellow PP,** high profile, 200 segments per case
4ti-0750/32/Y	**32 Well Non-Skirted PCR Plate Segment, yellow PP,** high profile, 150 segments per case
4ti-0750/48/Y	**48 Well Non-Skirted PCR Plate Segment, yellow PP,** high profile, 100 segments per case

Red 8 Well Non-Skirted PCR Plate Segment

4ti-0750/8/R	**8 Well Non-Skirted PCR Plate Segment, red PP,** high profile, 600 segments per case
4ti-0750/16/R	**16 Well Non-Skirted PCR Plate Segment, red PP,** high profile, 300 segments per case
4ti-0750/24/R	**24 Well Non-Skirted PCR Plate Segment, red PP,** high profile, 200 segments per case
4ti-0750/32/R	**32 Well Non-Skirted PCR Plate Segment, red PP,** high profile, 150 segments per case
4ti-0750/48/R	**48 Well Non-Skirted PCR Plate Segment, red PP,** high profile, 100 segments per case

Green 8 Well Non-Skirted PCR Plate Segment

4ti-0750/8/G	**8 Well Non-Skirted PCR Plate Segment, green PP,** high profile, 600 segments per case
4ti-0750/16/G	**16 Well Non-Skirted PCR Plate Segment, green PP,** high profile, 300 segments per case
4ti-0750/24/G	**24 Well Non-Skirted PCR Plate Segment, green PP,** high profile, 200 segments per case
4ti-0750/32/G	**32 Well Non-Skirted PCR Plate Segment, green PP,** high profile, 150 segments per case
4ti-0750/48/G	**48 Well Non-Skirted PCR Plate Segment, green PP,** high profile, 100 segments per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 8 Well PCR Tube Strips

High profile, 0.2 ml wells, clear polypropylene, working volume: <200 µl, total well capacity: 300 µl; suitable for all standard 0.2 ml block thermal cyclers

- These PCR tubes are molded from virgin polypropylene in our UK-based Class 7 ISO certified cleanroom production facility, and comply to the same stringent requirements as our FrameStar range
- Recommended for low to medium throughput applications

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results
- Standard 0.2 ml (200 µl) working volume, with a 0.3 ml (300 µl) total well capacity when used with sealing options
- Individually numbered tubes

Use

- Suitable for all standard 0.2 ml block thermal cyclers
- Can be cut into sections

Options

- Available with strips of domed (4ti-0780) or flat optical (4ti-0784) sealing caps*

** See website for the latest Important Product Information*

Ordering Information

4ti-0781	**8 Well PCR Tube Strips, clear PP,** high profile, 125 strips per case
Code Combi Pack	
4ti-0780	**8 Well PCR Tube Strips, plus Strips of Domed Caps,** 4ti-0781 plus 4ti-0782, combi pack, 125 tube strips and cap strips per case
4ti-0784	**8 Well PCR Tube Strips, plus Strips of Flat Caps**, 4ti-0781 plus 4ti-0783, combi pack, 125 tube strips and cap strips per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 8 Well PCR Tube Strips, With Attached Caps

Low profile 0.1 ml (working volume: <100 µl, total well capacity: 200 µl), clear polypropylene, with attached flat optically clear caps; and standard 0.2 ml (working volume: <200 µl, total well capacity: 300 µl), clear polypropylene, with attached domed or flat optically clear caps

- These PCR tubes with attached caps are molded from virgin polypropylene, comply to the same stringent requirements as our FrameStar range and are free from RNase, DNase, and human genomic DNA
- Recommended for low to medium throughput applications

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

- The tubes on each strip are joined together either by three links (flat cap variety - 4ti-0792 and 4ti-0793) or by one strong link (domed cap variety - 4ti-0794) to make the strip more rigid and help reduce any chance of spillage
- Each cap is separately joined to a tube, making it impossible to either cross contaminate another tube with the wrong cap, or to lose a cap altogether

Use

- The tube strips can be easily separated by cutting the links, to make smaller sections or individual tubes
- The flat optically clear caps enable light signals, such as fluorescence, to pass through without affecting the signal, and are suitable for imaging techniques including RT-qPCR

Options

- The strips are available with either tethered flat optically clear caps or domed caps

Ordering Information

4ti-0792	**8 Well PCR Tube Strips, with Attached Flat Caps,** 0.2ml wells, **clear PP,** high profile, 120 tube strips per case
4ti-0793	**8 Well PCR Tube Strips, with Attached Flat Caps,** 0.1ml wells, **clear PP,** low profile, 120 tube strips per case
4ti-0794	**8 Well PCR Tube Strips, with Attached Domed Caps,** 0.2ml wells, **clear PP,** high profile, 120 tube strips per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude 4 Well PCR Tube Strips, Rotor-Gene® Style, With Caps

0.1 ml wells, clear polypropylene, with strips of 4 caps, working volume: <100 µl, total well capacity: 200 µl; designed for Qiagen/ Corbett Rotor-Gene® instruments

- Azenta offers a range of PCR consumables for low to medium throughput applications
- These PCR tubes and caps are molded from virgin polypropylene to prevent any PCR background signal
- They are especially suited for use with Qiagen/Corbett Rotor-Gene® instruments

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/ pyrogen

Tubes

- Optically clear tubes ideally suited for qPCR
- Low profile 0.1 ml (100 µl) working volume, 0.2 ml (200 µl) total well capacity
- Ultra-smooth, uniform, thin-walled polypropylene tubes for optimum PCR and real-time (RT-qPCR) results

Caps

- Frosted cap extensions allow for easy handling and labeling

Use

- Designed for Qiagen/Corbett Rotor-Gene® instruments
- Tube and cap strips can be separated for individual use
- Pack of 250 strips of tubes and caps sufficient for 1,000 reactions

Ordering Information

4ti-0796	**4 Well PCR Tube Strips, Rotor-Gene style,** plus strips of caps, **clear PP,** 250 tube strips and cap strips per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

Cap² 0.2ml Dual-Cap Sample Collection PCR Tube

PCR Tube Innovation for Workflow Versatility

A unique PCR tube featuring a patent pending dual-cap mechanism, 2D datamatrix code as well as a human readable identification, allowing for wide-ranging workflow versatility. Innovative features allow for utilization as a consumable suitable for sample collection/ transport that can be directly processed for analysis, ideal for genetic testing workflows.

Key Features

Application and Workflow Flexibility

- PCR tube with patent pending cap-in-cap design, sample identifiers and automation friendly capabilities offer a flexible, scalable solution
- Hinged lid allows for flexibility for use in manual workflows, alongside mitigating against contamination
- Orange Screw cap enables automated opening and closing using an Azenta fully automated or semi-automated handheld capper
- Tube-specific PCR Rack in SBS footprint for PCR cycling as well as liquid handler use

Sample Identification

- Tab on the side of the tube with 2D datamatrix code and human readable code
- Full rack decoding possible with the Verification Camera of Azenta IntelliXcap Acoustic (part 46-8014)

High Quality Tubes

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen
- Leak tested
- 0.2 ml (200 µl) total well capacity
- Polypropylene, ultra-thin walled, low DNA binding tubes make for optimum PCR results and mitigation against
- DNA loss from samples

Ordering Information

4ti-0791	**Cap² 0.2ml Dual-Cap, Sample Collection, PCR Tube.** Clear polypropylene, attached flip cap with orange screw cap, 2D code and human readable number on tab, 500 tubes per case
4ti-0374	**Cap² 0.2ml Dual-Cap Sample Collection PCR Tube Rack.** 48 well skirted frame, SBS format, white PC, cut corner H1/H12, suitable for 0.2ml Dual-Cap PCR Tubes (4TI-0791), 10 racks per case

4titude Individual PCR Tubes, With Attached Caps, With Or Without 2D Barcode

High profile, 0.2 ml wells, polypropylene, working volume <200 µl, total well capacity: 300 µl; with either flat or domed attached caps; also available with unique 2D coded flat caps

- These PCR tubes are molded from virgin polypropylene in our UK-based Class 7 ISO certified cleanroom production facility, and comply to the same stringent requirements as our FrameStar range
- Recommended for low to medium throughput applications
- Our individual tubes with flat caps are also available with a unique 2D code applied to the top of each tube
- This allows for clear labeling of tubes, despite the limited space available
- Printed 2D codes allow for easy sample tracking and are more reliable than the use of adhesive stickers
- Our compact hand held barcode scanner, 4ti-4060, delivers the speed typical of laser scanners on any barcode, including both 1D and 2D codes

Key Features

- Leak tested
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Tubes

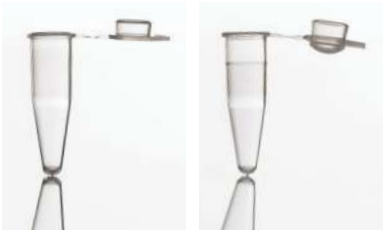
- 0.2 ml (200 µl) working volume, 0.3 ml (300 µl) total well capacity
- Snap-shut cap design

Uses

- Suitable for all standard 0.2 ml block thermal cyclers

Options

- Flat and domed cap designs
- Our individual tubes with flat caps (4ti-0790) are also available with unique 2D code applied to the top of each tube (use product code 4ti-0790/2D when ordering); the barcode is suitable for low temperature storage and high temperature thermal cycling
- Our hand held barcode scanner, 4ti-4060 together with the user-friendly software allows for reliable and convenient sample management



Ordering Information

4ti-0790	**Individual PCR Tubes with Attached Flat Caps,** 0.2ml, **clear PP** wells, 1000 tubes per case
4ti-0790/2D	**Individual PCR Tubes with Attached Flat Caps,** 0.2ml, **clear PP, 2D coded**, high profile, 960 tubes per case
4ti-0795	**Individual PCR Tubes with Attached Domed Caps,** 0.2ml, **clear PP,** high profile, 1000 tubes per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

4titude Non-Skirted PCR Plates Breakable Horizontally or Vertically

Non-Skirted PCR Plates Breakable Horizontally or Vertically allow for the most flexible, efficient and cost-effective use of a PCR plate. Avoid the costly use of half-empty plates or the fiddly separation of plates with scissors. Cutting plates can damage wells and sealing rings, risking evaporation and sample contamination.

Based on our standard non-skirted PCR plate (4ti-0750), Non-Skirted PCR Plates Breakable Horizontally or Vertically can be quickly and easily divided along the perforations between the rows. The correct number of wells can be separated off for each experiment, saving time and costs.

The Non-Skirted PCR Plates Breakable Horizontally or Vertically are available perforated either in the vertical direction, tearing into 8 well strips, or in the horizontal direction, tearing into 12 well strips. Both versions maintain all the benefits of our standard non-skirted PCR plate, but with increased flexibility.

- **Allows for the most flexible and efficient use of a PCR plate —** no need to run half-empty plates, so reducing costs
- **Plate is perforated to enable accurate tearing into either 8 well or 12 well strips —** no tricky cutting of plates with scissors risking perforating wells, damaging sealing rings and contamination
- **Black grid reference on all strips —** No sample identification errors
- **Non-skirted plates —** Universal cycler and sequencer compatibility
- **8 well version is easily divided into 24 and 48 well plates to fit a 24 or 48 well thermal cycler block**
- **12 well version perfectly suited for gradient cyclers**
- **White version available for superior qPCR performance**

96/12 Non-Skirted PCR Plates Breakable Horizontally or Vertically allow you to make full use of your gradient PCR instruments. The temperature gradient is typically created along the horizontal direction of the block, thus 12 well strips or sections are ideal.

How trustworthy are your scissors?

Scissors are widely used by everyone in the lab and are typically highly contaminated with substances including bacteria and DNA. Cutting PCR plates with scissors should be avoided as it may lead to contamination of the wells.

4titude 96 Well Non-Skirted PCR Plate Breakable Horizontally or Vertically

96 well non-skirted PCR plate, vertically or horizontally perforated, high profile, 0.2 ml wells, polypropylene, cut corner H12; working volume: <200 µl, total well capacity: 300 µl; tears easily into strips or part plates; universal cycler and sequencer compatibility

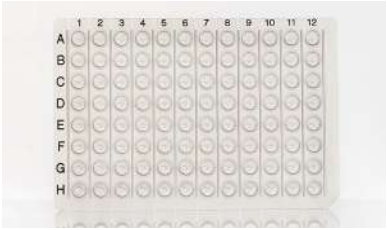
- Non-Skirted PCR Plates Breakable Horizontally or Vertically allow for the most flexible, efficient and cost-effective use of a PCR plate
- Avoid the costly use of half-empty plates or the fiddly separation of plates with scissors
- Scissors are widely used by everyone in the lab for cutting diverse materials, so are typically highly contaminated with substances including bacteria and DNA
- Cutting plates with scissors should be avoided as it can perforate wells and damage sealing rings, risking evaporation and sample contamination
- Based on our 96 Well Non-Skirted PCR Plate, plates can be quickly and easily divided along the perforations between the rows
- The correct number of wells can be separated off for each experiment, saving time and costs
- Available perforated either vertically, tearing into 8-well strips (96/8), or horizontally, tearing into 12-well strips (96/12)
- The new 12-strip 96/12 plates allow you to make full use of your gradient PCR instruments
- The temperature gradient is typically created along the horizontal direction of the block, thus 12-well strips or sections are ideal
- All of our PCR plates are molded from virgin polypropylene under ISO-certified cleanroom conditions in our UK-based production facility, and as such comply with the same stringent requirements as our FrameStar range
- This plate is perforated under the same cleanroom conditions post-manufacture so it can be separated into part plates or individual strips of tubes
- The Breakable Horizontally or Vertically Plate maintains all benefits of the 96 Well Non-Skirted PCR Plate, but adds extra flexibility

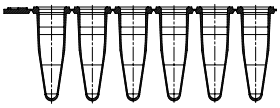
Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Frame

- Non-skirted plates: universal cycler and sequencer compatibility
- Alphanumeric grid reference on all strips: no sample identification errors
- Plate is perforated to enable accurate tearing into 8-well or 12-well strips: no tricky cutting of plates with scissors, risking perforated wells, damaging sealing rings, and contamination





Use

- Allows for the most flexible and efficient use of a PCR plate: no need to run half-empty plates, so reducing costs
- Snaps into strips for lower throughput: cost effective

Options

- The 96/8 8-well version is easily divided into 24 and 48-well plates to fit a 24 or 48-well thermal cycler block
- The 96/12 12-well version perfectly suited for gradient cyclers
- White version available for superior qPCR performance
- Sealable with Azenta PCR cap strips, adhesive seals and heat seals

Specifications

Parameter	Value
Plate length	120.00 ± 0.25 mm
Plate width	80.00 ± 0.25 mm
Plate height	20.20 ± 0.10 mm
Well depth	20.20 ± 0.10 mm
Well diameter	5.46 ± 0.10 mm
Distance to center of A1 from top edge	8.75 ± 0.25 mm
Distance to center of A1 from left edge	10.75 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0750/TA	**96 Well Non-Skirted PCR Plate, clear** PP, **breakable vertically**, high profile, cut corner H12, 50 plates per case
4ti-0750/W/TA	**96 Well Non-Skirted PCR Plate, white** PP, **breakable vertically**, high profile, cut corner H12, 50 plates per case
4ti-0750/TA/12	**96 Well Non-Skirted PCR Plate, clear** PP, **breakable horizontally**, high profile, cut corner H12, 50 plates per case

For recommended plate options depending on manufacturer, block type, and instrument please refer to the Azenta Plate Instrument Compatibility Table Pages 162-165.

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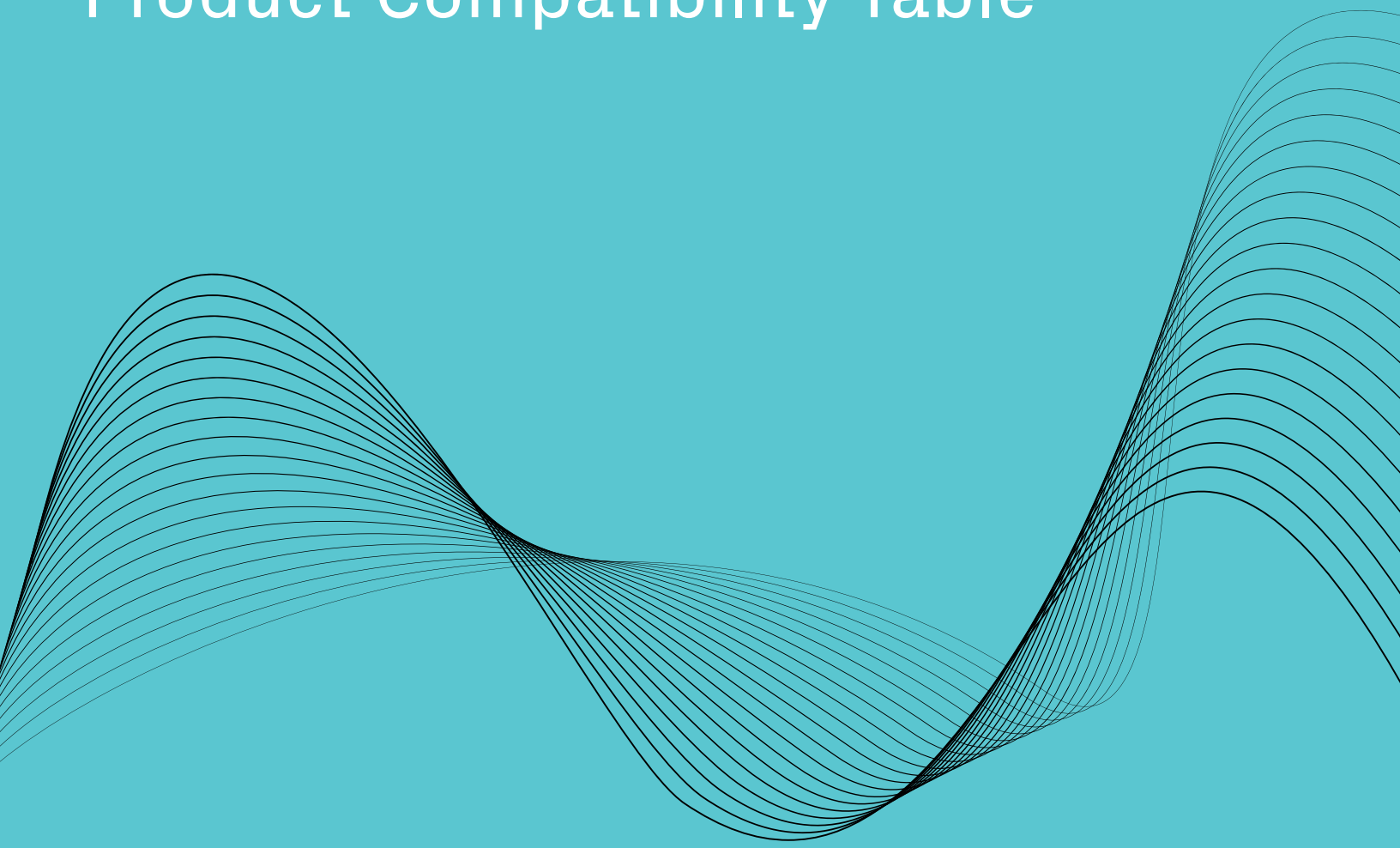
Thermal Cycler and PCR Product Compatibility Table



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Instrument Compatibility Table

			FrameStar Polypropylene & Polycarbonate PCR Plates							
Skirt			skirted			semi-skirted				
Number of wells			384	384	96	96	96	96	96	96
High/Low Profile			/	/	L	L	L	H	H	H
Product code[1]/Short description			4ti-0384 FrameStar 384	4ti-0380 FrameStar 384 Roche	4ti-0960 FrameStar 96	4ti-0950 & 4ti-0954 FrameStar 96 Roche	4ti-0910 FrameStar 96 FastPlate	4ti-0730 FrameStar 96 ABI®	4ti-0770 FrameStar 96 ABI®	4ti-0900 FrameStar 96
ABI® / LIFE TECHNOLOGIES / THERMO FISHER SCIENTIFIC										
Thermal Cyclers	96 well standard block	Veriti, Proflex, Simpliamp						✓	△	
		GeneAmp® 2700 / 2720 / 9600 / 9700						✓	△	
	96 well FAST block	GeneAmp® 9800 FAST, Veriti FAST					△			
	384 well block	GeneAmp® 9700, Veriti, Proflex, Multiblock system	△							
qPCR Cyclers	96 well standard block	7000, 7300, 7500, 7700, 7900 HT						✓	△	
		QuantStudio™ 3 / 5 / 6 / 7 / 12K, ViiA7™						✓	△	
	96 well FAST block	StepOne								
		StepOne Plus™					△			
		7500 FAST, 7900 HT FAST					△			
		QuantStudio™ 3 / 5 / 6 / 7 / 12K, ViiA7™					△			
	384 well block	QuantStudio™ 5 / 6 / 7 / 12K, ViiA7™ 7900 HT FAST	△							
Sequencers	96 well block	3100, 3130XL, 3500, 3500XL, 3730, 3730XL						△	✓	
	384 well block	3100, 3130XL, 3500, 3500XL, 3730, 3730XL	△							
AGILENT / STRATAGENE										
Thermal Cyclers	96 well block	Surecycler 8800								
	384 well block	SureCycler 8800	△							
	96 well block	Robocycler Gradient			△					✓
qPCR Cyclers	96 well block	AriaMx			△					
		Mx3000P™ Mx3005P™							△	✓
		Mx4000™						✓	△	
ANALYTIK JENA / BIOMETRA										
Thermal Cyclers	Strips only	TRIO, Tpersonal, T3 Thermocycler								
	96 well block	Flexcycler2, T1 Thermocycler, Tgradient, Tone, Tadvanced, TProfessional (Standard/Basic) Gradient/XL			△				✓	✓
		Trobot 96, SpeedCycler2 (SP, SPR)			△				✓	✓
	384 well block	Flexcycler2, T1 Thermocycler, Tadvanced, TProfessional, Trobot 96	△							
qPCR Cyclers	96 well block	qTOWER^3 / G / touch, Toptical							△	✓
	384 well block	qTOWER^3 84 / 84G	△							
BIOER TECHNOLOGIES										
Thermal Cyclers	Strips only	GeneQ								
	96 well block	Gene Touch 96							△	✓
	384 well block	Gene Touch 384	△							
BIO-RAD										
Thermal Cyclers	Strips only	Genecycler								
	96 well block	C1000 Touch, S1000			△				✓	✓
		iCycler,™ MyCycler™, T100							△	✓
	384 well block	C1000 Touch, S1000	△							
qPCR Cyclers	96 well block	CFX96 Touch, CFX96 Touch Deep Well, CFX connect			△					
		MyiQ,™ iCycler™ IQ / IQ 4 / IQ 5							△	✓
	384 well block	CFX384 Touch	△							

[1] Short product code shown only (without details on frame and well color), please refer to the corresponding product page for ordering details of all variations available.

[2] For compatibility information of the PCR Plate for Removable 8 Well Tube Strips please refer to the table entry for the respective PCR Plate for Removable 8 Well Tube Strips frame.

△ Recommended option ✓ Compatible • Should be compatible, please check with your specific instrument/block ✻ Compatible with PCR Plates Breakable Horizontally or Vertically only

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FrameStar PCR Plates, Individually Accessible Plate, PCR Tube Strips								Standard PCR Plates and Strips												
non skirted		Breakable Vertically		Breakable Vertically & Horizontally		skirted	strips	skirted			semi-skirted			non-skirted	strips				strips
96	96	96	96	96	96	96	8	384	384	96	96	96	96	96	8	8	8	8	8	4
H	L	H	L	H	L	L	H	/	/	L	H	L	H	H	H	L	H	L	H	/
4ti-0710 FrameStar 96	4ti-0720 FrameStar 96	4ti-1000 FrameStar Breakable Vertically	4ti-1200 FrameStar Breakable Vertically	4ti-1300 FrameStar Breakable Vertically & Horizontally	4ti-1400 FrameStar Breakable Vertically & Horizontally	4ti-0960/RA Individual Access 96	4ti-0785 & 4ti-0786 PCR Tube Strips 8 Well	4ti-1384 384 Well	4ti-1381 384 Well Roche	4ti-0740 96 Well	4ti-0760 96 Well	4ti-0955 96 Well Roche	4ti-0735 96 Well ABI®	4ti-0750 - 96 Well 4ti-0750/TA- dividable	4ti-0781 8 Well	4ti-0753 PCR Tube Strip	4ti-0792 8 Well, Attached Flat Caps	4ti-0793 8 Well, Attached Flat Caps	4ti-0794 8 Well, Attached Domed C.	4ti-0796 4 Well Rotor-Gene®
		✓		✓			✓				✓		✓	✓	✓		✓		✓	
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✓		✓		✓			✓				✓					✓		✓		
								✓												

The individual instrument-plate compatibility information is for guidance only. Samples of all plates are available before purchase to ensure compatibility. Please check installed heat block, refer to instruments manual for details or contact our technical support.

Azenta recognises that designated trademarks and brands of the Instrument Compatibility Table are the property of their respective owners.

Instrument Compatibility Table

			FrameStar Polypropylene & Polycarbonate PCR Plates							
Skirt			skirted			semi-skirted				
Number of wells			384	384	96	96	96	96	96	96
High/Low Profile			/	/	L	L	L	H	H	H
Product code[1]/Short description			4ti-0384 FrameStar 384	4ti-0380 FrameStar 384 Roche	4ti-0960 FrameStar 96	4ti-0950 & 4ti-0954 FrameStar 96 Roche	4ti-0910 FrameStar 96 FastPlate	4ti-0730 FrameStar 96 ABI®	4ti-0770 FrameStar 96 ABI®	4ti-0900 FrameStar 96
BIO-RAD MJ RESEARCH										
Thermal Cyclers	Strips only	Mini Gradient								
	96 well block	Personal								△
		PTC100™ / 200™ / 220™ / 221™ / 225™ / 240™			△				✓	✓
	384 well block	PTC200™ / 220™ / 221™ / 225™ / 240™	△							
qPCR Cyclers	Strips only	MiniOpticon								
	96 well block	Chromo4™			△				✓	✓
		Opticon2™			△					
CORBETT RESEARCH										
Thermal Cyclers	96 well block	(Qiagen) Palm Cycler							△	✓
	384 well block	(Qiagen) Palm Cycler 384	△							
qPCR Cycl.	Strips only	Rotor-Gene series								
EPPENDORF										
Thermal Cyclers	96 well block	MasterCycler® ep / ep gradient / Pro / Pro S / nexus / nexus gradient / nexus SX1 / nexus GSX1			△				✓	✓
		MasterCycler® nexus X2 / GX2 / GX2e / X2e								
	384 well block	MasterCycler® ep 384 / Pro 384	△							
qPCR Cycl.	96 well block	Mastercycler™ ep realplex			△				✓	✓
GE HEALTHCARE / AMERSHAM										
Sequencers	96 well block	MegaBACE™ 500, MegaBACE™ 1000 mark 2			△					
	384 well block	MegaBACE™ 4000	△							
PEQLAB / VWR										
Thermal Cyclers	Strips only	peqSTAR XS, peqSTAR 2X								
	96 well block	peqSTAR 96X			△				✓	✓
	384 well block	peqSTAR 384X	△							
ROCHE										
qPCR Cyclers	96 well block	LC96, LC480				△				
	384 well block	LC480		△						
	Strips only	Nano								
SENSOQUEST										
Thermal Cyclers	96 well block	Labcycler			✓		✓	✓	✓	✓
	384 well block	Labcycler	△							
TAKARA										
Thermal Cycl.	96 well block	Dice touch, Gradient							△	✓
TECHNE										
Thermal Cyclers	Strips only	3Prime, 3PrimeG, 3PrimeX								
	96 well block	Prime, PrimeG, Prime Elite, Prime Elite Satellite							△	✓
		PCRmax Alpha cycler 1 / 2 / 4							△	✓
		TC412, TC512, Genius, Genius Quad, Touchgene, Touchgene Gradient, Flexigene			△				✓	✓
	384 well block	Prime, PrimeG, Prime Elite, Prime Elite Satellite	△							
		PCRmax Alpha cycler 1 / 2 / 4	△							
		TC412, TC512, Genius, Genius Quad, Flexigene	△							
qPCR Cycl.	96 well block	Quantica			△					

[1] Short product code shown only (without details on frame and well color), please refer to the corresponding product page for ordering details of all variations available.

[2] For compatibility information of the PCR Plate for Removable 8 Well Tube Strips please refer to the table entry for the respective PCR Plate for Removable 8 Well Tube Strips frame.

△ Recommended option ✓ Compatible • Should be compatible, please check with your specific instrument/block ✻ Compatible with PCR Plates Breakable Horizontally or Vertically only

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FrameStar PCR Plates, Individually Accessible Plate, PCR Tube Strips								Standard PCR Plates and Strips												
non skirted		Breakable Vertically		Breakable Vertically & Horizontally		skirted	strips	skirted			semi-skirted			non-skirted	strips				strips
96	96	96	96	96	96	96	8	384	384	96	96	96	96	96	8	8	8	8	8	4
H	L	H	L	H	L	L	H	/	/	L	H	L	H	H	H	L	H	L	H	/
4ti-0710 FrameStar 96	4ti-0720 FrameStar 96	4ti-1000 FrameStar Breakable Vertically	4ti-1200 FrameStar Breakable Vertically	4ti-1300 FrameStar Breakable Vertically & Horizontally	4ti-1400 FrameStar Breakable Vertically & Horizontally	4ti-0960/RA Individual Access 96	4ti-0785 & 4ti-0786 PCR Tube Strips 8 Well	4ti-1384 384 Well	4ti-1381 384 Well Roche	4ti-0740 96 Well	4ti-0760 96 Well	4ti-0955 96 Well Roche	4ti-0735 96 Well ABI®	4ti-0750 - 96 Well 4ti-0750/TA- dividable	4ti-0781 8 Well	4ti-0753 PCR Tube Strip	4ti-0792 8 Well, Attached Flat Caps	4ti-0793 8 Well, Attached Flat Caps	4ti-0794 8 Well, Attached Domed C.	4ti-0796 4 Well Rotor-Gene®
		△		✓			✓							*	✓		✓		✓	
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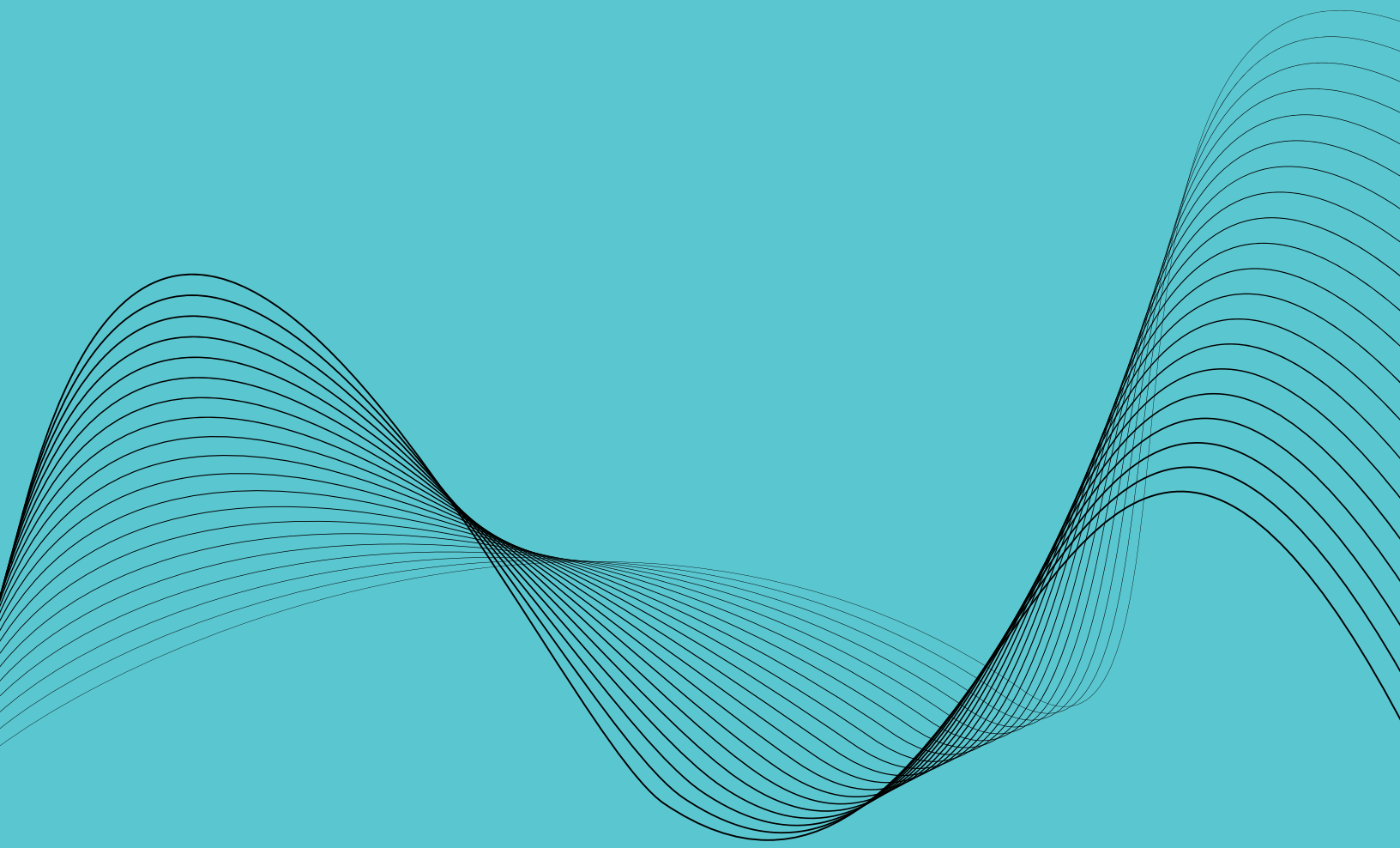
The individual instrument-plate compatibility information is for guidance only. Samples of all plates are available before purchase to ensure compatibility. Please check installed heat block, refer to instruments manual for details or contact our technical support.

Azenta recognises that designated trademarks and brands of the Instrument Compatibility Table are the property of their respective owners.

Storage Plates



4titude 384 Square Deep Well Storage Microplate

190 µl square wells, V shaped bases, clear polypropylene

- This plate is designed for high density sample collection and storage, for a wide array of applications within cell biology, molecular biology and drug discovery
- The V shaped wells allow for complete sample retention with pipettes, and are ultra-flat for a completely uniform seal, either with adhesive or heat seals, or (4ti-0139)
- Our plates are manufactured in cleanroom facilities which are certified free of RNase, DNase, human genomic DNA and endotoxins
- We use only the highest medical grade virgin polypropylene with high resistance against chemicals such as DMSO, phenol, and chloroform

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO
- Autoclavable
- Free from DNase, RNase, human genomic DNA, and endotoxin

Wells

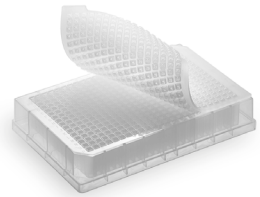
- Square wells, to make the best use of space, and to improve mixing
- Conical V-bottoms

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Clear plate, perfect for storage applications
- Temperature range for use: -80°C to 120°C
- Best for precipitation, centrifugation and small volume recovery due to the conical V bottom, as the liquid gathers at the lowest point of the V for easy pipetting
- Stackable
- Suitable for adhesive and heat sealing



Options

- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request
- A clear silicone sealing mat (4ti-0139) is also available to fit this product, with 384 sections to correspond with the wells of this plate
- Ultra-low DNA binding option available (4ti-LB0147) for sensitive applications with ultra-low DNA input and for maximum DNA recovery after low temperature storage and high temperature incubation

Ordering Information

4ti-0147	**384 Square Deep Well Storage Microplate,** 190ul square wells, V-shaped bottom, clear PP, 100 plates per case
4ti-LB0147	**384 Square Deep Well Storage Microplate, low binding,** 190µl square wells, V-shaped bottom, clear PP, 100 plates per case
Related Products	
4ti-0139	**384 Square Well Sealing Cap Mat,** clear silicone, for use with square 384 well microplates and deep well storage microplates, 50 mats per case

4titude 96 Square Deep Well Storage Microplate

1.2 ml and 2.2 ml square wells, U and V shaped bottom, clear polypropylene

- These storage plates are designed for high density sample collection and storage for a wide array of applications within cell biology, molecular biology and drug discovery
- They come in three formats: 1.2 ml volume U shaped well plates (4ti-0126), 2.2 ml volume V shaped (4ti-0132), and 2.2 ml volume U shaped (4ti-0136) plates
- All of these plates are ultra-flat for a completely uniform seal, either with adhesive or heat seals, or with our accompanying silicone sealing mat (4ti-0137)
- These plates are manufactured in cleanroom facilities which are certified free of RNase, DNase, human genomic DNA and endotoxins
- We use only the highest medical grade virgin polypropylene with high resistance against chemicals such as DMSO, phenol, and chloroform

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO
- Autoclavable
- Free from RNase, DNase, human genomic DNA and endotoxins

Wells

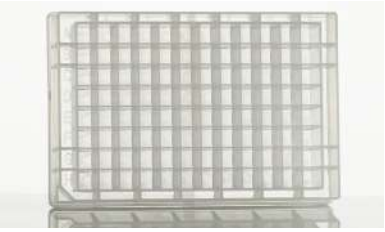
- Conical V-bottoms (4ti-0132) and U-shaped bottoms (4ti-0126 and 4ti-0136)
- Square wells, to make the best use of space, and to improve mixing

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Clear plate, perfect for storage applications
- Temperature range for use: -80°C to 120°C
- Best for precipitation, centrifugation and small volume recovery due to the conical V bottom, as the liquid gathers at the lowest point of the V for easy pipetting
- U-shaped bottom plates are best for washing, mixing and pelleting and give high surface area
- Stackable
- Suitable for adhesive and heat sealing



Options

- Available with a U-shaped bottom in 1.2 ml and 2.2 ml
- Also available with a V-shaped bottom in 2.2 ml
- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request
- A clear silicone sealing mat (4ti-0137) is also available to fit these plates

Ordering Information

4ti-0126	**96 Square Deep Well Storage Microplate, 1.2ml square wells,** U-shaped bottom, clear PP, 100 plates per case
4ti-0132	**96 Square Deep Well Storage Microplate, 2.2ml square wells,** V-shaped bottom, clear PP, 50 plates per case
4ti-0136	**96 Square Deep Well Storage Microplate, 2.2ml square wells,** U-shaped bottom, clear PP, 50 plates per case
Related Products	
4ti-0137	**96 Square Well Sealing Cap Mat, clear silicone,** for use with square 96 well microplates and deep well storage microplates, 50 mats per case

4titude 96 Round Deep Well Storage Microplate

1.2 ml or 2.0 ml round wells, U-shaped bottom, clear polypropylene

- These 96 deep well storage microplates are suitable for many manual and automated protocols, such as the Illumina® library and sample preparations, due to the plates' SBS footprint
- Additionally, they are suitable for use on magnetic plates for bead separation protocols
- Our round deep well storage microplates are available in two types of well volumes: 1.2 ml wells (4ti-0120) and 2.0 ml wells (4ti-0130)
- Both of these plates are ultra-flat for a completely uniform seal, either with our adhesive or heat seals, or with our accompanying silicone sealing mats (4ti-0135 mat for the 1.2 ml plate ; 4ti-0138 mat for the 2.0 ml plate)
- Our plates are manufactured in cleanroom facilities which are certified free of RNase, DNase, human genomic DNA and endotoxins
- We use only the highest medical grade virgin polypropylene with high resistance against chemicals such as DMSO, phenol, and chloroform

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO
- Autoclavable
- Free from RNase, DNase, human genomic DNA and endotoxins

Wells

- Round wells, suitable for most applications as they reduce droplet effects and wicking
- U-shaped bottoms

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Clear plate, perfect for storage applications
- Suitable as a collection plate from filter systems
- Temperature range for use: -80°C to 120°C
- U-shaped bottom plates are best for washing, mixing and pelleting and give high surface area
- Stackable
- Suitable for adhesive and heat sealing

Options

- Available with 1.2 ml and 2.0 ml wells
- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request
- 2 clear silicone sealing mats (4ti-0135 and 4ti-0138) are also available to fit these plates

Ordering Information

4ti-0120	**96 Round Deep Well Storage Microplate, 1.2ml round wells,** U-shaped bottom, clear PP, 50 plates per case
4ti-0130	**96 Round Deep Well Storage Microplate, 2.0ml round wells,** U-shaped bottom, clear PP, 50 plates per case
Related Products	
4ti-0135	**96 Round Well Sealing Cap Mat, white silicone,** for use with 4TI-0120 only, 100 mats per case
4ti-0138	**96 Round Well Sealing Cap Mat, clear silicone,** for use with round 96 well microplates and deep well storage microplates (not for use with 4ti-0120 and 4ti-0110), 50 mats per case

4titude 96 Round Deep Well Storage Microplate, For Magnetic Separators

1 ml round wells, V-shaped bottom, clear polypropylene

- These 96 deep well storage microplates are especially designed for use with magnetic separators for bead separation protocols
- Due to the special shape of the stacking ribs, the plate sits much lower on the magnetic separator than standard round well plates thus facilitating the speed and efficiency of the separation process
- The plates are ultra-flat for a completely uniform seal; sealing possible with either adhesive or heat seals

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO
- Autoclavable
- Free from RNase, DNase, human genomic DNA and endotoxins

Wells

- Round wells: suitable for most applications, as they reduce droplet effects and wicking
- V-shaped bottom

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Perfect fit to magnetic separators: the magnetic beads separate perfectly into e.g. a ring (if a ring magnet is used) allowing easy removal of supernatant from the center of the well by manual or automated pipetting
- Replaces the 96-well storage plates, round well, 0.8 ml (MIDI plate, Fisher Scientific® part number AB-0859), in e.g. Illumina® protocols
- Best for small volume recovery due to the V-shaped bottom, as the liquid gathers at the lowest point of the V for easy pipetting
- Compatible with plate readers and ideal for use with automation
- Temperature range for use: -80°C to 120°C

Options

- Ultra-low DNA binding option available (4ti-LB0125) for sensitive applications with ultra-low DNA input and for maximum DNA recovery after low temperature storage and high temperature incubation
- Available barcoded upon request
- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Silicone sealing cap mat (4ti-0124) available separately: efficiently prevents cross contamination and sample evaporation to ensure a high degree of sample security

Ordering Information

4ti-0125	**96 Round Deep Well Storage Microplate, for magnetic separators,** 1.0ml round wells, V-shaped bottom, clear PP, 50 plates per case
4ti-LB0125	**96 Round Deep Well Storage Microplate,** for magnetic separators, low binding, 1.0ml round wells, V-shaped bottom, clear PP, 50 plates per case
Related Products	
4ti-0124	**96 Round well Sealing Cap Mat, clear silicone,** for use with 4ti-0125, 50 mats per case

4titude 96 Round Well Storage Microplate

200 µl, 300 µl, 330 µl or 350 µl round wells, U or V shaped bottom, clear polypropylene; also available as a low binding plate with ultra-low DNA binding properties

- These shallow 96 well storage microplates are particularly suitable for collection and preservation of samples widely used in cell biology research, molecular biology research, and drug discovery
- Four formats of this plate are available: a U-bottom plate with 300 µl or 330 µl well volumes (4ti-0110 and 4ti-0116 respectively), and a V-bottom plate with 200 µl or 330 µl well volume (4ti-LB0109 and 4ti-0117 respectively)
- Also available as a low binding plate with ultra-low DNA binding properties (4ti-LB0109) for sensitive applications such as Next Generation Sequencing sample preparation
- All of these plates are ultra-flat for a completely uniform seal, either with adhesive or heat seals, or with our accompanying silicone sealing mat (4ti-0138)
- These plates are manufactured in cleanroom facilities which are certified free of RNase, DNase, human genomic DNA and endotoxins
- We use only the highest medical grade virgin polypropylene with high resistance against chemicals such as DMSO, phenol, and chloroform

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO
- Autoclavable
- Free from RNase, DNase, human genomic DNA and endotoxins
- Low binding option made of selected low bind polymers, no coating is used to achieve the binding characteristics; they feature stacking ribs under the deck for improved stability, strengthening the plate for use in robotic automation applications

Wells

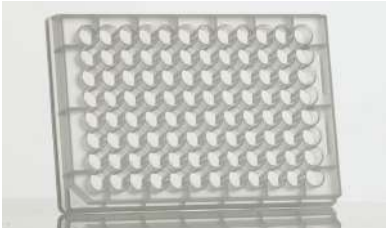
- Conical V-bottoms (4ti-LB0109 and 4ti-0117) and U-shaped bottoms (4ti-0110 and 4ti-0116)
- Round wells, suitable for most applications as they reduce droplet effects and wicking

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Clear plate, perfect for storage applications
- Suitable as a collection plate from filter systems
- Temperature range for use: -80°C to 120°C



- Best for precipitation, centrifugation and small volume recovery due to the V-shaped bottom, as the liquid gathers at the lowest point of the V for easy pipetting
- U-shaped bottom plates are best for washing, mixing and pelleting and give high surface area
- Stackable
- Suitable for adhesive and heat sealing

Options

- Available with a U-shaped bottom in 300 µl and 330 µl, and with V-shaped bottom in 200 µl and 330 µl
- Ultra-low DNA binding option available (4ti-LB0109) for sensitive applications with ultra-low DNA input and for maximum DNA recovery after low temperature storage and high temperature incubation; learn more about our low binding range (not suitable for use on PCR blocks)
- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request
- A clear silicone sealing mat (4ti-0138) is also available to fit these plates

Ordering Information

4ti-LB0109	**96 Round Well Microplate, low binding, 200ul round wells, V-shaped bottom, clear PP,** 50 plates per case
4ti-0110	**96 Round Well Microplate, 300ul round wells, U-shaped bottom, clear PP,** 100 plates per case
4ti-0116	**96 Round Well Microplate, 350ul round wells, U-shaped bottom, clear PP,** 100 plates per case
4ti-0117	**96 Round Well Microplate, 330ul round wells, V-shaped bottom, clear PP,** 100 plates per case
Related Products	
4ti-0138	**96 Round Well Sealing Cap Mat, clear silicone,** for use with round 96 well microplates and deep well storage microplates (not for use with 4ti-0120 and 4ti-0110), 50 mats per case

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4titude 12 Channel Reservoir Plate

Pyramid channel bottom, clear polypropylene

- Our Reservoir Plates are perfect for storing volumes of samples to be pipetted into other microplates for further applications
- Both plate formats - open format and 12 column format - are compatible with standard 12 and 96 well channel pipettes, and are suitable for automated systems, for instance the PerkinElmer® Sciclone® NGS Workstation
- These plates are manufactured in cleanroom facilities which are certified free of RNase, DNase, human genomic DNA and endotoxins
- We use only the highest medical grade virgin polypropylene with high resistance against chemicals such as DMSO, phenol, and chloroform
- Pyramid channel bases are best for small volume recovery
- The standard SBS footprint ensures its compatibility with automation

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO
- Stackable
- Free from RNase, DNase, human genomic DNA and endotoxins

Channels

- Pyramid channel bottom, perfect for maximum sample retrieval; both the open format plate (4ti-0133) and the 12 channel plate (4ti-0131) have pyramid bases
- Rectangular channels (4ti-0131), to ensure the best use of space and allow the use of multichannel pipettes

Frame

- SBS footprint

Use

- Perfect for maximum sample retrieval; even the smallest volume can be retrieved as it gathers in the base of the pyramid, and can be easily taken in by a pipette
- Compatible with plate readers and ideal for use with automation
- Suitable as a collection plate from filter systems
- Temperature range for use -80°C to 120°C

Options

- Available barcoded upon request
- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing

Ordering Information

4ti-0131	**12 Channel Reservoir Plate, 21ml channels, pyramid bottom, clear PP,** 25 plates per case
4ti-0133	**12 Channel Reservoir Plate, 290ml open format, 12 channel pyramid bottom, clear PP**, 25 plates per case

4titude 96 Square Well Microplate, KingFisher™ Style

200 µl square wells, V-shaped bottom, clear polypropylene

- Suitable for use with KingFisher Flex, Apex and Presto
- Ultra-flat deck and standard SBS footprint ensures its compatibility with automation

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO

Wells

- Conical V-bottoms
- Square wells, to make the best use of space, and to improve mixing

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Stackable
- Compatible with KingFisher system

Options

- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request

Ordering Information

4ti-0151	**Microplate KingFisher Style, 96 square 200ul wells, V-shaped bottom,** 50 plates per case

4titude 96 Square Deep Well Microplate, KingFisher™ Style

2.0 ml square wells, V-shaped bottom, clear polypropylene

- Suitable for use with KingFisher Duo Prime, Flex, Apex and Presto
- Designed for use with magnetic bead separators
- Ultra-flat deck and standard SBS footprint ensures its compatibility with automation

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO

Wells

- Conical V-bottoms
- Square wells, to make the best use of space, and to improve mixing

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Stackable
- Compatible with KingFisher system

Options

- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request

Ordering Information

4ti-0150	**Deep Well Microplate KingFisher Style, 96 square 200ul wells, V-shaped bottom,** 50 plates per case

4titude 96 Tip Comb for Deep Well Magnets, KingFisher™ Style

Clear polypropylene

- Suitable for use with KingFisher Flex, Apex and Presto

Key Features

- Made from polypropylene, a material with very low biomolecular binding characteristics, a high temperature tolerance and resistance to many standard laboratory chemicals, including DMSO

Use

- Suitable for use with 96 deep well magnets
- Compatible with KingFisher system

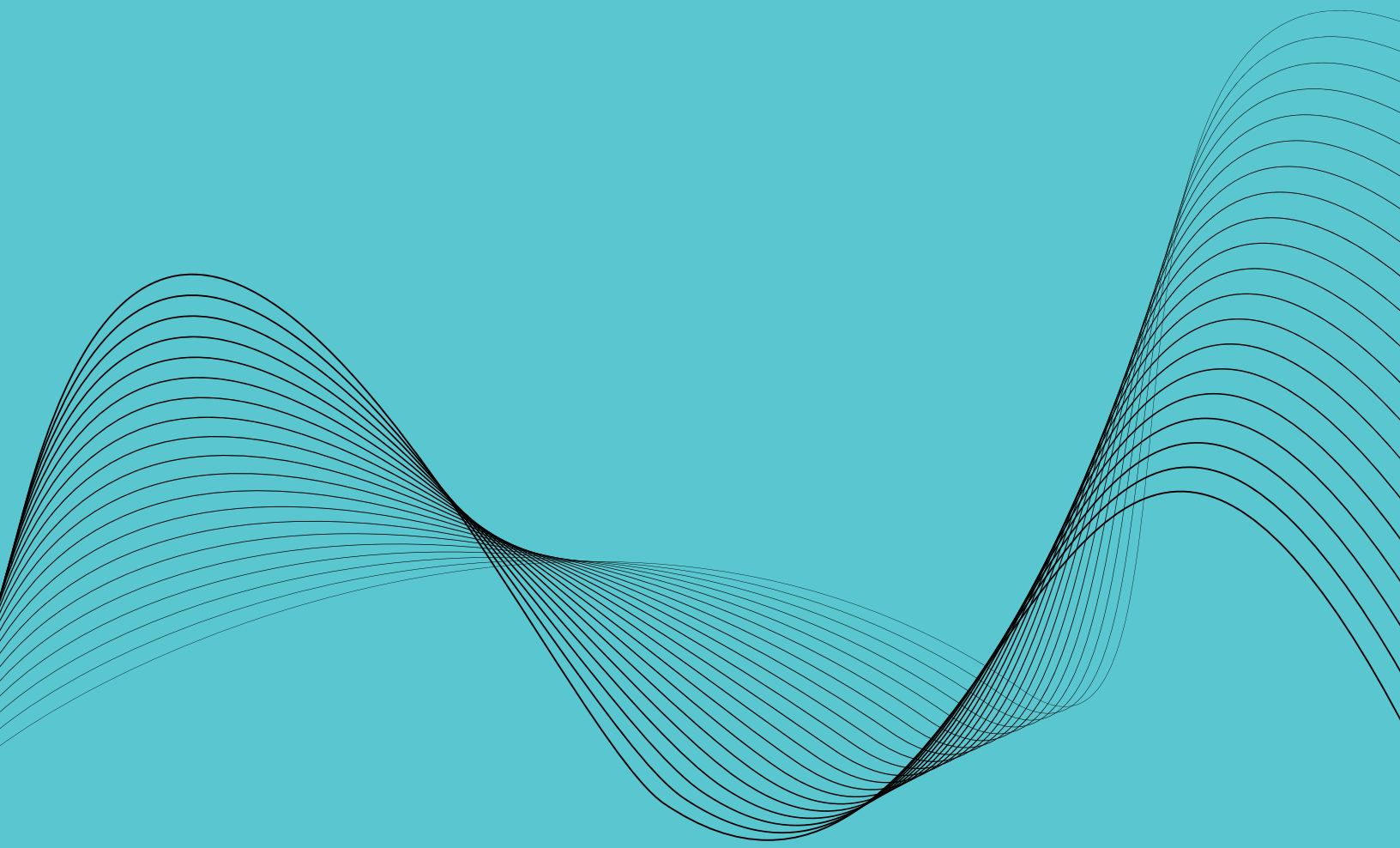
Options

- Non-gamma treated as standard, gamma treatment available upon request; contact us for details and pricing
- Available barcoded upon request

Ordering Information

4ti-0152	**Comb for Deep Well Magnets KingFisher Style,** 96 tips, 50 plates per case

Assay Plates



4titude 384 Well Optically Clear Tissue Culture Plate

190 µm clear base imaging microplate, black frame

- Optically Clear Tissue Culture Plates have been designed for high content screening (HCS) assays in drug development and related areas
- They are also suitable for homogeneous assays, employing fluorescence intensity, FRET and TR-FRET where measurements are bottom-read
- The high-quality optical base plate assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal-to-noise ratios
- Using state-of-the-art manufacturing technology, we have developed a product which offers several key advantages to the end user
- Optically Clear Tissue Culture Plates are assembled using unique patented laser welding technology which reduces autofluorescence and does not inhibit cell growth
- Available with 190 µm polystyrene base
- Available TC treated: our advanced tissue-culture (TC) treatment method evenly coats each well for optimal cell adhesion properties for highest reproducibility between wells, plates and batches

Key Features

- Leak free
- Free from DNase, RNase, human genomic DNA, and cyto-toxic

Wells

- Optimum signal-to-noise ratios
- Good cell adhesion
- Wicking and bubble formation eliminated

Frame

- SBS footprint
- Alphanumeric grid reference

Use

- Recommended for confocal microscopy due to reduced cross-talk and superior base flatness
- Reduced autofluorescence ensures their suitability for fluorescent assays
- Suitable for assays that measure absorbance in the visible light range (400-900 nm wavelengths)
- Suitable for colorimetric assays
- Suitable for homogeneous assays
- Suitable for use in BMG lab tech, Molecular Devices, Promega Glomax and other plate readers
- Suitable for adhesive and heat sealing: our Moisture Barrier Seal 384 (4ti-0516/384) is recommended as it is optically clear and allows repeated imaging without removal, reducing contamination risks

Options

- Available with 190 µm polystyrene base
- All plates come gamma irradiated, apart from 4ti-0204
- TC treated option available (4ti-0201)
- Collagen 1 treated option available (4ti-0205)
- Poly D-Lysine treated option available (4ti-0206)
- Available barcoded upon request

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	14.35 ± 0.25 mm
Well depth	11.35 ± 0.25 mm
Well diameter	3.70 ± 0.10 mm
Distance to center of A1 from top edge	8.99 ± 0.25 mm
Distance to center of A1 from left edge	12.13 ± 0.25 mm
Pitch (distance between A1 and A2)	4.50 mm

Ordering Information

4ti-0201	**Optically Clear Tissue Culture Plate, 384 well, tissue culture treated, gamma treated, with lid,** 190um clear base, black frame, 24 plates and lids per case
4ti-0203	**Optically Clear Tissue Culture Plate, 384 well, gamma treated,** 190um clear base, black frame, 30 plates per case
4ti-0204	**Optically Clear Tissue Culture Plate, 384 well,** 190um clear base, black frame, 30 plates per case
Lids	
4ti-0280	**Microplate 384 Lid, without condensation rings, clear,** low profile, cut corner A1/P1, 100 lids per case
4ti-0281	**Microplate 384 Lid, gamma treated, without condensation rings, clear,** low profile, cut corner A1/P1, 100 lids per case

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4titude 96 Well Optically Clear Tissue Culture Plate

190 µm clear base imaging microplate, black frame

- Optically Clear Tissue Culture Plates have been designed for high content screening (HCS) assays in drug development and related areas
- They are also suitable for homogeneous assays, employing fluorescence intensity, FRET and TR-FRET where measurements are bottom-read
- The high-quality optical base plate assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal-to-noise ratios
- Optically Clear Tissue Culture Plates are assembled using unique patented laser welding technology which reduces autofluorescence and does not inhibit cell growth
- Available with 190 µm polystyrene base
- Available TC treated: our advanced tissue-culture (TC) treatment method evenly coats each well for optimal cell adhesion properties for highest reproducibility between wells, plates and batches

Key Features

- Leak free
- Free from DNase, RNase, human genomic DNA, and cyto-toxic

Wells

- Optimum signal-to-noise ratios
- Good cell adhesion
- Wicking and bubble formation eliminated

Frame

- SBS footprint
- Alphanumeric grid reference

Use

- Recommended for confocal microscopy due to reduced cross-talk and superior base flatness
- Reduced autofluorescence ensures their suitability for fluorescent assays
- Suitable for assays that measure absorbance in the visible light range (400-900 nm wavelengths)
- Suitable for colorimetric assays
- Suitable for homogeneous assays
- Suitable for use in BMG lab tech, Molecular Devices, Promega Glomax and other plate readers
- Suitable for adhesive and heat sealing: our Moisture Barrier Seal 96 (4ti-0516/96) is recommended as it is optically clear and allows repeated imaging without removal, reducing contamination risks

Options

- Available with 190 µm polystyrene base
- All plates come gamma irradiated, apart from 4ti-0224
- TC treated option available (4ti-0221)
- Collagen 1 treated option available (4ti-0225)
- Poly D-Lysine treated option available (4ti-0226)
- Available barcoded upon request

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	14.35 ± 0.25 mm
Well depth	10.8 ± 0.25 mm
Well diameter	6.3 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0221	**Optically Clear Tissue Culture Plate, 96 well, tissue culture treated, gamma treated, with lid,** 190um clear base, black frame, 24 plates and lids per case
4ti-0223	**Optically Clear Tissue Culture Plate, 96 well, gamma treated,** 190um clear base, black frame, 30 plates per case
4ti-0224	**Optically Clear Tissue Culture Plate, 96 well,** 190um clear base, black frame, 30 plates per case
Lids	
4ti-0282	**Microplate 96 Lid, with condensation rings, clear**, low profile, cut corner A1/H1, 80 lids per case
4ti-0283	**Microplate 96 Lid, gamma treated, with condensation rings, clear,** low profile, cut corner A1/H1, 80 lids per case

AZENTA LIFE SCIENCES

4titude 24 Well Optically Clear Tissue Culture Plate

190 µm clear base imaging microplate, black frame

- Optically Clear Tissue Culture Plates have been designed for high content screening (HCS) assays in drug development and related areas
- They are also suitable for homogeneous assays, employing fluorescence intensity, FRET and TR-FRET where measurements are bottom-read
- The high-quality optical base plate assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal-to-noise ratios
- Using state-of-the-art manufacturing technology, we have developed a product which offers several key advantages to the end user
- Optically Clear Tissue Culture Plates are assembled using unique patented laser welding technology which reduces autofluorescence and does not inhibit cell growth
- Available with 190 µm polystyrene base
- Available TC treated: our advanced tissue-culture (TC) treatment method evenly coats each well for optimal cell adhesion properties for highest reproducibility between wells, plates and batches

Key Features

- Leak free
- Free from DNase, RNase, human genomic DNA, and cyto-toxic

Wells

- Optimum signal-to-noise ratios
- Good cell adhesion
- Wicking and bubble formation eliminated

Frame

- SBS footprint
- Alphanumeric grid reference

Use

- Recommended for confocal microscopy due to reduced cross-talk and superior base flatness
- Reduced autofluorescence ensures their suitability for fluorescent assays
- Suitable for assays that measure absorbance in the visible light range (400-900 nm wavelengths)
- Suitable for colorimetric assays
- Suitable for homogeneous assays
- Suitable for use in BMG lab tech, Molecular Devices, Promega Glomax and other plate readers
- Suitable for adhesive and heat sealing: our Moisture Barrier Seal 24 (4ti-0516/24) is recommended as it is optically clear and allows repeated imaging without removal, reducing contamination risks

Options

- Available with 190 µm polystyrene base
- All plates come gamma irradiated, apart from 4ti-0244
- TC treated option available (4ti-0241)
- Collagen 1 treated option available (4ti-0245)
- Poly D-Lysine treated option available (4ti-0246)
- Available barcoded upon request

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.00 ± 0.25 mm
Well depth	12.50 ± 0.25 mm
Well diameter	14.50 ± 0.10 mm
Distance to center of A1 from top edge	15.74 ± 0.25 mm
Distance to center of A1 from left edge	18.88 ± 0.25 mm
Pitch (distance between A1 and A2)	18.00 mm

Ordering Information

4ti-0241	**Optically Clear Tissue Culture Plate, 24 well, tissue culture treated, gamma treated, with lid,** 190um clear base, black frame, 24 plates and lids per case
4ti-0243	**Optically Clear Tissue Culture Plate, 24 well, gamma treated,** 190um clear base, black frame, 30 plates per case
4ti-0244	**Optically Clear Tissue Culture Plate, 24 well,** 190um clear base, black frame, 30 plates per case
Lids	
4ti-0284	**Microplate 24 Lid, with condensation rings, clear,** low profile, cut corner A1, 80 lids per case
4ti-0286	**Microplate 24 Lid, gamma treated, with condensation rings, clear,** low profile, cut corner A1, 80 lids per case

AZENTA LIFE SCIENCES

4titude 384 Well Ultra Optically Clear Plates

Ultra-clear based imaging microplate, black frame

- The main advantage of using Ultra Optically Clear Plates is in the optically ultra-clear base of the plate, which gives superior results by delivering low absorbance and high transmission, together with low background signals
- Not only this, but due to its incredible optical clarity, the ultra-clear base of the Ultra Optically Clear Plate delivers improved transmission of signals at low wavelengths compared to standard optical films
- It allows DNA measurements at 260/280 nm wavelengths in a medium or high throughput

Key Features

- Free from DNase, RNase and human genomic DNA

Base

- Ultra-clear base improves transmission for low wavelengths
- Peel-back film on the base for scratch free surface
- Optimum signal-to-noise ratios

Frame

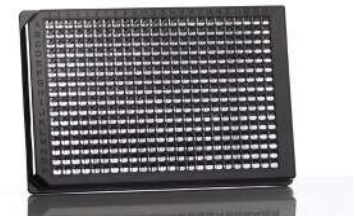
- Alphanumeric grid reference to aid well and sample identification

Use

- Suitable for adhesive and heat sealing

Options

- Available barcoded upon request
- Low profile lid available (4ti-0280)



Ordering Information

4ti-0214	**Ultra Optically Clear Plate,** 384 welll, clear base, black frame, 30 plates per case
Lids	
4ti-0280	**Microplate 384 Lid, without condensation rings, clear,** low profile, cut corner A1/P1, 100 lids per case

4titude 96 Well UV Ultra Optically Clear Cap Plates

Ultra-clear based imaging microplate

- The main advantage of using Ultra Optically Clear Plates is in the optically ultra-clear base of the plate, which gives superior results by delivering low absorbance and high transmission, together with low background signals
- Not only this, but due to its incredible optical clarity, the ultra-clear base of the Ultra Optically Clear Plate delivers improved transmission of signals at low wavelengths compared to standard optical films
- It allows DNA measurements at 260/280 nm wavelengths in a medium or high throughput

Key Features

- Free from RNase, DNase and human genomic DNA

Base

- Ultra-clear base improves transmission for low wavelengths
- Optimum signal-to-noise ratios

Frame

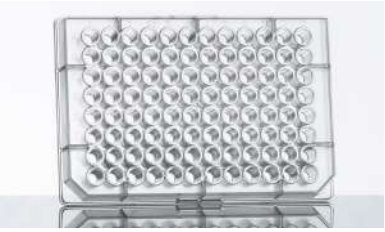
- Alphanumeric grid reference to aid well and sample identification

Use

- Suitable for adhesive and heat sealing

Options

- Available barcoded upon request
- Lid available (4ti-0290)



Ordering Information

4ti-0234	**Ultra Optically Clear Plate, 96 welll,** clear base, clear frame, 30 plates per case
Lids	
4ti-0290	**Universal Microplate Lid, without condensation rings, clear,** low profile, no cut corner, 50 lids per case

4titude 24 Well Assay Plate

1.88 ml round wells, flat base, polystyrene, cut corner A1

- The Azenta 24 well polystyrene assay plates have flat bottom wells and have been designed for fluorescence applications
- The plates give optimum results for most top-reading instruments and conform to standard SBS footprint
- Black plates have a low background fluorescence and minimize light scattering
- This high quality plate assures the necessary accuracy and consistency for automated high throughput systems

Key Features

- Made from polystyrene, a hard material with smooth surfaces
- Non-gamma treated as standard
- Leak-free
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Flat bottom wells, designed for fluorescence and cell culture application
- Round wells, for reduced droplet effects and wicking

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Best used for cell culture, fluorescence
- Compatible with top reading plate readers and ideal for use with automation

Options

- Available as a black microplate, ideal for low background fluorescence; it minimizes light scattering, suitable for fluorescent assays, recommended for top reading fluorescence instrumentation
- Gamma treatment available upon request
- Available barcoded upon request
- Our Moisture Barrier Seal 24 (4ti-0516/24) is recommended as sealing option, as it is optically clear and allows repeated imaging without removal, reducing contamination risks
- Lids available

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	15.00± 0.25 mm
Well depth	12.50 ± 0.25 mm
Well diameter	14.50 ± 0.10 mm
Distance to center of A1 from top edge	15.74 ± 0.25 mm
Distance to center of A1 from left edge	18.88 ± 0.25 mm
Pitch (distance between A1 and A2)	18.00 mm

Ordering Information

4ti-0262	**24 Well Assay Plate,** 1.88ml round wells, flat base, black PS, cut corner A1, 100 plates per case
Lids	
4ti-0284	**Microplate 24 Lid, with condensation rings, clear,** low profile, cut corner A1, 80 lids per case
4ti-0286	**Microplate 24 Lid, gamma treated, with condensation rings, clear,** low profile, cut corner A1, 80 lids per case

4titude 96 Well Assay Plate

0.35 ml round wells, flat base, polystyrene, cut corner A1/H1

- The Azenta 96 well black assay plate has been specifically designed for fluorescence
- It is also suitable for homogeneous assays employing fluorescence intensity, FRET and TR-FRET where measurements are top-read
- This high quality plate assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal to noise ratios
- The white assay microplates have been designed for luminescence applications, such as Luciferase Reporter Assays and scintillation applications
- The white plate maximizes signal intensity in cases of low signal from some or all the wells, and it is designed to give optimum results for most top reading instruments, and to conform to standard SBS footprint

Key Features

- Made from polystyrene, a hard polished material
- Leak-free
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Flat bottom wells, suitable for top reading and cell culture application
- Round wells, for reduced droplet effects and wicking

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Best used for cell culture, fluorescence, luminescence, and light assays, ELISA, and homogeneous assays
- Recommended for top reading fluorescence instrumentation
- Compatible with plate readers and ideal for use with automation

Options

- Available as a black plate, for low background fluorescence and minimum light scattering
- White microplate, suitable for visible light assays and imaging, and recommended for top reading instrumentation
- Non-gamma treated as standard; gamma treatment available upon request
- Available barcoded upon request

- Our Moisture Barrier Seal 96 (4ti-0516/96) is recommended as a sealing option, as it is optically clear and allows repeated imaging without removal, reducing contamination risks
- Lids available

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	14.35 ± 0.25 mm
Well depth	10.8 ± 0.25 mm
Well diameter	6.3 ± 0.10 mm
Distance to center of A1 from top edge	11.24 ± 0.25 mm
Distance to center of A1 from left edge	14.38 ± 0.25 mm
Pitch (distance between A1 and A2)	9.00 mm

Ordering Information

4ti-0263	**96 Well Assay Plate, 0.35ml round wells, flat base, black PS,** cut corner A1/H1, 100 plates per case
4ti-0273	**96 Well Assay Plate, 0.35ml round wells, flat base, white PS,** cut corner A1/H1, 100 plates per case
Lids	
4ti-0282	**Microplate 96 Lid, with condensation rings,** clear, low profile, cut corner A1/H1, 80 lids per case
4ti-0283	**Microplate 96 Lid, gamma treated, with condensation rings,** clear, low profile, cut corner A1/H1, 80 lids per case

4titude 384 Well Assay Plate, Solid Wells

0.12 ml rounded square wells, flat base, polystyrene, cut corner A1/P1

- The Azenta 384 well black assay plate has been specifically designed for fluorescence
- It is also suitable for homogeneous assays employing fluorescence intensity, FRET and TR-FRET where measurements are top-read
- This high quality plate assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal to noise ratios
- The 384 well white solid bottom assay microplate has been specifically designed for luminescence applications, such as Luciferase Reporter Assays and scintillation applications
- It reduces well-to-well crosstalk, and the solid white color boosts signal in cases of low signal from some or all the wells
- The non-treated clear microplate is ideal for colorimetric assays and sample storage
- The rounded square wells eliminate wicking (capillary action)
- The flat bottom is ideal for optical reading

Key Features

- Made from polystyrene, a hard material with optical clarity
- Leak-free
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Wells

- Flat bottom wells, suitable for top reading and cell culture application
- Rounded square wells, to ensure the best use of space and improve sample mixing, suitable for small volumes
- Wicking and bubble formation eliminated

Frame

- Alphanumeric grid reference to aid well and sample identification
- SBS footprint

Use

- Best used for cell culture, fluorescence, luminescence, imaging and light assays, ELISA, and homogeneous assays
- Recommended for top reading fluorescence instrumentation
- Compatible with plate readers and ideal for use with automation
- Suitable for use in BMG labtech, Molecular Devices, Promega Glomax and other plate readers; for full instrument compatibility please contact us

Options

- Black assay microplate, for low background fluorescence and minimum light scattering
- White microplate, suitable for visible light assays and imaging, and recommended for top reading instrumentation
- The clear microplate offers the best solution for absorption, ELISA, spectophotometric and colorimetric assays, and storage applications
- Non-gamma treated as standard; gamma treatment available upon request
- Available barcoded upon request
- Our Moisture Barrier Seal 384 (4ti-0516/384) is recommended as sealing option, as it is optically clear and allows repeated imaging without removal, reducing contamination risks
- Lids available

Specifications

Parameter	Value
Plate length	127.76 ± 0.25 mm
Plate width	85.48 ± 0.25 mm
Plate height	14.35 ± 0.25 mm
Well depth	11.35 ± 0.25 mm
Well diameter	3.70 ± 0.10 mm
Distance to center of A1 from top edge	8.99 ± 0.25 mm
Distance to center of A1 from left edge	12.13 ± 0.25 mm
Pitch (distance between A1 and A2)	4.50 mm

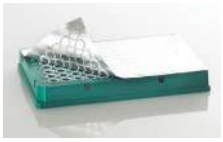
Ordering Information

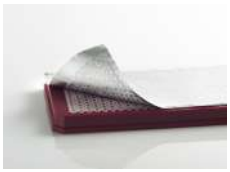
4ti-0254	**384 Well Assay Plate, 0.12ml rounded square wells, flat base, clear PS,** cut corner A1/P1, 100 plates per case
4ti-0264	**384 Well Assay Plate, 0.12ml rounded square wells, flat base, black PS,** cut corner A1/P1, 100 plates per case
4ti-0274	**384 Well Assay Plate, 0.12ml rounded square wells, flat base, white PS,** cut corner A1/P1, 100 plates per case
Lids	
4ti-0280	Microplate 384 Lid, without condensation rings, clear, low profile, cut corner A1/P1, 100 lids per case
4ti-0281	**Microplate 384 Lid, gamma treated, without condensation rings,** clear, low profile, cut corner A1/P1, 100 lids per case

4titude Microplate Sealing Consumables

Azenta offers a wide range of plate sealing solutions for whatever your requirements are. You can choose between sealing with strip caps, mats, lids, adhesive seals in strip or plate format, and heat seals in flexible formats up to plate size. The choice of an optimized sealing solution is particularly important for (q)PCR because thermal cycling can be associated with evaporation of reaction reagents.

Integration Friendly





Heat Sealing & Adhesive Sealing

Dependent on your application requirements we offer a wide selection of materials to choose from within both our adhesive seal and heat seal ranges. You have the option to choose your seal based on a wide variety of properties offered, including peelability, pierceability, gas permeability, optical clarity, temperature stability and solvent resistance.

The best sealing results can be obtained by using flat rigid plates like FrameStar plates and heat seals, using reliable, high quality sealing instruments for seal application, like the Semi-Automated Sheet Heat Sealer or the Automated Roll Heat Sealer.

Alternatively, popular adhesive seals need to be applied well using a seal roller or seal applicator.

Azenta seals are produced and processed under strictly controlled environmental conditions and according to our ISO standard manufacturing. All of our seals are DNase, RNase, human genomic DNA, dust, endotoxin/pyrogen free. Dimensional and functional tests are performed on all production lots. If your seal of choice is not offered gamma treated as a stock product, then please contact us; we can offer custom gamma treatment of any seals if required.

Caps, Lids & Mats

As an alternative to sealing films, Azenta offers multiple types of cap strips and individual well cap mats for sealing of both plates and tubes - domed and flat, strips of 8, strips of 12, and our new optically superior Strips of 8 Flat optically superior Crystal Clear caps.

A variety of rigid polystyrene lids are available for PCR plates and microplates, as well as silicone sealing mats for our storage plate range. We offer lids that are compatible with our FrameStar PCR plate range, and all assay plate ranges including the Optically Clear Plates range and Ultra Optically Clear Plates. The silicone cap mats are for use with our storage plates, and come in a variety of formats depending on the plate.

Heat Sealing Consumables & Instrumentation

Heat sealing is the gold standard method of plate and tube sealing. It prevents sample loss and maximizes sample security, by ensuring a complete seal and preventing evaporation, leakage and contamination.

The sealing performance of heat seals is superior to all other methods including cap, mat and adhesive sealing. The variability of sealing integrity seen when using adhesive seals, caps or mats is reduced. The optimized sealing performance of a heat seal allows the use of smaller reagent volumes, leading to reagent cost savings and thus making heat sealing the most cost efficient sealing method for a wide range of applications.

Heat seals are available as sheets, for manual or semi-automated heat sealers, as well as in different roll formats for automated sealers. Azenta sealing consumables are compatible with a wide range of heat sealers, please refer to the Instrument Compatibility Table on pages 162-165.

Depending on throughput, we recommend our Semi-Automated Sheet Heat Sealer (page 211) or Automated Roll Heat Sealer (page 213) for applying your heat seal.

In addition to instruments and consumables we also offer a Thermal Test Film for the optimization and troubleshooting of heat sealing applications.

Economic efficiency

Investing in heat sealing solutions leads to a per plate reduction of sealing costs for all applications including storage, PCR and qPCR as shown in the table below for (q)PCR. The cost is further reduced by changing to the use of rolls seals rather than sheet seals.

Benefit of Heat Sealing	Why this is important
Enables a tight seal around each sample through melding of seal with sealing rings	Maintains sample integrity and minimizes evaporation
Achieves a consistent seal across the plate through unrivalled optimized sealing performance of Azenta heat sealers	Provides the ability to use the whole plate; Eliminates any potential for variation between wells as a result of evaporation
Fast and convenient application through touch of a button	Ability to seal a number of plates quickly and efficiently
No sample contamination through sealing materials, as seal surface is identical to well material	Sample contamination may affect the sample and resulting experiment

Save your time

The application of heat seals is also easier and faster than when using caps or adhesive seals. Typical sealing times of a semi-automatic heat sealer, such as the Azenta Semi-Automated Sheet Heat Sealer, are around 2.5 seconds. A fully automatic roll heat sealer, such as the Azenta Automated Roll Heat Sealer, allows for sealing cycle times of less than 15 seconds.

Set your standard

Reproducible sealing quality can be guaranteed by standardizing the sealing parameters: time, temperature and pressure. Azenta offers the widest choice of heat seal materials available, with sheet formats for manual or semi-automatic heat sealers and roll formats for automated heat sealers.

Choose your application

Depending on the material of the plate (PP, PE, PS, COC, PC), the presence of solvents like DMSO in your sample and the storage or application temperatures required, we can offer a wide range of seals covering 100% DMSO storage and sealing integrity temperatures between -200°C to +120°C.

Highest quality standards

Our seals are produced according to our ISO standard manufacturing. All of our seals are DNase, RNase, human genomic DNA, dust, endotoxin and pyrogen free. If your seal of choice is not offered gamma treated as a stock product then please contact us as we can offer custom gamma treatment of any seals if required.

Optically Clear Peelable Heat Seal

Peelable heat sealing film, optically clear; suitable for qPCR and optical applications

- Heat sealing offers a 100% effective method for plate sealing for a complete seal integrity, as well as being quick and cost effective
- Our Clear Heat Seal is an optically clear laminate film forming a peelable seal to polypropylene, polyethylene, polystyrene and polycarbonate plates
- Samples can also be accessed by pre-piercing with a blade, needle or our Pierce Plate (4ti-0398)
- The optical clarity of this seal enables its use for sealing plates required for imaging use, including fluorescent detection methods such as qPCR and colorimetric assays
- The Clear Heat Seal forms a complete seal to a plate enabling both low temperature uses, including low temperature storage, and high temperature uses, such as PCR (when used with a pressurized heated lid)
- This seal demonstrates moderate solvent resistance and can be utilized for short term compound storage at room temperature
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers such as our Automated Roll Heat Sealer
- Our sheet seals are inter-leaved with paper sheets to help denote which side is the sealing side and aid removal of one sheet at a time from the pack
- For applications requiring high tensile strength (e.g. bead mill applications) please see our Clear Heat Seal Plus

Key Features

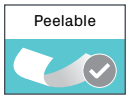
- Peelable
- Seal integrity range: -80°C to 80 °C (to 110°C with a pressurized heated PCR lid)
- Optically clear
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Applications: imaging, fluorescent detection, and colorimetric assays
- Suitable for PCR and qPCR
- Seals polypropylene, polyethylene, polystyrene and polycarbonate plates

Seal Integrity Temperature Range	-80°C	80°C

*110°C with pressurized heated lid



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request
- Also available with our FrameSeal™ technology, a disposable, rigid, plastic frame perfect for use with a robotic gripper to be used within an automation cell

Ordering Information

4ti-0540	**Clear Heat Seal, peelable heat sealing film,** 1 roll (500m x 78mm)[1]
4ti-0540/80	**Clear Heat Seal, peelable heat sealing film,** 1 roll (80m x 78mm)[1]
4ti-0540/REMP	**Clear Heat Seal, peelable heat sealing film,** 1 roll (500m x 78mm)[3]
4ti-0540S	**Clear Heat Seal, peelable heat sealing film,** 1 sample roll (5m x 78mm)[1]
4ti-0542	**Clear Heat Seal, peelable heat sealing film,** 1 roll (350m x 115mm)[2]
4ti-0542/REMP	**Clear Heat Seal, peelable heat sealing film,** 1 roll (350m x 115mm)[4]
4ti-0542S	**Clear Heat Seal, peelable heat sealing film,** 1 sample roll (5m x 115mm)[2]
4ti-0541	**Clear Heat Seal, peelable heat sealing film,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc® ·*

[3] *Compatible with Azenta Portrait Heat Sealer ·*

[4] *Compatible with Azenta Landscape | Stacking Heat Sealers*

Optically Clear Weld Heat Seal

Optically clear heat sealing film, non-peelable, difficult to pierce; suitable for qPCR, optical applications and storage

- Heat sealing offers a 100% effective method for plate sealing for a complete seal integrity, as well as being quick and cost effective
- Our Clear Weld Heat Seal is an optically clear polymer film forming a permanent seal to polypropylene plates
- The optical clarity of this seal enables its use for sealing plates required for imaging use, including fluorescent detection methods such as qPCR and colorimetric assays
- The Clear Weld Heat Seal forms a complete seal to a plate, enabling both low and very high temperature uses, including low temperature storage and high temperature incubations
- This seal is suitable for PCR/qPCR, even without the use of a pressurized heated lid, and is 100% effective when used in water bath thermal cyclers
- The permanent nature of this 100% effective seal renders it suitable for the storage and disposal of hazardous material
- Clear Weld Heat Seal demonstrates a good solvent resistance and can be utilized for long term compound storage
- Samples can be accessed by pre-piercing with a blade, needle or our Pierce Plate (4ti-0398)
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

- Permanent seal
- Difficult to pierce
- Non-peelable
- Seal integrity range: -80°C to 110°C
- DMSO and solvent resistant
- Autoclavable (121°C)* Once autoclaved, not recommended for PCR applications
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Applications: suitable for PCR and qPCR, long term storage, and disposal of hazardous materials
- Seals polypropylene plates
- Compatible with water bath thermal cyclers

Seal Integrity Temperature Range	-80°C
	110°C

*Once autoclaved, not recommended for PCR

Autoclavable

Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request
- Also available with our FrameSeal™ technology, a disposable, rigid, plastic frame perfect for use with a robotic gripper to be used within an automation cell

Ordering Information

4ti-0573	**Clear Weld Heat Seal, optically clear heat sealing film,** 1 roll (610m x 78mm)[1]
4ti-0573/122	**Clear Weld Heat Seal, optically clear heat sealing film,** 1 roll (122m x 78mm)[1]
4ti-0573S	**Clear Weld Heat Seal, optically clear heat sealing film,** 1 sample roll (5m x 78mm)[1]
4ti-0574	**Clear Weld Heat Seal, optically clear heat sealing film,** 1 roll (500m x 115mm)[2]
4ti-0574S	**Clear Weld Heat Seal, optically clear heat sealing film,** 1 sample roll (5m x 115mm)[2]
4ti-0575**	**Clear Weld Heat Seal, optically clear heat sealing film,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

** *Seals are inter-leaved with paper sheets. This helps to denote which side is the sealing side, plus aids removal of one sheet at a time from the pack*

Strong Clear Heat Seal Plus

High tensile strength heat sealing film, optically clear, peelable; suitable for bead mill applications

- Heat sealing offers a 100% effective method for plate sealing for a complete seal integrity, as well as being quick and cost effective
- Our Clear Heat Seal Plus is a clear polymer film forming a peelable seal to polypropylene, polystyrene and cyclic olefin copolymer (COC) plates
- The excellent tensile strength of this seal enables its use for sealing of microplates during homogenisation or disruption of seeds or other material such as bead mill applications
- Clear Heat Seal Plus forms a complete seal to a plate also enabling short term sample storage
- The Clear Heat Seal Plus is thicker than our standard Clear Heat Seal for application requiring high tensile strength, but is not as suitable for optical applications due to decreased transmission through the thicker sealing layers
- For optical applications please refer to our Clear Heat Seal
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

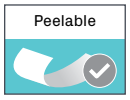
- Peelable
- Seal integrity range: -80°C to 80°C (110°C with a pressurized heated lid)
- High tensile strength for bead mill applications
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Applications: suitable for bead mill applications and PCR

Seal Integrity Temperature Range	-80°C
	80°C

*110°C with pressurized heated lid



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in two roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0549	**Clear Heat Seal Plus, high tensile strength heat sealing film,** 1 roll (250m x 78mm)[1]
4ti-0549/S	**Clear Heat Seal Plus, high tensile strength heat sealing film,** 1 sample roll (5m x 78mm)[1]
4ti-0548	**Clear Heat Seal Plus, high tensile strength heat sealing film,** 1 roll (250m x 115mm)[2]
4ti-0548/S	**Clear Heat Seal Plus, high tensile strength heat sealing film,** 1 sample roll (5m x 115mm)[2]
4ti-05481	**Clear Heat Seal Plus, high tensile strength heat sealing film,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Agilent (Velocity 11) PlateLoc®*

[2] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

Clear Heat Seal Easily Pierceable

Thin polyester heat sealing film, easily pierceable with autosampler needles/ABI® 3730; suitable for PCR, qPCR and optical applications

- Heat sealing offers a 100% effective method for plate sealing for a complete seal integrity, as well as being quick and cost effective
- Our Clear Heat Seal Easily Pierceable is an optically clear polyester backed film, forming a pierceable seal to polypropylene, polyethylene, polystyrene and cyclic olefin copolymer (COC) plates
- The optical clarity of this seal enables its use for sealing plates required for imaging use, including fluorescent detection methods such as qPCR and colorimetric assays
- Its pierceability renders it useful for automation and for use on needle, capillary and tip based liquid handling systems
- Effective on the ABI® 3730 capillary sequencer, removing the need for the use of expensive septa mats
- The Clear Heat Seal Easily Pierceable forms a complete seal to a plate enabling moderately low and high temperature uses, including PCR when using a pressurized heated lid thermal cycler
- Demonstrates a moderate solvent resistance and can be utilized for short term compound storage
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer
- A perforated roll is available, for easy removal of sheets, for use with manual and semi-automated sealers

Key Features

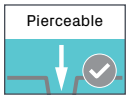
- Permanent seal
- Easily pierceable with autosampler needles/ABI® 3730
- Seal integrity range: -20°C to 80°C (or 110°C when used with pressurized heated PCR lid)
- Moderate solvent resistance
- Optically clear
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene, polyethylene, polystyrene and cyclic olefin copolymer (COC) plates
- Suitable for capillary sequencers and automated liquid handlers, e.g. ABI® 3730
- Suitable for PCR and qPCR, and short term storage

Seal Integrity Temperature Range	-80°C	80°C

*110°C with pressurized heated lid



Options

- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Sheet format: 125 x 78 mm, available from a roll with 1,000 perforated sheets; seals all SBS plate formats, from 12 well to 1536 well
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0580	**Clear Heat Seal, easily pierceable with autosampler needles,** thin polyester heat sealing film, 1 roll (610m x 78mm)[1]
4ti-0580/122	**Clear Heat Seal, easily pierceable with autosampler needles,** thin polyester heat sealing film, 1 roll (122m x 78mm)[1]
4ti-0580S	**Clear Heat Seal, easily pierceable with autosampler needles,** thin polyester heat sealing film, 1 sample roll (5m x 78mm)[1]
4ti-0582	**Clear Heat Seal, easily pierceable with autosampler needles,** thin polyester heat sealing film, 1 roll (500m x 115mm)[2]
4ti-0582S	**Clear Heat Seal, easily pierceable with autosampler needles,** thin polyester heat sealing film, 1 sample roll (5m x 115mm)[2]
4ti-0581	**Clear Heat Seal, easily pierceable with autosampler needles,** thin polyester heat sealing film, 1 perforated roll with sheets (125 x 78mm)

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

4titude Peel Foil Heat Seal

Peelable heat sealing foil; suitable for low temperature storage, high temperature uses and PCR

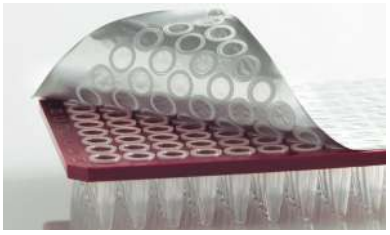
- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Our Peel Heat Seal is a laminate seal compatible with polypropylene plates
- It can be removed from polypropylene plates by peeling, even with a plate which has been removed directly from -80°C storage
- Peel Heat Seal forms a complete seal to a plate enabling very low temperature uses, including very low temperature storage, and high temperature uses, such as PCR (when used with a pressurized heated lid)
- The seal demonstrates moderate solvent resistance and can be utilized for short term compound storage at room temperature
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

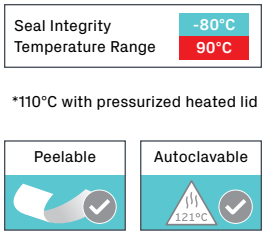
Key Features

- Peelable from polypropylene and COC plates
- Seal integrity range: -80°C to 90°C (110°C when used with pressurized heated lid)
- Good solvent resistance including DMSO
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Suitable for short term room temperature storage
- Suitable for very low temperature storage





Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0520	**Peel Heat Seal, peelable heat sealing foil,** 1 roll (610m x 78mm)[1]
4ti-0520/122	**Peel Heat Seal, peelable heat sealing foil,** 1 roll (122m x 78mm)[1]
4ti-0520S	**Peel Heat Seal, peelable heat sealing foil,** 1 sample roll (5m x 78mm)[1]
4ti-0522	**Peel Heat Seal, peelable heat sealing foil,** 1 roll (500m x 115mm)[2]
4ti-0522S	**Peel Heat Seal, peelable heat sealing foil,** 1 sample roll (5m x 115mm)[2]
4ti-0521	**Peel Heat Seal, peelable heat sealing foil,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

4titude Universal Foil Peel Heat Seal

Peelable heat sealing foil with wide material compatibility; suitable for low temperature storage, high temperature uses and PCR

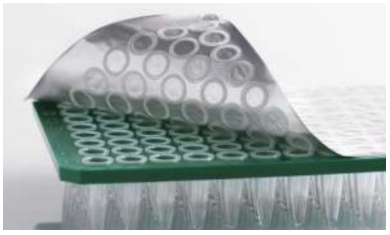
- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Our Universal Peel Heat Seal is a laminate seal compatible with PP, PE, PS, COC and PC plates, providing the highest flexibility in plate material choice
- Sample access is possible by peeling from the compatible materials and also by piercing the seal with needles, but not with plastic tips
- It is resealable by applying another Universal Peel Heat Seal directly on top of a previously pierced seal
- Universal Peel Heat Seal forms a complete seal to a plate enabling low temperature uses as well as high temperature uses, such as PCR (when used with a pressurized heated lid)
- The seal demonstrates moderate solvent resistance
- Use of Universal Peel Heat Seal makes roll changes unnecessary even for customers using different microplate materials, because with minor adjustments of sealing parameters all common microplate materials can be sealed to
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

- Pierceable with needle, but not with standard pipette tips
- Peelable
- Seal integrity temperature range: -80°C to 90°C (110°C when used with a pressurized heated lid)
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

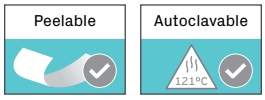
Use

- Suitable for low temperature sample storage and high temperature uses, such as PCR
- Compatible with PP, PE, PS, COC and PC plates
- Wide material compatibility allows for high throughput sealing of different plates without the need for roll changes
- Resealable by applying another Universal Peel Heat Seal directly on top of a previously pierced seal



Seal Integrity Temperature Range	
-80°C	90°C

*110°C with pressurized heated lid



Options

- Sheet format: 125 mm x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in two roll dimensions, to suit your choice of automatic heat sealing equipment

Ordering Information

4ti-0523	**Universal Peel Heat Seal, peelable heat sealing foil with wide material compatibility,** 1 roll (610m x 78mm)[1]
4ti-0523S	**Universal Peel Heat Seal, peelable heat sealing foil with wide material compatibility,** 1 sample roll (5m x 78mm)[1]
4ti-0524	**Universal Peel Heat Seal, peelable heat sealing foil with wide material compatibility,** 1 roll (500m x 115mm)[2]
4ti-0524S	**Universal Peel Heat Seal, peelable heat sealing foil with wide material compatibility,** 1 sample roll (5m x 115mm)[2]
4ti-05231	**Universal Peel Heat Seal, peelable heat sealing foil with wide material compatibility,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

4titude Individual Access Peel Heat Seal

Peelable heat sealing foil, 96 individual seals with tabs, or 12 strips each covering 8 wells; suitable for very low temperature storage/ high temperature uses/PCR

- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Our Individual Access Peel Heat Seal is a laminate seal compatible with polypropylene plates, featuring 96 individual foil seal spots or 12 strips of individual spots on a removable backing
- These seals result in individually sealed tubes/strips, and they can be removed from polypropylene plates by peeling, even with a plate which has been removed directly from -80°C storage
- Individual Access Peel Heat Seal forms a complete seal to a plate enabling very low temperature uses, including very low temperature storage, and high temperature uses, such as PCR (when used with a pressurized heated lid)
- The seal demonstrates moderate solvent resistance and can be utilized for short term compound storage at room temperature
- This seal is available as sheets, for use with manual and semi-automated sealers, such as our Semi-Automated Sheet Heat Sealer (using the 4ti-0613 Individual Access adapter)

Key Features

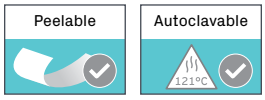
- 96 individual foil seal spots or 12 strips of 8 spots on a removable backing
- 4 pin holes for exact positioning in special adapters of the Semi-Automated Sheet Heat Sealer
- Peelable from polypropylene and COC plates
- Seal integrity range: -80°C to 90°C (110°C when used with pressurized heated lid)
- Good solvent resistance including DMSO
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Suitable for short term room temperature storage
- Suitable for very low temperature storage
- Best used in combination with our Individual Access plates and Breakable Vertically PCR Plates

Seal Integrity Temperature Range	-80°C	90°C

*110°C with pressurized heated lid



Options

- Available as 96 individual seals with tabs per sheet
- Also available as 12 strips of 8 individual seals per sheet
- Sheet format: 127 x 100 mm
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0521/RA-TAB	**Individual Access Peel Heat Seal, with tabs, peelable heat sealing foil,** 96 individual seals with tabs, sheet format, 100 sheets (127 x 100mm) per case
4ti-0521/RA-8	**Indvidual Access Peel Heat Seal, peelable heat sealing foil,** 12 strips, each covering 8 wells, sheet format, 100 sheets (127 x 100mm) per case

DMSO Resistant Peel Heat Seal

Solvent resistant heat sealing foil, peelable; suitable for low and room temperature compound storage

- Our DMSO Resistant Peel Heat Seal is a foil seal compatible with polypropylene and forming an excellent seal to cyclic olefin copolymer (COC) plates
- The solvent resistance of this seal enables its use for low and room temperature compound storage in Dimethyl Sulfoxide (DMSO) and organic solvents
- 100% DMSO can be stored at room temperature for 12 months without deterioration of the seal
- It forms a weld seal to polyethylene plates and cannot be peeled off
- Access is by piercing using a blade, needle, or an Azenta Pierce Plate (4ti-0398)
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer
- The sheet seals are inter-leaved with paper sheets to help denote which side is the sealing side and to aid removal of one sheet at a time from the pack

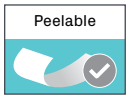
Key Features

- Permanent seal to polyethylene
- Peelable seal to polypropylene and COC
- Seal integrity range: -80°C to 40°C
- High solvent resistance, including 100% DMSO
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Suitable for long term storage

Seal Integrity Temperature Range	-80°C
	40°C



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0585	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 roll (500m x 78mm)[1]
4ti-0585/100	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 roll (100m x 78mm)[1]
4ti-0585/REMP	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 roll (500m x 78mm)[3]
4ti-0585S	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 sample roll (5m x 78mm)[1]
4ti-0586	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 roll (500m x 115mm)[2]
4ti-0586/REMP	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 roll (500m x 115mm)[4]
4ti-0586S	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 sample roll (5m x 115mm)[2]
4ti-0587	**DMSO Resistant Peel Heat Seal, solvent resistant heat sealing foil,** 1 perforated roll with 100 sheets (125 x 78mm)

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

[3] *Compatible with Azenta Portrait Heat Sealer*

[4] *Compatible with Azenta Landscape | Stacking Heat Sealers*

Pierceable Heat Seal

Pierceable heat sealing foil, high solvent resistance, resealable, suitable for PCR/storage/shipping

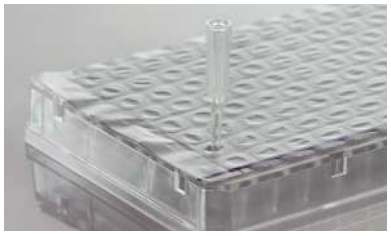
- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Pierce Heat Seal is compatible with polypropylene and polystyrene plates
- This seal demonstrates good solvent resistance and can be used for low temperature and room temperature compound storage in DMSO and organic solvents
- Pierce Heat Seal can be pierced with a pipette tip manually, or by a liquid handling robot
- This seal can be resealed by applying another Pierce Seal straight on top of a previously pierced seal
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer
- A blue stripe on the sheet foils clearly indicates the non-sealing surface, for ease of seal orientation and handling
- Pierce Heat Seal sheets are also available with a printed grid reference on the non-sealing surface

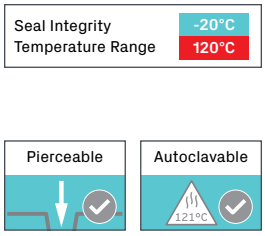
Key Features

- Pierceable
- Resealable
- Seal integrity range: -20°C to 120°C
- Good solvent resistance
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene and polystyrene plates
- Suitable for long term storage





Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Available with printed grid reference (in sheet format, 4ti-0531/GR)
- Non-gamma treated as standard; gamma treatment available upon request
- Custom printing available on request

Ordering Information

4ti-0530	**Pierce Heat Seal, pierceable heat sealing foil,** 1 roll (610m x 78mm)[1]
4ti-0530/122	**Pierce Heat Seal, pierceable heat sealing foil,** 1 roll (122m x 78mm)[1]
4ti-0530/REMP	**Pierce Heat Seal, pierceable heat sealing foil,** 1 roll (610m x 78mm)[3]
4ti-0530S	**Pierce Heat Seal, pierceable heat sealing foil,** 1 sample roll (5m x 78mm)[1]
4ti-0532	**Pierce Heat Seal, pierceable heat sealing foil,** 1 roll (500m x 115mm)[2]
4ti-0532/REMP	**Pierce Heat Seal, pierceable heat sealing foil,** 1 roll (500m x 115mm)[4]
4ti-0532S	**Pierce Heat Seal; pierceable heat sealing foil,** 1 sample roll (5m x 115mm)[2]
4ti-0531	**Pierce Heat Seal, pierceable heat sealing foil,** 100 sheets (125 x 78mm) per case
4ti-0531/GR	**Pierce Heat Seal, with Grid Reference, pierceable heat sealing foil,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

[3] *Compatible with Azenta Portrait Heat Sealer*

[4] *Compatible with Azenta Landscape | Stacking Heat Sealers*

Individual Access Pierceable Heat Seal

Pierceable heat sealing foil, 96 individual seals in sheet format, high solvent resistance, resealable; suitable for PCR/storage/shipping

- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Individual Access Pierce Heat Seal is compatible with polypropylene and polystyrene plates, featuring 96 individual foil seal spots on a removable backing
- This seal demonstrates good solvent resistance and can be used for low temperature and room temperature compound storage in DMSO and organic solvents
- These seals result in individually sealed tubes, and they can be pierced with a pipette tip manually, or by a liquid handling robot
- Individual Access Pierce Heat Seal can be resealed by applying another Individual Access Pierce Seal straight on top of a previously pierced seal
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer

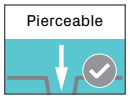
Key Features

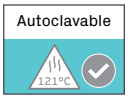
- 96 individual foil seal spots on a removable backing
- Pierceable
- 4 pin holes for exact positioning in special adapters of the Semi-Automated Sheet Heat Sealer
- Resealable
- Seal integrity range: -20°C to 120°C
- Good solvent resistance
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene and polystyrene plates
- Suitable for long term storage
- Best used in combination with our Individual Access plates

Seal Integrity Temperature Range	-20°C
	120°C





Options

- Sheet format: 127 x 100 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0531/RA	**Individual Access Pierce Heat Seal, pierceable heat sealing foil, 96 individual seals in sheet format,** 100 sheets (127 x 100mm) per case

Pierce Heat Seal Strong

Strong heat sealing foil, peelable from COC plates, pierceable, suitable for PCR, sample shipping, compound storage

- Heat sealing offers an 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Pierce Heat Seal Strong is compatible with polypropylene and COC plates
- This seal is peelable from COC plates and gives a weld seal to polypropylene plates
- Demonstrating good solvent resistance it can be used for low temperature and room temperature compound storage in DMSO and organic solvents
- The seal can be pierced with a pipette tip manually, or by a liquid handling robot
- Applications include PCR, sample shipping, low and room temperature compound storage with DMSO and other organic solvents
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

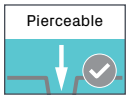
Key Features

- Pierceable
- Peelable from COC plates
- Seal integrity range: -20°C to 120°C
- Good solvent resistance
- Gives a weld seal to polypropylene plates
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene and COC plates
- Recommended for PCR, sample shipping, low and room temperature compound storage with DMSO and other organic solvents
- Suitable for long term storage

Seal Integrity Temperature Range	-20°C
	120°C



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in two roll dimensions: 610 m x 78 mm, and 500 m x 115 mm
- Custom printing available upon request
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0538	**Pierce Heat Seal Strong, strong heat sealing foil,** 1 roll (610m x 78mm)[1]
4ti-0538S	**Pierce Heat Seal Strong, strong heat sealing foil,** 1 sample roll (5m x 78mm)[1]
4ti-0539	**Pierce Heat Seal Strong, strong heat sealing foil,** 1 roll (500m x 115mm)[2]
4ti-0539S	**Pierce Heat Seal Strong, strong heat sealing foil,** 1 sample roll (5m x 115mm)[2]
4ti-05381	**Pierce Heat Seal Strong, strong heat sealing foil,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

Individual Access Pierce Heat Seal Strong

Sheets of 96 foil seal spots for sealing of individual wells, suitable for storage and PCR, pierceable

- Individual Access Pierce Heat Seal Strong features 96 individual foil seal spots on a removable backing
- These seals result in individually sealed tubes that are pierceable, allowing for sample addition straight into pre-dispensed reagents, without fiddly removal of the seal
- Individual Access Pierce Heat Seal Strong is compatible with polypropylene and COC plates
- This seal is peelable from COC plates and gives a weld seal to polypropylene plates
- Demonstrating good solvent resistance, it can be used for low temperature and room temperature compound storage in DMSO and organic solvents
- The seal can be pierced with a pipette tip manually, or by a liquid handling robot
- Applications include sample shipping, storage and PCR
- This seal is available as sheets, for use with manual and semi-automated sealers, such as our Semi-Automated Sheet Heat Sealer (using the 4ti-0613 Individual Access adapter)
- The 96 well Individual Access plate can be sealed in one step resulting in individually sealed tubes that are pierceable, allowing for sample access

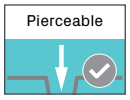
Key Features

- 96 individual foil seal spots on a removable backing
- 4 pin holes for exact positioning in special adapters of the Semi-Automated Sheet Heat Sealer
- Seals polypropylene (weld seal) and COC (peelable seal) plates
- Pierceable
- Seal integrity range: -20°C to 120°C
- Good solvent resistance
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Recommended for PCR, sample shipping, low and room temperature compound storage with DMSO and other organic solvents
- Best used in combination with our Individual Access 96 Well Skirted PCR Plate (4ti-0960/RA)

Seal Integrity Temperature Range	-20°C
	120°C



Options

- Sheet format: 127 mm x 100 mm

Ordering Information

4ti-05381/RA	**Individual Access Pierce Heat Seal Strong, strong heat sealing foil,** 96 individual seals in sheet format, 100 sheets (127 x 100mm) per case
4ti-0539/RA	**Individual Access Pierce Heat Seal Strong, strong heat sealing foil,** 96 individual seals in roll format, 1 roll (420m x 100mm)

Foil Heat Seal

Aluminium heat sealing foil, resealable, peelable, pierceable; suitable for compound storage, PCR

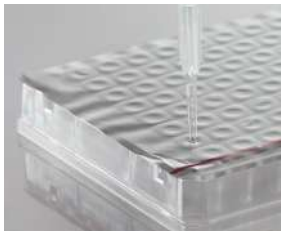
- Our Foil Heat Seal is compatible with polypropylene and polystyrene plates
- This seal demonstrates moderate solvent resistance and can be used for low temperature compound storage in DMSO and organic solvents and short term room temperature storage
- The Foil Heat Seal can be pierced with a pipette tip, manually or by liquid handling robots, or it can be removed by peeling
- It can be resealed by applying another Foil Heat Seal directly on top of a previously pierced seal
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer
- A red stripe on the sheet foils clearly indicates the non-sealing surface, for ease of seal orientation and handling

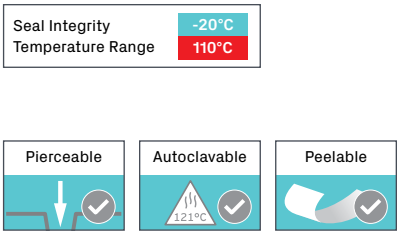
Key Features

- Pierceable
- Peelable
- Resealable
- Seal integrity range: -20°C to 110°C
- Moderate solvent resistance
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene and polystyrene plates
- Suitable for short term storage





Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0535	**Foil Heat Seal, aluminium heat sealing foil,** 1 roll (610m x 78mm)[1]
4ti-0535/122	**Foil Heat Seal, aluminium heat sealing foil,** 1 roll (122m x 78mm)[1]
4ti-0535/REMP	**Foil Heat Seal, aluminium heat sealing foil,** 1 roll (610m x 78mm)[3]
4ti-0535S	**Foil Heat Seal, aluminium heat sealing foil,** 1 sample roll (5m x 78mm)[1]
4ti-0537	**Foil Heat Seal, aluminium heat sealing foil,** 1 roll (500m x 115mm)[2]
4ti-0537/REMP	**Foil Heat Seal, aluminium heat sealing foil,** 1 roll (500m x 115mm)[4]
4ti-0537S	**Foil Heat Seal, aluminium heat sealing foil,** 1 sample roll (5m x 115mm)[2]
4ti-0536	**Foil Heat Seal, aluminium heat sealing foil,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

[3] *Compatible with Azenta Portrait Heat Sealer*

[4] *Compatible with Azenta Landscape | Stacking Heat Sealers*

Polystyrene Plate Foil Heat Seal

Peelable heat sealing foil, seals to polystyrene plates, resealable, pierceable; suitable for compound storage

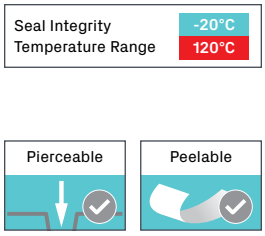
- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Our Polystyrene Foil Heat Seal produces a stronger seal to polystyrene plates than our standard Foil Heat Seal
- Compatible with polypropylene, polystyrene and polycarbonate plates
- This seal demonstrates moderate solvent resistance and can be used for low temperature compound storage, in DMSO and organic solvents, and short term room temperature storage
- Polystyrene Foil Heat Seal can be pierced with a pipette tip manually, by a liquid handling robot, using the Azenta Pierce Plate (4ti-0398), or it can be removed by peeling. It can be resealed by applying another Polystyrene Foil Heat Seal directly on top of a previously pierced seal
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

- Pierceable
- Peelable
- Resealable foil on foil
- Seal integrity range: -20°C to 110°C
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene, polystyrene and polycarbonate plates
- Suitable for short term storage
- Suitable for low temperature compound storage



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0545	**Polystyrene Foil Heat Seal, peelable heat sealing foil,** 1 roll (610m x 78mm)[1]
4ti-0545/122	**Polystyrene Foil Heat Seal, peelable heat sealing foil,** 1 roll (122m x 78mm)[1]
4ti-0545S	**Polystyrene Foil Heat Seal, peelable heat sealing foil,** 1 sample roll (5m x 78mm)
4ti-0546	**Polystyrene Foil Heat Seal, peelable heat sealing foil,** 1 roll (500m x 115mm)[2]
4ti-0547	**Polystyrene Foil Heat Seal, peelable heat sealing foil,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

Thermal Bond Heat Seal

Heavy duty heat sealing foil, peelable; suitable for long term storage, transportation

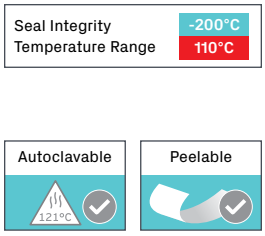
- Heat sealing offers a 100% effective method of plate sealing, for complete seal integrity, as well as being quick and cost effective
- Our Thermal Bond Heat Seal is a heavy duty laminate foil seal suitable for providing a very strong, but peelable seal
- Compatible with polypropylene plates to provide a high degree of sample protection
- Demonstrates very good solvent resistance and can be used for very low temperature compound storage, in DMSO and organic solvents, and long term room temperature storage such that it is recommended as suitable for sample transportation
- The seal can be pierced only by using a blade or using the Azenta Pierce Plate (4ti-0398)
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

- Peelable
- Seal integrity range: -200°C to 110°C
- High solvent resistance
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Recommended for PCR, including with water bath thermal cyclers
- Seals polypropylene plates
- Suitable for long term storage and transportation
- Suitable for very low temperature storage



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0590	**Thermal Bond Heat Seal, heavy duty heat sealing foil,** 1 roll (500m x 78mm)[1]
4ti-0590/100	**Thermal Bond Heat Seal, heavy duty heat sealing foil,** 1 roll (100m x 78mm)[1]
4ti-0590S	**Thermal Bond Heat Seal, heavy duty heat sealing foil,** 1 sample roll (5m x 78mm)[1]
4ti-0592	**Thermal Bond Heat Seal, heavy duty heat sealing foil,** 1 roll (300m x 115mm)[2]
4ti-0592S	**Thermal Bond Heat Seal, heavy duty heat sealing foil,** 1 sample roll (5m x 115mm)[2]
4ti-0591	**Thermal Bond Heat Seal, heavy duty heat sealing foil,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Not compatible with Agilent (Velocity 11) PlateLoc®*

Gas Permeable Heat Seal

Heat sealing membrane, limits evaporation, peelable, pierceable; suitable for cell culture, seed and insect storage

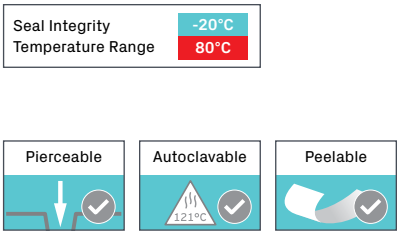
- Heat sealing offers a 100% effective method for plate sealing for a complete seal integrity, as well as being quick and cost effective
- Our Gas Permeable Heat Seal is made from a woven material and is designed for use in cell culture, due to its porous nature
- The small pore size (<20 µm) of this material enables gas exchange, per 24 hours of >20 g/m², whilst evaporation is reduced to a minimum
- Compatible with polypropylene, polystyrene and cyclic olefin copolymer (COC) plates
- It can be removed by peeling, or it can be pierced with a pipette tip manually, using a liquid handling robot or with our Pierce Plate (4ti-0398)
- Gas Permeable Heat Seal can be utilized for effective overnight incubations, during which it demonstrates significant reductions in evaporation compared to lids
- It can also be used for insect and seed storage as it enables gas exchange, whilst providing an inert surface with no adhesive to interfere with the well contents
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

- Peelable
- Pierceable
- Seal integrity range: -20°C to 80°C
- Gas permeability rate: 180 m³/m²/day
- Moisture vapor transmission rate: 20 g/m²/day
- Autoclavable (121°C)
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene, polystyrene and cyclic olefin copolymer (COC) plates
- Suitable for cell culture, overnight incubations, as well as insect and seed storage



Options

- Sheet format: 125 x 78 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: available in a variety of roll dimensions, to suit your choice of automatic heat sealing equipment
- Available gamma treated from stock: gamma treated variations have /ST added to the end of their product code

Ordering Information

4ti-0598	**Gas Permeable Heat Seal, heat sealing membrane,** 1 roll (610m x 78mm)[1]
4ti-0598/122	**Gas Permeable Heat Seal, heat sealing membrane,** 1 roll (122m x 78mm)[1]
4ti-0598S	**Gas Permeable Heat Seal, heat sealing membrane,** 1 sample roll (5m x 78mm)[1]
4ti-0599	**Gas Permeable Heat Seal, heat sealing membrane,** 1 roll (500m x 115mm)[2]
4ti-0599S	**Gas Permeable Heat Seal, heat sealing membrane,** 1 sample roll (5m x 115mm)[2]
4ti-0597	**Gas Permeable Heat Seal, heat sealing membrane,** 100 sheets (125 x 78mm) per case
4ti-0597/ST	**Gas Permeable Heat Seal, Gamma treated, heat sealing membrane,** 10 x 10 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

[2] *Compatible with Agilent (Velocity 11) PlateLoc®*

Clear Heat Seal, Peelable Film

Peelable heat sealing film, optically clear, with 3mm slits for gas transfer; suitable for insect studies, seed storage

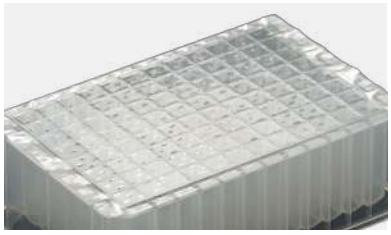
- Heat sealing is a quick and cost effective method of plate sealing
- Our Clear Heat Seal, Peelable Film is based on our Clear Heat Seal, with the addition of 3mm slits across the width of the seal
- These slits render the seal gas permeable, whilst retaining evaporation to a minimum, compared to the use of lids
- The Clear Heat Seal, Peelable Film is compatible with polypropylene, polyethyleneand polystyrene plates
- The seal can be removed by peeling, or it can be pierced with a pipette tip manually, using a liquid handling robot or with our Pierce Plate (4ti-0398)
- The Clear Heat Seal, Peelable Film has a wider seal integrity temperature range, from -80°C to 110°C, than our Gas Permeable Heat Seal
- It can be used for insect and seed storage, as it enables gas exchange, whilst providing an inert surface with no adhesive to interfere with the well contents
- This seal is available as sheets, for use with manual and semi-automated sealers such as our Semi-Automated Sheet Heat Sealer
- Also available in multiple roll formats compatible with specified automated heat sealers, such as our Automated Roll Heat Sealer

Key Features

- Peelable
- Seal integrity range: -80°C to 110°C
- 3mm slits for gas transfer
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Seals polypropylene, polyethylene and polystyrene plates
- Suitable for insect and seed storage



Options

- Sheet format: 125 x 78mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates, from 12 well to 1536 well
- Roll format: 500m x 78mm; approx. 4,200 seals
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0540/SLIT	**Clear Heat Seal, gas permeable, clear heat sealing film, with 3mm slits for gas transfer,** 1 roll (450m x 78mm)[1]
4ti-0540/SLIT/S	**Clear Heat Seal, gas permeable, clear heat sealing film, with 3mm slits for gas transfer,** 1 sample roll (5m x 78mm)
4ti-0541/SLIT	**Clear Heat Seal, gas permeable, clear heat sealing film, with 3mm slits for gas transfer,** 100 sheets (125 x 78mm) per case

[1] *Compatible with Azenta Semi-Automated Sheet Heat Sealer / Thermo Fisher ALPS 300™ and ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube*

Thermal Individual Tube Seal, 96-Format

Thermal Individual Tube Seal was designed for the heat sealing of 96 well microplates or 96 format cluster tubes, preserving sample integrity and audit trail in compound library and other high-throughput applications

- 96 individual sealing spots on a backing liner
- Creates an air-tight seal
- Peelable and pierceable
- “Embossed” seal construction
- Available with or without tabs for easy peeling
- For use with heat sealers
- Heat sealing offers a 100% effective method of microplate and tube sealing, for complete seal integrity, as well as being quick and cost effective
- Thermal Individual Tube Seal, 96-Format was designed for the heat sealing of 96 well microplates or 96 format cluster tubes, preserving sample integrity and audit trail in compound library and other high-throughput applications
- This is a foil-based heat seal which consists of 96 individual round seals held on a convenient to handle sealing sheet
- The seal is applied using a manual or semi-automated heat sealer, such as our Semi-Automated Sheet Heat Sealer
- After sealing, the microplate frame or the rack can be removed to leave 96 individually sealed wells or tubes
- The individual seals can be removed as required, by hand or using forceps, via the seal removal tab; no polymer residue is left on the well/tube following removal
- The individual seals can also be pierced with a pipette tip manually, using a liquid handling robot

Key Features

- Peelable
- Pierceable
- Seals polypropylene
- 96 individual foil-based seals held on an easy to handle sealing sheet
- Good solvent resistance, including DMSO
- Free from DNase, RNase, and human genomic DNA, endotoxin/pyrogen free

Use

- Air-tight sealing that works as an impenetrable barrier for added sample security
- Compatible with 96 well microplates and 96 format racked tubes
- For use with manual or semi-automated heat sealers, such as our Semi-Automated Sheet Heat Sealer
- Tabs for easy removal: hold the tube and peel the tab upwards with forceps or fingers
- Engineered to come away cleanly, leaving no residue, for easy resealing
- Suitable for long term storage and sample shipping
- Suitable for high temperature incubations
- Suitable for cryogenic storage*

Options

- Sheet format: individual spots with tabs for easy peeling
- Sheet format: individual spots without tabs

Ordering Information

66-1001	**Thermal Seal, Individual, with tab for manual peeling,** 96 Tube Seals per sheet, 50 sheets per case
66-1021	**Thermal Seal, Individual, without tab,** 96 Tube Seals per sheet, 50 sheets per case

**Not for use in liquid phase nitrogen*

Heat Sealing Consumables Comparison & Instrument Compatibility Table

	Clear Heat Seals				Peelable Heat Seals		
Name	Clear Heat Seal	Clear Weld Heat Seal	Clear Heat Seal Easily Pierceable	Clear Heat Seal Plus	Peel Heat Seal	Universal Peel Heat Seal	DMSO Resistant Peel Heat Seal
Specifications							
Application	qPCR Short term compound storage	PCR, esp. water bath cyclers qPCR Storage & disposal of hazardous materials	qPCR and for use with ABI 3730 Sequencer	Homogenisation or disruption of seeds or other material, e.g. bead mill applications	Low temperature compound storage Short term room temperature compound storage (<5 days) PCR	Low temperature compound storage High temperature applications PCR	Low/room temperature compound storage with DMSO & other organic solvents
Special Properties	Good optical clarity Moderate solvent resistance	Good optical clarity Resistance to DMSO	Good optical clarity Some solvent resistance	High tensile strength	Can be peeled directly from -80°C freezer Moderate resistance to solvents at room temperature	Moderate solvent resistance Re-sealable with another Universal Peel Heat Seal	Can be peeled directly from -80°C freezer High resistance to solvents even at elevated temperatures
Seal Integrity Min Temperature	-80°C	-80°C	-20°C	-80°C	-80°C	-80°C	-80°C
Seal Integrity Max Temperature	80°C (or 110°C with pressurized heated PCR lid)	110°C	80°C (or 110°C with pressurized heated PCR lid)	80°C (or 110°C with pressurized heated PCR lid)	90°C (or 110°C with pressurized heated PCR lid)	90°C (or 110°C with pressurized heated PCR lid)	40°C
Pierceable			✓			(✓)	
Peelable	✓			✓	✓	✓	✓
RNase/DNase free	✓	✓	✓	✓	✓	✓	✓
Material	Laminate	Polymer	Polymer	Polymer	Laminate	Laminate	Laminate
Seals to	PP, PE, PS, PC, COC	PP	PP, PE, PS, COC	PP, PS, COC	PP, COC	PP, PE, PS, PC, COC	PP, PE, COC
Sealing parameters with 96 Well PP Plates	175-185°C 2-3 s	175-185°C 2-3 s	165-175°C 3 s	175-185°C 2-3 s	175-185°C 3 s	175°C 2 s	175-185°C 3 s
Sealing parameters with 384 Well PP Plates	165-180°C 3 s	170-175°C 2-3 s	165-175°C 2 s	165-180°C 3 s	170-175°C 2-3 s	175°C 2 s	170-175°C 2-3 s
Sealing parameters with Optically Clear Tissue Culture Plates	185-200°C 3 s	N/A	175-185°C 2-3 s	185-200°C 3 s	N/A	180°C 2 s	N/A
Product Codes/Instrument Compatibility							
Compatible with Azenta Automated Roll Heat Sealer | Thermo Fisher ALPS 300™ and ALPS 3000™ | KBiosystems Wasp™ and Chameleon™ | KBioscience FlexiSeal and Cube							
Roll, 78 mm width	4ti-0540	4ti-0573	4ti-0580	4ti-0549	4ti-0520	4ti-0523	4ti-0585
Roll, 78 mm width, short roll*	4ti-0540/80	4ti-0573/122	4ti-0580/122		4ti-0520/122		4ti-0585/100
Sample roll, 78 mm width	4ti-0540S	4ti-0573S	4ti-0580S	4ti-0549/S	4ti-0520S	4ti-0523S	4ti-0585S
Compatible with Agilent (Velocity 11) PlateLoc®							
Roll, 115 mm width	4ti-0542	4ti-0574	4ti-0582	4ti-0548	4ti-0522	4ti-0524	4ti-0586
Sample roll, 115 mm width	4ti-0542S	4ti-0574S	4ti-0582S	4ti-0548/S	4ti-0522S	4ti-0524S	4ti-0586S
Compatible with Azenta Portrait Heat Sealer							
Roll, 78 mm width, large core	4ti-0540/REMP						4ti-0585/REMP
Compatible with Azenta Landscape | Stacking Heat Sealers							
Roll, 115 mm width, large core	4ti-0542/REMP						4ti-0586/REMP
Compatible with Azenta Semi-Automated Sheet Heat Sealer | Thermo Fisher ALPS™ 25 and ALPS™ 50 | KBiosystems E-Fly 2 | Azenta Easy Sealer							
Sheets	4ti-0541	4ti-0575	4ti-0581	4ti-05481	4ti-0521	4ti-05231	4ti-0587
Compatible with Azenta Semi-Automated Sheet Heat Sealer							
Individual Access, sheets					4ti-0521/RA-TAB 4ti-0521/RA-8		
Compatible with Azenta Automated Individual Access Heat Sealer							
Individual Access, roll, 100 mm width					4ti-0522/RA-TAB		

* For use with the Azenta Automated Roll Heat Sealer when using lower roll position and the optional dust cover for protection of the roll · ** NOT compatible with Agilent (Velocity 11) PlateLoc®

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Pierceable Heat Seals		Foil Heat Seals			Gas Permeable Heat Seals	
Pierce Heat Seal	Pierce Heat Seal Strong	Foil Heat Seal	Polystyrene Foil Heat Seal	Thermal Bond Heat Seal	Gas Permeable Heat Seal	Gas Permeable Clear Heat Seal
PCR Compound storage Sample shipping	PCR Compound storage Sample shipping	Low temperature compound storage Short-term room temperature compound storage PCR	Low temperature compound storage Short-term room temperature compound storage PCR	Low temperature transportation & storage PCR, esp. water bath cyclers Storage of organic solvents, acids & alkalines	Cell culture Over night incubation Seed and insect storage	Storage e.g. for seeds or insects
Easily pierceable Resistant to DMSO Re-sealable with another Pierce Heat Seal Color print identifies non-sealing surface	Easily pierceable Resistant to DMSO Re-sealable with another Pierce Heat Seal Color print identifies non-sealing surface	Re-sealable with another Foil Seal Resistant to DMSO Color print identifies non-sealing surface	Re-sealable with another Foil Seal Resistant to DMSO	Very strong seal with PP Resistant to DMSO and other solvents	Small pore size of 20 µm allows gaseous exchange & limits evaporation Gas permeability: 180 m^3/m^2/day Moisture vapor transmission: 20g/m^2/day	3 mm slits across entire surface of seal makes this permeable to gases
-20°C	-20°C	-20°C	-20°C	-200°C	-20°C	-80°C
120°C	120°C	110°C	110°C	110°C	80°C	100°C material integrity (not seal)
✓	✓	✓	✓		✓	✓
		✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
Foil	Foil	Foil	Foil	Laminate	Woven material	Laminate
PP, PS	PP, COC	PP, PS	PP, PS, PC	PP	PP, PS, COC	PP, PE, PS
160-175°C 2 s	170-180°C 2 s	165-180°C 2 s	165-180°C 2 s	170-180°C 2-3 s	170°C 2 s	175-185°C 2-3 s
160-175°C 2 s	170-180°C 2 s	165-175°C 2-3 s	165-175°C 2-3 s	160-170°C 2 s	170°C 2 s	165-180°C 3 s
185-200°C 3 s	180-200°C 3 s	185-200°C 3 s	185-200°C 3 s	N/A	170°C 2 s	185-200°C 3 s
4ti-0530	4ti-0538	4ti-0535	4ti-0545	4ti-0590	4ti-0598	4ti-0540/SLIT
4ti-0530/122		4ti-0535/122	4ti-0545/122	4ti-0590/100	4ti-0598/122	
4ti-0530S	4ti-0538S	4ti-0535S	4ti-0545S	4ti-0590S	4ti-0598S	4ti-0540/SLIT/S
4ti-0532	4ti-0539	4ti-0537	4ti-0546	4ti-0592**	4ti-0599**	
4ti-0532S	4ti-0539S	4ti-0537S	4ti-0546/S	4ti-0592S**	4ti-0599S**	
4ti-0530/REMP		4ti-0535/REMP				
4ti-0532/REMP		4ti-0537/REMP				
4ti-0531	4ti-05381	4ti-0536	4ti-0547	4ti-0591	4ti-0597	4ti-0541/SLIT
4ti-0531/RA	4ti-05381/RA					
4ti-0532/RA	4ti-0539/RA					

Azenta recognizes that designated trademarks and brands of the Instrument Compatibility Table are the property of their respective owners.

Thermosensitive Color Forming Film

Thermosensitive color-forming film; for evaluation of consistent temperature across a heating block; to be used in conjunction with roll fed or sheet fed heat sealing instruments

- Azenta Thermal Test Film (TTF) can be used in conjunction with a roll fed (e.g. Azenta Automated Roll Heat Sealer) or sheet fed (e.g. Azenta Semi-Automated Sheet Heat Sealer)
- It checks the uniformity and reproducibility of the heat sealing block of the instrument
- The film can be used to effectively test the temperature of the heating block between 160°C and 200°C

Key Features

- The Thermal Test Film has a thermosensitive color-forming layer plus a protective layer, both attached to the base material
- Depending on the temperature applied to the film, a color is produced in varying density and hue, giving a perfect image of heat distribution across the heating block of your heat sealer
- The color varies according to dwell time and temperature
- The shorter the duration, the paler and more blueish the color
- The longer the duration, the more saturated and reddish the color

Specifications

Parameter	Value
Sealing temperature range	160 °C to 200 °C
Recommended ambient temperature	15 °C to 30 °C
Recommended ambient humidity	35% RH to 80% RH

Ordering Information

4ti-0640	**Thermosensitive Color Forming Film, used to check uniformity and reproducibility of a heat sealing block,** 25 sheets (125 x 80 mm)
4ti-0641	**Thermosensitive Color Forming Film, starter kit,** 10 sheets (125 x 80 mm) and 1 silicone pad
4ti-0642	**Thermosensitive Color Forming Film, roll kit,** 1 roll (1m x 80 mm) and 1 silicone pad

Thermal Test Film Color Chart

Temperature/Duration	150°C	160°C	170°C	180°C	190°C	200°C	210°C
1 second							
10 seconds							
60 seconds							

Note: This color chart is just an example based on the results of the tests performed in our laboratories. Before using the Thermal Test Film, a similar chart needs to be created that is based on your actual measurement conditions

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Automated Roll Heat Sealer

The Automated Roll Heat Sealer enables up to 5,000 perfect seals without manual user intervention, providing a true walk-away system. The main advantage of the Automated Roll Heat Sealer is that it is powered by electric motors, with no requirement for any air supply. This enables the Automated Roll Heat Sealer to generate a reliable and consistent sealing pressure, resulting in superior seal uniformity. In addition, it provides the user the flexibility to use this instrument without the need for an external air supply, enabling ease-of-use as a stand-alone unit on a lab bench or within integrated robotic set-ups. Consistent sealing is achieved through a fixed high sealing pressure and accurate time and temperature controls, ensuring reproducible seal uniformity on the widest range of plates. The high-performance heating block design enables rapid heating with no delay between seals, and provides a uniform temperature across the entire heating block. The Automated Roll Heat Sealer is compatible with a wide range of SBS footprint plates, including all PCR plate formats from 96 to 1536 wells, assay plates, deep well storage plates and microplates. The Automated Roll Heat Sealer can be used with the wide range of sealing materials that Azenta offers, including gas permeable seals with no further instrument modification, enabling a wide range of applications.

- Unrivalled sealing performance and consistency; 5,000 perfect seals without intervention
- SiLA compatible; Easy integration into robotic systems
- Powerful electric motor generates consistent sealing pressure for superior sealing uniformity
- High-performance heating block design generates uniform temperature across entire heating block

Color touch screen with intuitive user interface – ease of use

Features

- Powerful electric motor drives plate sealing mechanism
- SiLA compatible
- Compatible with a wide range of plates and seals; 2 positions for different roll sizes
- Variable time and temperature controls
- Seal cycle time < 15 seconds
- High-performance heating block design
- Color touch screen with intuitive user interface
- Unlimited password protected protocols
- Auto standby mode
- Optional roll cover
- 2 year warranty

Benefits

- Reliable and consistent sealing pressure; Superior sealing uniformity; No requirement for any air supply
- Easy integration into robotic systems through plug & play
- Flexibility with a wide range of consumables including gas permeable seals without instrument modification
- Enables optimization of any seal / plate type
- Time-saving
- Rapid heating, no delay between seals; Uniform temperature across entire heating block, +/- 1 degree edge-to-edge, corner-to-corner
- Ease of use, saving time
- Save personalized and SOP-set temperatures and times
- Energy-saving; prolongs component life
- Seal protection for sensitive applications
- Instrument reliability

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Providing The Perfect Solution For Automated Heat Sealing

Plug and Play Robotic Integration

- The automated Roll Heat Sealer is compliant with SiLA standards for rapid integration of automated systems (www.sila-standard.org). This means it can be “plug and play” connected with other instruments, such as readers, robotic arms and liquid handlers, to give a custom automated system without the need to write expensive custom drivers.
- The Automated Roll Heat Sealer is extremely versatile leaving you the freedom to expand and reconfigure your systems such as adding robotic plate handling.
- Full communication protocol available — operate the instrument and record sealing conditions for each seal using the RS232 communication port
- SiLA compatible — quick and easy integration with other SiLA compliant devices using the SiLA driver

SiLA Rapid Integration®

Technical Specifications

Parameter	Value
Dimensions (W x L x H)	230 x 507 x 276 mm
Please note: Additional space is required if large seal rolls are used	
Sealing Temperature Range	100-195°C
Sealing Time Range	0.1-10 sec
Weight (without roll)	27 kg
Power Supply	V in: AC 100-240 V V out: DC 24 V 320 W
Power Consumption	700 W (max)
Working Temperature Range	10-30°C
Operating Humidity (RH)	0-85%
Connection	RS-232 serial port, USB port

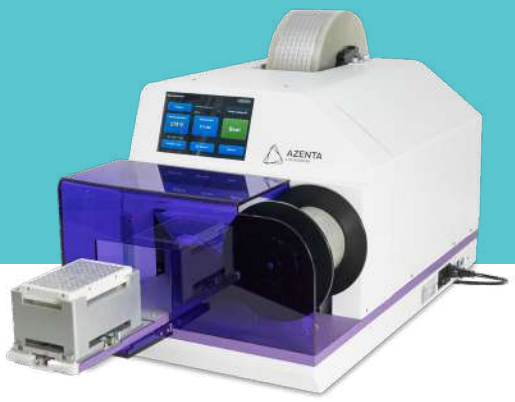
Flexibility of seal material choice - Azenta offers a wide range of sealing films and foils

Compatibility with a wide range of plate types - two adapters supplied for optimal sealing results, with custom adapters available on request

Ordering Information

Automated Roll Heat Sealer Includes: Power cord, manual, plate support adapters A (4ti-0665-2) and B (4ti-0665-3), 24 months parts and labor warranty	
4ti-0665	**Automated Roll Heat Sealer,** for use with adapters A and B
Accessories	
4ti-0665-1	**Seal Loading Tool;** 1 tool
4ti-0665-2	**Plate Support Adapter A, for mid height plates;** 1 adapter
4ti-0665-3	**Plate Support Adapter B, for 96/384 well PCR plates, 1536 well plates and standard height plates;** 1 adapter
4ti-0665-56	**Elevator Adapter, for very low skirted microplate;** 1 adapter
4ti-0665-57	**Lightweight Adapter, for low skirted microplates;** 1 adapter
4ti-0665-58	**Lightweight Adapter, for high skirted microplates;** 1 adapter
4ti-0665-59	**Lightweight Adapter, for 384 well microplates;** 1 adapter
4ti-0665-60	**Lightweight Adapter, for 96 well microplates;** 1 adapter
4ti-0665-4	**Roll Holder Set;** includes spindle, clamping wheels, locking nut; 1 set
4ti-0665-5	**Vacuum Cups, Front; clear, set of 2;** 1 set
4ti-0665-6	**Vacuum Cups, Back; black, set of 2;** 1 set
4ti-0665-7	**Plastic Tweezers;** 1 tweezers
4ti-0665-8	**Clear Plastic Roll Dust Cover;** 1 cover
4ti-0665-41	**SiLA driver;** 1 license

Automated Individual Access Roll Heat Sealer



The Automated Individual Access Heat Sealer is an automated roll heat sealer for higher throughput capable of sealing individual wells or tubes, enabling researchers to leverage the benefits of the Azenta Individual Access range whilst maintaining the gold standard heat sealing provided by the Azenta Automated Roll Heat Sealer.

Concept

Individual access utilizes a plate with individually removable wells, together with seals consisting of individual foil seal spots. This enables sealing of individually accessible tubes and thereby provides flexibility for single access or placement of tubes within a rack. In addition, the Automated Individual Access Heat Sealer also has the ability to seal custom shaped consumables with custom shaped seals to accommodate tailor-made needs. The resulting individual access of tubes and consumables through sealing of individual tubes and custom shaped consumables enables high throughput manufacturing but shipment of individual product. End-users can then utilize tubes individually as needed by taking one well at a time.

Features

- Individual sealing of plate wells or tubes
- Color touch screen with intuitive user interface
- Variable time and temperature controls
- Compatibility with wide range of plates and seals
- Ability to seal custom shapes with custom seals
- Unlimited password protected protocols
- Rapid heating
- Auto standby mode
- 2 year warranty

Benefits

- Enables individual access to plate wells or tubes and allows high throughput manufacturing but shipment of individual product
- Ease of use, saving time
- Enables optimization of any seal and plate type
- Enables specific requirements and unique applications
- Custom potential for tailor-made consumables
- Save personalized and SOP-set temperatures and times
- Easy integration into robotic systems through plug & play
- Fast start-up time; block uniformity maintained to ±1°C
- Energy saving; prolongs component life
- Instrument reliability

A solution for:

- Diagnostic Kit Manufacturers
- Oligonucleotide Production
- Synthetic Biology
- Sample Storage
- Individual Access Users
- Antibody Extraction

Ordering Information

Automated Individual Access Heat Sealer Includes: Power cord, manual, plate support adapters, 24 months parts and warranty.	
59-1000	Automated Individual Access Heat Sealer
Accessories	
59-1001	Automated Individual Access Heat Sealer Seal Loading Tool
59-1004	Automated Individual Access Heat Sealer Plate Support Adapter, A
59-1003	Automated Individual Access Heat Sealer Waste Collection Core
59-1002	Automated Individual Access Heat Sealer Spindle Support

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Semi-Automated Sheet Heat Sealer

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Semi-Automated Sheet Heat Sealer

The Semi-Automated Sheet Heat Sealer is compatible with a wide range of seals and plates of differing designs and heights.

With variable temperature and time settings, sealing conditions are easily optimized to produce a tight seal, eliminating sample loss.

Plate and seal are placed on the holder, the "*Operate*" button pressed and the drawer automatically closes. The sealing process is controlled by an electric mechanism.

Heat sealers provide a mechanism for controlled plate sealing, eliminating variation and giving consistent sealing every time.

Features

- Variable time and temperature control
- Simple, three button operation
- Real-time temperature display
- Auto stand-by function and switch-off mode
- Compatible with all SBS microplates
- Small footprint
- RS-232 serial port
- 12 month warranty

Benefits

- Enables optimization of any seal / plate type
- Ease of use
- Rapid heating element enables fast start-up, saving time
- Conserves energy by reducing temperature of heating element down to 60°C or switching off after defined time
- Flexibility for wide range of consumables, eg competitor plates
- Minimal bench space
- RS-232 port enables unit integration within robotic systems
- Instrument reliability

Technical Specifications

Parameter	Value
Dimensions (W x L x H)	181 x 275 x 310 mm
Sealing Temperature Range	60-200°C
Sealing Time Range	0-10 sec
Weight	9 kg
Power Supply	110/230V
Power Consumption	300 W (max)
Connection	RS-232 serial port

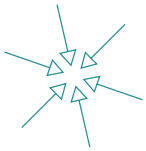
The semi-automated sheet heat sealer is compatible with a wide range of seals & plates of differing designs & heights

Reproducible Sealing

Adapters

The Semi-Automated Sheet Heat Sealer employs a unique and cost saving adapter system

- Deep well plates and most other skirted plates can be sealed on the standard plate support adapter (59-2001)
- For all other 96 well PCR plates, an additional plate support adapter (59-2003, optional extra) must be used
- Both adapters can also be combined for easier handling of shallow plates such as 384 well PCR plates.
- For best sealing results with Individual Access seals, 8 different adapters are available to offer the perfect plate support and seal alignment



Highest Flexibility

Sealing Aids

- For better sealing of films which have a tendency to curl, Azenta offers sealing aids
- A sealing frame for use with all other plate designs is supplied when ordering the optional 59-2003 plate support adapter

Plate Formats

The following plate formats can be used with the appropriate plate adapter:

- Standard SBS footprint PP & PS plates & deepwell blocks
- PCR plates (skirted, semi-skirted and non-skirted formats)

Ordering Information

Semi-Automated Sheet Heat Sealer Includes: Power cord, manual, standard plate support adapter (59-2001), 12 months parts and labour warranty	
59-2000	**Semi-Automated Sheet Heat Sealer,** includes adapter (59-2001)
Accessories	
59-2001	**Semi-Automated Sheet Heat Sealer Adapter, for skirted 96 and 384 well plates,** 1 adapter per case
59-2002	**Semi-Automated Sheet Heat Sealer Adapter, for Roche 1536 well PCR plates,** 1 adapter per case
59-2003	**Semi-Automated Sheet Heat Sealer Adapter, for 96 well PCR plates,** includes Semi-Automated Sheet Heat Sealer Sealing Frame (59-2009) 1 adapter and frame per case
59-2004	**Semi-Automated Sheet Heat Sealer Adapter, for 384 well PCR plates,** 1 adapter per case
59-2005	**Semi-Automated Sheet Heat Sealer Adapter, for Indvidual Access plates,** 1 adapter per case
59-2006	**Semi-Automated Sheet Heat Sealer Adapter, for 96 and 384 well storage plates,** 1 adapter per case
59-2007	**Semi-Automated Sheet Heat Sealer Adapter, for 4TI-LB0109 and 96 well PCR plates,** 1 adapter per case
59-2008	**Semi-Automated Sheet Heat Sealer Weighted Sealing Platen,** 1 platen per case
59-2009	**Semi-Automated Sheet Heat Sealer Sealing Frame, for use with Semi-Automated Sheet Heat Sealer Adapter,** for use with 59-2003, 1 frame per case

59-2001 Plate Support Adapter, Standard

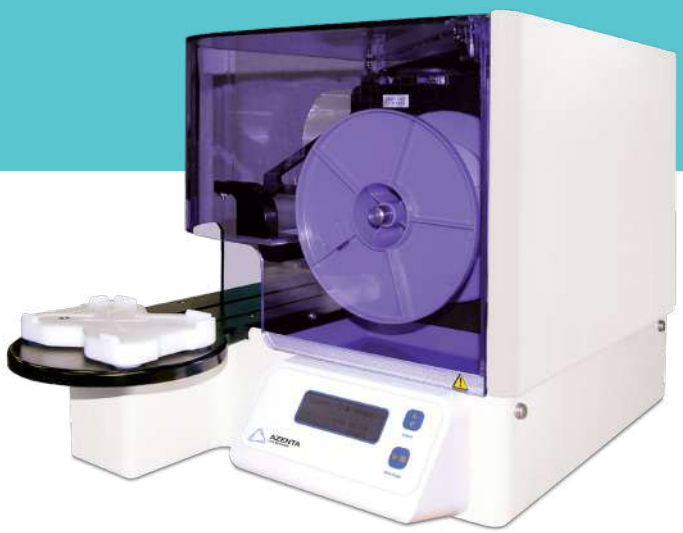
59-2003 Plate Support Adapter, PCR 96

59-2005 Plate Support Adapter, Individual Access, Low Profile

59-2008 Weighted Sealing Platen

59-2009 Sealing Frame

Automated Plate Seal Remover



Automatically removes seals from a wide range of microplate types with the single touch of a button.

A robust and elegantly-simple automated system, the Automated Plate Seal Remover eliminates the need for repetitive, manual removal of plate seals and enables the adoption of the gold-standard operating model (sealed plates, no lids).

The Automated Plate Seal Remover Tape eliminates the need for mechanical removal mechanisms which are often prone to failure. Automated Plate Seal Remover is highly reliable and can be used manually or integrated into automated systems with external robotics.

Key Features

Compatible with Virtually All Plate Types and Seal Types

- Can be used with a wide variety of microplates, including full-skirted PCR plates, low-base microplates and deep-well (up to 2ml) plates
- Compatible with a variety of full-plate seals, including heat and pressure applied seals
- Uses proprietary Automated Plate Seal Remover Tape to de-seal microplates, up to 400 seal removals per roll

Preserves Sample Integrity

- Eliminates cross contamination common with manual seal removal techniques
- Supports Quality Control measures requiring samples to be sealed until their moment of use
- Holds the plate down whilst the seal is peeled away from the plate, eliminating another contamination issue
- Operating mode minimizes plate or seal damage
- When used as part of an integrated workflow, seal removal verification feature reduces plate handling errors

Easy to Use, Easy to Integrate

- Can be used as a standalone system, or integrated into automated and robotic workflows via Serial RS232 remote interface
- One-touch, push-button operation to de-seal plates makes the Automated Plate Seal Remover an ideal standalone device for busy laboratories
- Capacity to remove up to 200 plate seals per hour
- Robust, time-proven device with hundreds of units placed globally in a range of manual and automated environments

Specifications

Parameter	Value
Seal Removal Capacity	Up to 400 per Tape Roll
Seal Verification Sensor	Reflective with Sensitivity Adjustment
Communication	Serial RS232
Motion Parameters	Tape Adhere Time, De-seal Speed, Plate Output Orientation, Begin Peel Location
General Parameters	Auto Tape Advance, Plate Verification Menu Language
Weight	35kg (76lbs)
Power Requirements	115VAC, 4A, 60Hz 230VAC, 2A, 50Hz
Throughput	Up to 200 Plate Seal Removals per Hour

Ordering Information

Automated Plate Seal Remover Includes: Power cord, manual, plate support adapters, 12 months parts and warranty.	
XP-A_100V	**Automated Plate Seal Remover, 100V,** version for Asia; 1 unit
XP-A	**Automated Plate Seal Remover, 115V,** version for North America; 1 unit
XP-A_230V	**Automated Plate Seal Remover, 230V,** version for Europe; 1 unit
Compatible Tapes	
X-Tape_2000	**Automated Plate Seal Remover Tape,** 5 spools per case

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Adhesive Sealing Consumables & Sealing Accessories

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Adhesive Sealing Consumables & Sealing Accessories

Adhesive seals provide a versatile, yet robust, method for protecting samples. The seals are supplied as sheets and some are also available in roll format. Most adhesive seals are supplied with convenient tabs on both ends for easy application and removal. These tabs also enable easy peeling to remove a seal without leaving adhesive residue on the sealing surface.

All our seals are produced and processed under strictly controlled environmental conditions and certified free from DNase, RNase and human genomic DNA.

To choose the most suitable seal, please refer to the comparison table on page 232 which describes the recommended applications and technical features of each seal.

To obtain the best sealing results with adhesive seals, we strongly recommend the use of high quality plates with raised rim sealing rings for optimal sealing integrity and guaranteed flatness. All Azenta PCR plates are designed with these features.

To improve seal application by ensuring even pressure is applied, we offer a seal roller and a seal applicator, for complete and secure application of all our adhesive seals. We also offer supplementary products like the compression pad, for details see page 230.

4titude PCR Seal

Clear adhesive film, strong adhesive, peelable; suitable for PCR and optical applications; available as a full sheet, perforated for tearing into 8 well strips or 12 well strips

- Our PCR Seal is a durable transparent polyester film with a strong adhesive layer
- The seal enables a high integrity and efficiently prevents sample evaporation
- Recommended for PCR, qPCR, and other optical applications (e.g. fluorescence or colorimetric measurements) as well as sample storage
- The PCR Seal is also available in two flexible formats with perforated sheets, to enable tearing into 8 well and 12 well strips, respectively
- Allows for sealing of complete 96 well plates, but also individual or multiple Breakable Horizontally or Vertically or Breakable Vertically strips, perfectly complementing these products
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

Key Features

- Non-pierceable, please refer to our PCR Foil Seal Strong for a pierceable variant
- Peelable
- Seal integrity range: -20°C to 110°C
- Non-gamma treated
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: PCR, qPCR
- Removal: features adhesive-free end tabs for easy removal, will not leave a sticky residue on the plate surface following removal

Seal Integrity Temperature Range	-20°C
	110°C

*110°C with pressurized heated lid

Peelable

Options

- Sheet format: 135 x 80 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates
- Perforated sheet format: 115 x 100 mm, for tearing into 8 well strips
- Perforated sheet format: 137 x 71 mm, for tearing into 12 well strips

Ordering Information

4ti-0500	**PCR Seal, clear adhesive film,** strong adhesive, 100 sheets (135 x 80mm) per case
4ti-0500/8	**PCR Seal 96/8, clear adhesive film, vertically perforated,** strong adhesive, 100 sheets (115 x 100mm) per case
4ti-0500/12	**PCR Seal 96/12, clear adhesive film, horizontally perforated,** strong adhesive, 100 sheets (137 x 71mm) per case

4titude Optically Clear Windowed qPCR Seal

Adhesive film with 96 optically clear windows, peelable, suitable for qPCR and optical applications

- These unique seals combine the strong sealing integrity of our PCR Seal with improved optical properties, thanks to the 96 adhesive-free windows
- The seal is made of a durably transparent polyester film, and a strong adhesive is applied across the seal, apart from the 96 round windows
- The Optically Clear Windowed qPCR Seal is recommended for qPCR and other optical applications, such as fluorescence or colorimetric measurements
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

Key Features

- Non-pierceable
- Peelable
- Seal integrity range: -20°C to 110°C
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: qPCR, plate readers
- For 96-well microplates only
- Removal: will not leave a sticky residue on the plate surface following removal
- Suitable for cutting to fit part plates

Seal Integrity Temperature Range	-200°C
	110°C

*110°C with pressurized heated lid

Peelable

Options

- Sheet format: 133 x 76 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates with 96 round wells
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0565*	**Optically Clear Windowed qPCR Seal, adhesive film with 96 optically clear windows,** 100 sheets (133 x 76mm) per case

**Not available for purchase in or onwards distribution to the USA*

qPCR Adhesive Seal

Optically clear adhesive film, pressure activated adhesive, peelable; suitable for qPCR and other imaging techniques including crystallization

- Optically clear seal specifically developed for optical applications, particularly qPCR
- It is non sticky when removed from the packaging; this aids handling when wearing gloves
- The adhesive is contained within small capsules, allowing light to pass through to ensure the optical clarity of the seal
- When the seal is in position, pressure can be applied to burst the capsules, releasing a strong adhesive only where the seal touches the raised well rims of the plate - the rest of the seal area above the wells remains optically clear

Key Features

- Non-pierceable
- Peelable
- Seal integrity range: -80°C to 110°C
- Free from DNase, RNase, and human genomic DNA

Use

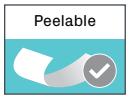
- Applications: qPCR and other fluorescent applications, plate readers, microscopy and protein crystallization (96 or 384 well)
- Removal: will not leave a sticky residue on the plate surface following removal
- Replacement for: ABI® MicroAmp Optical Adhesive film, Absolute qPCR plate seals and Roche LightCycler® sealing foils

Options

- Sheet format: 140 x 77 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates with 96 round wells
- Roll format: 100 m x 80 mm, approx. 700 seals
- Non-gamma treated as standard; gamma treatment available upon request

Seal Integrity Temperature Range	-80°C
	110°C

*110°C with pressurized heated lid



Specifications

- This is a pressure-activated seal: the adhesive is released when pressure is applied firmly and evenly to the seal
- Our Adhesive Seal Roller and Adhesive Seal Applicator are ideal for use with this product
- We also recommend the use of our Optical Film Compression Pad during PCR with this product

Ordering Information

4ti-0560	**qPCR Adhesive Seal, optically clear film, pressure activated adhesive,** 100 sheets (140 x 77mm) per case
4ti-0561	**qPCR Adhesive Seal, optically clear film, pressure activated adhesive,** 1 roll (100m x 80mm)
4ti-0561S	**qPCR Adhesive Seal, optically clear film, pressure activated adhesive,** 1 sample roll (5m x 80mm)

PCR Foil Adhesive Seal

Pierceable adhesive aluminium foil, strong adhesive, peelable; suitable for high temperature applications

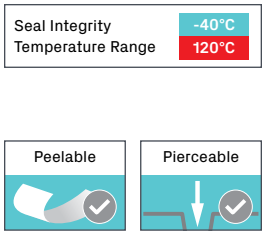
- This aluminium foil seal has a strong acrylic adhesive which produces a seal of high integrity
- It was developed for PCR and other high temperature applications due to its effectiveness in preventing sample evaporation
- The PCR Foil Seal is pierceable; when pierced, the foil tears in an irregular manner which prevents the formation of a vacuum
- Perforated end tabs for easy application and removal by peeling
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

Key Features

- Pierceable
- Peelable
- Seal integrity range: -40°C to 120°C
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: PCR, incubation, storage
- Suitable for cutting to fit part plates



Options

- Sheet format: 130 x 80 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0550	**PCR Foil Seal, pierceable adhesive aluminium foil, strong adhesive,** 100 sheets (130 x 80mm) per case

PCR Foil Adhesive Seal Strong

Adhesive aluminium foil, strong adhesive, peelable, pierceable; suitable for high temperature incubations and low temperature storage

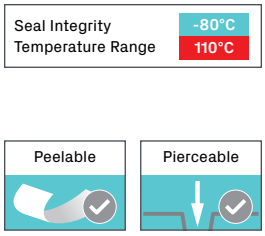
- Our PCR Foil Seal Strong is a pierceable aluminium foil seal with a strong acrylic adhesive, recommended for PCR and low temperature storage
- This seal features all of the advantages of our PCR Seal, but in a pierceable format
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

Key Features

- Pierceable
- Peelable
- Seal integrity range: -80°C to 110°C
- Non-gamma treated
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: PCR, high temperature incubations, low temperature sample storage



Options

- Sheet format: 137 x 80 mm
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0500FL	**PCR Foil Seal Strong, adhesive aluminium foil, strong adhesive,** 100 sheets (137 x 80mm) per case

DMSO Resistant Foil Adhesive Seal

Peelable adhesive foil, strong adhesive, high solvent resistance; suitable for long term storage

- This aluminium foil seal has a chemically resistant silicone adhesive layer to produce a seal with high levels of solvent resistance, including to Dimethyl Sulfoxide (DMSO)
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

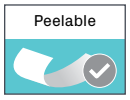
Key Features

- Non-pierceable
- Peelable
- Seal integrity range: -20°C to 80°C
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: long-term plate storage, samples containing <80% Dimethyl Sulfoxide (DMSO) can be stored for up to 5 years
- Removal: this seal will not leave a sticky residue on the plate surface following removal
- Suitable for cutting to fit part plates

Seal Integrity Temperature Range	-20°C
	80°C



Options

- Sheet format: 122 x 80 mm, to fit all standard SBS footprint plates, PCR and qPCR plates and part plates, microplates, assay and storage plates
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0512	**DMSO Resistant Foil Seal, peelable adhesive foil, strong adhesive, high solvent resistance,** 100 sheets (122 x 80mm) per case

Pierceable Film Strong Adhesive, 96 Cross-Cut Windows

Strong adhesive seal cross-cut windows, peelable, pierceable; suitable for 96 well plates (auto samplers, HPLC, sequencers)

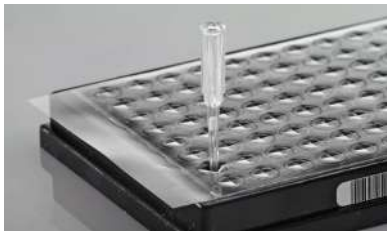
- This strong adhesive seal was developed to facilitate easy sample removal with a manual or automated system
- The seal is optically clear, being made from a transparent polyester film, and has a strong adhesive applied across the underside of the seal, except for 96 round windows which align to the 96 wells of a plate
- The optical windows are cross-cut, allowing for easy access to the sample wells with a tip or probe with minimal pressure
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

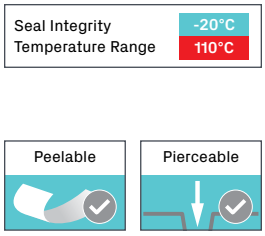
Key Features

- Pierceable
- Peelable
- Seal integrity range: -20°C to 110°C
- Non-gamma treated
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: sample application or retrieval, for use in automated systems and sample analyzers such as HPLC and DNA sequencers
- Removal: will not leave a sticky residue on the plate surface following removal
- Suitable for cutting to fit part plates
- Replacement for: ABI® septa mats on capillary sequencers and to replace silicone and EVA storage plate cap mats





Options

- Sheet format: 135 x 77 mm, to fit all standard SBS footprint PCR and qPCR plates, microplates, assay and storage plates with 96 round wells
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0566*	**Pierceable Film, strong adhesive seal with 96 cross-cut windows,** 100 sheets (135 x 77mm) per case

**Not available for purchase in or onwards distribution to the US*

Pierceable Film Strong Adhesive, 384 Cross-Cut Windows

Strong adhesive seal with cross-cut windows, red adhesive, peelable, pierceable; suitable for 384 square well plates

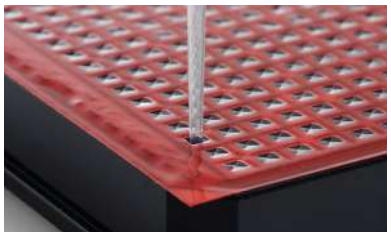
- This strong adhesive seal was developed to facilitate easy sample removal with a manual or automated system
- A red adhesive is applied across the underside of the seal, except for 384 windows which align to the 384 wells of a plate
- The optical windows are cross-cut, allowing for easy access to the sample wells with a tip or probe with minimal pressure
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

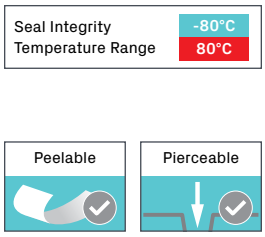
Key Features

- Pierceable
- Peelable
- Seal integrity range: -80°C to 120°C
- Adhesive-free windows avoid clogging of tips or needles during piercing
- Pre-slit well centres for access to samples with no force needed for piercing
- No cross contamination
- Good solvent and DMSO resistance
- Non-gamma treated
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: sample application or retrieval, for use in automated systems and sample analyzers such as HPLC and DNA sequencers





Options

- Sheet format: 117 x 80 mm, to fit all standard SBS footprint plates, microplates, assay and storage plates with 384 wells with rounded square wells
- Non-gamma treated as standard; gamma treatment available upon request

Ordering Information

4ti-0566/384	**Pierceable Film, strong adhesive seal with 384 cross-cut windows,** 100 sheets (117 x 80mm) per case

Moisture Barrier Adhesive Seal 24, 96, 384

Gas permeable adhesive film, optically clear, with adhesive free windows, peelable, pierceable, gamma treated; suitable for cell culture

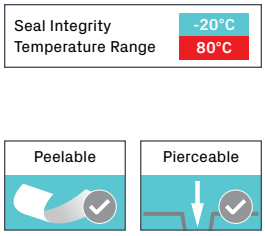
- This unique seal has optically clear adhesive free windows; these windows can be imaged through, and also allow for gas exchange
- The clear film is made of a porous material which allows for a uniform air and CO_2 exchange, whilst acting as a moisture barrier and preventing evaporation
- The seal is coated with a strong adhesive (except for the optical windows) which has a high sealing integrity
- This ensures a reliable seal and prevention of well-to-well contamination
- The gas permeable seal enables long term incubations without intervention, whilst allowing for imaging through the optically clear windows
- Can reduce the risk of sample contamination, evaporation and can improve your experimental workflow
- Use of this seal within plate readers can prevent moisture release into the sensitive equipment
- A number of plate reader manufacturers recommend the use of the Azenta Moisture Barrier Seal 24,96,384 (Gas Permeable Moisture Barrier Seal)
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

Key Features

- Pierceable
- Peelable
- Seal integrity range: -20°C to 80°C
- Gas permeability rate: 0.6 m^3/m^2/day
- Moisture vapor transmission rate: 1 g/m^2/day
- Optically clear for imaging
- Gamma treated
- Free from RNase and DNase

Use

- Applications: plate readers, eukaryotic cell culture, bacterial cell culture, long-term incubation, live cell assays, confocal microscopy



Options

- Sheet format: 140 x 80 mm (4ti-0516/24) and 137 x 80 mm (4ti-0516/96 and 4ti-0516/384)
- Available with 24/96/384 adhesive free windows for use with 24/96/384 well plates

Ordering Information

4ti-0516/24*	**Moisture Barrier Seal, gas permeable adhesive film, optically clear, with 24 adhesive free windows,** gamma treated, 5 x 10 sheets (137 x 77mm) per case
4ti-0516/96*	**Moisture Barrier Seal, gas permeable adhesive film, optically clear, with 96 adhesive free windows,** gamma treated, 5 x 10 sheets (137 x 77mm) per case
4ti-0516/384*	**Moisture Barrier Seal, gas permeable adhesive film, optically clear, with 384 adhesive free windows,** gamma treated, 5 x 10 sheets (137 x 77mm) per case

**Not available for purchase in or onwards distribution to the USA*

Cell Culture Adhesive Seal

Gas permeable adhesive seal, peelable; suitable for cell culture

- Our Cell Culture Adhesive Seal is a gas permeable adhesive seal which seals assay and tissue culture plates, microplates and storage plates
- The Cell Culture Adhesive Seal prevents evaporation and contamination whilst enabling cells to breathe. It is made of a non-woven fiber with an acrylate adhesive layer for effective sealing
- The seal has a low moisture transfer rate and a porosity enabling gas exchange
- Due to its paper-based material it should not be used in wet conditions
- Suitable for cell culture and enables long term culture with significantly reduced evaporation
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

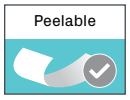
Key Features

- Peelable
- Seal integrity range: -20°C to 40°C
- Gas permeability rate: 8,900 $m^3/m^2/day$
- Moisture vapor transmission rate (very low): 4,200 $g/m^2/day$
- Air porosity: 10 sec/100 cc/in^2
- RNase/DNase free

Use

- Application: bacterial and eukaryotic cell culture

Seal Integrity Temperature Range	-20°C
	40°C



Options

- Sheet format: 135 x 80 mm
- Available gamma treated (4ti-0517/ST)

Ordering Information

4ti-0517	**Cell culture adhesive seal, gas permeable,** 100 sheets (135 x 80mm) per case
4ti-0517/ST	**Cell culture adhesive seal, gas permeable,** 10x10 sheets (135 x 80mm) per case

Microplate Seal Low Strength Adhesive Film

Low strength adhesive film, transparent, peelable; suitable for short term storage

- This transparent polyester-based film has a low strength adhesive
- It is designed as a low-cost sealing option, and useful for temporary storage and as a cover for applications such as centrifugation
- End tabs allow for easy application and removal
- This seal is removable without residue on the plate
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

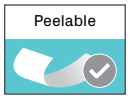
Key Features

- Non-pierceable
- Peelable
- Seal integrity range: -20°C to 80°C
- Free from DNase, RNase, and human genomic DNA

Use

- Applications: sample storage (aqueous samples only)
- Suitable for all plate types

Seal Integrity Temperature Range	-20°C
	80°C



Options

- Sheet format: 130 x 80 mm

Ordering Information

4ti-0510	**Microplate Seal, low strength adhesive film,** transparent, 100 sheets (130 x 80mm) per case

Double Sided Re-Sealable Adhesive Film

Double sided adhesive film, black, with 96 holes and a protective liner, peelable; suitable for re-sealing without the need for a heat sealer

- A double sided black adhesive microplate film to facilitate the sealing, accessing (piercing) and resealing of 8 Well PCR Tube Strips (4ti-0753) prior to PCR
- The strips or plates are filled with reagents and sealed with Pierce Heat Seal (4ti-0530) resulting in lowest evaporation and best possible long-term storage
- With the use of a pierceable seal, samples can easily be added
- The protective Double Sided Re-Sealable Adhesive Film makes sure there will be no damage to the Pierce Heat Seal during transportation
- The film is overlaid and the strips or plates processed with a cutter into individually sealed strips
- The strips can then be transported and opened at a customer site by peeling off the protective layer of the Double Sided Re-Sealable Adhesive Film and accessing the sample through the Pierce Heat Seal
- Can then be resealed with a foil or film which is applied to the exposed black adhesive without the need for a heat sealer
- For all adhesive seals, the best sealing results are achieved using the hand held Adhesive Seal Roller (4ti-0502)

Key Features

- Peelable
- Resealable
- Seal integrity range: -20°C to 110°C
- Free from RNase and DNase

Use

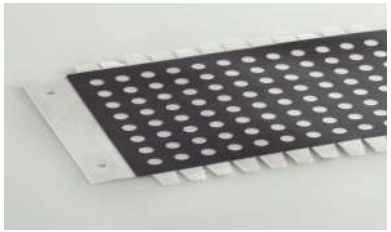
- Applications: ideal for kit manufactures to allow flexible access to individual wells

Options

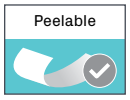
- Sheet format: 148 x 98 mm, to fit all SBS footprint 96 well plates, designed to work with 96 Well Skirted PCR Plate for Removable 8 Well Tube Strips, Breakable Vertically PCR Plates, and Breakable Horizontally or Vertically plate ranges

Ordering Information

4ti-0519	**Double sided, re-sealable, adhesive film, with 96 holes and a protective liner,** 100 sheets (148 x 98mm) per case



Seal Integrity Temperature Range	-20°C / 110°C



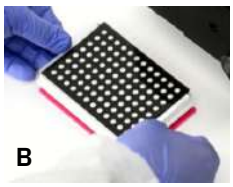
Typical Molecular Diagnostic Workflows – Example

At the kit manufacturer

- The plate (e.g. 96 Well Skirted PCR Plate with Removable 8 Well Strips Frame loaded with 8 Well PCR Tube Strips, e.g. 4ti-0753/C/757) is filled with reagents on a robotic system
- The filled plate is sealed with a pierceable heat seal (e.g. Pierce Seal, 4ti-0530) resulting in lowest evaporation and best possible long-term storage (A)
- The protective Double Sided Re-Sealable Adhesive Film is placed on top of the pierceable seal to make sure there will be no damage of the seal during transportation (B)
- The sealed plate is cut into strips - the pre-filled strips are ready for transport, e.g. to the point of diagnostic use (C)

At the point of diagnostic use

- The Double Sided Re-Sealable Adhesive Film protective layer is removed making the pierceable seal accessible (D)
- The sample is added to the pre-filled strip by piercing the seal (E)
- The strips can easily be resealed with foil or film strips by applying to the exposed black adhesive without the need for a heat sealer (F)
- After resealing, the strips are ready for PCR analysis



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Adhesive Seal Roller and Applicator

Our Adhesive Seal Roller & Adhesive Seal Applicator ensure even pressure is applied across the adhesive seal for a complete application to the plate

- To obtain the best sealing results when using our adhesive seals, we strongly recommend the use of the Adhesive Seal Roller (4ti-0502) or Adhesive Seal Applicator (4ti-0503)
- Both application tools ensure even pressure is applied across the adhesive seal for complete and secure application to your plate, across every well
- The handle of the Adhesive Seal Roller is made of a durable plastic, with a semi-hard padded rolling wheel
- The straight rigid sides of the small-sized Adhesive Seal Applicator allow for even pressure application
- When applying adhesive seals to 384 well plates, we recommend using the application tools in conjunction with our FrameStar 384 Holder (4ti-0391) to support the 384 well plates during seal applications, and to give a level base

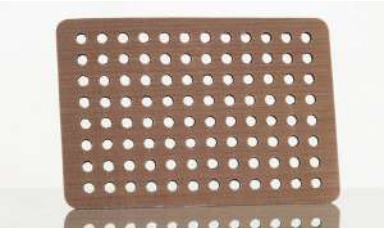
4ti-0503

Ordering Information

4ti-0502	**Adhesive Seal Roller;** ensures consistent seal application across all wells, 1 roller
4ti-0503	**Adhesive Seal Applicator;** ensures consistent seal application across all wells, 1 applicator

Support Adapters to Improve Performance

Optical Film Compression Pad



A silicone foam mat laminated to a non-stick PTFE film, to be used with adhesive seals, compatible with heated lid cyclers

- When used in conjunction with an adhesive seal - for instance the qPCR Seal (4ti-0560) - and a thermal cycler heated lid, the pad enhances the adhesion between the seal and the PCR plate
- This in turn improves results by reducing sample evaporation
- The 96 holes align with the wells of the PCR plate, ensuring the mat is compatible with qPCR instrumentation which image through the top of the well

Ordering Information

4ti-0563	**Optical Film Compression Pad,** 5 pads per case

Pierce Plate

Metal block with 96 pins, suitable for piercing every well of a heat or adhesive sealed 96 well plate

- This useful tool is a machine-engineered metal block with 96 pins aligned central to each well of a 96 well plate
- The pierce plate‘s 96 pins pierce every well of a heat or adhesive-sealed 96 well PCR or microplate (pierceable seals only)
- Enables instant access to samples with a single or multichannel pipette or automated system
- The Pierce Plate can be cleaned between uses to avoid contamination by using most cleaning agents that are suitable for use on aluminium e.g. RNase removal solutions, bleach or UV treatment

Ordering Information

4ti-0398	**Pierce Plate, metal block with 96 pins,** suitable for piercing every well of a heat or adhesive sealed 96 well plate, 1 plate

Adhesive Sealing Consumables Comparison Table

	Clear Seals			Foil Seals			Cross-cut Seals
Name	PCR Seal	Optically Clear Windowed qPCR Seal	qPCR Adhesive Seal	PCR Foil Seal	PCR Foil Seal Strong	DMSO Resistant Foil Seal	Pierceable Film Strong Adhesive, 96 Cross-Cut Windows
Specifications							
Application	PCR	qPCR, fluorescence 96-well microplates only	qPCR & other fluorescent applications Imaging techniques incl. crystallisation Plate readers, microscopy	PCR & sample storage Incubations	High temperature incubations & low temperature storage	Microplate sealing containing solvents incl. DMSO	Sample application or retrieval 96 well plates only
Special Properties	Good optical clarity	Discreet optical windows for 96-well plates	Good optical clarity	Irregular tearing when pierced prevents formation of vacuum	Strong adhesive	High solvent resistance	Cross-cut reduces tip or probe becoming clogged
Seal Integrity Min Temperature	-20°C	-20°C	-80°C	-40°C	-80°C	-20°C	-20°C
Seal Integrity Max Temperature	110°C	110°C	110°C	120°C	110°C	80°C	110°C
Gas Permeability Rate	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Vapor Transmission Rate	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Irradiated							
Pierceable				✓	✓		✓
Peelable	✓	✓	✓	✓	✓	✓	✓
RNase/DNase free	✓	✓	✓	✓	✓	✓	✓
Product Codes							
Code	4ti-0500	4ti-0565	4ti-0560	4ti-0550	4ti-0500FL	4ti-0512	4ti-0566
Format	Sheets	Sheets	Sheets	Sheets	Sheets	Sheets	Sheets
Dimensions	135 mm x 80 mm	133 mm x 76 mm	140 mm x 77 mm	130 mm x 80 mm	137 mm x 80 mm	122 mm x 80 mm	135 mm x 77 mm
Code	4ti-0500/8		4ti-0561				
Format	Perforated sheets		Roll				
Dimensions	115 mm x 100 mm		100 m x 80 mm				
Code	4ti-0500/12		4ti-0561/S				
Format	Perforated sheets		Sample roll				
Dimensions	137 mm x 71 mm		5 m x 80 mm				
Code	4ti-0500/HP		4ti-0560/HP				
Format	Half plate sheets		Half plate sheets				
Dimensions	70 mm x 80 mm		70 mm x 77 mm				

Cross-cut Seals	Permeable Seals				
Pierceable Film Strong Adhesive, 384 Cross-Cut Windows	Moisture Barrier Seal 24, 96, 384	Cell Culture Adhesive Seal	Microplate Seal Low Strength Adhesive Film	Double Sided Re-Sealable Adhesive Film	Name
					Specifications
Sample application or retrieval 384 well plates only	Eukaryotic cell culture, bacterial culture and long-term live assays Suitable for use on plate readers	Bacterial or cell culture	Aqueous sample storage	Assay kit production	Application
Cross-cut reduces tip or probe becoming clogged Good solvent resistance, including DMSO	Gas permeable that allows air and CO_2 exchange, but prevents moisture evaporation Optically clear	Very low moisture transfer rate Suitable for bacterial or cell culture Air porosity: 10 sec/100 cc/in²	Medium strength transparent seal	Two sealing surfaces Optical windows	Special Properties
-80°C	-20°C	-20°C	-20°C	-20°C	Seal Integrity Min Temperature
120°C	80°C	80°C	80°C	110°C	Seal Integrity Max Temperature
N/A	0.6 m^3/m^2/day	8,900 m^3/m^2/day	N/A	N/A	Gas Permeability Rate
N/A	1 g/m^2/day	4,200 g/m^2/day	N/A	N/A	Moisture Vapor Transmission Rate
	✓	✓			Gamma Irradiated
✓	✓				Pierceable
✓	✓	✓	✓	✓	Peelable
✓	✓	✓	✓	✓	RNase/DNase free
					Product Codes
4ti-0566/384	4ti-0516/24	4ti-0517	4ti-0510	4ti-0519	Code
Sheets	Sheets	Sheets	Sheets	Sheets	Format
117 mm x 80 mm	140 mm x 80 mm	135 mm x 80 mm	130 mm x 80 mm	148 mm x 98 mm	Dimensions
	4ti-0516/96	4ti-0517/ST			Code
	Sheets	Sheets, gamma treated			Format
	137 mm x 80 mm	135 mm x 80 mm			Dimensions
	4ti-0516/384				Code
	Sheets				Format
	137 mm x 80 mm				Dimensions
					Code
					Format
					Dimensions

Plate Lids, Caps & Mats

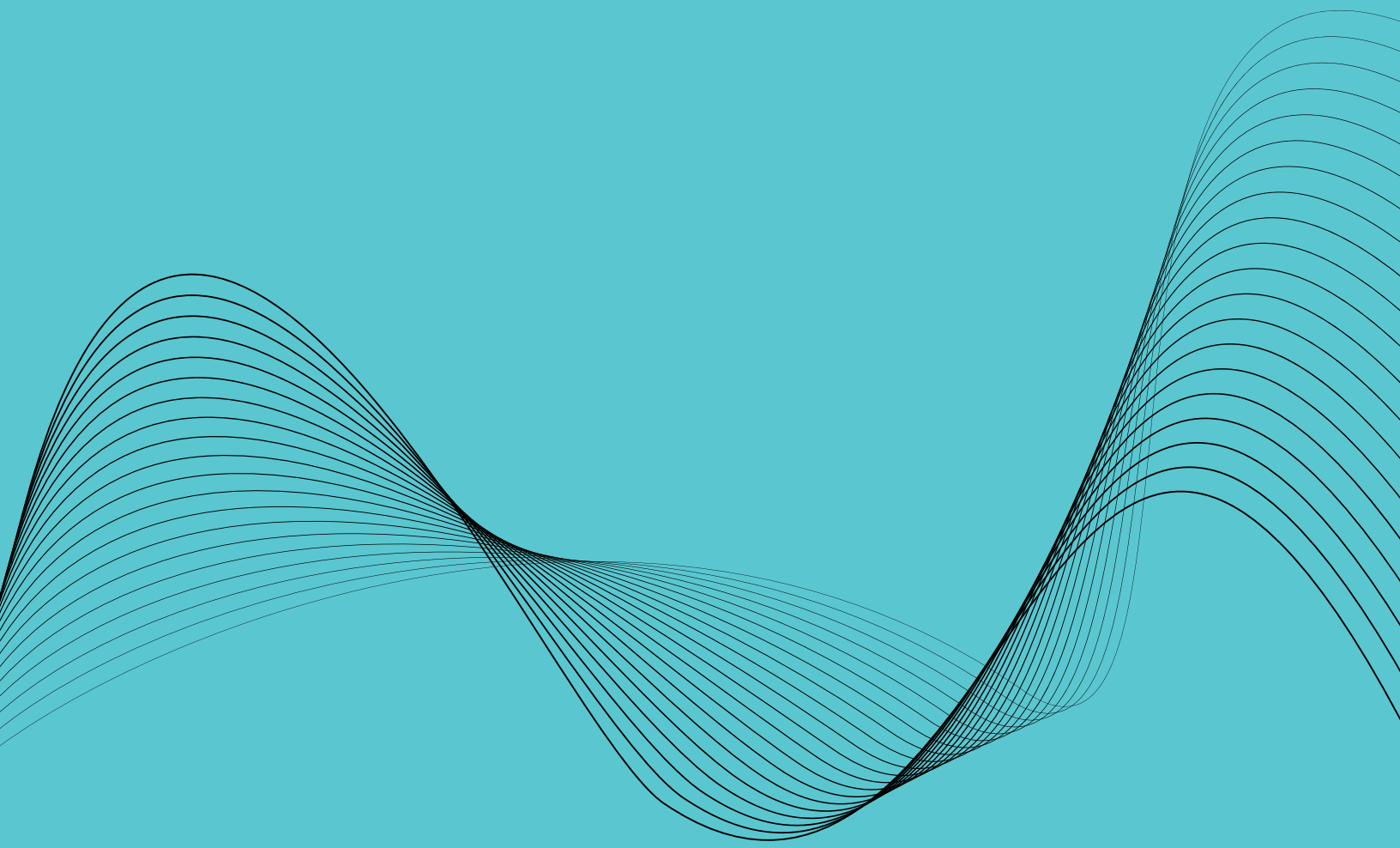


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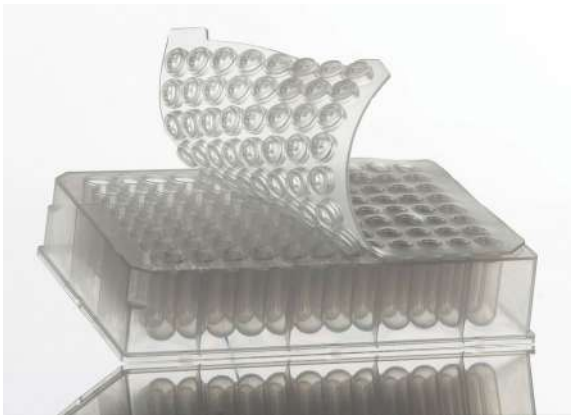
Plate Lids, Caps & Mats



As an alternative to sealing films, Azenta offers multiple types of cap strips for sealing both plates and tubes - domed, flat, strips of 8, strips of 12, and our new optically superior caps.

A variety of rigid polystyrene lids are available for PCR plates and microplates, including lids compatible with our FrameStar,® Optically Clear Tissue Culture Plate and Ultra Optically Clear Plate ranges. Azenta also stock silicone sealing mats for use with our storage plate ranges and in a variety of formats depending on the well size, number and shape.

Strips of 8 & 12 Flat Sealing Caps

Clear polypropylene sealing caps, available as strips of 8 caps (domed or flat optical) and strips of 12 caps (flat optical)

- Compatible with our tube strips and 96 well PCR plates
- These strips are molded from virgin polypropylene in our UK-based Class 7 ISO certified clean-room production facility, and comply to the same stringent requirements as our FrameStar range

Key Features

- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- Flat caps are optically clear for fluorescence detection (e.g. qPCR)
- Easy to apply
- Large end tabs for easy removal
- Labeled for orientation

Options

- Strips of 8 flat optical caps (4ti-0751/4ti-0783)*: for use with our FrameStar PCR plates (including FrameStar Breakable Vertically PCR Plate), 8 Well PCR Tube Strip with PC Frame, 8 Well Removeable Tube Strips and general PCR plates, as well as with PCR tube strips (4ti-0781)
- Strips of 8 domed caps (4ti-0752/4ti-0782)*: for use with our FrameStar PCR plates (including FrameStar Breakable Vertically PCR Plate), 8 Well PCR Tube Strip with PC Frame, 8 Well Removeable Tube Strips and general PCR plates, as well as with PCR tube strips (4ti-0781)
- Strips of 12 flat optical caps (4ti-0788): recommended for use with our 96 Well Non-Skirted PCR Plate Breakable Horizontally or Vertically and FrameStar Breakable Horizontally and Vertically PCR Plates to allow for flexible sample usage; not compatible with low profile plates

Ordering Information

4ti-0751	**Strips of 8 Flat Optical Caps,** 300 strips per case
4ti-0783	**Strips of 8 Flat Optical Caps,** 125 strips per case
4ti-0752	**Strips of 8 Domed Caps,** 300 strips per case
4ti-0782	**Strips of 8 Domed Caps,** 125 strips per case
4ti-0788	**Strips of 12 Flat Optical Caps,** 200 strips per case[1]

[1] *Recommended for use with our 96 Well Non-Skirted PCR Plate Breakable Horizontally or Vertically and FrameStar Breakable Horizontally and Vertically PCR Plates to allow for flexible sample usage; not compatible with low profile plates*

Strips of 8 Flat Optical Caps Crystal Clear

Strips of 8 flat optical caps, crystal clear; designed for low volume applications such as low volume qPCR

- With the Strips of 8 Flat Optical Caps Crystal Clear Azenta offers the perfect supplement to the existing range of PCR Cap Strips
- Due to their improved optical properties and evaporation-safe fit, the strips are ideally suited for applications where small volumes are used, e.g. low volume qPCR

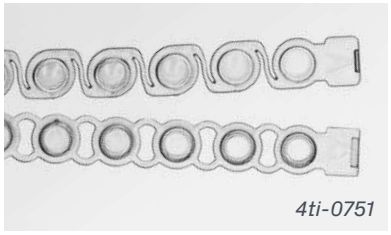
Key Features

- Made of a special polymer with improved optical properties leading to high transmission rates; ideally suited for small samples with low signal intensity
- Reduced shrinking during heating and cooling phases; very tight sealing
- Highest flexibility between the pitch of the individual caps
- Variations in the pitch of any 96 well plate are accommodated, the caps can easily be aligned to the corresponding tubes as they allow for more independent movement
- Free from DNase, RNase, human genomic DNA, and endotoxin/pyrogen

Use

- For use with our FrameStar PCR plates (including FrameStar Breakable Vertically PCR Plate), 8 Well PCR Tube Strip with PC Frame and general PCR plates

4ti-0755



4ti-0751

Ordering Information

4ti-0755	**Strips of 8 Flat Optical Caps,** crystal clear, 300 strips per case
4ti-0755/120	**Strips of 8 Flat Optical Caps,** crystal clear, 120 strips per case

For use with our our FrameStar PCR plates (including FrameStar Breakable Vertically PCR Plate), 8 Well PCR Tube Strip with PC Frame and general PCR plates

PCR Plate Lids, FrameStar Lids and Microplate Lids

Rigid polystyrene lids for PCR plates, optically clear tissue culture plates, and assay plates

- Designed to give a quick and easy sealing solution to protect samples from contamination and evaporation

4ti-0287

4ti-0289

Ordering Information

PCR Plate Lids & FrameStar Lids

4ti-0285	**Ultra-Low Universal Lid, without condensation rings,** clear, ultra-low profile, no cut corner, 100 lids per case
4ti-0288	**PCR Plate Lid, without condensation rings,** clear, low profile, cut corner H1, 50 lids per case
4ti-0287	**FrameStar 96 Next Generation Sequencing Lid,** with condensation rings, clear, low profile, cut corner H12, for use with 4ti-0960/RIG, 50 lids per case
4ti-0289	**FrameStar 96 Lid, without condensation rings,** clear, low profile, cut corner A12, for use with 4ti-0770, 50 lids per case

Microplate Lids

4ti-0280	**Microplate 384 Lid, without condensation rings,** clear, low profile, cut corner A1/P1, 100 lids per case
4ti-0281	**Microplate 384 Lid, gamma treated, without condensation rings,** clear, low profile, cut corner A1/P1, 100 lids per case
4ti-0282	**Microplate 96 Lid, with condensation rings, clear,** low profile, cut corner A1/H1, 80 lids per case
4ti-0283	**Microplate 96 Lid, gamma treated, with condensation rings,** clear, low profile, cut corner A1/H1, 80 lids per case
4ti-0284	**Microplate 24 Lid, with condensation rings,** clear, low profile, cut corner A1, 80 lids per case
4ti-0286	**Microplate 24 Lid, gamma treated, with condensation rings,** clear, low profile, cut corner A1, 80 lids per case
4ti-0290	**Universal Microplate Lid, without condensation rings,** clear, low profile, no cut corner, 50 lids per case

Auto-Sealing PCR Plate Lid

Low profile, with integrated compression pad, white, no cut corner, for PCR applications on integrated instruments

- Developed to support fully automated sealing in the absence of specific instrumentation
- Meets the needs of customers using integrated platforms that often lack suitable heat sealing instrumentation especially when low throughput is needed
- Specialized alternative to standard lids: while standard lids protect reagents, the Auto-Sealing PCR Lid helps minimize reagent evaporation during longer incubations
- Universal fit: due to the lack of cut corners, the lid can be applied to most plates, showing good sealing results when pushed down onto the plate

Key Features

- Rigid polycarbonate frame padded with an elastic foam
- No cut corners
- Stackable

Use

- Suitable for automation
- Universal fit to PCR plates
- Recommended when full sealing automation is required in the absence of dedicated instrumentation
- Suitable for low throughput workflows
- Alternative to heat sealing, when heat sealing materials and instrumentation are not an option
- Alternative to standard lids for longer incubations

Specifications

Parameter	Value
Lid length	128.10 ± 0.10 mm
Lid width	85.80 ± 0.10 mm
Lid height	8.20 ± 0.05 mm

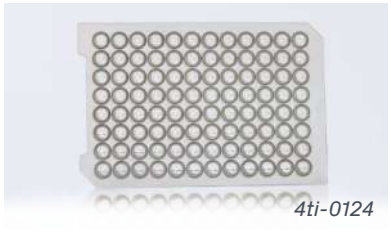
Ordering Information

4ti-0291	**Auto-Sealing PCR Plate Lid, with integrated compression pad,** white, low profile, no cut corner, 20 lids per case

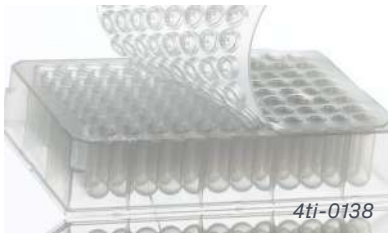
Sealing Cap Mats

Silicone rubber or TPE mats, durable to high temperatures; for sealing storage plates to protect samples from evaporation

- The clear cap mats are made of silicone rubber, a material that is highly durable to high temperatures, and so can be used to seal storage plates being used for high-temperature storage to protect samples from evaporation
- Azenta silicone mats are DNase/RNase and pyrogen-free to meet the highest standard of both laboratory experiment
- All our clear silicone cap mats are pierceable



4ti-0124



4ti-0138

Ordering Information

4ti-0124	**96 Round well Sealing Cap Mat,** clear silicone, for use with 4ti-0125, 50 mats per case
4ti-0137	**96 Square Well Sealing Cap Mat,** clear silicone, for use with square 96 well microplates and deep well storage microplates, 50 mats per case
4ti-0138	**96 Round Well Sealing Cap Mat,** clear silicone, for use with round 96 well microplates and deep well storage microplates (not for use with 4ti-0120 and 4ti-0110), 50 mats per case
4ti-0139	**384 Square Well Sealing Cap Mat,** clear silicone, for use with square 384 well microplates and deep well storage microplates, 50 mats per case
4ti-0135	**96 Round Well Sealing Cap Mat,** white silicone, for use with 4ti-0120 only, 100 mats per case

Cap Mat for PCR Plates

96 individual caps in sheet format, blue TPE, pierceable; suitable for sealing all of our 96 well PCR plates

- These caps in sheet format are universally compatible with our 96 well PCR plates
- The caps can be individually applied and removed once detached from the backing liner, making the mats ideally suited for use with our flexible PCR consumables, including Individual Access and divisible plates
- The mats offer an alternative to adhesive and heat sealing, in particular as a temporary solution when samples need to be repeatedly accessed
- They are easily pierceable with pipette tips to access samples, and they are easily removable using 1- and 8-way decappers or, alternatively, using Azenta Automated Plate Seal Remover if a seal is overlaid on top of the caps

Key Features

- Caps made from TPE mounted on an easily removable backing liner
- Pierceable with pipette tips

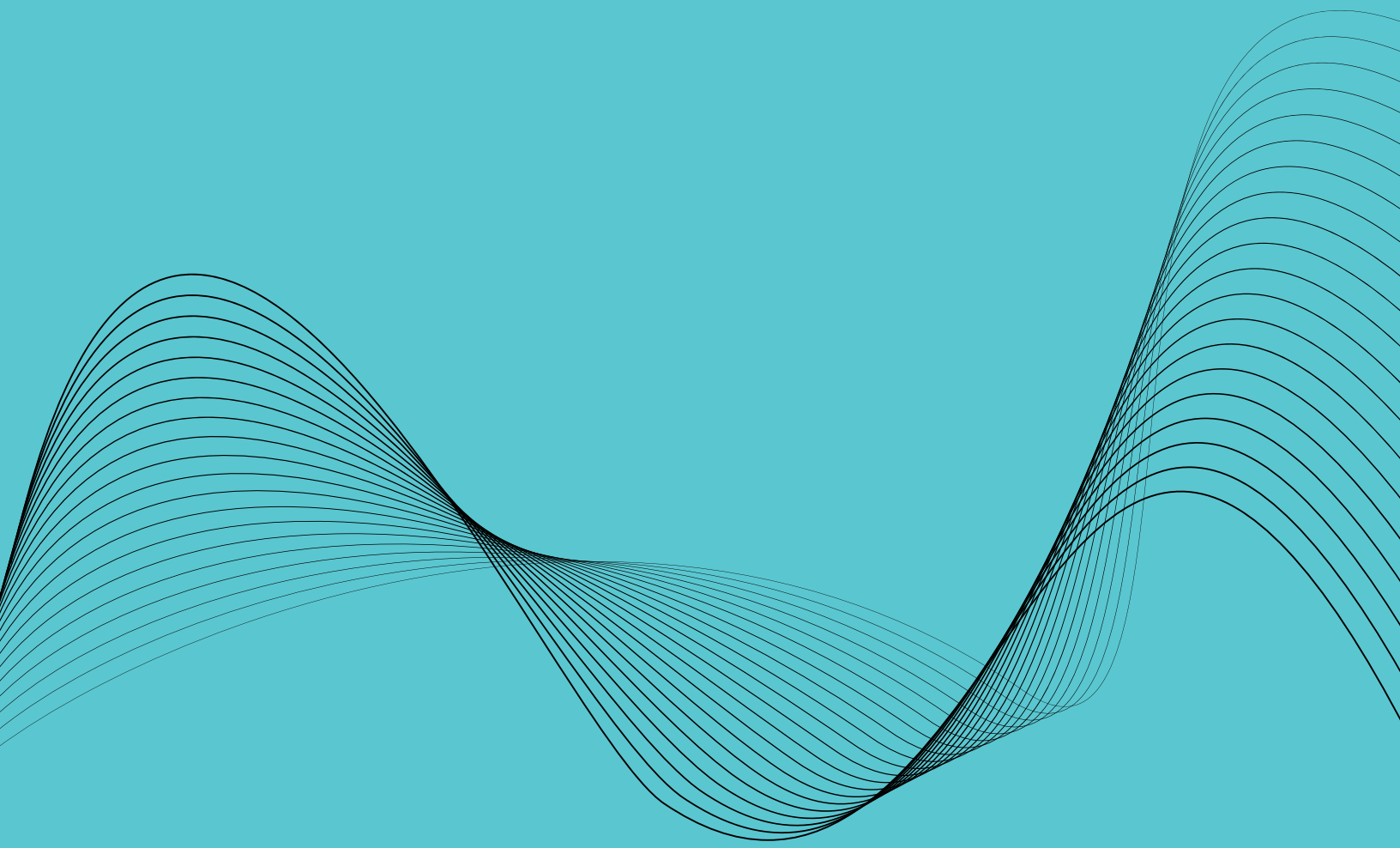
Use

- Universal fit to 96 well PCR plates
- Ideally suitable for use with Individual Access and breakable PCR plates
- Applications: endpoint PCR, storage
- Not recommended for qPCR
- Alternative to adhesive and heat sealing, as temporary sealing solution when sample access must be carried out multiple times
- Caps perform equivalently to polypropylene cap strips during 25 cycle PCR
- The 96 caps can be applied all at once or individually
- The 96 caps can be removed all at once using Azenta Automated Plate Seal Remover (a seal must be placed on top of the caps), or individually using 1- or 8-way decappers

Ordering Information

4ti-0778	**Cap Mat for PCR** Plates, 96 individual caps in sheet format, blue TPE, pierceable, 50 mats per case

Custom Capabilities



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Custom Capabilities for OEM Diagnostic Kit and Medical Device Manufacturing

Our team brings decades of development expertise to any custom project. Our experience in working with partners worldwide has placed us as the company of choice for introducing practical solutions to changing workflows, using innovative design and bespoke manufacture.

Our commitment to quality is reflected in our ISO certified management system which is applied at all levels, from manufacture, to technical support, to packaging and delivery of plates and seals.

Azenta has an integrated quality management system where plate and seal products undergo a wide range of QC inspections. We constantly perform visual, physical and biological tests to ensure both the absence of contaminants, as well as the integrity of the products. Our ISO 13485:2016 certification is an endorsement of our excellent manufacturing practices.

The ultimate quality of any product is dependent not only on the design of the component to be produced, but also the accuracy, construction and precision of the tooling and manufacturing processes.

Azenta's highly skilled engineers have extensive knowledge and experience in the design and manufacture of precision components for the life science industry.

By working with our in-house engineers we can offer a completely integrated project management service to ensure there is a smooth transition from initial project idea through to finished product. We aim to help enhance end products, reduce overall part and production costs, and streamline assembly within manufacturing. Whatever your custom requirement, you will receive ongoing support and advice from a designated sales contact, our QC department and Customer Services team.

We understand the costs and complexities involved with OEM products and would be happy to discuss a range of solutions for your project. Please contact us to discuss your specific requirements in detail and complete confidence.

Custom and OEM Services Overview

- Product design and manufacturing for injection-molded parts
- Instrumentation design and manufacture: Heat sealers, press tools, cutters, liquid handling instrumentation
- Heat and adhesive sealing: Custom material design and manufacture
- Sample tracking solutions: Custom applications and specifications for linear and 2D coding
- Surface treatment options
- Gamma treatment options
- Packaging choices
- Specified QC procedures

Customizable PCR Plates, Microplates and Seals

We partner with our customers to provide flexible solutions that improve reproducibility and achieve consistent results. We can provide the complete end-to-end development of custom, premium plastic consumables including PCR plates, strips and tubes, sealing materials and instrumentation. Our completely tailored solutions include custom designs, tool making and contract manufacturing from concept to completion.

Plates, Strips, and Tubes

Customizable options:

- Non-SBS format
- Plate color
- Well color, including clear wells and white wells
- Application specific direct marking and branding options
- Coating
- Treatments
- 2D coding and barcoding for tracking of samples

Plate Seals

Customizable options:

- Non-standard size seals, in rolls or sheets
- Application specific direct marking and branding options
- Custom instrumentation to support your workflows
- Material
- Chemical Compatibility

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