

Heat Sealing

Heat sealing is the gold standard plate sealing method, minimising sample loss and maximising sample security, for PCR, qPCR, storage and other applications.



The sealing performance of heat seals is superior to cap, mat and adhesive sealing with clear reductions in sample loss and cross contamination. The optimized sealing performance allows use of smaller reaction volumes leading to reagent savings.

Heat sealing is the most cost efficient way to seal plates for a wide range of applications. Per well comparisons show a 3 to 5 five fold reduction in costs for qPCR application (list price comparison of Clear Weld Seal against caps and qPCR seal) and at least a 50% reduction for storage solutions (list price comparison of Peel Seal against caps and PCR seal). Costs can be further reduced by changing to use of the material format, using rolls rather than sheets.

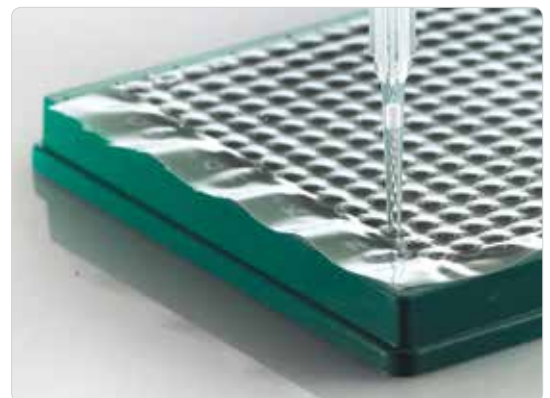
The application of a heat seals is much faster than caps or adhesive seals. Typical sealing times are around 2,5 seconds. Depending on throughput the use of a semi-automatic or fully automatic heat sealer can guarantee a reproducible sealing quality by standardising the sealing parameters, time, temperature and pressure. Sealing performance variability between different users can be eliminated.

4titude® offers a wide choice of heat seals in both roll and sheet format. Different seals can be chosen to optimize the use depending on plate material, desired permeability or resistance, ability to peel or pierce the seal material and visualisation through the material. Please refer to the comparison table on page 73 for an overview of our heat sealing range.

All seals are certified free from nucleases and human genomic DNA contamination.

The best sealing results can be obtained by using flat, rigid plates with a raised rim design like our FrameStar® 2-component plates and reliable, high quality sealing instruments such as the 4s3 semi-automated heat sealer or the 4AS sealer.

For details of the instruments see page 62 and 64. For a demonstration or trial of a heat sealer please contact us at info@4ti.co.uk.



Clear Seal



Clear seal is an optically clear film which forms an easily peelable yet PCR/qPCR tight seal. Its optical clarity allows use for all optical applications. The clear seal can be used to seal most plate types including polypropylene, polyethylene, polystyrene and COC plates. Available as sheets or on a roll for automated sealers.

Code	Pack Size/Dimensions
4ti-0540	500m x 78mm roll ¹ Approx 4200 seals
4ti-0540/REMP	500m x 78mm roll ³ Approx 4200 seals
4ti-0540S	Trial roll ¹ 5m x 78mm
4ti-0542	350m x 115mm roll ² Approx 4400 seals
4ti-0542/REMP	500m x 115mm roll ⁴ Approx 6250 seals
4ti-0542S	Trial roll
4ti-0541	100 sheets (125mm x 78mm) 5m x 115mm



Applications

- qPCR or other optical applications (e.g. fluorescence or colorimetric assays)
- Short term compound storage
- Suitable for most plate materials
- Available in sheet or roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

Clear Weld Seal Mark II



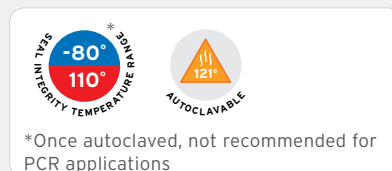
Clear weld seal is an optically clear polymer film which forms a permanent bond to polypropylene plates that can not be peeled and is difficult to pierce. The seal has a good solvent resistance for safe long term storage.

Sample can be accessed if required using a blade or needle.

NEW

Now also available as FrameSeal product see page 75

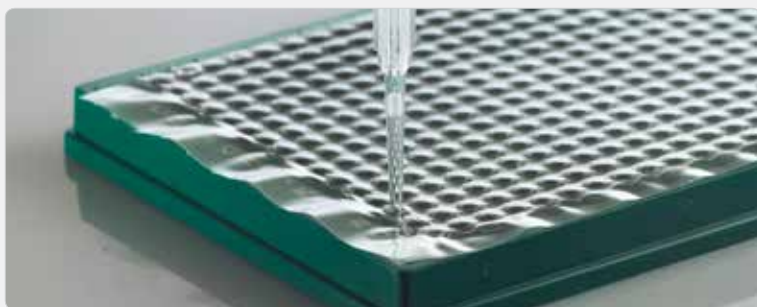
Code	Pack Size/Dimensions
4ti-0573	610m x 78mm roll ¹ Approx 5000 seals
4ti-0573S	Trial roll ¹ 5m x 78mm
4ti-0574	500m x 115mm roll ² Approx 6250 seals
4ti-0574S	Trial roll ² 5m x 115mm
4ti-0575	100 sheets (125mm x 78mm)
4ti-0575/FS	Sealing Frame: 50 seals/frame per pack



Applications

- PCR
- water bath thermal cyclers
- qPCR and other optical applications (e.g. fluorescence and colorimetric assays)
- Storage and disposal of hazardous materials
- Recommended for use with DMSO
- Available as sheets or in roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

Clear Seal 3730



The Clear Seal 3730 is a clear polyester backed film which is particularly thin. It seals to polypropylene, polystyrene, polyethylene and COC microplates. This seal has good optical clarity with moderate solvent resistance. The thin nature of this seal enables it to be easily pierced with an auto-sampler needle, or the probe from the ABI 3730 sequencer.

The seal is only available in roll format, but a roll with perforated sheets can be used for low throughput.

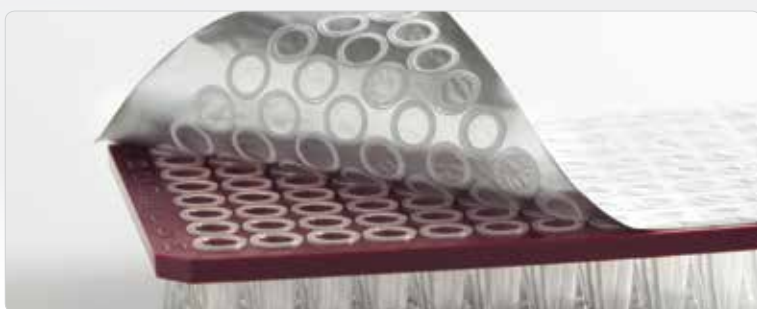
Code	Pack Size/Dimensions
4ti-0580	610m x 78mm roll ¹ Approx 5000 seals
4ti-0580S	Trial roll ¹ 5m x 78mm
4ti-0582	500m x 115mm roll ² Approx 6250 seals
4ti-0582S	Trial roll ² 5m x 115mm
4ti-0581	Roll of 1000 perforated sheets 125mm x 78mm



Applications

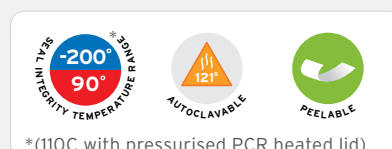
- PCR
- qPCR and other optical applications (e.g. fluorescence and colorimetric assays)
- Piercable by autosamples needles
- Piercable by the ABI 3730
- Available in roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

Peel Seal



This popular laminate material gives a peelable heat seal to PP and COC plates. It can be peeled directly from the plate following removal from the freezer and is a good barrier to aqueous solutions. The seal shows moderate resistance to solvents at room temperature and forms a weld-seal to polyethylene plates (can not be peeled).

Code	Pack Size/Dimensions
4ti-0520	610m x 78mm roll ¹ Approx 5000 seals
4ti-0520S	Trial roll ¹ 5m x 78mm
4ti-0522	500m x 115mm roll ² Approx 6250 seals
4ti-0522S	Trial roll ² 5m x 115mm
4ti-0521	100 sheets (125mm x 78mm)



Applications

- Very low temperature compound storage.
- Mid-term (<5 days) room temperature compound storage
- PCR
- Available as sheets or in roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

¹ Compatible with Thermo Fisher ALPS 300™ / ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube

² Compatible with Agilent (Velocity 11) PlateLoc®

³ Compatible with REMP Portrait Heat Sealer (PHS)

⁴ Compatible with REMP Landscape / Stacking Heat Sealers (LHS/SHS)

COC = Cyclic Olefin Copolymer

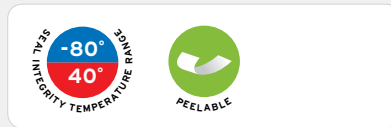
DMSO Resistant Peel Seal



This laminate material gives a peelable heat seal to polypropylene and COC plates. It can be peeled directly from the plate immediately after removal from the freezer. The DMSO resistant peel seal is an excellent barrier to aqueous solutions and solvents, in particular DMSO, even at room temperature.

It forms a weld-seal to polyethylene plates (can not be peeled), requiring a blade or needle for access.

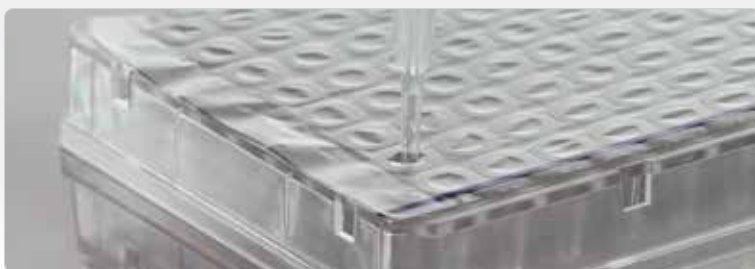
Code	Pack Size/Dimensions
4ti-0585	500m x 78mm roll ¹ Approx 4200 seals
4ti-0585/REMP	500m x 78mm roll ³ Approx 4200 seals
4ti-0585S	Trial roll ¹ 5m x 78mm
4ti-0586	500m x 115mm roll ² Approx 6200 seals
4ti-0586/REMP	500m x 115mm roll ⁴ Approx 6200 seals
4ti-0586S	Trial roll ² 5m x 115mm
4ti-0587	100 sheets (125mm x 78mm)



Applications

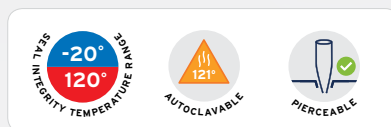
- Low and room temperature compound storage with DMSO* and other organic solvents
- 100% DMSO can be stored at room temperature for 12 months with no deterioration of the seal quality
- Available in sheet and roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

Pierce Seal



This foil-based heat seal is suitable for polypropylene and polystyrene plates and can be easily pierced with a manual or auto pipette tip. It has very good solvent resistance, including to DMSO. Seals can be applied on top of each other allowing multiple access/resealing of samples. A blue colour print identifies the non-sealing surface for ease of application. This seal remains intact to very high temperatures.

Code	Pack Size/Dimensions
4ti-0530	610m x 78mm roll ¹ Approx 5000 seals
4ti-0530/REMP	610m x 78mm roll ³ Approx 5000 seals
4ti-0530S	Trial roll ¹
4ti-0532	500m x 115mm roll ² Approx 6200 seals
4ti-0532/REMP	500m x 115mm roll ⁴ Approx 6200 seals
4ti-0532S	Trial roll ²
4ti-0531	100 sheets (137mm x 76mm)



Applications

- PCR
- Low and room temperature compound storage with DMSO and other organic solvents
- Sample shipping
- Available in sheet and roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

96 INDI™ Seal

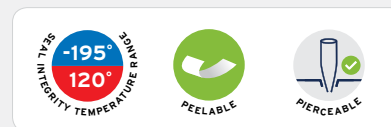


The INDI Seal is a foil-based heat seal that seals to polypropylene and is suitable for low temperature storage. The seal consists of 96 perforated individual sealing caps in a foil frame. The frame is removed after heat sealing leaving each well with an individual air tight seal. The seals have tabs for easy removal by hand or with forceps, without leaving any residue.

Mainly developed for use with tubes in cluster racks some plates can also be sealed.

Re-sealing and piercing are possible.

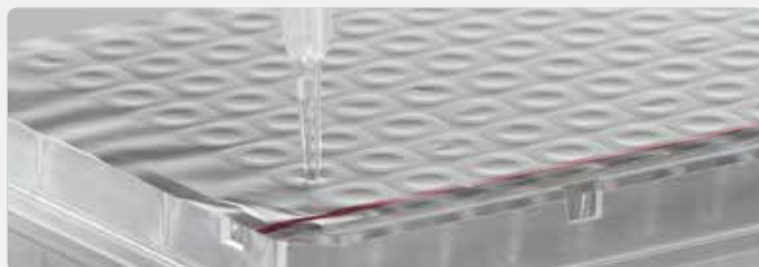
Code	Pack Size/Dimensions
4ti-0543	INDI Seal for individual tube sealing (125mm x 78mm sheets) 50 sheets



Applications

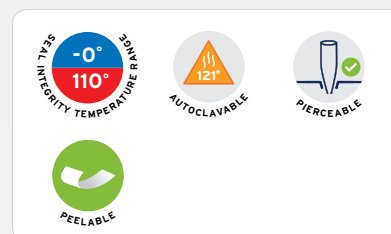
- Compound storage
- Sample shipping
- Free from DNase, RNase and human genomic DNA

Foil Seal



An aluminium heat seal that seals to PP and PS plates and can be pierced with a pipette tip or peeled by hand. Good solvent resistance including DMSO. Resealing onto an existing seal is possible. A red colour print identifies the non-sealing surface for ease of application.

Code	Pack Size/Dimensions
4ti-0535	610m x 78mm roll ¹ Approx 5000 seals
4ti-0535/REMP	610m x 78mm roll ³ Approx 5000 seals
4ti-0535S	Trial roll ¹ 5m x 78mm
4ti-0537	500m x 115mm roll ² Approx 6200 seals
4ti-0537/REMP	610m x 115mm roll ⁴ Approx 6200 seals
4ti-0537S	Trial roll ² 5m x 115mm
4ti-0536	100 sheets (125mm x 78mm)



Applications

- Low temperature compound storage
- Short-term room temperature compound storage
- PCR
- Resealable
- Available in sheet and roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

¹ Compatible with Thermo Fisher ALPS 300™ / ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube

² Compatible with Agilent (Velocity 11) PlateLoc®

³ Compatible with REMF Portrait Heat Sealer (PHS)

⁴ Compatible with REMF Landscape / Stacking Heat Sealers (LHS/SHS)

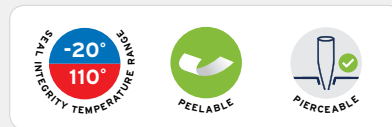
COC = Cyclic Olefin Copolymer

Polystyrene Foil Seal



The polystyrene foil seal creates a strong, but peelable seal to polystyrene plates. The seal can also be pierced with a pipette tip and has a good solvent resistance, including to DMSO. Resealing onto an existing seal is possible.

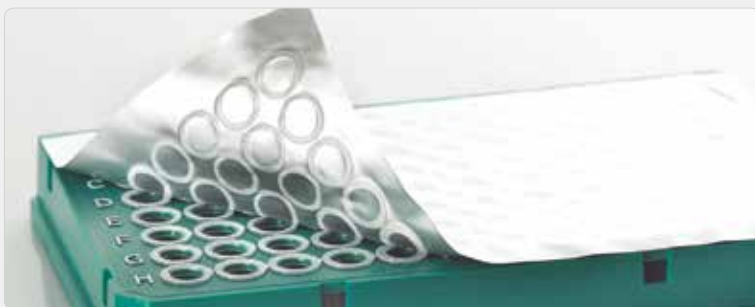
Code	Pack Size/Dimensions
4ti-0547	100 sheets (125mm x 78mm)



Applications

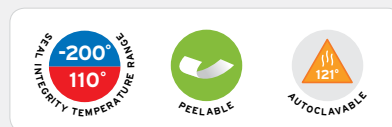
- Low temperature compound storage
- Short-term room temperature compound storage
- Resealing is possible
- Free from DNase, RNase and human genomic DNA

Thermal Bond



This is a heavy duty laminate material that seals to polypropylene to give a very strong but peelable seal. This seal affords a high degree of sample protection. Good solvent resistance including DMSO.

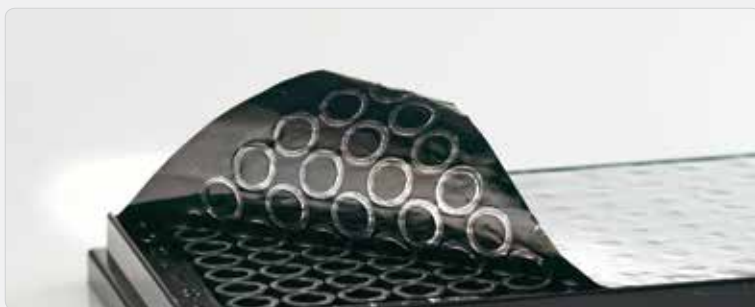
Code	Pack Size/Dimensions
4ti-0590	500m x 78mm roll ¹ Approx 4200 seals
4ti-0590S	Trial roll ¹ 5m x 78mm
4ti-0592	300m x 115mm roll ² Approx 3700 seals
4ti-0591	100 sheets (125mm x 78mm) 5m x 78mm



Applications

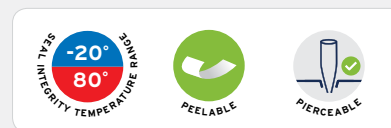
- Long term storage, including storage and transportation at low temperature
- Storage of organic solvents, acids and alkalines including DMSO
- PCR
- Suitable for water bath thermal cyclers
- Available in sheet and roll formats for automated sealers
- Free from DNase, RNase and human genomic DNA

Black Seal



This is a foil-based heat seal which is coated on the sealing surface with a low autofluorescence black pigment for use with light sensitive samples or for fluorescent assays. The Black Seal forms a peelable seal to polystyrene plates.

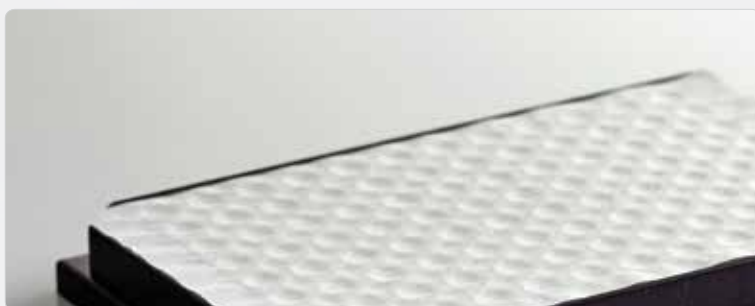
Code	Pack Size/Dimensions
4ti-0525	610m x 78mm roll ¹ Approx 5000 seals
4ti-0526	500m x 115mm roll ² Approx 6200 seals
4ti-0527	100 sheets (125mm x 78mm)



Applications

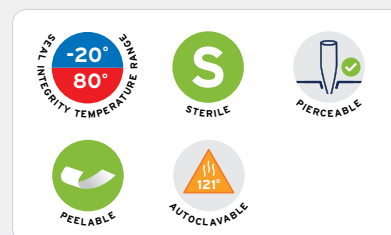
- Fluorescent and other light sensitive assays.
- Pierces with a force greater than 10N (ASTM D1000)
- Available in sheet and roll formats for automated sealers
- Free from DNase, RNase and human genomic DNA

Gas Permeable Seal Mk 2



This heat seal has a smaller pore size than the discontinued Gas Permeable Seal (4ti-0596) which still allows for gaseous exchange, but limits evaporation. Handling in automated sealers is improved. The Gas Permeable Heat Seal Mk2 is suitable for cell culture and is available as sterile product for this application.

Code	Pack Size/Dimensions
4ti-0598	Gas Permeable Seal Mk 2 roll (610m x 78mm) ¹ Approx 5000 seals 1 roll
4ti-0598/ST	Gas Permeable Seal Mk 2 roll, sterile (610m x 78mm) ¹ Approx 5000 seals 1 roll
4ti-0599	Gas Permeable Seal Mk 2 roll (500m x 115mm) ² Approx 6200 seals 1 roll
4ti-0599/ST	Gas Permeable Seal Mk 2 roll, sterile (500m x 115mm) ² Approx 6200 seals 1 roll
4ti-0597	Gas Permeable Seal Mk 2 sheets (125mm x 78mm) 100 sheets
4ti-0597/ST	Gas Permeable Seal Mk 2 sheets, sterile (125mm x 78mm) 100 sheets (10 packs x 10 sheets)



Applications

- Cell culture
- Overnight incubation
- Seed and insect storage
- Permeability rate is > 20g/m²/24h
- Pore size is <20µm
- Available in sheet and roll format for automated heat sealers
- Free from DNase, RNase and human genomic DNA

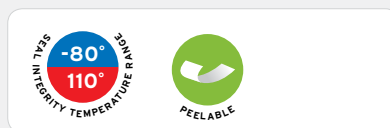
¹ Compatible with Thermo Fisher ALPS 300™ / ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube

² Compatible with Agilent (Velocity 11) PlateLoc®
COC = Cyclic Olefin Copolymer

Gas Permeable Clear Seal



This is a clear polymer film forming a peelable seal to polypropylene, polyethylene, polystyrene and COC plates with good optical clarity and moderate solvent resistance. The film has 3mm slits across the entire width of the roll or sheet, allowing gaseous exchange. Due to its wider temperature tolerance compared to the Gas Permeable Heat Seal it can be used for storage e.g. for seeds or insects.



Applications

- Insect studies
- Seed storage
- Available in sheet and roll format for automated sealers
- Free from DNase, RNase and human genomic DNA

Code	Pack Size/Dimensions
4ti-0540/SLIT	480m x 78mm roll ¹ Approx 4000 seals
4ti-0541/SLIT	100 sheets (125mm x 78mm)

¹ Compatible with Thermo Fisher ALPS 300™ / ALPS 3000™ / KBiosystems Wasp™ / KBioscience FlexiSeal and Cube

² Compatible with Agilent (Velocity 11) PlateLoc®

COC = Cyclic Olefin Copolymer

Application	Clear Seal p66	Clear World Seal Mark II p66	Clear Seal 3730 p67	Peel Seal p67	DMSO Resistant Peel Seal p68	Pierce Seal p68	Foil Seal & PS Foil Seal p69/70	Thermal Bond p70	Black Seal p71	Gas Permeable Seal Mk 2 p71	Gas Permeable Clear Seal p72	INDI Seal p69
gPCR, short term compound storage.	PCR (esp. water bath), gPCR. Storage & disposal of hazardous materials.	gPCR and for use with ABI 3730 Sequencer.	Low temperature, compound storage, short term room temperature compound storage (<5 days). PCR.	Low temperature / room temperature compound storage with DMSO & other organic solvents.	PCR, compound storage, sample shipping	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.	Fluorescent & other light sensitive assays	Cell culture, overnight incubation, seed and insect storage	Storage e.g. for seeds or insects	Compound storage, sample shipping	
Special Properties	Good optical clarity, Moderate solvent resistance.	Good optical clarity & resistant to DMSO.	Good optical clarity, some solvent resistance.	Can be peeled directly from -80°C freezer. Moderate resistance to solvents at room temperature.	Can be peeled directly from -80°C freezer. High resistance to solvents even at elevated temperatures.	Easily pierceable. Resistant to DMSO. Re-sealable with another Pierce Seal. Colour print identifies non-sealing surface	Re-sealable with another Foil Seal. Resistant to DMSO. Colour print identifies non-sealing surface. (Foil Seal only)	Very strong seal with PP. Resistant to DMSO and other solvents	A foil-based heat seal, coated on the sealing surface with a low fluorescence black pigment	Small pore size that allows gaseous exchange, but limits evaporation. Permeability rate 220g/sqm/24h 20µm pore size	3µm silt across entire surface of seal makes this permeable to gases	96 perforated individual sealing caps in a foil frame. Can be resealed
Min Temp	-80°C	-80°C	-20°C	-80°C	-80°C	-20°C	-20°C	-200°C	-80°C	-20°C	-80°C	-195°C
Max Temp	80°C (or 110°C with pressurised PCR heated lid)	110°C	80°C (or 110°C with pressurised PCR heated lid)	90°C (or 110°C with pressurised PCR heated lid)	40°C	120°C	110°C	110°C	120°C	80°C	100°C	120°C
Pierceable												
Peelable	*		*	*	*	*	*	*	*	*	*	*
RNase / DNase free	*	*	*	*	*	*	*	*	*	*	*	*
Material	Laminate	Laminate	Polymer	Laminate	Laminate	Foil	Foil	Laminate	Foil	Woven material	Laminate	Laminate
Seals to	PP, PE, PS, COC	PP	PP, PE, PS, COC	PP, COC	PP, PE	PP, PS	PP, PS	PP	PS	PP, PS, COC	PP, PE, PS, COC	PP
4/3 sealing time with 96well PP Plates (°C/secs)✓	175-185 / 2-3	175-185 / 2-3	165-175 / 3	175-185 / 3	175-185 / 3	160-175 / 2	165-180 / 2	170-180 / 2-3	-	170 / 2	175-185 / 2-3	175 / 3
4/3 sealing time with 384well PP Plates (°C/secs)✓	165-180 / 3	170-175 / 2-3	165-175 / 2	170-175 / 2-3	170-175 / 2-3	160-175 / 2	165-175 / 2-3	160-170 / 2	-	170 / 2	165-180 / 3	-
4/3 sealing time with Vision Plates (°C/secs)✓	185-200 / 3	-	175-185 / 2-3	-	-	185-200 / 3	185-200 / 3	-	185-200 / 3	170 / 2	185-200 / 3	-
Product Codes												
Roll 78mm1	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
Roll 78mm3	4ti-0540/REMP	4ti-0573/REMP	4ti-0580/REMP	4ti-0520/REMP	4ti-0585/REMP	4ti-0530/REMP	4ti-0535/REMP	4ti-0590/REMP	4ti-0525/REMP	4ti-0598/REMP	-	-
Roll 115mm2	4ti-0542	4ti-0574	4ti-0582	4ti-0522	4ti-0586	4ti-0532	4ti-0537	4ti-0592	4ti-0526	4ti-0599	4ti-0542/SLIT	-
Roll 115mm4	4ti-0542/REMP	4ti-0574/REMP	4ti-0582/REMP	4ti-0522/REMP	4ti-0586/REMP	4ti-0532/REMP	4ti-0537/REMP	4ti-0592/REMP	4ti-0526/REMP	4ti-0599/REMP	-	-
Pack of 100 sheets (125mm x 78mm)	4ti-0541	4ti-0545	4ti-0581	4ti-0521	4ti-0587#	4ti-0531	4ti-0536	4ti-0591	4ti-0527	4ti-0597	4ti-0541/SLIT	4ti-0543

Supplied on a perforated roll
 1 Compatible with Thermo Fisher ALPSS 300™ / ALPSS3000™ / Kbiosystems Chamelion™ / Kbioscience FaxiSeal & Remp/Tecan Plate Sealer
 2 Compatible with Agilent (Velocity 11) PlateLoc®
 3 Compatible with REMP Portrait Heat Sealer (PHSO)
 4 Compatible with REMP Landscape/Stacking Heat Sealers (LHS/SHS)

PP Polypropylene
 PS Polystyrene
 COC Cyclic Olefin Copolymer
 PE Polyethylene

NB Some seals available as sterile on request
 Rolls are also available on 150mm core for Remp/Tecan Sealers. Please enquire.

Heat Seal Selection Table

This table makes it simpler for you to select the right heat seal for your sealer:

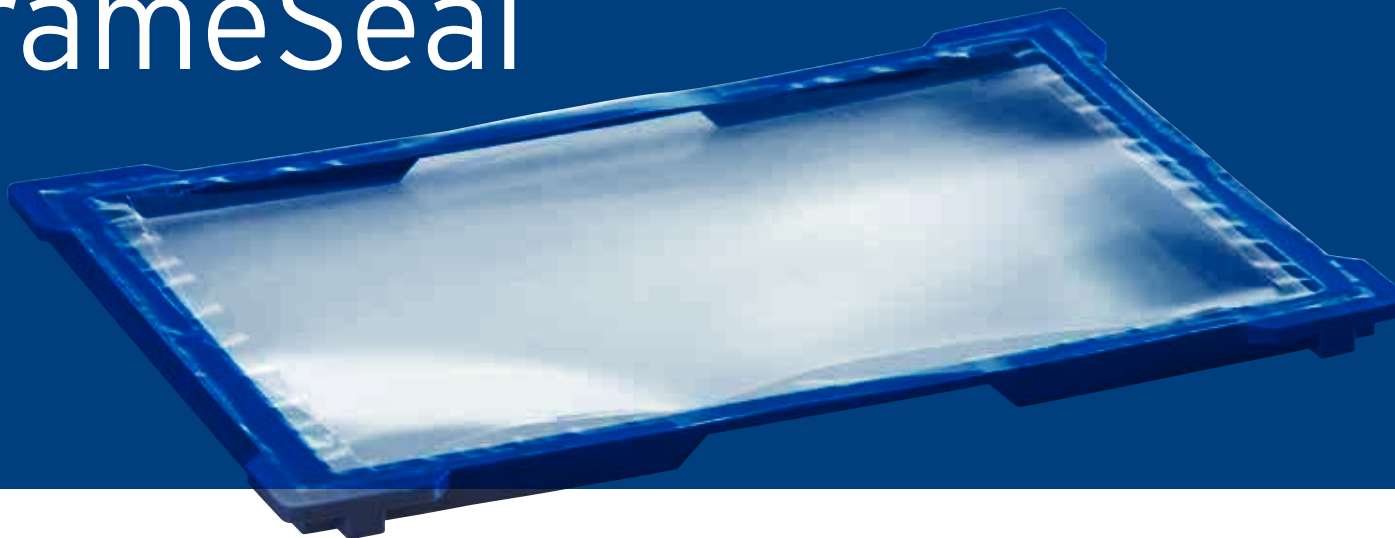
Choose which type of seal you require across the top and follow down to the correct row for your heat sealer, listed on the left. Take a note of the product code.

	Clear Seal p66	Clear Weld Seal Mark II p66	Clear Seal 3730 p67	Peel Seal p67	DMSO Resistant Peel Seal p68	Pierce Seal p68	Foil Seal p69	PS Foil Seal p70	Thermal Bond p70	Black Seal p71	Gas Permeable Seal Mk 2 p71	Gas Permeable Clear Seal p72	INDI Seal p69
4titude													
4s3	4ti-0541	4ti-0575	4ti-0581	4ti-0521	4ti-0587	4ti-0531	4ti-0536	4ti-0547	4ti-0591	4ti-0527	4ti-0597	4ti-0541/SLIT	4ti-0543
A4S	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	4ti-0545	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
Agilent													
PlateLoc	4ti-0542	4ti-0574	4ti-0582	4ti-0522	4ti-0586	4ti-0532	4ti-0537	-	4ti-0592	4ti-0526	4ti-0599	-	-
KBioscience													
FlexiSeal	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	-	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
KBiosystems													
E-Fly 2	4ti-0541	4ti-0575	4ti-0581	4ti-0521	4ti-0587	4ti-0531	4ti-0536	4ti-0547	4ti-0591	4ti-0527	4ti-0597	4ti-0541/SLIT	4ti-0543
Wasp	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	-	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
Chameleon™	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	-	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
REMP													
EasySealer	4ti-0541	4ti-0575	4ti-0581	4ti-0521	4ti-0587	4ti-0531	4ti-0536	4ti-0547	4ti-0591	4ti-0527	4ti-0597	4ti-0541/SLIT	4ti-0543
Portrait	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	-	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
Thermo Fisher													
ALPS 3001™	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	-	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
ALPS 3000™	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	-	4ti-0590	4ti-0525	4ti-0598	4ti-0540/SLIT	-
ALPSTM 50	4ti-0541	4ti-0575	4ti-0581	4ti-0521	4ti-0587	4ti-0531	4ti-0536	4ti-0547	4ti-0591	4ti-0527	4ti-0597	4ti-0541/SLIT	4ti-0543
ALPSTM 25	4ti-0541	4ti-0575	4ti-0581	4ti-0521	4ti-0587	4ti-0531	4ti-0536	4ti-0547	4ti-0591	4ti-0527	4ti-0597	4ti-0541/SLIT	4ti-0543

All roll seal formats are available in a trial roll. Add S to the end of the product code to order. If you would like assistance in choosing the correct seal for your application and heat sealer, please contact technical support on +44 (0) 1306 884885 or info@4ti.co.uk

NEW

FrameSeal™



Frame Seal™ utilises a sheet of standard 4titude® heat seal material mounted onto a disposable, rigid, plastic frame. A FrameSeal™ can be placed either manually or with a robotic gripper onto a wide range of skirted and semi-skirted microplates including PCR plates and are compatible with the 4S3 heat sealer. After sealing, there is the option to remove the frame by tearing along pre-cut lines leaving the heat seal in place on the plate surface.

Code	Description	Qty
4ti-0575/FS	Clear Weld Seal Mk II FrameSeal™, stackable heat seal frames	50
4ti-0541/FS	ClearSeal FrameSeal™	50
4ti-0531/FS	Pierce Seal FrameSeal™	50

COMING SOON
COMING SOON

Application example:

Our Clear Weld Seal Mk II (4ti-0575) heat sealing film is now available pre-mounted to create a FrameSeal. Together with Fraunhofer IPA Institute FrameSeal™ has been used in a fully integrated solution for sealing 1536well PCR plates before analysis of RNAi screening with a Roche Lightcycler1536.

Using a robotic arm, a single FrameSeal™ is placed onto a 1536well PCR plate. By adjusting the position of the robot gripper, the plate and FrameSeal™ combination are then transferred to the draw of a 4S3 Heat Sealer which seals the part via a software command through its RS232 port.

After the sealing process has been carried out, the sealed plate is transferred to the De-Framer, which separates the frame from the film at each point along the edge of the film. The frame can then be removed leaving the sealed plate to be placed in the cyclor.

Together the heat sealer and the FrameSeal™ presented here are:

- The most cost effective automated heat sealing solution available
- An approach in line with demands of diagnostics for a sterile, single-use consumable
- The most compact instrument for integration

Key advantages

- Key advantages compared to sheets of sealing film or roll material, are the ease of handling and the ability to sterilise and improve the quality control of every single seal.
- The FrameSeal™ also enables the use of sheeted sealing material in automation.



4s3™ shown next to the De-Framer



Automation cell, showing the 4LAB™, 4s3™ and De-Framer fully integrated