

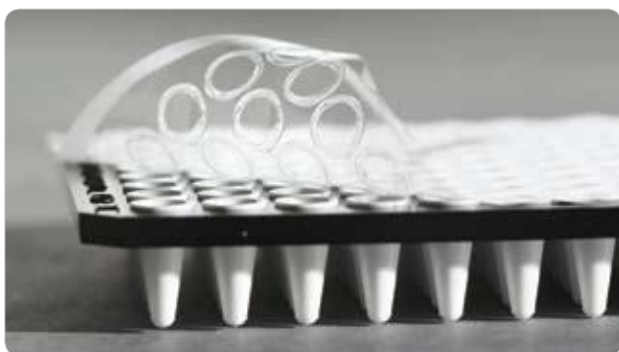
Heat Sealing



4titude® offers a wide range of heat sealing materials in roll and sheet formats. All seals are certified free from nucleases and human genomic DNA contamination and have the following benefits compared to conventional adhesive sealing:

- High degree of reliability for automated sealers
- Substantial savings compared to adhesive seals
- No adhesion of dry samples to the film - reduces the risk of contamination
- Minimises sample loss - cost savings and reduction in reaction failures

Clear Seal



Description

Clear polymer film forming a peelable seal to PP, PE, PS and COC plates. Good optical clarity. Moderate solvent resistance. Non-pierceable. Peelable.

Seal integrity range

-80°C to 80°C (110°C with pressurised PCR heated lid)

Application

qPCR, short term compound storage.



Code

Dimensions

4ti-0540	500m x 78mm Roll ¹
4ti-0540/REMP	500m x 78mm Roll ³
4ti-0540S	Trial Roll ¹
4ti-0542	350m x 115mm Roll ²
4ti-0542/REMP	500m x 115mm Roll ⁴
4ti-0542S	Trial Roll ²
4ti-0541	100 Sheets (125mm x 78mm)

NEW

NEW

Clear Weld Seal Mark II



Description

Clear polymer film forming a permanent seal to PP that can not be peeled and is difficult to pierce. Good optical clarity and solvent resistance. Non-pierceable. Non-peelable.

Seal integrity range

-80°C to 110°C

Application

PCR, especially water bath thermal cyclers, qPCR. Storage and disposal of hazardous materials. Sample inspection. Recommended for use with DMSO.



Code

Dimensions

4ti-0573	610m x 78mm Roll ¹
4ti-0573S	Trial Roll ¹
4ti-0574	500m x 115mm Roll ²
4ti-0574S	Trial Roll ²
4ti-0575	100 Sheets (125mm x 78mm)

BIOKÉ
sharing knowledge

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Clear Seal 3730



- **Description**

Clear polymer. Seals to PP, PS, PE and COC. Pierceable. Good optical clarity, some solvent resistance. Not suitable for peeling. Pierceable. Non-peelable

- **Seal integrity range**

-80°C to 80°C (110°C with pressurised PCR heated lid)

- **Application**

Recommended for use with the ABI 3730 Sequencer as the thinner structure pierces more easily.



Code	Dimensions
4ti-0580	610m x 78mm Roll ¹
4ti-0580S	Trial Roll ¹
4ti-0582	500m x 115mm Roll ²
4ti-0582S	Trial Roll ²
4ti-0581	Roll of 1000 Perforated Sheets

Peel Seal



- **Description**

This popular laminate material gives a peelable heat seal to PP plates. Can be peeled directly from -80°C freezer. Good barrier to aqueous solutions. Moderate resistance to solvents at room temperature. Non-pierceable. Peelable

- **Seal integrity range**

-80°C to 110°C

- **Application**

Low temperature, compound storage, short term room temperature compound storage (less than 5 days), PCR.



Code	Dimensions
4ti-0520	600m x 78mm Roll ¹
4ti-0520S	Trial Roll ¹
4ti-0522	500m x 115mm Roll ²
4ti-0522S	Trial Roll ²
4ti-0521	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®

³ Compatible with REMP Portrait Heat Sealer (PHS)

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

PP = Polypropylene PS = Polystyrene COC = Cyclic Olefin Copolymer
PE = Polyethylene

Heat Sealing

DMSO Resistant Peel Seal



- **Description**

Identical sealing characteristics to Peel Seal but with a high resistance to solvents even at elevated temperatures. Excellent seal on COC plates. Non-pierceable. Peelable. Not certified free from nucleases and DNA.

- **Seal integrity range**

-80°C to 80°C

- **Application**

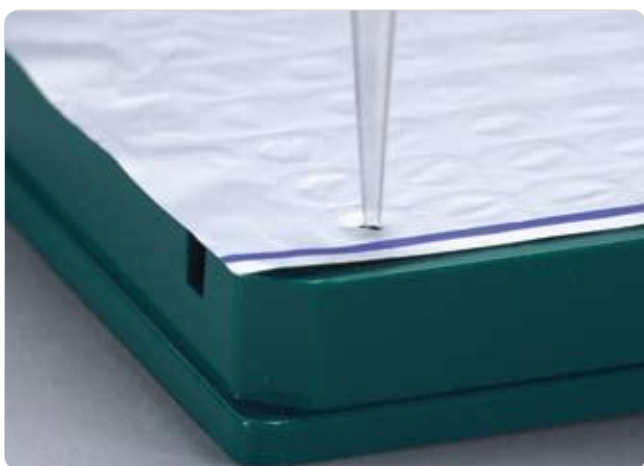
Both low temperature and room temperature compound storage with DMSO* and other organic solvents.

* 100% DMSO can be stored at room temperature for 12 months with no deterioration of the seal quality.



Code	Dimensions
4ti-0585	500m x 78mm Roll ¹
NEW 4ti-0585/REMP	500m x 78mm Roll ³
4ti-0585S	Trial Roll ¹
NEW 4ti-0586	500m x 115mm Roll ²
4ti-0586/REMP	500m x 115mm Roll ⁴
4ti-0586S	Trial Roll ²
4ti-0587	100 Sheets (125mm x 78mm) supplied on a perforated roll

Pierce Seal



- **Description**

Foil based material. Heat seals to PP and PS plates and can be easily pierced with a tip. Very good solvent resistance including DMSO. Seals can be applied on top of each other allowing multiple access/ resealing of samples. Not recommended for peeling. A colour print identifies the non-sealing surface. Pierceable. Non-peelable.

- **Seal integrity range**

-20°C to 120°C

- **Application**

PCR, compound storage, sample shipping.

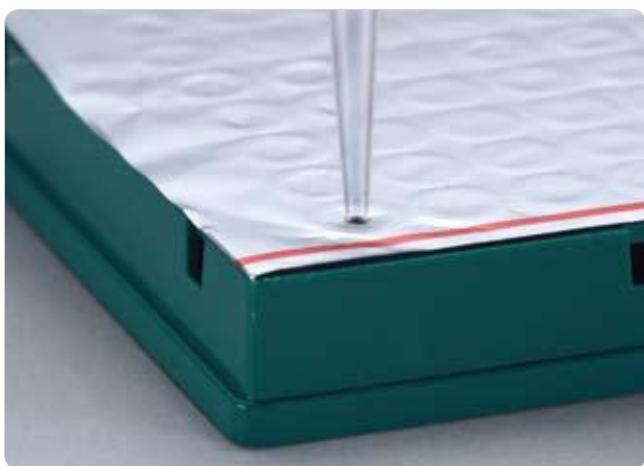


Code	Dimensions
4ti-0530	610m x 78mm Roll ¹
NEW 4ti-0530/REMP	610m x 78mm Roll ³
4ti-0530S	Trial Roll ¹
NEW 4ti-0532	500m x 115mm Roll ²
4ti-0532/REMP	500m x 115mm Roll ⁴
4ti-0532S	Trial Roll ²
4ti-0531	100 Sheets (125mm x 78mm)

Foil Seal & PS Foil Seal*

* For a stronger, but still peelable bond to PS plates

NEW



- **Description**

Heat seal to PP and PS plates that can be pierced with a tip or peeled off by hand. Good solvent resistance including DMSO. Resealing onto existing seal is possible. A colour print identifies the non-sealing surface. Pierceable. Peelable.

- **Seal integrity range**

-20°C to 110°C

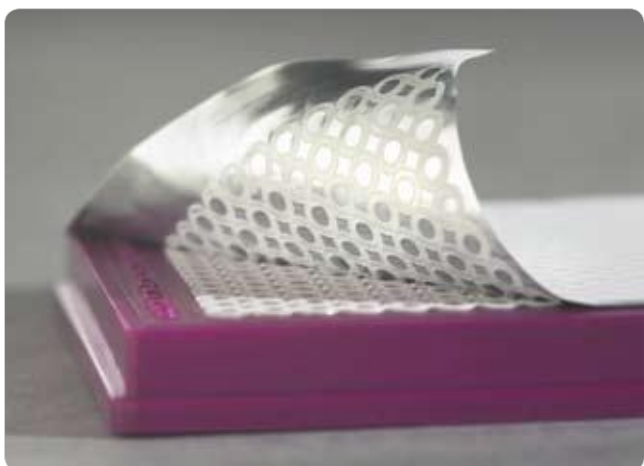
- **Application**

Low temperature compound storage, short term room temperature compound storage, PCR.



Code	Dimensions
4ti-0535	610m x 78mm Roll ¹
NEW 4ti-0535/REMP	610m x 78mm Roll ¹
4ti-0535S	Trial Roll ¹
4ti-0537	500m x 115mm Roll ²
NEW 4ti-0537/REMP	610m x 78mm Roll ¹
4ti-0537S	Trial Roll ²
4ti-0536	100 sheets (125mm x 78mm)
NEW 4ti-0547	100 sheets PS Foil Seal (125mm x 78mm)

Thermal Bond



- **Description**

Heavy duty laminate material that seals to PP to give a very strong peelable seal. High degree of sample protection. Good solvent resistance including DMSO. Non-pierceable. Peelable.

- **Seal integrity range**

-200°C to 110°C

- **Application**

Long term storage including storage and transportation at low temperature. PCR, especially water bath cyclers. Storage of organic solvents, acids and alkalines.



Code	Dimensions
4ti-0590	500m x 78mm Roll ¹
4ti-0590S	Trial Roll ¹
4ti-0591	100 sheets (125mm x 78mm)
4ti-0592	300m x 115 mm Roll ²

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

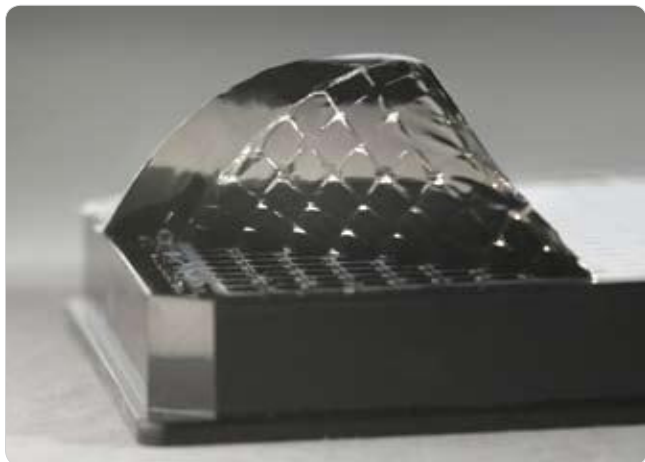
² Compatible with Agilent (Velocity 11) PlateLoc®

³ Compatible with REMP Portrait Heat Sealer (PHS)

⁴ Compatible with REMP Landscape / Stacking Heat Sealers (LHS/SHS)
PP = Polypropylene PS = Polystyrene COC = Cyclic Olefin Copolymer

Heat Sealing

Black Seal



- **Description**

A foil based heat seal, coated on the sealing surface with a low fluorescence black pigment. Forms a peelable seal to PS plates. Non-pierceable. Peelable. Not certified free from nucleases and DNA.

- **Seal integrity range**

-20°C to 80°C

- **Application**

Fluorescent and other light sensitive assays.



Code	Dimensions
4ti-0525	610m x 78mm Roll ¹
4ti-0526	500m x 115mm Roll ²
4ti-0527	100 sheets (125mm x 78mm)

Gas Permeable Seal



- **Description**

A woven heat seal that is permeable to gasses but providing a barrier to solid contaminants. Permeability rate >4000g/sqm/24h. Pore size up to 35 Microns. Seals to PP and PS plates. Pierceable. Peelable. Not certified free from nucleases and DNA.

- **Seal integrity range**

-20°C to 80°C

- **Application**

Cell culture, over night incubation, seed and insect storage.



Code	Dimensions
4ti-0596	200m x 78mm Roll ¹
4ti-0595	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®











³ Compatible with REMP Portrait Heat Sealer (PHS)

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

PP = Polypropylene PS = Polystyrene COC = Cyclic Olefin Copolymer



Heat Sealing Films & Foils Comparison Table

Product Application	Clear Seal	Clear Weld Seal Mark II	Clear Seal 3730	Peel Seal	DMSO Resistant Peel Seal	Pierce Seal	Foil Seal & PS Foil Seal	Thermal Bond	Black Seal	Gas Permeable Heat Seal
										
	gPCR, short term compound storage.	PCR (esp. water bath), gPCR. Ideal for Roche LightCycler 480. Storage & disposal of hazardous materials.	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. Good seal on COC plates.	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 & insect storage.
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. Colour print identifies non-sealing surface.	Very strong seal with PP. Resistant to DMSO and other solvents	Coated on sealing surface with low fluorescence black pigment.	Permeable to gases. Permeability rate >4000g/sqm/24h. 35µm pore size.
Min Temp	-80°C	-80°C	-80°C	-80°C	-80°C	-20°C	-20°C	-200°C	-20°C	-20°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)	110°C	80°C	120°C	110°C	110°C	80°C	80°C
Sterile						*	*		*	*
Peelable	•			•	•	•	•	•	•	•
RNase/DNase free	•	•	•	•	•	•	•	•	•	•
Material	Laminate	Laminate	Polymer	Laminate	Laminate	Foil	Foil	Laminate	Foil	Woven material
Seals to	PP, PE, PS, COC	PP	PP, PE, PS, COC	PP	PP	PP, PS	PP, PS	PP	PS	PP, PS, COC
Roll length mm (78mm width)	500	610	610	600	500	610	610	500	610	200
Roll length mm (115mm width)	350	500	500	500	500	500	500	300	500	-
4s² sealing time (°C / secs)⁵ with 96well PP Plates	180 / 2	175 / 2	175 / 2	175 / 2	175 / 2	175 / 2	175 / 2 (180 for reseal)	175 / 2	-	170 / 2
4s² sealing time with 384 well PP Plates (°C / secs)⁵	175 / 2	175 / 2	170 / 2	175 / 2	175 / 2	160 / 2	160 / 2	170 / 2	-	170 / 2
4s² sealing time with Vision Plates™ (°C / secs)⁵	-	-	175 / 2	175 / 2	-	-	175 / 2	-	180 / 2	170 / 2
Product Codes										
Roll 78mm¹	4ti-0540	4ti-0573	4ti-0580	4ti-0520	4ti-0585	4ti-0530	4ti-0535	4ti-0590	4ti-0525	4ti-0596
Roll 78mm³	4ti-0540/REMP	-	-	4ti-0522	4ti-0585/REMP	4ti-0530/REMP	4ti-0535/REMP	-	-	-
Roll 115mm²	4ti-0542	4ti-0574	4ti-0582	4ti-0522	4ti-0586	4ti-0532	4ti-0537	4ti-0592	4ti-0526	-
Roll 115mm⁴	4ti-0542/REMP	-	-	-	4ti-0586/REMP	4ti-0532/REMP	4ti-0537/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-0595

100% DMSO can be stored at room temperature for 12 months with no deterioration of the seal quality

Roll of 1000 Perforated Sheets

Supplied on a perforated roll

Compatible with Thermo Fisher ALPS 300[™] / ALPS 3000[™] / Kbiosystems Wasp / Kbioscience FlexiSeal & REMP/Tecan Plate Sealer

Compatible with Agilent (Velocity 11) Plateloc[®]

Compatible with REMP Portrait Heat Sealer (PHS)

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

Add 1 second to the sealing time when a weighted platen is used (4ti-0602)

Polypropylene

Polystyrene

Cyclic Olefin Copolymer

PE Polythene

Heat Sealing Product Selection Guide

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	Clear Weld Seal Mark II	Clear Seal 3730	Peel Seal	DMSO Resistant Peel Seal	Pierce Seal	Foil Seal	Thermal Bond	Black Seal	Gas Permeable Seal
4i:Ruler [®]	4i:0-541	4i:0-575	4i:0-591	4i:0-571	4i:0-587	4i:0-531	4i:0-536	4i:0-591	4i:0-527	4i:0-595
4i [®]										
Applent	4i:0-542*	4i:0-594*	4i:0-592*	4i:0-572*	4i:0-586*	4i:0-532*	4i:0-537*	4i:0-592	4i:0-526	-
K Resealence	4i:0-540*	4i:0-573*	4i:0-590*	4i:0-570*	4i:0-585*	4i:0-530*	4i:0-535*	4i:0-590*	4i:0-525	4i:0-596
FlexiSeal	4i:0-540*	4i:0-573*	4i:0-590*	4i:0-570*	4i:0-585*	4i:0-530*	4i:0-535*	4i:0-590*	4i:0-525	4i:0-596
K BioSealSeals										
E-Flu ²	4i:0-541	4i:0-575	4i:0-591	4i:0-571	4i:0-587	4i:0-531	4i:0-536	4i:0-591	4i:0-527	4i:0-595
MySeo	4i:0-540*	4i:0-573*	4i:0-590*	4i:0-570*	4i:0-585*	4i:0-530*	4i:0-535*	4i:0-590*	4i:0-525	4i:0-596
ChromoSeal [®]	4i:0-540*	4i:0-573*	4i:0-590*	4i:0-570*	4i:0-585*	4i:0-530*	4i:0-535*	4i:0-590*	4i:0-525	4i:0-596
REMP [®]										
Emp [®] Sealer	4i:0-541	4i:0-575	4i:0-591	4i:0-571	4i:0-587	4i:0-531	4i:0-536	4i:0-591	4i:0-527	4i:0-595
Low Level (Dry) 6i	4i:0-540/590/60*	-	-	-	4i:0-585/REMP*	4i:0-530/REMP*	4i:0-535/REMP*	-	-	-
Low Level (Dry) 6i	4i:0-542/REMP*	-	-	-	4i:0-586/REMP*	4i:0-532/REMP*	4i:0-537/REMP*	-	-	4i:0-596
Thermal Tracker										
ALPS 300 [®]	4i:0-540*	4i:0-573*	4i:0-590*	4i:0-570*	4i:0-585*	4i:0-530*	4i:0-535*	4i:0-590*	4i:0-525	4i:0-596
ALPS 3000 [®]	4i:0-540*	4i:0-573*	4i:0-590*	4i:0-570*	4i:0-585*	4i:0-530*	4i:0-535*	4i:0-590*	4i:0-525	4i:0-596
ALPS 50	4i:0-541	4i:0-575	4i:0-591	4i:0-571	4i:0-587	4i:0-531	4i:0-536	4i:0-591	4i:0-527	4i:0-595
ALPS 25	4i:0-541	4i:0-575	4i:0-591	4i:0-571	4i:0-587	4i:0-531	4i:0-536	4i:0-591	4i:0-527	4i:0-595

* These rolls are available in a trial roll. Add 5 to the end of the product code to order.