



Agilent PlateLoc Thermal Microplate Sealer Consumables

Selection Guide

Learn more about thermal microplate sealing and get answers to common questions... Ask for a FREE copy of the *Reference for Optimal Thermal Microplate Sealing*



This is a selection guide for thermal microplate seals. ● = YES (dot) TBD = To Be Determined NA = Not Applicable

	Peelable Aluminum	Peelable Aluminum RT*	Pierceable Aluminum	Clear Peelable Seal	Clear Pierceable Thin Seal+	Clear Permanent Seal
Product Number	24210-001	24214-001	06644-001	16985-001	17318-001	24212-001
	24211-081 (Sample)	24214-081 (Sample)	06644-081 (Sample)	16985-081 (Sample)	17318-081 (Sample)	24212-081 (Sample)
ADHESION (The number of times a microplate can be resealed is a function of the plate design/well chimney height, plate material, and the time and temperature utilized.)						
Peelable	●	●		●	●	
Permanent			●			●
APPLICATIONS (Typical)						
Compound Storage, Low Temp (0°C to -80°C) (DMSO)	●	●		Short Term (Hours to Daily) – Not for Long Term Storage	Short Term (Hours to Daily) – Not for Long Term Storage	
Compound Storage, Room Temp (0°C to +40°C) (DMSO)		●	<ul style="list-style-type: none"> Room temperature storage of 100% DMSO for 12 months Short term resistance to 40°C for few weeks 			
DNA Sequencing					●	●



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	Peelable Aluminum	Peelable Aluminum RT*	Pierceable Aluminum	Clear Peelable Seal	Clear Pierceable Thin Seal ⁺	Clear Permanent Seal
	24210-001	24214-001	06644-001	16985-001	17318-001	24212-001
Product Number	24211-081 (Sample)	24214-081 (Sample)	06644-081 (Sample)	16985-081 (Sample)	17318-081 (Sample)	24212-081 (Sample)

APPLICATIONS (Typical)

PCR/qPCR/rtPCR		Yes PCR/ No qPCR/ No rtPCR				
Optical Plate Reading (rtPCR/qPCR)				●	●	●
Dry Thermal Cycling	●	●	Limited	●	●	●
Water Bath Thermal Cycling						●
Screening	●	●	●		●	
SPA Radioactive/ Top Count Assays				●	●	

CHEMICAL COMPATIBILITY GUIDELINES (Assumes microplate sealing surface/chimney is clean. Chemical solutions that produce explosive vapor mixtures, such as those that may be generated by solvents, alcohols, etc. are incompatible with thermal plate sealing.) Chemical compatibility testing involves confirming sample is not lost through evaporation and leakage (gravimetric testing).

Alcohols	Polypropylene Good Polystyrene Poor	●	●	●	●	●
Aqueous Solutions	●	●	●	●	●	●
DMSO	Polypropylene Good Polystyrene Fair (Not recommended for room temperature storage)	Polypropylene Good ⁺⁺ COC Good ⁺⁺ (Good for room temperature storage; short term resistance to 40°C – few weeks)	Polypropylene Good Polystyrene Fair (Not recommended for room temperature storage)	Short Term (Hours to Daily) – Not for Long Term Storage	Short Term (Hours to Daily) – Not for Long Term Storage	●

DIMENSIONS (sealing film on roll)

Core Diameter	76.2 mm (3") ID	76.2 mm (3") ID	76.2 mm (3") ID	76.2 mm (3") ID	76.2 mm (3") ID	76.2 mm (3") ID
Length of Roll	457.2 m (1500 ft)	457.2 m (1500 ft)	500 m (1640 ft)	200 m (656 ft)	370 m (1213 ft)	500 m (1640 ft)
Length Used per Plate	78 mm (3.07")	78 mm (3.07")	78 mm (3.07")	78 mm (3.07")	78 mm (3.07")	78 mm (3.07")
Plates/Roll (Min)	5000	5000	5000	2000	4700	5000
Roll Diameter	241.3 mm (9.5")	255 mm (10.04")	241.3 mm (9.5")	203.2 mm (8")	203.2 mm (8")	208 mm (8.2")
Thickness	.0591 mm (.002")	.0700 mm (0.0028")	.025 mm (.00098")	.125 mm (0.005")	.0762 mm (0.003")	0.049 mm (0.002")
Width	115 mm (4.53")	115 mm (4.53")	115 mm (4.53")	115 mm (4.53")	115 mm (4.53")	115 mm (4.53")

MICROPLATE COMPATIBILITY, AGILENT PLATELOC SEALING CONDITIONS/GUIDELINES (Heat sealing compatible microplates feature a raised rim or “chimney” surrounding each sample well and flat sealing surfaces. Conditions below are starting point recommendations for microplate sealing optimization—plate design can play a significant role in the ideal sealing conditions. Microplates of the same material may require different settings, based on thickness/geometry, etc. Optimize time and temperature parameters for each plate type before use. Use the lowest temperature and shortest time period possible for best results. If warped microplates or plates that do not lie flat are a challenge, or if you experience non-uniformity in seal quality, try Agilent’s **PlateLoc Flexible Inserts** Product Number 15818-002.)

Cyclic Olefin Copolymer (COC)	190°C; 2.5 sec	185°C; 1.5 sec	TBD	TBD	TBD	
Polypropylene	170°C; 1.2 sec	175°C; 1.5 sec	Best Results with Polypropylene 170°C; 1.2 sec	110°C; 1-1.2 sec	110°C; 1-1.2 sec	Permanent 175°C; 1.2-2 sec
Polystyrene	185°C; 1.2 sec	Not Compatible	NA	NA / TBD	NA / TBD	

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OPTICAL PROPERTIES

Autofluorescence	NA	NA	NA	Non-detected	Non-detected	Non-detected
Optically Clear (Plate Reader Compatible)	NA	NA	NA	●	●	●
Transparent, Visually	NA	NA	NA	●	●	●

PHYSICAL PROPERTIES *(Gas transmission is relative and dependent on time, temperature, application, etc. Each seal should be evaluated for its suitability for the application.)*

Adhesion	Thermal	Thermal	Thermal	Thermal	Thermal	Thermal
Appearance	White top, reflective bottom	Uncolored aluminum foil	Reflective top and bottom	Opaque unsealed, transparent sealed	Opaque unsealed, transparent sealed	Clear unsealed, clear sealed
Cross Contamination/Leakage Resistant	●	●	●	●	●	●
Evaporation Resistant	●	●	●	●	●	●
Material	Multilayer Aluminum Foil / Polymer Laminate	Multilayer Aluminum Foil / Polymer Laminate	Aluminum Foil w/ Thermal Sealant Layer	Multilayer Polymer Laminate	Multilayer Polymer Laminate	Multilayer Polymer Laminate
O₂ Barrier	Excellent	Excellent	TBD	Good	Good	Good
H₂O Vapor Barrier	Excellent	Excellent	Excellent	Good	Good	Good

PIERCEABILITY *(Note: 06644-001 is not recommended for multiple pierce/reseal/pierce cycles—there is a risk of aluminum fragments falling into samples.) Automated piercing generally requires a plate hold-down mount for microplate.*

Agilent Bravo/ Vertical Pipettor						
Fixed Tips						
Plastic Disposable Tips						
Agilent Seal Piercer			●		●	TBD
Metal Tip/Probe, Other					(Some, e.g. ABI 3730)	TBD
Handheld Pipettor Plastic Tips	Fair		●			TBD

THERMAL PROPERTIES *(Allow microplates that have been stored at low temperature to reach room temperature before attempting to remove/peel seal. Seal integrity and length of time samples can be safely stored is application dependent and must be verified.)*

Seal Integrity Range	-80°C to Plate Softening	-80°C to 40°C ** • Room temperature storage of 100% DMSO for 12 month • Short term resistance to 40°C for few weeks	-20°C to 80°C	-20°C to 120°C	-20°C to 120°C	-80°C to 110°C
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* Before using the Peelable Aluminum RT heat seal or sample roll (part numbers 24214-001 and 24214-081, respectively), determine if your PlateLoc Sealer requires an adjustment to ensure compatibility. PlateLoc Sealers manufactured before week 51 in December 2010 may require an adjustment. Please see document G5402-90006 PlateLoc Sealer Customer Notice http://www.chem.agilent.com/Library/usermanuals/Public/G5402-90006_R00_PlateLoc_CN_P.pdf for details.

⁺ This material has been included on this guide for existing customers who have used it successfully in an existing Agilent PlateLoc. Due to intermittent thermo-mechanical incompatibility with some PlateLocs (which may be due to its thickness in combination with its flexibility), it is not recommended for new PlateLoc customers.

⁺⁺ Compound stability in DMSO can be affected by many factors above and beyond the quality of the seal material and the quality of the seal with the plate (e.g. temperature, gas exchange through the microplate material itself, light, etc.)

PlateLoc Seal Selection Guide Notes:

1. Test Microplates. This data was generated using the following microplates or equivalent:
Polypropylene Microplate: Greiner, 650201 (96-well, round well, round bottom)
Polystyrene Microplate: Greiner, 655101 (96-well, round well, round bottom)

2. Customer Testing. Material suitability, seal integrity, and maximum storage times for sealed microplates are a function of the specific application and must be determined by the user of this product. It is recommended that all microplate sealing processes take place prior to the “Best if Used By” date, if indicated on the material labeling. Bond integrity, in correctly sealed microplates used in storage applications, should remain intact past this date—but the actual ideal storage time is application and storage condition dependent. End-user, application-based requalification (testing) is required past “Best if Used By” date.

3. 3rd Party Thermal Seal. The performance of the Agilent PlateLoc Thermal Microplate Sealer has been optimized using Agilent thermal seal. If you choose to try third-party thermal seal and experience poor performance/instrument problems and contact Agilent for support, it is your responsibility to immediately notify the Agilent support representative that you are using third-party thermal seal. Use of third-party consumables may be outside the scope of the terms of the PlateLoc Thermal Microplate Sealer instrument warranty and may result in the user paying for any necessary repairs and applications support, as a result of using these materials. If you are considering the use of third-party consumables because the Agilent consumables do not meet your requirements, please give Agilent the opportunity to try to help.

4. Reference. This information is for reference only.

Satisfaction Guaranteed. If you are not satisfied with your Agilent product within the first 60 days, you may return your purchase in its original condition for a full refund or credit. A return policy statement is posted under Product Information on the website. In the US and Canada, please call for a Return Authorization form and return instructions at 1-800-227-9770. If your Agilent product was purchased from a distributor, please contact the distributor.

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Quality. Have confidence in every supply you purchase. Authentic Agilent Consumables feature published specifications and warranties, are verified and validated, and include application support. You are guaranteed top notch system performance when teamed-up with Agilent Instrumentation.

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***Agilent Laboratory Automation Consumables
Selection Guide 5990-4651EN***

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