

# Agilent PlateLoc Thermal Microplate Sealer

## Data Sheet

### Introduction

Agilent's PlateLoc Thermal Microplate Sealer is the premier thermal sealer for fast, easy, reliable microplate sealing. The PlateLoc Thermal Microplate Sealer has distinguished itself as the premier thermal sealer through its speed, small footprint, ease of use, and dependability. In designing the PlateLoc Sealer, the design engineers overcame the challenges of sealing a wide range of microplates by developing a versatile instrument that automatically accommodates deep well, assay, PCR and compound storage microplates. Stand-alone operators have full control of sealing time and temperature through the PlateLoc Sealer's touch screen, while a choice of plate stage inserts ensures the best possible seal for any microplate.

As with every Agilent Automation Solution, the PlateLoc Sealer is ideal for robotic integration, featuring an extended-travel plate stage, RS-232 serial port and ActiveX control. In order to minimize system downtime when replenishing consumables, the instrument features an easy to access, top-loading seal roll support and each new roll of seal includes a handy, seal-loading card that makes it simple and safe to install a new roll of seal. A variety of aluminum and clear seal materials are available for various applications.

### Features & Benefits

- **Easy to Operate:** Touch-screen interface allows fast and easy manual operation.
- **High Precision:** With sealing temperature control of  $\pm 2^\circ\text{C}$  and advanced seal slitting control, seal integrity will be the same for every microplate.
- **High Speed:** Fast cycle times, with no required cool down periods for rapid microplate sealing.
- **Flexibility:** Automatically adjusting to accommodate a wide range of microplates and tube racks, four types of plate stage inserts provide support for challenging microplate types.
- **Ideal for System Integration:** Smallest instrument footprint and numerous proven integrations make the PlateLoc Sealer a choice for system integrators.

### Applications

1. Compound Storage
2. Screening
3. PCR/qPCR/rtPCR
4. Sequencing



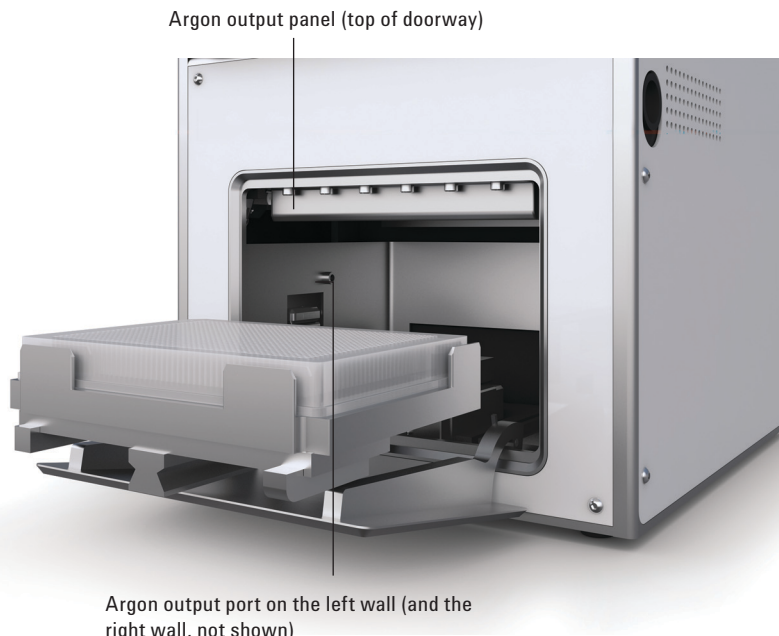
**Agilent Technologies**

## PlateLoc Options

### Option 1: Gas-Purging PlateLoc Sealer for Compound Storage

In addition to the standard Agilent PlateLoc Sealer, a Gas-Purging PlateLoc Sealer is also available, which uses inert gas such as Argon to displace air containing moisture and oxygen in the plate immediately before the sealing begins. The plate contents can be protected from hydration and oxidation for up to 24 hours. Typically used for compound storage applications, the Gas-Purging PlateLoc Sealer is best for plate contents that are sensitive to oxidation and moisture (for example, DMSO). Note: For typical polystyrene and polypropylene plates, the gas-purging effects can last up to 24 hours when the plates are stored at room temperature. The effects can last longer if the plates are stored at lower temperatures.

*Retrofits not available.*



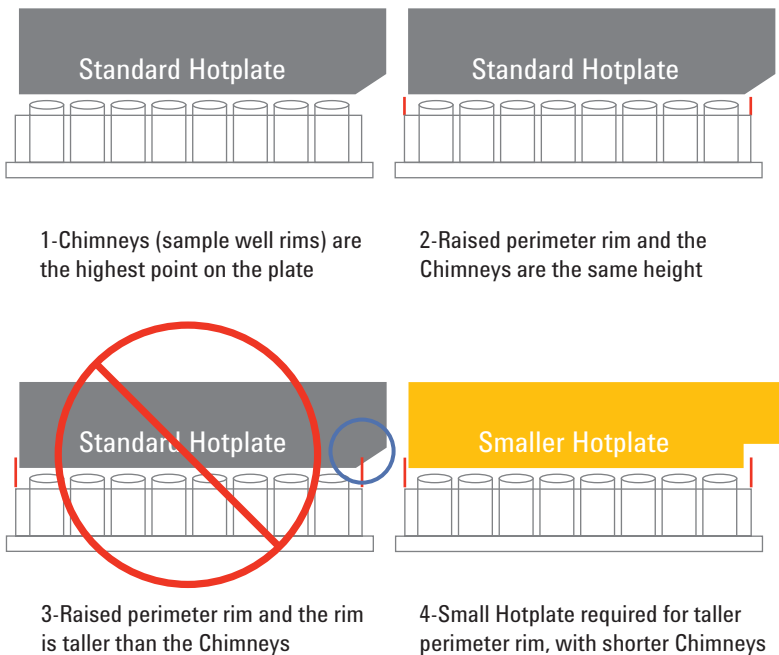
### Option 2: Small Hotplate PlateLoc Sealer for Some PCR Plates

The standard rectangular hotplate within the PlateLoc, is sized to be compatible with microplates which meet the standards ANSI/SBS 1-2004 through ANSI/SBS 4-2004. The PlateLoc can also be ordered with a smaller hotplate option which may effectively seal some labware which can not be sealed with the standard hotplate.

To date, the smaller hotplate has been required by a few PCR plate designs (these PCR plates include but are not limited to):

- ABI MicroAmp Optical 96-Well Reaction Plate N801-0560, 4316813, 4306737, 4326659
- ABI 384-well Optical Reaction Plate with Barcode PN 4309849

*All small hotplate labware candidates MUST be confirmed through testing (even those listed)  
Retrofits may be available through the Service department*



Some Common Plate Surface Topographies

# Heat Sealing Friendly Labware

## Compatible Microplates

The PlateLoc is compatible with microplates which meet the Standards ANSI/SBS 1-2004 through ANSI/SBS 4-2004 and are designed for thermal microplate sealing.

Thermal sealing compatible microplates feature raised sample well rims or “chimneys.” The PlateLoc is able to seal standard microplates in 96-, 384-, and 1536-well formats, including many deep well and PCR microplates. Skirtless and half-skirt PCR plates require Agilent **PCR Base, 96, Partial Skirt** plate support.

## Microplate Material Types

Heat seals are designed to be compatible with specific polymer (microplate) substrates such as polypropylene, polystyrene and COC. Consult the Agilent Seal Selection Guide Publication Number 5990-3659EN for complete heat seal specifications and ordering information.

## Microplate Height

Microplates as tall as 2.5 in. (63.5 mm) can be accommodated by the PlateLoc.

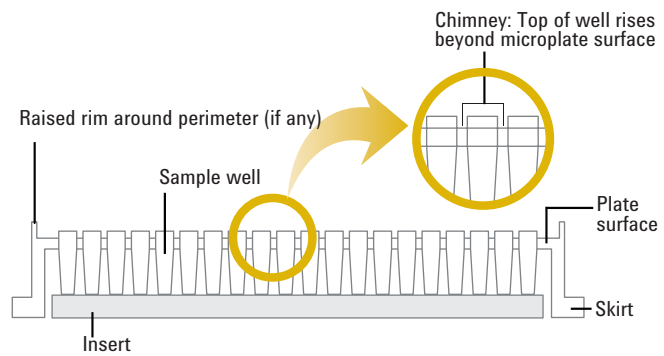


Figure 1. Microplate physical features and nomenclature

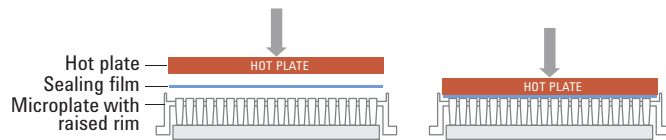


Figure 2. Above left: Pneumatics drive the hot plate down to the microplate surface. The hot plate can sense and automatically adjust for variations in microplate height. Seals are applied using pressure and heat. Right: If the microplate has a raised rim that is higher than the chimney height around its perimeter, the hot plate must fit within the rimmed area so that the hot plate can make uniform contact with the seal and all sample wells simultaneously.

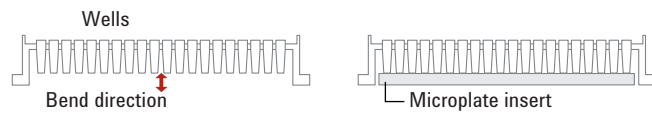
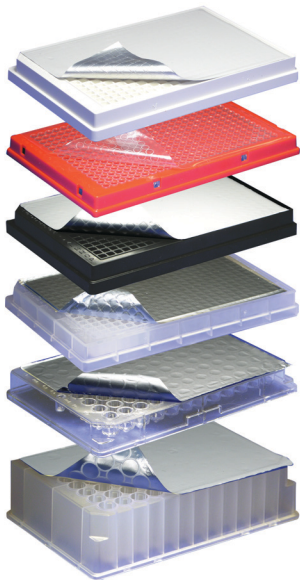


Figure 3. Microplate without and with insert. Support inserts help ensure a flat sealing surface by supporting the sample well bottoms—they are especially helpful with highly flexible or warped plates.



Seals ANSI-compliant microplates including deep well, PCR and standard microplates in 96-, 384-, and 1536-well formats.

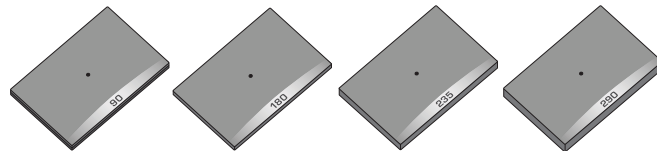


Figure 4. Standard inserts. The number on the inserts indicates the thickness of the metal pad (for example, 180 means 0.180 in thick). Note: The 90 insert has a 0.090-in metal pad with foam padding on the microplate-facing side and is used with microplates that require flexible support.

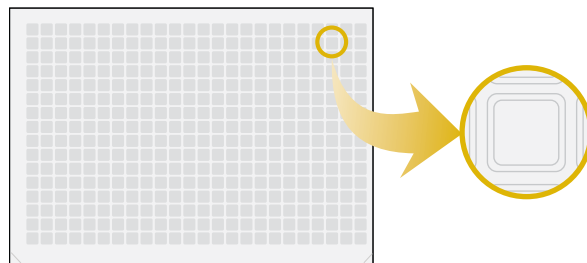
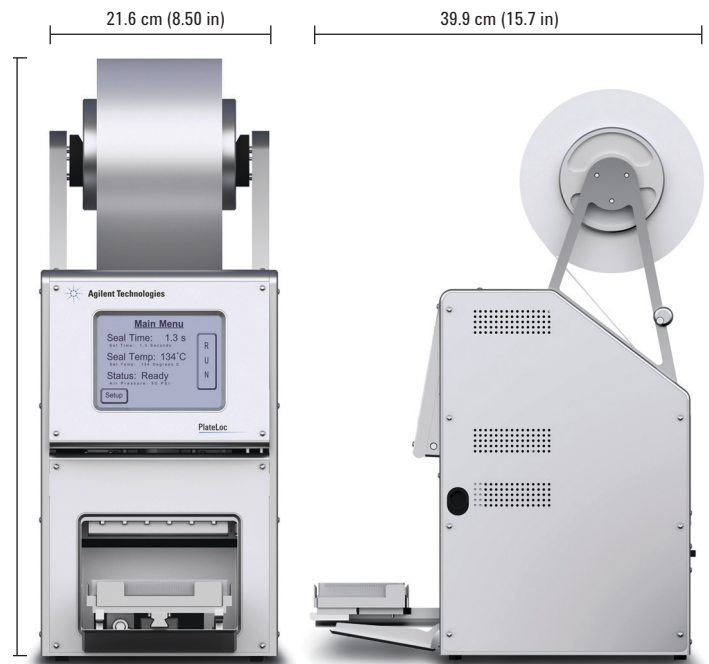
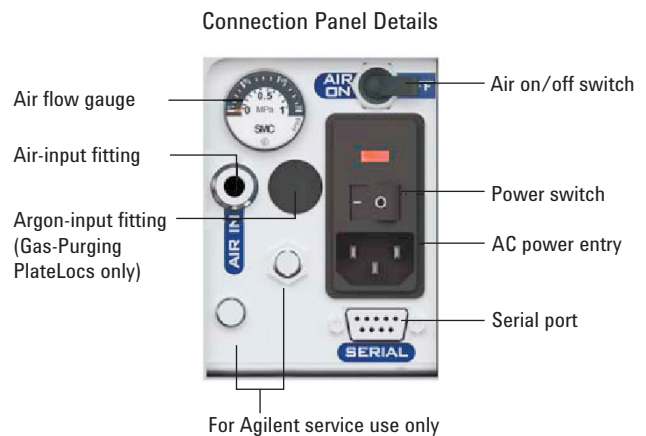


Figure 5. Confirming a quality seal application. Allow a peelable seal to set for a minimum of 10 seconds prior to peeling. Then examine the bottom/sealing surface of the heat seal and look for intact and continuous sample well rim (“chimney”) impressions.

## Key PlateLoc Features/Components



**Dimensions:**  
 Height: 58.4 cm (23")  
 Width: 21.6 cm (8.5")  
 Depth: 39.9 cm (15.7")  
 Weight: 20 kg (45 lbs)



## Specifications

<b>Certification</b>	
	CE Certified
<b>Microplate Height</b>	
Standard PlateLoc	Microplates up to 51 mm (2 in.)
PlateLoc with gas purge option	Microplates up to 51 mm (2 in.)
<b>Computer/Software Requirements</b>	
Host Computer	Not required for manual operation; Windows 7 for VWorks
Software	Agilent VWorks Automation Control software when part of an Agilent lab automation workstation/system (VWorks software is not included in standalone instrument purchases) ActiveX CD included with all PlateLocs to facilitate integration when using third-party automation software to control the PlateLoc
Interface	RS-232 Serial Port with DB9 connector
<b>Dimensions / Weight</b>	
	Please see diagrams in this document
<b>Heat Seal</b>	
	Download PlateLoc Thermal Microplate Sealer Consumables Selection Guide PDF document, publication number 5990-3659EN
<b>Labware Compatibility</b>	
Microplates	Which meet the Standards ANSI/SBS 1-2004 through ANSI/SBS 4-2004 and are thermal sealing compatible (feature raised sample well rims or "chimneys")
<b>Operating Requirements</b>	
Air	70 LPM at 6.2 bar (2.5 cfm at 90 psi) [Clean, dry, oil-free]
Electrical	Operating AC Current (typical) 100 – 120VAC, 50/60 Hz,      200 – 240VAC, 50/60 Hz
Inrush	20A/120V                              40A/240V
Current (typical)	4A/120V                                2.5A/240V
Environment	4-40°C; 10-90% RH, non-condensing
<b>Performance</b>	
Cycle Time	Approximately 8 seconds per plate
Warm-up Time	2.5 minutes
Cool-down Time	1 hour (from 160°C to room temperature)
Sealing Temperature	30 to 200°C
<b>Sealing Technology</b>	
	Thermal, roll fed Not designed for manual, individual cut sheet heat sealing Not compatible with PSA Pressure Sensitive Adhesive-based sealing films
<b>Warranty</b>	
	12 month instrument warranty - See Terms of Sale document
<b>What's in the Box</b>	
	<ul style="list-style-type: none"> <li>• PlateLoc Thermal Microplate Sealer (G5402A/G)</li> <li>• One full roll of user's choice of heat seal - must be specified at time of order</li> <li>• Seal roll mount - 2-hubs (G5550-02649) and 1-axle (G5550-02799)</li> <li>• Set of four Microplate Support Inserts (15818-002)</li> <li>• Microplate stage (G5550-22756)</li> <li>• Air Connection Kit (N. American G5550-23870 or Metric G5550-23871)</li> <li>• RS-232 DB9 Serial Cable (G5550-02797)</li> <li>• Power cord (8120-1378 USA or Misc. PNs for Other Countries)</li> <li>• PlateLoc User Guide (G5402-90001)</li> <li>• ActiveX CD (Does not include VWorks software) (G5550-11979)</li> </ul>

## Ordering Information

Part No. (Instrument Order/ Configuration)	Part No. (Agilent Internal Use Only)	Description	Part No. (Standalone Purchase of Component Only)
<p>Important Note on Instrument Voltage: The Agilent Business Center will use the Ship To address you provide to automatically select the appropriate instrument voltage. If you are an integrator, reseller or distributor that require a specific voltage instrument–NOT related to the Ship To address, it is your responsibility to let your Agilent sales professional or the Business Center know your special requirements.</p>			
G5402A/G		<b>PlateLoc Thermal Microplate Sealer</b> <i>Compact, high speed, automated microplate sealer controlled by touchpanel or PC.            Please specify choice of free seal.</i> PlateLoc, 120V PlateLoc, 230V	Not Applicable
	01867-201 01867-202		
G5402A/G Option 225		<b>PlateLoc, Gas Purging</b> <i>Typically used with inert gas such as Argon to displace air containing moisture and oxygen immediately before sealing begins when plate contents are in DMSO solvent in pharma compound storage.</i> PlateLoc, 120V, Gas Purging PlateLoc, 230V, Gas Purging	Not Applicable
	01867-251 01867-252		
G5402A/G Option 226		<b>PlateLoc, Smaller Hotplate</b> <i>Typically required by some PCR plates where a raised perimeter rim prevents the standard hotplate from making good thermal contact with the heat seal/plate. Most other microplates compatible with the standard PlateLoc hotplate can also be sealed.</i> PlateLoc, 120V, Hotplate, small PlateLoc, 230V, Hotplate, small	Not Applicable
	G5402-60014 G5402-60015		
G5402A/G with Options 225 & 226	G5402-60016 G5402-60017	<b>PlateLoc, Smaller Hotplate and Gas Purging</b> PlateLoc, 120V, GP, Hotplate, small PlateLoc, 230V, GP, Hotplate, small	Not Applicable
<b>Misc. Related Components</b>			
Please see <b>PlateLoc Thermal Microplate Sealer Consumables</b> (Heat Seal) <b>Selection Guide</b> Document 5990-3659EN for consumables ordering information, part numbers, detailed specifications.			
		<b>G5402A PlateLoc, Shipping Carton Kit</b> Original packaging kit to return instrument to factory for Depot service repair, etc.	G5402-60043
Not Applicable	G5550-22756	<b>Current PlateLoc Plate Stage</b> (Plate Transfer Nest, Thinned, Tall Tabs) (One required and supplied with PlateLoc instrument) Spare/replacement part.	G5550-22756
G5550-19632	G5550-19632	<b>Legacy PlateLoc Plate Stage</b> (Plate Transfer Nest, BC, BioCel, Element) This component must be ordered through the PlateLoc Product Manager. It is intended for use with a small number of robotic grippers unable to pick or place a microplate in the Current PlateLoc Plate Stage. Customers will need to provide make and model robot/gripper details with inquiry.	G5550-19632
Not Applicable	15818-002	<b>PlateLoc Support Inserts, Set of Four</b> (One set supplied with PlateLoc instrument) Appropriate thickness plate is placed under the microplate to support the bottom of the sample wells--which in turn, can help compensate/adjust/ flatten many warped microplates for optimum sealing.	15818-002
Not Applicable	18631-001	<b>PlateLoc Support Inserts, A La Carte</b> Plate Insert, Flexible, .090 (one included in 15812-002)	18631-001
Not Applicable	G5550-12875	Plate Insert, .180 (one included in 15812-002)	G5550-12875
Not Applicable	G5550-12879	Plate Insert, .235 (one included in 15812-002)	G5550-12879
Not Applicable	G5550-12880	Plate Insert, .290 (one included in 15812-002)	G5550-12880
19385-001	19385-001	<b>Specialty Inserts Not Included with PlateLoc</b> Plate Insert, .500	19385-001
16664-101	16664-101	Plate Insert, Flexible, Labcyte	16664-101
17708-101	17708-101	Plate Insert, Flexible, Aurora 1536	17708-101
G5402-20000	G5402-20000	PCR Base, 96, Partial Skirt	G5402-20000
		<b>Hot Plate Assemblies for Retrofit</b> <i>These are the parts that an Agilent FSE Field Service Engineer or the Service Depot would install to retrofit an existing PlateLoc to a <b>PlateLoc, with Smaller Hotplate</b>. Contact the Agilent Automation Solutions business unit Service Department for a complete quotation which includes, parts, labor and any potential travel charges.</i>	
G5550-21437	G5550-21437	Hotplate Assembly, 110 volt, small	G5550-21437
G5402-60021	G5402-60021	Hotplate Assembly, 230 volt, small	G5402-60021

## Additional Helpful Information Resources

### Collateral



#### **Agilent BenchCel Workstations. Microplate Sealing Solution – Application Bulletin**

Agilent Automation Solutions integrates a wide range of instruments with the BenchCel Microplate Handler to create flexible benchtop automation solutions. An Automated Microplate Sealing Workstation can be created using two Agilent instruments: the BenchCel Microplate Handler and the Agilent PlateLoc Thermal Microplate Sealer. With a capacity of two to six labware stacking racks, a PlateLoc Sealer and BenchCel system can automate the sealing of hundreds of microplates and provide walkaway convenience.

Publication Number 5990-3631EN

#### **PlateLoc Thermal Microplate Sealer – Quick Reference Guide**

This document provides quick-reference guidelines for optimizing seal quality and FAQ Frequently Asked Questions on the PlateLoc and heat sealing. This guide should be used in conjunction with the PlateLoc Thermal Microplate Sealer User Guide and the PlateLoc Seal Selection Guide.

Publication Number G5402-90003

#### **Request for PlateLoc Sealer Applications Support**

Single paged PDF which may be completed on-line and forwarded to Agilent Technical Support/Applications for assistance. Helps gather contact information and helpful information need to help optimize the required time/temperature for a specific plate or other applications-based challenges.

Publication Number G5402-90004

#### **Agilent Laboratory Automation Consumables – Selection Guide**

An introduction to Agilent Laboratory Automation Consumables (Tips, Heat Seal, Labels, etc.). Presents the features and benefits of using Agilent consumables.

Publication Number 5990-4651EN

#### **Agilent Thermal Microplate Sealer Consumables Selection Guide**

Includes official product descriptions and part numbers, time/temperature starting point sealing recommendations, recommended applications and complete technical specifications for the full range of PlateLoc heat seal.

Publication Number 5990-3659EN

#### **PlateLoc Thermal Microplate Sealer User Guide**

Instrument manual which ships with each PlateLoc. Includes information on installation, setup and operation of the instrument.

Publication Number G5402-9001

### Videos

#### **Agilent PlateLoc - How it Works Video**

*Fast, dependable microplate sealing with Agilent's compact PlateLoc Thermal Microplate Sealer are demonstrated and discussed in both walk-up manual and automated modes.*

Use website search box to locate "**PlateLoc Thermal Microplate Sealer Video**"

(1 minute 32 seconds)

### Miscellaneous

#### **2D and 3D PlateLoc Exterior Drawings**

*Contact your Agilent sales professional or Automation Solutions Technical Support for assistance (No CDA Confidentiality Agreement required)*

## Warranties

**Warranty for Instrumentation.** A **12 month Warranty** is provided on all instruments manufactured by the Agilent Automation Solutions business unit. For more information, please see the Agilent *Terms of Sale* document.

**Warranty for Consumables.** These Agilent products, are backed with a 90-day warranty and a money-back guarantee. If Agilent receives notice of defects during the warranty period, Agilent shall, at its option, either repair or replace products which prove to be defective. If Agilent is unable, within a reasonable time, to repair or replace any product to a condition as warranted, the buyer shall be entitled to a refund of the purchase price upon return of the product to Agilent. The warranty period begins on the day of shipment.

This warranty shall not apply to any defect, failure, or damage caused by improper use or improper or inadequate maintenance or care. This warranty is exclusive and no other warranty, whether written or oral, is expressed or implied. Agilent specifically disclaims the implied warranties of merchantability and fitness for particular purposes. The remedies provided herein are the buyer's sole and exclusive remedies. In no event shall Agilent be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) whether based on contract, tort or any other legal theory.

**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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**Value.** You are always assured the highest value when you invest in Authentic Agilent Consumables—we promise. Agilent will match any verifiable offer by any microplate thermal seal supplier for an equivalent product. *Ask our Agilent sales or support professionals for details.*

[www.agilent.com/lifesciences/automation](http://www.agilent.com/lifesciences/automation)

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