

Agilent G2545A Hybridization Oven

Calibration Procedure

- Step 1. Set up and heat the oven 2
- Step 2. Start the temperature recorder 3
- Step 3. Retrieve the temperature data from the temperature recorder 4
- Step 4. Calibrate the oven 4

The Agilent G2545A Hybridization Oven maintains temperature calibration for at least 3 months under normal operating conditions when properly installed within the laboratory.

See the *Agilent G2545A Hybridization Oven Installation, Operation, and Maintenance Guide* (p/n G2545-9001) for information on site requirements and oven placement.

To establish and maintain optimal performance of your Agilent G2545A Hybridization Oven, calibrate it:

- After first installation in a working environment
- After each 3 months of use
- When systematic high microarray background noise may indicate a drift in oven temperature

To view a demonstration of the hybridization oven calibration procedure, go to www.agilent.com/en/video/hybridization-oven-calibration or scan this QR code with your mobile device.

Required Parts and Tools

Part	Vendor and part/model
hybridization oven	Agilent p/n G2545A
hybridization oven rotator rack	Agilent p/n G2530-60029
hybridization chambers	Agilent p/n G2534A
Wireless temperature recorder and computer/software to operate the recorder <i>The temperature recorder must be calibrated per vendor recommendations and within its calibration interval.</i>	Any model with the following specifications <ul style="list-style-type: none">• Range: -40°C to 80°C• Resolution: 0.1°C• Accuracy: ±0.3°C Example: Fourtec MicroLite II USB Temperature Logger*
General-purpose labeling tape or 2 cable ties (long enough to attach the temperature recorder to the oven rotator rack)	

* This model meets the specification requirements but has not been validated in all Agilent microarray hybridization assays.

Step 1. Set up and heat the oven

- 1 Install the hybridization oven rotator rack in the hybridization oven.

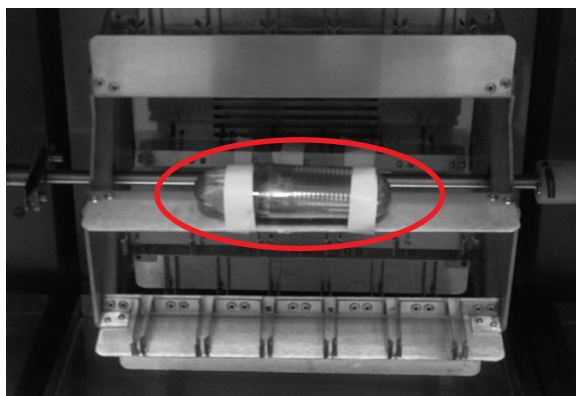


- 2 Load the hybridization oven rotator rack with the typical number of hybridization chambers used during a single hybridization run.
Install the hybridization chambers without microarrays. Distribute the hybridization chambers across hybridization oven rotator rack positions to mimic normal operating procedure.
- 3 Turn on the hybridization oven, set rotational speed control to 20 rpm, and set oven temperature consistent with the recommended hybridization temperature for the protocol that you use.
- 4 Allow the hybridization oven to heat and stabilize for at least 3 hours.

Step 2. Start the temperature recorder

- 1 Set up and start the temperature recorder. Follow the instructions provided with the temperature recorder and its accompanying software.
- 2 If needed, make sure that previously recorded temperature data is cleared.
- 3 Put the temperature recorder on the center of the hybridization oven rotator rack to get the average temperature.
- 4 Secure the temperature recorder to the center of the hybridization oven rotator rack by attaching it to one of the hybridization chamber positions. Use general-purpose laboratory labeling tape or cable ties.

Oven temperature may vary slightly across the width of the rotator rack. When using the oven with >8 hybridization chambers loaded in the rotator rack, verify that your protocol will accommodate the variations in temperature across the oven.



CAUTION

Make sure that the temperature recorder is secure and will not detach from the rack. If the temperature recorder comes loose during use, the data collected can be inaccurate. A loose temperature recorder that becomes trapped and prevents the rotator rack from rotating can damage the oven.

- 5 Close the oven door and allow the temperature recorder to record temperature data for at least 3 hours.

Make sure that the hybridization oven rotator rack is set to rotate during this time.

WARNING

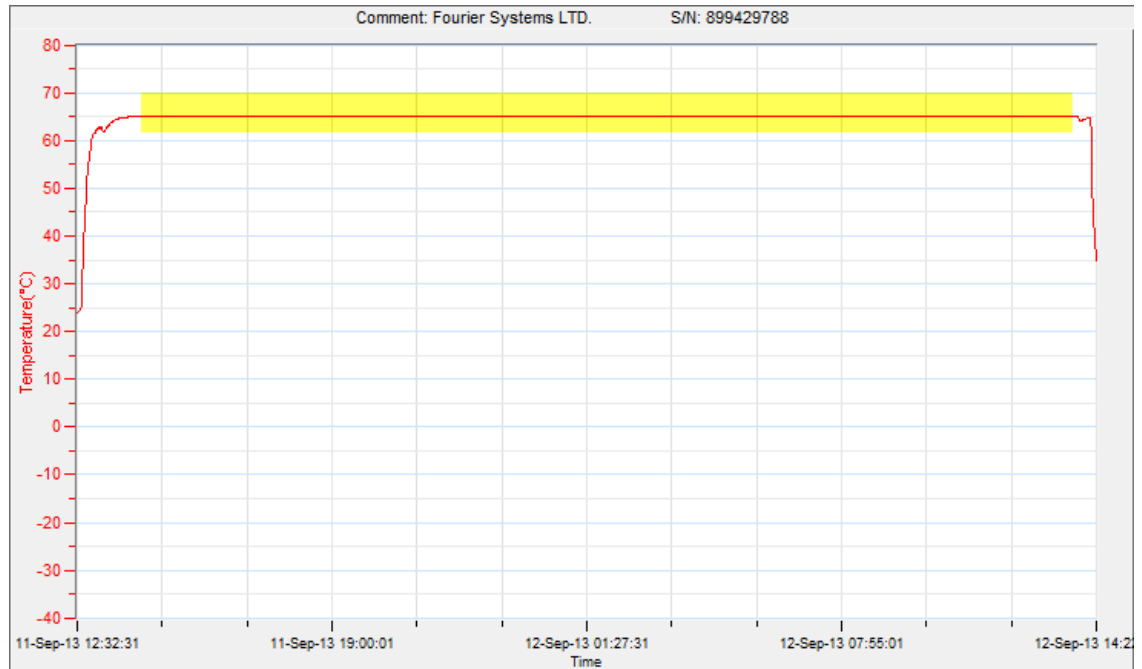
The temperature recorder can be hot to the touch. Use caution while handling.

- 6 Record the temperature on the hybridization oven display.
- 7 Remove the temperature recorder from the oven. Let the oven continue to operate after you remove the temperature recorder from the oven.

Step 3. Retrieve the temperature data from the temperature recorder

- 1 Follow the instructions for the temperature recorder to retrieve and analyze the temperature data.
- 2 Take the temperature reading from the period of stable temperature data recorded before the oven door was opened.

The image below shows an example of a temperature reading with the period of stable temperature highlighted.



Step 4. Calibrate the oven

Wait until the hybridization oven reaches the temperature recorded in [step 6](#) on [page 3](#) before proceeding with the calibration.

NOTE

The accuracy of the oven display is $\pm 0.1^{\circ}\text{C}$. If the oven temperature recorded in [step 6](#) on [page 3](#) is within 0.1°C of the average temperature of the recording session, then calibration is not needed.

- 1 Raise or lower the temperature on the oven display to match the average temperature of the recording session as calculated from the temperature recorder data.
 - a Press both ▲ and ▼ at the same time until the two outside decimal points of the display begins to flash to put the display into calibration mode.
 - b While the decimal points are flashing, press the ▲ or ▼ arrow pad until the reading on the display matches that measured by the temperature recorder.

If the arrow pads are not pressed for five seconds, the display stops blinking and reads the temperature in the chamber.

- 2 To recheck the temperature, start from [“Step 2. Start the temperature recorder”](#) on page 3. Repeat calibration steps if needed.

The calibration procedure is now complete. Please keep your records as required by GLP guidelines.

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