



Technical Brief

TEMPERATURE

Thermometer Testing Methods

A reliable, accurate thermometer that is calibrated periodically is essential for food handling operations. Let's take a brief look at common testing methods. Prior to testing, you should know the manufacturer's specified accuracy in terms of +/- degrees F or C (or other unit of measure).

- The **Ice Bath Method** is the most basic way to test the accuracy of a thermometer. This method doesn't require any special equipment and can be done with consistent results if the proper process is followed (*see instructions below*). For best results, a reference thermometer can be used to verify the ice bath temperature.
- The **Boiling Water Method** can also be utilized as a calibration method, however, the exact temperature at which water boils depends on your elevation. For example, pure water boils at 212°F (100°C) at sea level and 202.5°F (94.7°C) in Denver, CO. For this method, you should know the exact temperature at which water boils where you are and again, for best results use a reference thermometer.



Ice Bath Method



Boiling Water Method

[Click here](#) for instructions for the ice bath and boiling water methods.

- **Dry Block Calibrator** -- Both the ice bath and boiling water methods are simple but require you to ensure the test medium (ice slurry or boiling water) is continuously maintained. These options are time-consuming, and may not be practical when several thermometers need to be verified or are part of a process where verification is frequently required. In this case a Dry Block Calibrator such as the Tel-Tru Check-Set® is a convenient alternative. A calibrator automatically maintains a consistent testing temperature and provides a NIST traceable Certificate of Calibration. This temperature reference device is ideal for HACCP compliance officers, QA managers, in-plant maintenance technicians, and compliance officers.



Tel-Tru Check-Set Calibrator

Adjustment

If your thermometer is operating within the accuracy specification there is no reason to adjust it. If it does require adjustment, consult the manufacturer's recommendations. Adjustment can typically be done using a hex nut on the stem or by rotating an adjustment screw. Not all thermometers can be adjusted; if you find a thermometer which is outside the specified accuracy tolerance and can't be recalibrated, it should no longer be used for food safety processes.

[Click here](#) for more information on thermometer testing with a dry block calibrator and the Tel-Tru Check-Set.

If you have any questions, please feel free to contact one of our experts us at 800.232.5335 or info@teltru.com.



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