Food Safety Fact Sheet
2013

Calibrating Thermometers

Introduction

Food temperatures must be checked throughout the food preparation process, and the thermometers used must be accurate. School nutrition employees are responsible for checking the accuracy of thermometers and calibrating them if they are not accurate.

Here Are the Facts

Thermometers that are not accurate will give misleading information. For example, if you use a thermometer that registers 10 °F higher than the actual temperature, you would cook ground beef to 145 °F rather than 155 °F. That would be inadequate cooking to make sure the ground beef is safe to serve. If the thermometer registers too low, you could easily overcook food.

Application

It is important for school nutrition employees to know when and how to calibrate bimetallic stemmed and digital (that can be calibrated) thermometers. Follow state or local health department requirements.

How to Take Temperatures

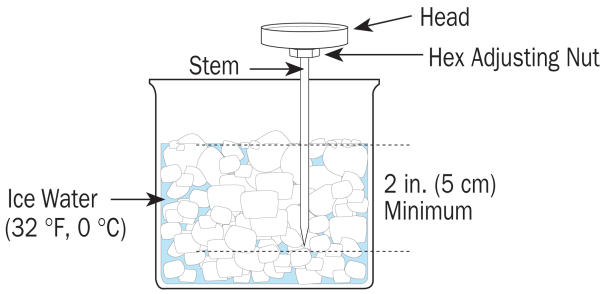
When?
Thermometers are sensitive and can lose calibration. It is important to calibrate them:

- Weekly,
- When they are dropped,
- More often if specified by local policy.

How?
There are two methods that can be used to calibrate thermometers.

Ice Water Method

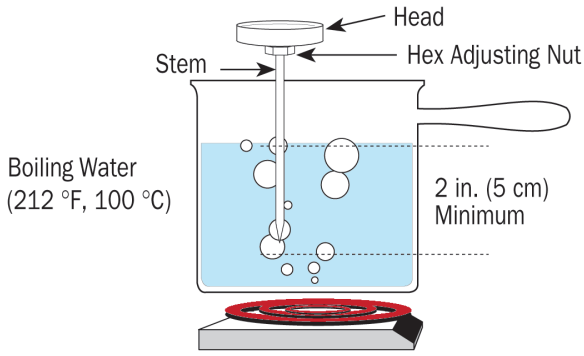
1. Fill a 2-quart measure with ice.
2. Add water to within 1 inch of top of container.
3. Stir mixture well.
4. Let sit for one minute.
5. Place thermometer in container so that the sensing area of stem or probe is completely submerged over the dimple.
6. Keep the thermometer from touching sides or bottom of container.
7. Let thermometer stay in ice water for 30 seconds or until the dial stops moving.
8. Place the calibration tool on the hex adjusting nut and rotate until the dial reads 32 °F, while in ice water.
9. Some digital stemmed thermometers (thermistors) and thermocouples have a reset button that should be pushed.
10. Repeat process with each thermometer.



Thermometer Information Resource (2005).

Boiling Water Method

1. Fill a saucepan or stockpot with water.
2. Bring water to a rolling boil.
3. Place thermometer in the container so that the sensing area of the stem or probe is completely submerged over the dimple.
4. Do NOT let the thermometer stem/probe touch sides or bottom of container.
5. Let thermometer stay in the boiling water for 30 seconds or until the dial stops moving.
6. Place the calibration tool on the hex adjusting nut and rotate until the thermometer dial reads 212 °F, while in boiling water.
7. Some digital thermometers (thermistors) and thermocouples have a reset button that should be pushed.
8. Repeat process with each thermometer.

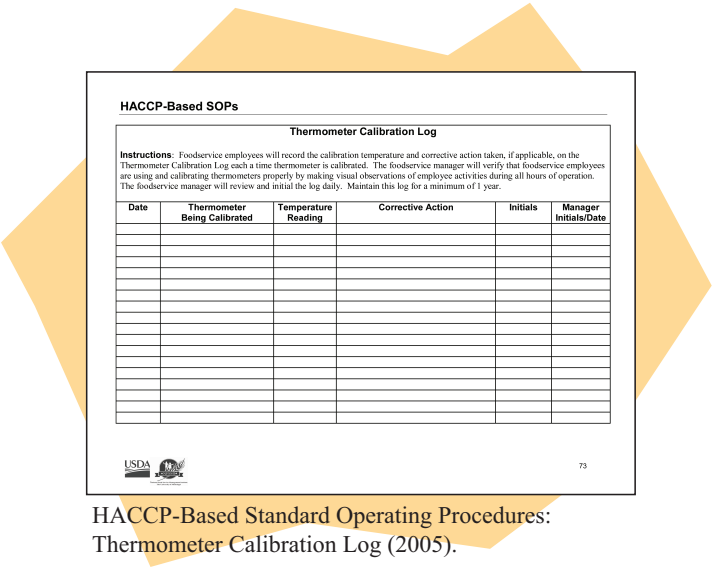


Thermometer Information Resource (2005).

Note: The boiling point of water is about 1 °F lower for every 550 feet above sea level. If you are in high altitude areas, the temperature for calibration should be adjusted. For example, if you were at 1100 feet above sea level, the boiling point of water would be 210 °F.

Documenting Calibration

Each time thermometers are calibrated, the process should be documented. The food safety program should include a form for documenting the calibration process of each thermometer.



HACCP-Based SOPs

Thermometer Calibration Log

Instructions: Foodservice employees will record the calibration temperature and corrective action taken, if applicable, on the Thermometer Calibration Log each a time thermometer is calibrated. The foodservice manager will verify that foodservice employees are using and calibrating thermometers properly by making visual observations of employee activities during all hours of operation. The foodservice manager will review and initial the log daily. Maintain this log for a minimum of 1 year.

Date	Thermometer Being Calibrated	Temperature Reading	Corrective Action	Initials	Manager Initials/Date

USDA

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HACCP-Based Standard Operating Procedures: Thermometer Calibration Log (2005).

Remember, follow state or local health department requirements.

References

U.S. Department of Agriculture, Food and Nutrition Service, & National Food Service Management Institute. (2005). *HACCP-based standard operating procedure: Thermometer calibration log.* Retrieved January 8, 2009, from http://www.nfsmi.org/documentLibraryFiles/PDF/20080213013307.pdf

U.S. Department of Agriculture, Food and Nutrition Service, & National Food Service Management Institute. (2005). *HACCP-based standard operating procedure: Using and calibrating thermometers.* University, MS: Author.

U.S. Department of Agriculture, Food and Nutrition Service, & National Food Service Management Institute. (2005). *Thermometer information resource.* University, MS: Author.

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