

# Using and Calibrating Thermometers

## (Sample SOP)

**PURPOSE:** To prevent foodborne illness by ensuring that the appropriate type of thermometer is used to measure internal product temperatures and that thermometers used are correctly calibrated for accuracy.

**SCOPE:** This procedure applies to foodservice employees who prepare, cook, and cool food.

**KEY WORDS:** Thermometer, Calibration

1. THERMOMETER means a device designed to measure temperatures.
2. CALIBRATION means the act of adjusting, by comparison with a known standard, the accuracy of a measuring instrument

### INSTRUCTIONS:

1. Train foodservice employees on using the procedures in this SOP.
2. Follow Wyoming Food Safety Rule.
3. Follow the food thermometer manufacturer's instructions for use. Use a food thermometer that measures temperatures from at least 0 °F (-18 °C) to 220 °F (104 °C) and is appropriate for the temperature being taken. For example:
  - Temperatures of thin products, such as hamburgers, chicken breasts, pizza, filets, nuggets, hot dogs, and sausage patties, must be taken using a thermistor or thermocouple with a thin probe.
  - Bimetallic, dial-faced stem thermometers are accurate only when measuring temperatures of thick foods. They may not be used to measure temperatures of thin foods. A dimple mark located on the stem of the thermometer indicates the minimum food thickness that can be accurately measured.
  - Use only oven-safe, bimetallic thermometers when measuring temperatures of food while cooking in an oven.
4. Have food thermometers easily-accessible to foodservice employees during all hours of operation.
5. Clean and sanitize food thermometer before and after each use. (Wiping cloth with approved sanitizer or alcohol swab approved to sanitize thermometer probe.)
6. Store food thermometers in an area that is clean and where they are not subject to contamination.

### MONITORING:

1. Foodservice employees will use either the ice-point method or boiling-point method to verify the accuracy of food thermometers. This is known as verifying the calibration of the thermometer.
2. To use ice-point method:
  - Prepare a cup of ice with enough cold water to remove any air pockets.
  - Insert the thermometer probe at least two inches into the ice water making sure not to touch sides or bottom of the cup.
  - Allow the temperature reading to stabilize before reading the temperature.
  - Temperature measurement should be 32 °F ( $\pm 2$  °F) [or 0 °C ( $\pm 1$  °C)]. If adjustment is required, follow manufacturer's instructions.
1. To use boiling-point method:

## **SOP for Using and Calibrating Thermometers, continued**

(Sample SOP)

- Immerse at least the first two inches of the probe into boiling water making sure not to touch sides or bottom of container.
  - Allow the temperature reading to stabilize before reading the temperature.
  - Reading should be 212 °F ( $\pm 2$  °F) [or 100 °C ( $\pm 1$  °C)]. If adjustment is required, follow manufacturer's instructions. This is for 0 ft. elevation. Calculations and adjustments must be made for appropriate elevation.
4. Foodservice employees will check the accuracy of the food thermometers:
- At regular intervals (at least once per week)
  - If dropped
  - If used to measure extreme temperatures, such as in an oven
  - Whenever accuracy is in question

### **CORRECTIVE ACTION:**

1. Retrain any foodservice employee found not following the procedures in this SOP.
2. For an inaccurate, bimetallic, dial-faced thermometer, insert the thermometer probe at least two inches into ice water (prepared as stated above) and adjust the temperature by turning the dial while securing the calibration nut (located just under or below the dial) with pliers or a wrench until the thermometer reads 32 °F.
3. For an inaccurate, digital thermometer with a reset button, adjust the thermometer according to manufacturer's instructions.
4. If an inaccurate thermometer cannot be adjusted on-site, discontinue using it, and follow manufacturer's instructions for having the thermometer calibrated.
5. Retrain employees who are using or calibrating food thermometers improperly.

### **VERIFICATION AND RECORD KEEPING:**

Foodservice employees will record the calibration temperature and any corrective action taken, if applicable, on the Thermometer Calibration Log each time a thermometer is calibrated. The foodservice manager will verify that foodservice employees are using and calibrating thermometers properly by making visual observations of the employees during the calibration process and all operating hours. The foodservice manager will review and initial the Thermometer Calibration Log weekly. The Calibration Log will be kept on file a minimum of 1 year. The foodservice manager will complete the Food Safety Checklist daily. The Food Safety Checklist is to be kept on file for a minimum of 1 year.

**DATE IMPLEMENTED:** \_\_\_\_\_ **BY:** \_\_\_\_\_

**DATE REVIEWED:** \_\_\_\_\_ **BY:** \_\_\_\_\_

**DATE REVISED:** \_\_\_\_\_ **BY:** \_\_\_\_\_