

# HACCP-Based SOPs

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## 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 school nutrition employees who prepare, cook, and cool food.

**KEY WORDS:** Thermometers, Calibration

### INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Follow the food thermometer manufacturer's instructions for use. Use a food thermometer that measures temperatures from 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 maximum 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 school nutrition employees during all hours of operation.
5. Clean and sanitize food thermometers before each use. Refer to the Cleaning and Sanitizing Food Contact Surfaces SOP for the proper procedure to follow.
6. Store food thermometers in an area that is clean and where they are not subject to contamination.

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## Using and Calibrating Thermometers, continued

(Sample SOP)

### MONITORING:

1. School nutrition employees will use either the ice-point method or boiling-point method to verify the accuracy of food thermometers. This is known as calibration of the thermometer.
2. To use ice-point method:
  - Insert the thermometer probe into a cup of crushed ice.
  - Add enough cold water to remove any air pockets that might remain. Allow to sit for 1 minute.
  - Allow the temperature reading to stabilize before reading temperature.
  - Temperature measurement should be 32 °F ( $\pm 2$  °F) [or 0 °C ( $\pm 1$  °C)]. If not, adjust according to manufacturer's instructions.
3. To use boiling-point method:
  - Immerse at least the first two inches of the probe into boiling water.
  - Allow the temperature reading to stabilize before reading temperature.
  - Reading should be 212 °F ( $\pm 2$  °F) [or 100 °C ( $\pm 1$  °C)]. This reading may vary at higher altitudes. If adjustment is required, follow manufacturer's instructions.
4. School nutrition employees will check the accuracy of the food thermometers:
  - At regular intervals (at least once per week, ideally daily)
  - If dropped
  - If used to measure extreme temperatures, such as in an oven
  - Whenever accuracy is in question

### CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. For an inaccurate, bimetallic, dial-faced thermometer, adjust the temperature by turning the dial while securing the calibration nut (located just under or below the dial) with pliers or a wrench.
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.

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## Using and Calibrating Thermometers, continued

(Sample SOP)

### VERIFICATION AND RECORD KEEPING:

School nutrition 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 school nutrition manager will verify that school nutrition employees are using and calibrating thermometers properly by making visual observations of the employees during the calibration process and all operating hours. The school nutrition manager will review and initial the Calibration Log daily. The Calibration Log will be kept on file a minimum of 1 year. The school nutrition 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:** \_\_\_\_\_