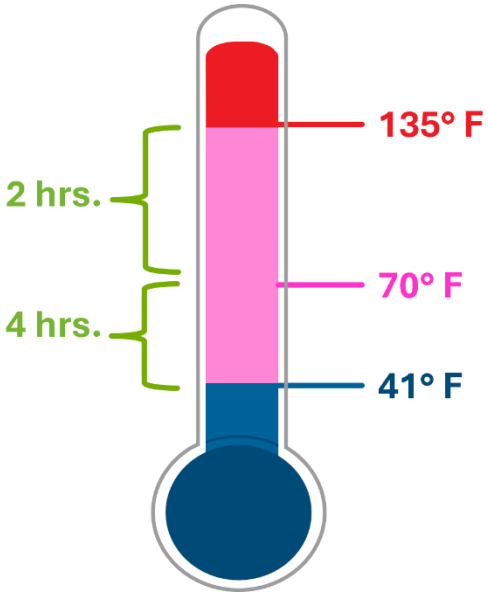
Importance of Proper Cooling

Retail Food Establishments - Food Safety

Improper cooling of hot, time/temperature control for safety (TCS) foods is a major source of foodborne illnesses in retail food establishments. It is important for cooked TCS foods to go through the **temperature danger zone**, between **135°F** and **41°F**, quickly to prevent the growth of harmful bacteria.



Ensuring TCS foods are properly cooled minimizes the risk of a potential foodborne illness outbreak.

Cooked TCS foods must be cooled from **135°F** to **70°F** in **less than 2 hours**, then from **70°F** to **41°F** in **less than 4 hours**. **Total cooling must be completed within 6 hours.**

Using a calibrated probe thermometer, the **internal temperature** of the food should be checked at regular intervals during the cooling process. Regular monitoring allows time for corrective actions if it is likely that the food will not cool to the target temperature within the time allowed.

Examples of corrective actions are:

- Reheating the TCS food to 165°F within 2 hours, then again attempting the cooling process.
- Changing to a cooling method(s) that may speed up the cooling process.

TCS foods that are not monitored at regular intervals to allow time for corrective action must be discarded if:

- The temperature is taken at the end of the 2-hour stage, and the product has not cooled from **135°F** to **70°F** or less**, or**
- The temperature is taken at the end of the 4-hour stage, and the product has not cooled from **70°F** to **41°F** or less.

TIP: If refrigeration is used for cooling, allow the cooked food to cool until the temperature of the product is near **135°F** before placing it inside the refrigeration unit. Hot foods, especially in large amounts, placed in a refrigeration unit could raise the inside temperature of the unit into the **temperature danger zone**. This could prevent the ability of the refrigeration unit to quickly cool the product through the **temperature danger zone**. It could also raise the temperature of cold foods already stored inside the refrigeration unit.

TCS foods prepared from **room temperature ingredients**, such as tuna salad or cut melon, must be cooled to **41°F** or less **within 4 hours.** Cold ingredients that are added to dense foods such as chicken, potato, and tuna salads can help the cooling process. Room temperature is generally considered 70°F. However, the room temperature inside a food preparation area may be higher due to heat generated by cooking and warewashing equipment.

Regulation 61-25, Retail Food Establishments, Chapter 3, Section 3-501.15(A) provides several methods that may be used to achieve safe cooling goals. The most effective method used may depend on the type and/or quantity of food being cooled.

Additional guidance may be found on the Proper Cooling Temperatures (Las Temperaturas de Mantenimiento Adecuadas, 适当的冷却温度) fact sheet. The fact sheet includes an example of a rapid cooling temperature log that may be used to ensure that TCS foods are being properly monitored during the cooling process.