Cooling Cooked Time/Temperature Control for Safety Foods and the FDA Food Code: for Food Employees

U.S. FOOD & DRUG ADMINISTRATION

One of the top contributors to foodborne illness is improper cooling of Time/Temperature Control for Safety (TCS) foods. Following the FDA Food Code cooling guidelines prevents this problem.

Cooling to Avoid the Temperature Danger Zone

Bacteria or other pathogens that cause foodborne illness can grow rapidly on TCS foods when they are not cooled properly. The "Temperature Danger Zone" is when food is most susceptible to pathogen growth—usually between 41°F and 135°F (5°C and 57°C).

- The amount of time food spends in this range needs to be minimized by proper cooling.

Cooling typically occurs when:

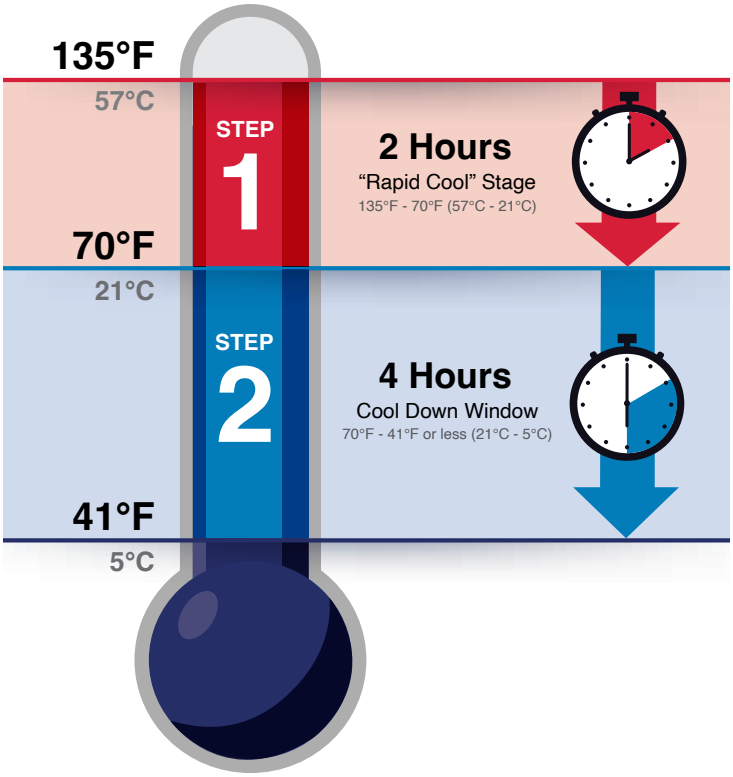
- Leftovers are put into the refrigerator to be stored.
- After preparing hot foods, but before you intend to serve them.
- After preparing foods from room temperature that are not getting used immediately.
- After milk and molluscan shellfish are delivered and placed under refrigeration.

The FDA Food Code requires a two-step cooling process for cooked TCS Food:

1. A two-hour "rapid cool" from 135°F to 70°F (57°C to 21°C)
2. Followed by a 4-hour window where foods must be cooled to 41°F or less (21°C to 5°C)

This means that within two hours, the food must be cooled from cooking temperature (135°F) to 70°F in order to eliminate risk of pathogen growth. Over the next 4 hours the food must be cooled from 70°F to 41°F or less.

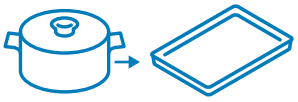
Note: If 70°F is reached before 2 hours, you have the remaining time to reach 41°F or less.



Keep food out of the danger zone to avoid risk of foodborne illness!

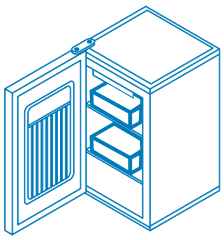
Food Code:

Section 3-501.15 of the Food Code recommends using **one or more** of following methods be employed to assist with the cooling of TCS Food:



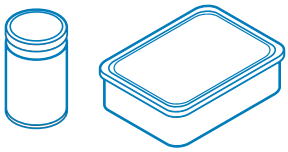
Placing the food in shallow pans

Separating the food into smaller or thinner portions

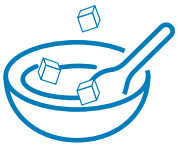


Using rapid cooling equipment

Stirring the food in a container placed in an ice water bath



Using containers that facilitate heat transfer



Adding ice as an ingredient, or other effective methods

When placed in cooling or cold holding equipment, food containers in which food is being cooled shall be:

- Arranged in the equipment to provide maximum heat transfer through the container walls, and
- Loosely covered, or uncovered if protected from overhead contamination, during the cooling period to facilitate heat transfer from the surface of the food.

For more information:

- FDA, Poster: Why It's Important to Cool Food Properly. Multiple translations available.
- FDA, Retail Food Protection Industry Educational Materials (See Section "Proper Cooling of Time-Temperature Control for Safety Foods") https://www.fda.gov/food/retail-food-industryregulatory-assistance-training/retail-food-protection-industry-educational-materials
- CDC, Food Cooling Practice Improvements: https://www.cdc.gov/restaurant-food-safety/php/practices/food-cooling.html
- FDA Food Code: https://www.fda.gov/food/fda-food-code/food-code-2022
- FDA Job Aid: Time and Temperature Control for Safety Foods: https://www.fda.gov/files/food/published/Job-Aid--Time-and-Temperature-Control-for-Safety-Foods.pdf