

Cooling Time/Temperature Control for Safety Food (TCS)

PREVENTING BACTERIA FROM MULTIPLYING OR FORMING TOXINS

Safe cooling times and temperatures

- TCS food must be cooled from 135°F to 70°F within 2 hours and completely cooled to 41°F or below within 6 hours.
- TCS food prepared from ingredients at room temperature must be cooled to 41°F or below within 4 hours.

Examples of safe cooling

Properly cooked chili is cooled from 135°F to 70°F in 1 hour. Five hours remain to completely cool the chili to 41°F.

Tuna salad prepared from room temperature ingredients is cooled from 68°F to 41°F in 4 hours or less.

Examples of unsafe cooling

Properly cooked chili is cooled from 135°F to 41°F in 6 hours, but the initial cooling to 70°F took 3 hours. The chili must be discarded.

Tuna salad prepared from room temperature ingredients is cooled from 68°F to 50°F in 4 hours. The tuna salad must be discarded.

Temperature danger zone

The temperature range in which disease causing bacteria grow best in TCS food is called the temperature danger zone.

- The temperature danger zone is between 41°F and 135°F.
- TCS food must pass through the temperature danger zone as quickly as possible.
- Keep hot food hot and cold food cold. Always use a thermometer to check internal food temperatures.

Cooling methods

Cool food rapidly using one or more of the following cooling methods:

- Place food in shallow pans
- Separate food into smaller or thinner portions
- Place containers in an ice water bath and stir frequently
- Use metal containers
- Add ice as an ingredient
- Use rapid cooling equipment, such as blast chillers
- Use cleaned and sanitized ice wands
- Use other effective methods

When using cold holding equipment to cool food, provide space for air flow between and around containers. Always protect food from contamination.

Resources

[Minnesota Department of Health Food Business Safety](#)
www.health.state.mn.us/foodbizsafety

Minnesota Department of Health
Food, Pools, and Lodging Services
PO Box 64975
St. Paul, MN 55164-0975
651-201-4500
health.foodlodging@state.mn.us
www.health.state.mn.us

Minnesota Department of Agriculture
Food and Feed Safety Division
625 Robert Street N
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JANUARY 2019

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