

Time/Temperature Control for Safety Food

RECOGNIZING TCS FOOD AND ENSURING SAFE FOOD

Characteristics of TCS food

The definition of TCS food is based on the following characteristics of the food:

- pH, or acidity
- Water activity (aw)
- Interaction of pH and aw
- Heat treatment
- Packaging

Examples of TCS food

Food from animal origin that is raw, cooked or partially cooked, such as eggs, milk, meat or poultry.

Food from plant origin that is cooked such as rice, potatoes and pasta.

Food from plant origin such as raw seed sprouts, cut melons, cut tomatoes and cut leafy greens.

Mixtures including cut tomatoes or garlic-in-oil, unless modified to prevent growth of disease-causing bacteria or formation of toxins.

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.

Temperature controls

Using temperature controls minimizes the potential for harmful bacterial growth and toxin formation in TCS food. Temperature controls either keep food entirely out of the danger zone or pass food through the danger zone as quickly as possible.

Receiving

- If food temperatures do not meet requirements or if TCS food shows evidence of previous temperature abuse, do not accept the food, or discard the products.

Cold holding

- Maintain cold food at 41°F or below.
- Frozen food must remain frozen.

Thawing

- Thaw in the refrigerator, under running water or as part of the cooking process.
- Never thaw at room temperature.

Cooking

- Cook all TCS food to required temperatures and times.

Hot holding

- Maintain hot TCS food at 135°F or above.
- Properly cooked roasts may be held at 130°F or above.

Cooling

- 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.

Reheating

- Reheat food rapidly, within 2 hours.
- TCS food made in-house and reheated for hot holding must reach an internal temperature of at least 165°F for 15 seconds.

Resources

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

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

Minnesota Department of Agriculture
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To obtain this information *in a different format*, call:
651-201-4500 or 651-201-6000.