

# Safe Cooling Methods

## Retail Food Establishments – Food Safety

Proper cooling prevents the rapid growth of harmful bacteria and other germs that could result in a foodborne illness. Cooked [Time/Temperature Control for Safety \(TCS\) Foods](#) that are to be stored under refrigeration for future service must be cooled in two stages: From **135°F** to **70°F** or less within 2 hours, then from **70°F** to **41°F** or less within 4 hours.

Using the appropriate cooling method can minimize the time foods are in the temperature danger zone (between **135°F** and **41°F**). Cooling foods quickly can also help maintain quality. **More than one method may be needed to effectively cool product depending on the type and/or quantities of food.** Pots, pans, and similar food equipment, and utensils made of metal, such as stainless steel or aluminum, help cool foods faster.

### ICE

**Ice as an ingredient** – At the end of the cooking process, add ice as a replacement for all or some of the water in the recipe of foods such as soups and sauces, then **frequently stir** the food to increase the rate of cooling.

**Ice bath** – Fill a compartment of a clean prep sink, 3-compartment sink or large container with ice and cold water.

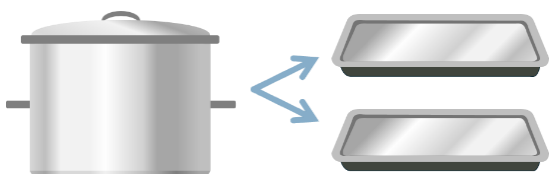
- **For soups, sauces and similar foods** - Place the container (e.g., pot, pan) of food into the ice bath. Be careful that the food container is not fully submerged. The level of the ice bath should be just above the level of the food inside the container.
- **Vacuum packaged foods** – Foods prepared using a cook-chill or sous vide special process method may be placed directly into the ice bath. Vacuum packaged foods should be fully immersed into the ice bath.

Product in the ice bath must be **stirred frequently** to ensure that all parts of the food cools evenly.

**Ice paddle** – A clean, properly constructed ice paddle filled with water then frozen, or filled with an ice and water mixture may be immersed directly into a container of food. Paddles work best with liquid foods such as soups, sauces, and gravies. **Stir frequently** to promote even cooling.



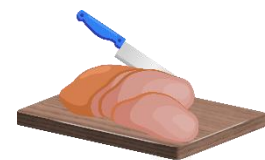
### SHALLOW PANS/SLICING



Small portions cool faster than large portions. Transferring foods from large containers into shallow pans, that are no more than 4-inches deep, increases the surface area of solid (e.g., roast beef, ham, turkey, casseroles, lasagna) and liquid foods exposed to cold. Solid foods should be sliced into smaller pieces and placed in single layers in the pans. Shallow pans may also be used to cool such foods as rice and pastas.

Food in shallow pans must be placed inside a refrigeration unit for cooling. It is important that pans are spaced to allow airflow around the product. During the cooling process, pans that are protected from overhead contamination may be stored loosely covered or uncovered to allow heat to escape. For guidance see Rules for Refrigerated Storage ([English/Español](#), [English/中文](#)).

Once properly cooled in shallow pans, the food may be transferred into a larger container for refrigerated storage.



### BLAST CHILLER

Blast chillers are refrigeration units specifically designed to rapidly cool foods. They are not designed for food storage. Depending on the type and quantities of food, and the starting temperature, on average a blast chiller cools food to **41°F** within 2 hours which decreases the time needed for temperature monitoring. Manufacturer's guidance should be followed.

Blast chillers are ideal for food establishments (e.g., cafeterias, caterers, buffets, delis) that cook foods in large quantities; or that are limited on space for cooling inside refrigeration units that are primarily used for storage.

Additional guidance may be found on the [Proper Cooling Temperatures](#) ([Las Temperaturas de Mantenimiento Adecuadas](#), [适当的冷却温度](#)) fact sheet.

