



Potentially Hazardous Foods

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What is a Potentially Hazardous Food?

The Food Code defines a potentially hazardous food (PHF) as a natural or synthetic food that requires temperature control because it is capable of supporting:

- The rapid and progressive growth of infectious or toxigenic microorganisms, **or**
- The growth and toxin production of *Clostridium botulinum*, **or**
- In raw shell eggs, the growth of *Salmonella enteritidis*.

The phrase does not mean a naturally dangerous food (for example: a poisonous mushroom).

Which Foods Would be Considered Potentially Hazardous?

Microorganisms generally grow rapidly in moist, high protein foods that have not been acidified or otherwise further processed to prevent such growth. Examples of PHFs include, but are not limited to:

1. Animal foods that are raw or heat treated such as:
 - Milk or milk products including cheese, sour cream, and whipped butter
 - Meats including raw or partially cooked bacon
 - Shell eggs
 - Fish

- Poultry and poultry products
- Shellfish

2. Food derived from plants that are heat treated including:
 - Onions (cooked and rehydrated)
 - Cooked rice
 - Soy protein products (example: Tofu)
 - Potatoes (baked or boiled)
3. Food derived from plants that consist of:
 - Cut melons, or
 - Raw seed sprouts.
4. Garlic-in-oil, and other vegetable-in-oil mixtures that are not treated to prevent the growth and toxin production of *C. botulinum*;
5. Certain sauces, breads, and pastries containing potentially hazardous food (examples: meat, cheese, cooked vegetables or cream)

How Should a PHF be Handled?

Both time and temperature must be carefully controlled to ensure the safety of these foods.

Time

Mark ready-to-eat PHF with the date of discard if these foods are held under refrigeration for more than a cumulative total of 24 hours before sale or service. Sections 3-501.17 – 18 of the 1999 Food Code and the MDA fact sheet entitled "Date Marking" describe required procedures.

*Note: This document is for educational purposes only and should not be considered a replacement to reading the Food Code and Michigan Food Law of 2000. Food safety information and additional copies of this and other fact sheets are available from the Michigan Department of Agriculture's web page www.michigan.gov/mda

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Temperature

Hold hot cooked PHF at 140°F or above and cold PHF at 41°F or lower.

Meet required internal temperatures when cooking or reheating PHF.

What is Not a PHF?

- An air cooled hard boiled egg with shell intact;
- A food with water activity of 0.85 or less;
- A food with a pH of 4.6 or below when measured at 75°F;
- A food in a hermetically sealed container commercially processed to achieve and maintain sterility;
- A food for which laboratory evidence has demonstrated that rapid and progressive growth of pathogens or the slower growth of *C. botulinum* cannot occur.

Food establishment managers are responsible for accurately determining which of the foods they serve or sell are potentially hazardous and therefore require strict temperature control.

Assistance in determining if food meets these requirements is generally available from food industry consultants, independent consulting laboratories certified to conduct microbiological testing of foods, and university-based food scientists.

Verifying that Foods are not Potentially Hazardous

Regulatory personnel verify that foods maintained without temperature control are not potentially hazardous. Actions regulators take may include, but are not limited to:

- Requesting a copy of analytical testing results;
- Requiring written assurance that a food is not potentially hazardous. Relevant information normally includes:
 - Name and address of the independent agency or laboratory that conducted the evaluation.
 - Procedure/methodology used
 - Conclusions and scientific basis for those conclusions
- Taking a sample of the food for analysis at any given time to verify its safety.

If a Food Is Not a PHF, Could It Still Cause Foodborne Illness?

Yes. Although a food does not support the growth of microorganisms, it can still be contaminated at levels to cause illness. Example: an outbreak of *Salmonella agona* was caused by contamination of dry breakfast cereal.

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