

Reference Document: 2013 FDA Food Code

Provision: 1-201.10

Document Name: Heat sealing without a vacuum

Date: January 4, 2017

Question: When packaging food in a retail food establishment, does the 2013 Food Code definition of reduced oxygen packaging apply to the use of plastic bags or plastic films that have been heat sealed without drawing a vacuum?

Response:

No. The process of heat sealing a time temperature control for safety (TCS) food in packaging (a plastic bag or a plastic film on trays) without drawing a vacuum or otherwise modifying the atmosphere inside the package would not meet the 2013 Food Code definition of reduced oxygen packaging, provided that the food being packaged is below 135°F at the time of packaging.

The 2013 FDA Food Code defines “Reduced Oxygen Packaging” (ROP) as:

- “The reduction of the amount of oxygen in a package by removing oxygen; displacing oxygen and replacing it with another gas or combination of gases; or otherwise controlling the oxygen content to a level below that normally found in the atmosphere (approximately 21% at sea level); and”

A reduced oxygen environment occurs in a package when less oxygen is present in the package relative to the amount of oxygen expected to be present in the atmosphere (typically 21% at sea level). The Food Code definition of reduced oxygen packaging is limited to the intentional or purposeful methods used by food establishments to create a reduced oxygen environment within a packaged TCS food product at the time of packaging.

Heat sealing a hot (at or above 135°F) TCS food without modifying the atmosphere or drawing a vacuum leads to the concern of *C. botulinum* growth in the packaged TCS food. This is because heating a TCS food to 135°F or greater removes oxygen from the food and thereby lowers the oxygen level in that food. As a result, heat sealing this hot TCS food that now has a lower oxygen level than normally found in the atmosphere results in a package with an oxygen level below what is normally found in the atmosphere, thereby creating an environment that aligns with the Food Code definition of ROP.

The model Food Code is neither federal law nor federal regulation and is not preemptive. It represents FDA's best advice for a uniform system of regulation to ensure that food at retail is safe and properly protected and presented. The model Food Code provisions are designed to be consistent with federal food laws and regulations, and are written for ease of legal adoption at all levels of government.

References:

1. 2013 FDA Food Code, 1-202.10 Statement of Application and Listing of Terms.

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