

ULTRAHIGH-PRESSURE

SHELLFISH PRODUCTS



***Fresher Under Pressure®* Provides Quality, Food Safety and Extended Shelf Life**

Fresher Under Pressure Serves the Market

Consumers expect safe foods, yet foodborne pathogens cause millions of illnesses every year. These preventable illnesses result in thousands of deaths. *Fresher Under Pressure* from Flow International Corporation, the leader in ultrahigh-pressure food processing equipment, is a viable tool for increasing food safety.

By introducing the shellfish to very high pressures for less than a few minutes, spoilage organisms and harmful pathogens are inactivated. The shellfish retains its original texture, color, shape and nutritional content, and also has the potential for extended refrigerated shelf life.

A significant benefit to processors is that high pressure processing (HPP) automatically shucks the shellfish from its shell. The membrane holding the meat to the shell is separated, and since the shellfish remains totally intact, the size and weight of the shucked meat can increase yield by over 10 percent, resulting in an even more juicy and tasty product.

Fresher Under Pressure Advantages

Products retain fresh or just prepared characteristics without changes in appearance, flavor or nutrition

Increases food safety without the use of heat or chemicals

Pressure transmission is instantaneous and uniform throughout food

Bacteria inactivation is low energy

HPP produces no by-products

Batch Processing Benefits

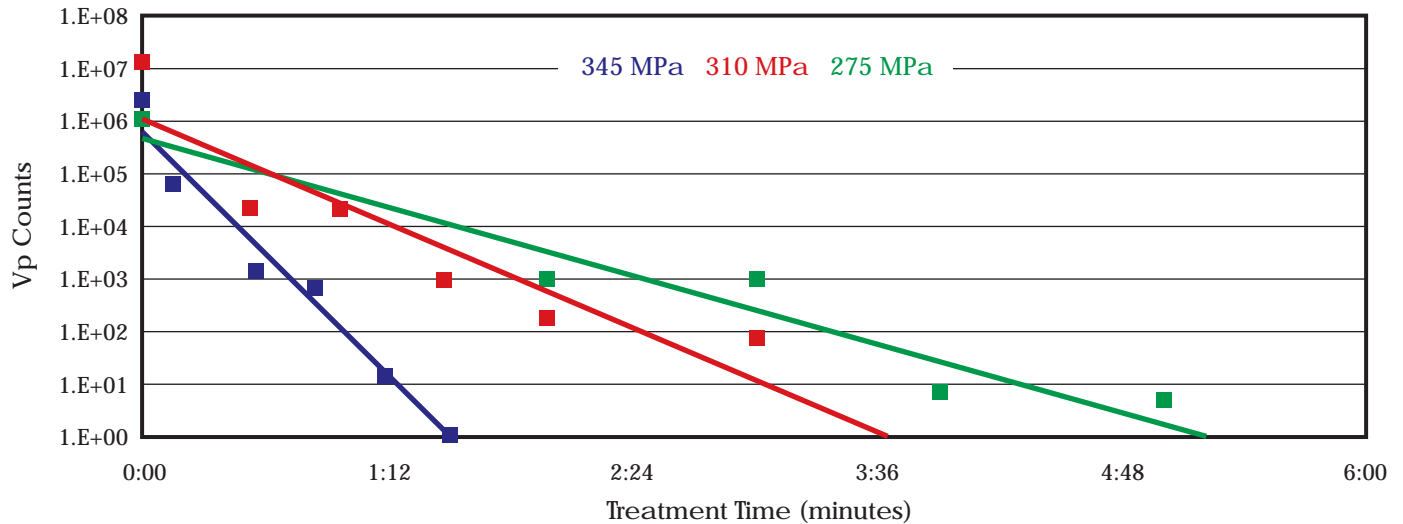
Product can be pressurized in the shell, in bulk, or in the final consumer package; most plastic food packages are suitable, including vacuum and gas-packed.

Integrates with conventional equipment and allows for rapid changeover between product line variations in food type, package size and format.

***“Fresher
under
Pressure”***

OYSTERS

HPP Treatment of Inoculated Oysters



Data source: "High Pressure Processing of Oysters and Salmon to Reduce Microbial Pathogens"; H. Calk, M. Morrissey, H. An, and P. Reno, presented at the Technical Innovations in Seafood Products & Processing Conference, Orlando, FL, February 11-14, 2000.

Inactivation of Vibrio

- High hydrostatic pressure inactivated all strains of pathogenic Vibrio tested at 200 to 300 MPa for 5 to 15 minutes at 25°C:
 - Vibrio parahaemolyticus ATCC 17803
 - Vibrio vulnificus ATCC 27562
 - Vibrio cholerae ATCC 14035
 - Vibrio cholerae non-O:1 ATCC 14547
 - Vibrio hollisae ATCC 33564
 - Vibrio mimicus ATCC 33653

Data source: D. Berlin, D. Herson, D. Hicks, and D. Hoover; Applied and Environmental Microbiology, June 1999.



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