

U L T R A H I G H - P R E S S U R E

G U A C A M O L E



***Fresher Under Pressure*® Provides the Highest Quality Foods with 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 (UHP) food processing equipment, can eliminate these pathogens and retain fresh quality, extend shelf life and create opportunities for new product development.

Semi-Continuous Processing Benefits

Highest efficiency processing for pumpable foods
Post-process packaging allows increased options
Modular design for capacity growth
Process is compatible with in-line production methods

Batch Processing Benefits

Processed 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 Advantages

Products retain fresh or just prepared characteristics without changes in appearance, flavor or nutrition
Increases food safety without the use of heat
Pressure transmission is instantaneous and uniform throughout food
Bacteria inactivation is low energy
UHP produces no by-products
Reduction of spoilage organisms without chemical preservatives
Extended shelf life enables wider product distribution and results in fewer product returns
Allows the introduction of new premium products

***“Fresher
under
Pressure”***

GUACAMOLE

Pressure Inactivation of Foodborne Pathogens in Guacamole (pH 5.3) Without Preservatives

Process Time at 87,000 psi [600 MPa]	E. coli O157:H7 (3-Strain Mix) CFU/g	
	18 Hour Post UHP	6 Days Post UHP
Inoculated, non-UHP	24,000,000	5,000,000
2 minutes	<10.0	<10.0
3 minutes	<10.0	<10.0
	Salmonella (9-Strain Mix) CFU/g	
	18 Hour Post UHP	6 Days Post UHP
Inoculated, non-UHP	25,000,000	2,000,000
2 minutes	<100.0	<100.0
3 minutes	<100.0	<100.0
	Listeria monocytogenes (Scott A) CFU/g	
	18 Hour Post UHP	6 Days Post UHP
Inoculated, non-UHP	16,000,000	3,000,000
2 minutes	<100.0	<100.0
3 minutes	<100.0	<100.0

AVOCADO PULP

Pressure Inactivation of *Salmonella* and *Listeria monocytogenes* in Avocado Pulp (pH 6.5) Without Preservatives

Process Time at 87,000 psi [600 MPa]	Salmonella (9-Strain Mix) CFU/g	
	18 Hour Post UHP	6 Days Post UHP
Inoculated, non-UHP	4,900,000	890,000
2 minutes	<100.0	<10.0
3 minutes	<100.0	<10.0
	L. monocytogenes (Scott A) CFU/g	
	18 Hour Post UHP	6 Days Post UHP
Inoculated, non-UHP	7,600,000	3,100,000
2 minutes	<100.0	<10.0
3 minutes	<100.0	<10.0



Flow

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