

High Pressure Processing (HPP) facilities at Food Science Department Rutgers University, New Brunswick, NJ 08901

Contact:

Professor Mukund V. Karwe, karwe@aesop.rutgers.edu, Tel. 848-932-5487

1. Large HPP unit



Equipment specifications

Capacity: Product volume of 10 liters

Process fluid: filtered tap water

Pressure range: 100 MPa to 575 MPa.

Hold time: 1 min to 60 min.

Initial temperature: 7 °C to 50 °C.

Suitable products for HPP

Generally, any product of high water activity without any air pockets or voids is suitable for HPP. For example, fruit juices, vegetable juices, soups, smoothies, jellies, meats, sea food are all suitable. The product **must** be packed in flexible containers with little or no head space. The vessel bore diameter (for product package to fit in) is 5 inches.

Note: high pressure processing near room temperature will not cause significant inactivation of spores, including *Clostridium Botulinum* spores, which is a primary concern for shelf stable low acid products. Salmonella in peanut butter cannot be inactivated to a sufficient degree by HPP.

2. Smaller table-top high pressure vessels for research purposes



Equipment specification (vessel on the left)

Capacity: 26 mL

Pressure chamber inner diameter: 15 mm

Pressure range: 0.1 MPa to 800 MPa

Hold time: 1 min to 30 min

Temperature: room

This vessel also has two sapphire windows, which allow for fluorescence measurements. We have a portable spectrophotometer with fiber optics that can be inserted into the windows, for excitation and emission measurements.

Equipment specification (vessel on the right)

Capacity: 75 mL

Pressure chamber diameter: 25 mm

Pressure range: 0.1 MPa to 150 MPa

Hold time: 1 min to 30 min

Temperature: room