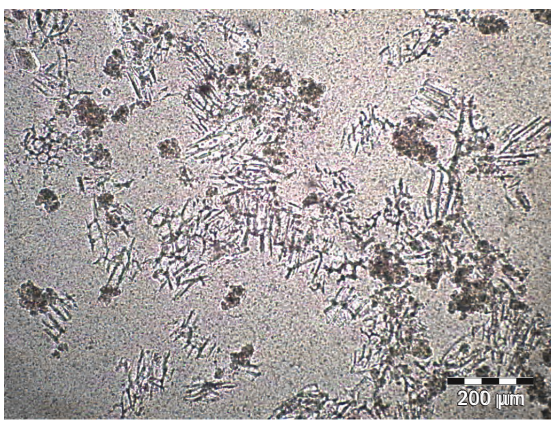
Materials Processing Data Sheet

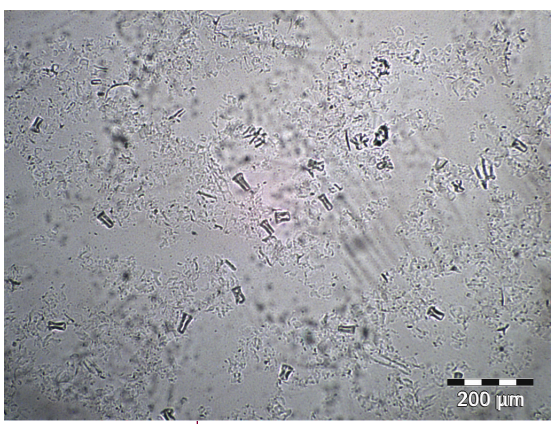
Microfluidizer® Processor Laboratory Results

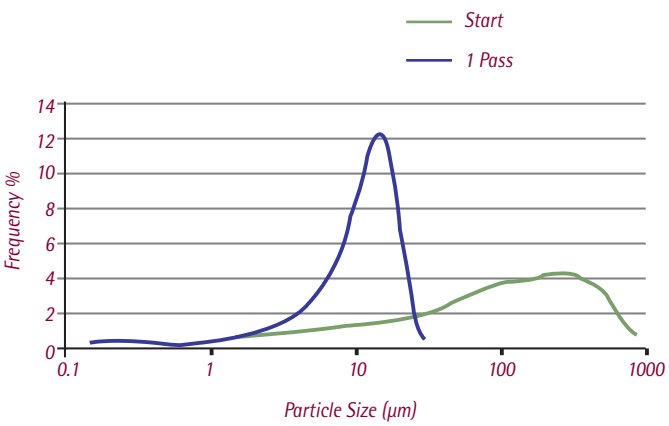
Industry:	Food
Product:	High protein/fiber drink
Test Objective:	Increase fiber content while improving mouth feel
Processor:	M-110Y
Chambers:	Auxiliary Processing Module (upstream) H30Z (200 µm) Interaction Chamber (downstream) H10Z (100 µm)
Number of passes:	1
Shear per pass:	5,000,000 sec^{-1}
Process Pressure:	25,000 psi
Mean Particle Size:	Start 122 µm 1 Pass 11 µm

Before Processing



After Processing





Summary of Results: Increased fiber content by 40% without affecting mouth feel, and increased profitability by significantly reducing fiber removal costs.

Reference #FY92918-1

Materials Processing Data Sheet

HC-2000 GMP Pneumatic — **Pressure Range 250-2,000 psi**
HC-5000 GMP Pneumatic — **Pressure Range 500-5,000 psi**

The HC-2000 is our lightweight, easy to use, low pressure homogenizer. With sanitary fittings and 300 series stainless steel parts, processing with the HC-2000 meets GMP requirements. The HC-2000 is suitable for batch and continuous processing with flowrates to 2 liters/minute. The HC-5000 is identical to the HC-2000 but with higher pressure capabilities (to 5,000 psi) and flow rates to 950 ml/minute.

HC-8000 Sanitary Pneumatic — **Pressure Range 1,000-8,000 psi**

The HC-8000 complies with sanitary standards to meet demanding product specifications and tight quality control. This unit employs a flow-through, sanitary pressure transducer with digital display and generates liquid pressures up to 8,000 psi and flowrates to 1 liter/minute.

M-110S Small Volume Pneumatic — **Pressure Range 3,000-23,000 psi**

The M-110S is an air-powered unit designed to process smaller sample volumes than the other Microfluidizer models with greater product recovery. For samples as small as 14 ml (with >12ml recovery) up to continuous operation.

M-110Y High Pressure Pneumatic — **Pressure Range 3,000-23,000 psi**

The M-110Y provides the highest operating pressure of our laboratory units. It is specifically designed for applications that require optimum pressure, such as cell rupture. The M-110Y is ideally suited for improving product yield and minimizing downtime.

M-110EH-30 Electric-Hydraulic — **Pressure Range 2,500 - 30,000 psi**

The M-110 EH is specifically designed for those customers that prefer an electrically-driven unit over a pneumatically-driven one. The unit reaches pressures as high as 30,000 psi and is mounted on locking casters for mobility.

M-140K High Pressure Electric-Hydraulic — **Pressure Range 8,000 - 40,000 psi**

The M-140K is built to sustain prolonged high pressure demands and provide users with the opportunity to create new formulations, and improve existing products. The unit reaches pressures as high as 40,000 psi and is mounted on locking casters for mobility.

M-210EH Electric-Hydraulic — **Pressure Range 2,500-30,000 psi**

The M-210 EH Series is the pilot plant line specifically designed to utilize an electric-hydraulic pump in place of the standard air-powered pump. Results achieved on laboratory Microfluidizers will scale up to this level. These units can achieve pressures up to 30,000 psi and flowrates to 1.12 gpm. The M-210EH is mounted on locking casters for mobility.

M-700 Series — **Pressure Range to 40,000 psi**

The M-700 Series offers pilot and production performance levels with specific features amenable to industrial applications, including coatings, waxes, inks, pigments, sealants, etc. The units are available in 15, 25, and 50 horsepower models, and can be fitted with 1 or 2 intensifier pumps that can be operated with independent product streams and flow rates.

M-610 Custom Designed Electric-Hydraulic Production — **Pressure Range to 40,000 psi**

The M-610 Series Production Microfluidizer is capable of flowrates to 18 gpm and can process samples from one gallon to continuous operation. These custom built units employ an electric/hydraulic intensifier pump which can be designed to generate process stream pressures up to 40,000 psi.

HC-8000

M-700

M-710

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