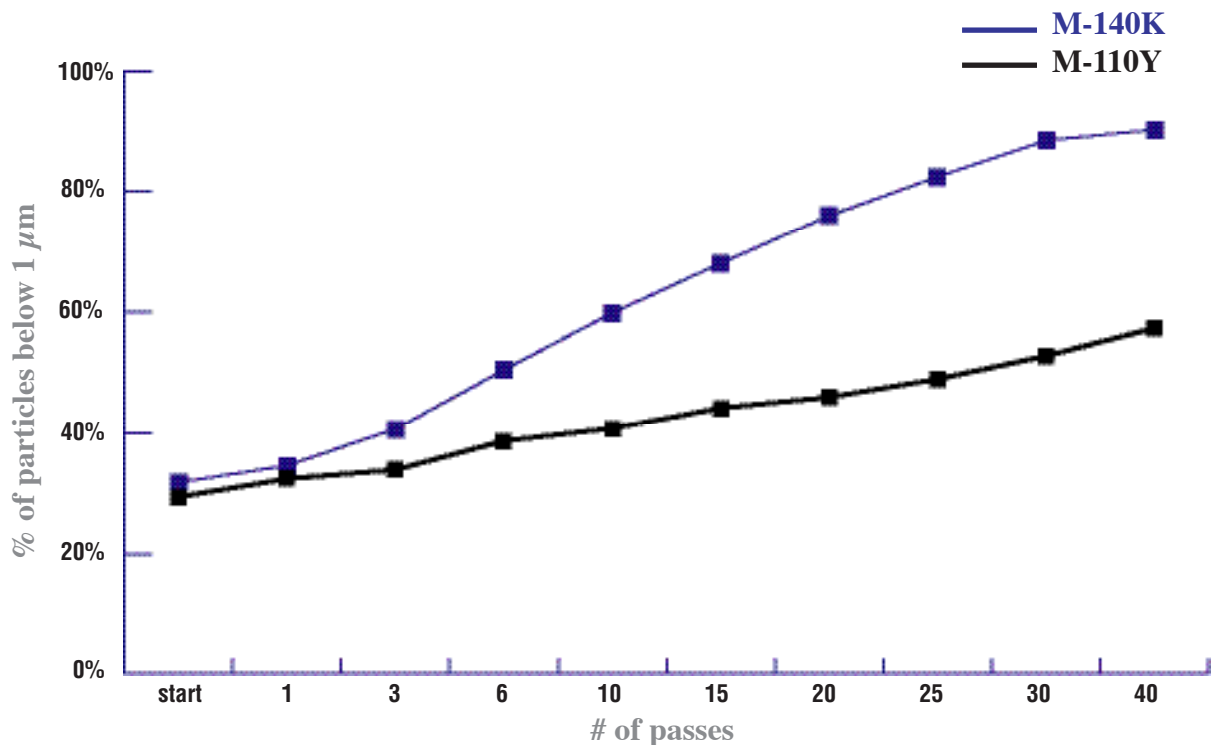


# Materials Processing Data

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Reference #BPY/14090993

Industry:	Pharmaceutical
Product:	2% Budesonide dispersion in water
Test Objective:	Reduce the particle size of Budesonide so that 90% of particles are below $1\mu\text{m}$
Processor:	M-110Y vs M-140K
Chambers:	Interaction Chamber (downstream) G10Z ( $87\mu\text{m}$ ) Auxiliary Processing Module (upstream) H30Z ( $200\mu\text{m}$ )
Number of passes:	40 passes (M-110Y); 32 passes (M-140K)
Shear per pass:	Approx. $5,900,000\text{ sec}^{-1}$ (M-110Y) @ 23,000 psi Approx. $7,800,000\text{ sec}^{-1}$ (M-140K) @ 40,000 psi
Process Pressure:	23,000 psi (M-110Y); 40,000 psi (M-140K)



Summary of Results: The M-140K Microfluidizer processor reduced 90% of particles to  $0.649\mu\text{m}$  in 32 passes vs the M-110Y, which reduced 57.4% of particles to  $0.960\mu\text{m}$  in 40 passes.

# Equipment Info

## M-110S Small Volume Pneumatic

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.

Pressure Range 3,000-23,000 psi

## M-110Y High Pressure Pneumatic

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.

Pressure Range 3,000-23,000 psi

## M-110EHi Industrial Electric-Hydraulic

The M-110EHi is an electric-hydraulic laboratory unit that is housed in an epoxy painted enclosure. This is a less expensive option for industrial applications that do not require features such as SIP and a stainless steel enclosure to meet cleanroom standards.

Pressure Range 2,500-25,000 psi

## M-110EH Electric-Hydraulic

The M-110EH is specifically designed for those customers that prefer an electrically-driven unit over a pneumatically-driven one. The unit reaches pressures as high as 25,000 psi and is mounted on locking casters for mobility.

Pressure Range 2,500 - 25,000 psi

## M-140K High Pressure Electric-Hydraulic

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.

Pressure Range 8,000 - 40,000 psi

## HC-2000 GMP Pneumatic & HC-5000 GMP Pneumatic

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.

Pressure Range 250-2,000 psi

Pressure Range 500-5,000 psi

## HC-8000 3A Sanitary Pneumatic

The HC-8000 complies with 3A 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.

Pressure Range 1,000-8,000 psi

## M-700 Series

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

Pressure Range to 40,000 psi

## M-210 EH Electric-Hydraulic

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-210 EH is mounted on locking casters for mobility.

Pressure Range 2,500-30,000 psi

## M-610 Custom Designed Electric-Hydraulic Production

The M-610 Series Production Microfluidizer is capable of flowrates to 50 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.

Pressure Range to 40,000 psi



M-110Y



M-700



M-610