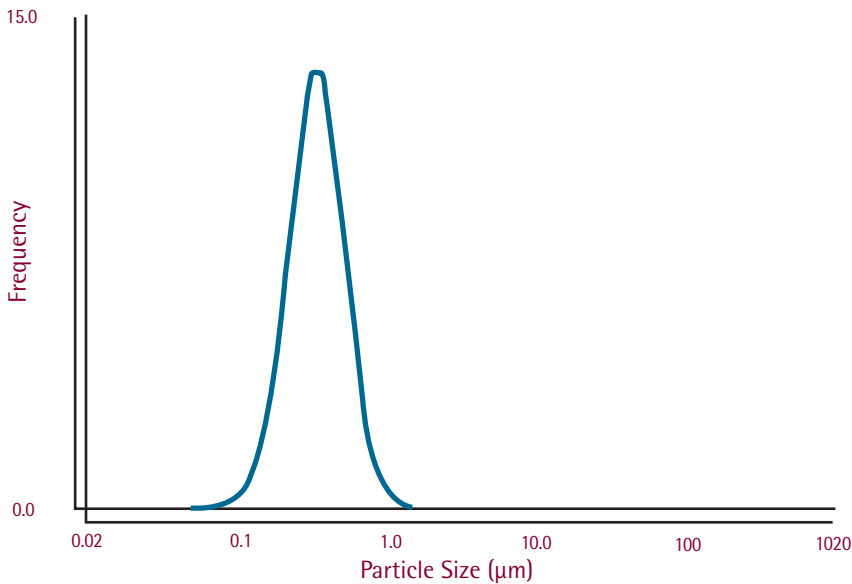
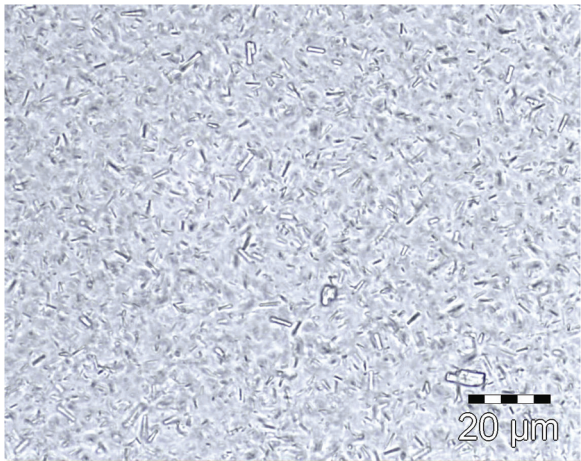


# Materials Processing Data Sheet

## Microfluidics Reactor Technology

Industry:	Pharmaceutical
Product:	Drug nanosuspension
Process:	Solvent/antisolvent crystallization
Reactants:	Drug solution and water – reactant streams are miscible
Processor:	Microfluidics reactors
Chambers:	Interaction Chamber (upstream) F20Y (75 $\mu\text{m}$ ) Auxiliary Processing Module (downstream) H30Z (200 $\mu\text{m}$ )
Number of passes:	1-3
Process pressure:	12,000 psi
Median particle size:	$D_{50}$ =480 nm



Summary of results:

As a drug solution interacted with an anti-solvent, the drug precipitated in the form of nanocrystals

# Materials Processing Data Sheet

## 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 flow rates to 2 liters/minute at up to 138 bar (2,000 psi). The HC-5000 is identical to the HC-2000 but with higher pressure capabilities [to 345 bar (5,000 psi)] and flow rates to 950 ml/minute.

## HC-8000 Sanitary Pneumatic

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 552 bar (8,000 psi) and flow rates to 1 liter/minute.

## M-110S Small Volume Pneumatic

The M-110S is an air-powered unit designed to process smaller sample volumes than the other Microfluidizer processors with greater product recovery. For samples as small as 14 ml (with >12ml recovery) up to continuous operation at 1586 bar (23,000 psi).

## M-110Y High Pressure Pneumatic

The M-110Y is a versatile and portable laboratory unit. 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-110P Electric "Plug and Play"

The M-110P produces a flow rate range of 110-155 ml/min at any process pressure up to 2068 bar (30,000 psi). Powered by a standard 20 amp, single phase electrical outlet, it requires no compressed air and no hydraulic cooling water.

## M-110EH-30 Electric-Hydraulic

The M-110EH is specifically designed for those customers that prefer an electrically-driven unit capable of laboratory sized batches as well as small production volumes. The unit reaches pressures as high as 2068 bar (30,000 psi) and is mounted on locking casters for mobility. It is available as an ATEX unit for hazardous environments needing to meet CE standards, and a biopharmaceutical series to meet cGMP standards. It is also available in a small volume version.

## 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 2758 bar (40,000 psi) and is mounted on locking casters for mobility.

## M-700 Series

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 11, 19, and 37 kw (15, 25, and 50 hp) models, and can be fitted with 1 or 2 intensifier pumps that can be operated with independent product streams and flow rates. These machines are also available as preconfigured biopharmaceutical series for applications requiring cGMP standards.

## M-710 Electric-Hydraulic Production

The M-710 production Microfluidizer processor is capable of flowrates to 18 gpm and can process samples from one gallon to continuous operation. These 75 kw (100 hp) units employ an electric/hydraulic intensifier pump which can be designed to generate process stream pressures up to 2068 bar (30,000 psi).



HC-8000



M-110P



M-700

