Microfluidics™

Superior Knowledge | Superior Results

M700 Series

Pharma Enhanced

Microfluidizer™ Processors



M700 Series Pharma Enhanced Microfluidizer™ Processors

M7125 and M7250 Pharma Enhanced Microfluidizer Processor Provides Superior Results For Pilot and Production Environments

Since 1984, Microfluidics has provided life sciences and formulation scientists with critical tools used in the development and production of pharmaceutical formulations and recombinant technologies.

High shear fluid processing, Microfluidics' proprietary technology, uniformly reduces droplet and particle size to enable the production of stable nano-emulsions, nano-suspensions, liposomes and the nano-encapsulation of actives.

In addition, it offers the most efficient method for disruption of yeast, E. coli, plant and mammalian cells.

Microfluidizer™

Recommended For:

- Nano-emulsions (with and without API)
- Nano-dispersions
- Microencapsulation
- Cell disruption
- Fine Particle Deagglomeration

Unique Benefits

- Guaranteed scale up from lab and pilot scale Microfluidizer processors
- Easy to operate with simple manual controls
- Easy to maintain with most maintenance points easily accessed
- Highly secure batch records, 21 CFR Part 11 compliant
- CIP process with no equipment takedown
- Thermally sensitive materials processed safely
- More efficient processing, usually requiring fewer passes than other processing machinery
- Batch to batch process reproducibility assured

	M7125	M7250
Pressure Range	up to 689, 1379, or 2068 bar (10,000, 20,000 or 30,000 psi)	
Product Flow Rate*	up to 7.56 lpm (2.0 gpm)	up to 15.12 lpm (4.0 gpm)
Product Feed Temperature Range	-10ºC to 75ºC (14ºF to 165ºF)	
Power Requirement	18.6 kw (25 HP)	37.3 kw (50 HP)
Utility Requirements	• COOLING WATER FOR HYDRAULIC Oil HEAT EXCHANGER • COOLING WATER FOR PROCESS FLUID HEAT EXCHANGER • COMPRESSED AIR FOR FEED PUMP AND CYCLING CONTROL SWITCHES requires 0.65 m3/min @ 6.2 bar (23 scfm @ 90 psi) minimum with -37ºC to -18ºC (-35ºF to 0ºF) dew point	
Dimensions** W x D x H	236 x 142 x 201 cm (93" x 56" x 79")	
Weight with oil**	816 kg (1,850 lbs)	1,089 kg (2,400 lbs)

*based on water **all weights and dimensions are approximate

M700 Series Pharma Enhanced Microfluidizer™ Processors

Standard Features

- Validatable under 21 CFR for cGMP
- Turnover documentation package for validation
- Installation Qualification / Operational Qualification (IQ/OQ) documentation
- Installation Qualification / Operational Qualification (IQ/OQ) execution
- Startup and training
- Stainless steel construction
- Product wetted surfaces finish to 0.5µm (20 Ra) nominal, electropolished and passivated
- Manual controls
- Feed pump, pharmaceutical grade
- CE compliant
- Interaction Chamber™ selected for your application
- Factory Acceptance Testing (FAT) / Site Acceptance Testing (SAT)
- Motor starter panel
- Ultra-Clean-In-Place (UCIP)
- Product heat exchanger - Pharma grade with active product temperature control, double tube sheet style
- Mass flow meter - Pharma grade
- Data acquisition and recorder system, Industrial Personal Computer (IPC); 21 CFR Part 11 compliant for electronic signature and record keeping
- Proprietary high pressure diaphragm priming valve
- Process pressure and temperature sensing

Key Features

- Up to 15 lpm @ 690 bar (4.0 gpm @ 10,000 psi) product flow rates
- 7.5 lpm @ 1,379 bar (2.0 gpm @ 20,000 psi) product flow rates
- 5.1 lpm @ 2,068 bar (1.3 gpm @ 30,000 psi) product flow rates
- Low product holdup volume (<1 liter)
- Small batch capable (minimum 5 liters)
- All product paths are sanitary grade and BPE compliant
- Complete package unit including motor starter panel and process interlocks
- Ultra Clean In Place (UCIP) using supplied feed pump or your CIP system pump
- All instruments and valves are sanitary grade, BPE compliant
- On board data acquisition for complete batch record audit trail
- On board flow meter to measure product and CIP flow rates
- PID control of process chilled water for product temperature management
- Factory Acceptance Testing (FAT)
- Complete document turn over package for validation support including IQ/OQ, material certification and calibrations
- On site start-up assistance, operator and maintenance training, SAT and IQ/OQ execution by our technical staff

M7125_M7250 Pharma Enhanced Microfluidizer™ Processor

Discovery to Commercialization

As a result of recent advances in high throughput screening and drug discovery, many new chemical compounds have been identified as possible drug candidates. Unfortunately, many of these compounds show poor water solubility and often are only marginally soluble in oil-based solvents.

The ultra high shear force developed by Microfluidizer processors solves this problem by reducing the particle size of active pharmaceutical ingredients to therapeutically relevant sizes that enables the production of drug products with improved bioavailability and stability.

Options

- Product inlet strainer
- Hydraulic oil
- Explosion proof (XP) compliant version available
- ATEX compliant version available
- Self contained seal quench system
- Conductivity sensors
- Automation
- Design Qualification

Cell Disruption for Biotechnology

From the gentle disruption of cultured cells for virus isolation to the challenging disruption of yeast and other fungi, Microfluidics offers technologies to meet the variable and demanding needs for cell membrane disruption.

This technology provides exacting process control for highly reproducible and efficient cell breakage while keeping temperatures under precise control to prevent denaturing.

Getting To Full Production

Results obtained on all laboratory units will scale up easily and in a linear manner to production volumes when the same operating conditions are employed.

Enhanced Microfluidizer processors include Ultra Clean In Place (UCIP) eliminating the need for disassembly and Clean Out of Place (COP). Data recording and validation support documentation including IQ/OQ is included to ensure your ability to comply with 21CFR part 11 guidelines.

Microfluidics™

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Material Processing Technologies

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