Microfluidics™

MP350 Microlyser™ Processor

An Innovation in Cell Disruption Production

Microlyser™

IDEX
Material Processing Technologies

MP350 Microlyser™ Processor

Since 1983, Microfluidics has been providing the life sciences sector and formulation scientists with the critical tools they need for the development and production of pharmaceutical formulations and recombinant technologies.

Microfluidics offers a range of products to deliver the most efficient method for rupturing a variety of cells including mammalian, bacterial and yeast cells.

The MP350 Microlyser™ processor is a new revolutionary hybrid approach to cell disruption, which pairs the proprietary Microfluidics Interaction Chamber™ with a unique sanitary electric pumping system to create a production scale solution.

This biopharma grade processor achieves maximum yields, improves product quality and delivers optimum yields in production scale cell disruption.

Advantages of the MP350 Microlyser™

- **Consistent Shear Rates with Fewer Passes** achieves high quality yields with limited risk of denaturation.
- **Controlled Temperature Regulation** preserves the integrity of temperature-sensitive contents.
- **Efficient Separation** prevents clogging issues and delivers shorter filtration times.
- **Ease of Cleaning** limits downtime and prevents contamination-free content.
- **Repeatable Results** provides consistency batch-to-batch.

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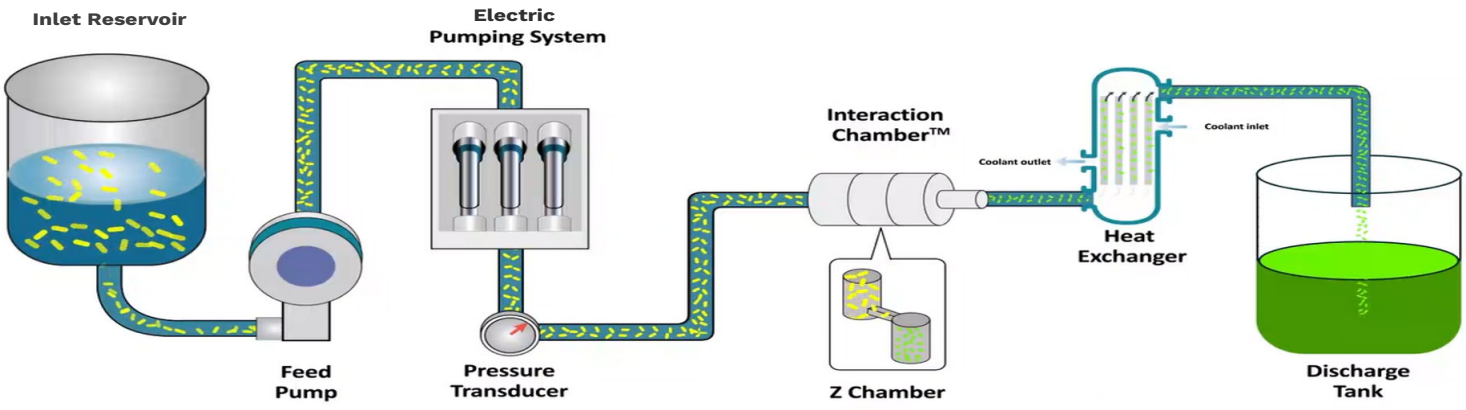
Unique Features and Benefits of the MP350 Enhanced Biopharma Microlyser™ Processor

- **Diamond Interaction Chamber™**
  Consistent shear & uniform processing results in reduced processing time & fewer number of passes.
- **Industrial PC with 15” Touchscreen HMI**
  21CFR Part 11 data logging system provides an audit trail for process pressure, temperature, alarms and batch records.
- **Patented Sanitary Electric Pumping System**
  Operating pressure up to 30,000 PSI (2068 bar) delivers optimal process efficiencies.
- **Steam-in-Place (SIP) and Clean in Place (CIP) Feature**
  Modular skid system for product feed arrangement with SIP and CIP capabilities to meet biotech industry standards.
- **Pharma Grade Process Piping**
  Ceramic plungers with U-cup seals ensure zero leaks in addition to reduced maintenance time and ease of cleaning.

How Microlyser™ Technology Works



Product enters the system via the inlet reservoir and is pulled into a patented sanitary electric pumping system which pushes the material through a fixed geometry Interaction Chamber™ where it experiences consistent, high shear rates and impact forces. All material receives the same treatment to achieve repeatable, reliable results. After passing through the Interaction Chamber™, the product is cooled in the heat exchanger resulting in reduced denaturing and increased yields.

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Technical Specifications

Pressure Range	Up to 2068 bar (30,000 psi)
Flow Rate Range	Up to 300 lph @ 2068 bar (5.0-5.2 lpm/300 lph)
Product Feed Temperature (max)	158°F (70°C)
Dimensions (L x W x H)*	73” x 37” x 71” (185 cm x 95 cm x 180 cm)
Power Requirement	50 HP (37.3 kW)
Weight	1800 kg (3970 lbs.)
Electrical Requirements	Three Phase / 380-460VAC / 50-60 Hz / 125 Ampere
Utility Requirements	Cooling water for lubrication: 10 LPM Water at 5-10°C (2.64 GPM Water at 41-50° F) Cooling water for product heat exchanger**: 100-150 LPM Water at 5-10°C (26.4-39.6 GPM Water at 41-50°F) WFI Seal quench: 5 LPM at room temperature and 2.5-3.0 barg pressure (1.32 GPM at 36.2-43.5 psi pressure) Pharmaceutical grade feed pump: Air operated double diaphragm for feed pressure: 0.4 µm (16Ra) surface finish, requires 0.85m^3/min @ 6.9 bar (30 SCFM @ 100 psi) minimum, -37°C to –18°C (-35°F to 0°F) dew point Require saturated clean steam supply: at 130°C & 145°C temperature @ 22.6 kg/hr @ 2.4 bar (50 lbs/hr @ 35 psi)

* May vary based on configuration
** May vary based on product requirements

Microfluidics International Corporation is the leader in design and production of laboratory and commercial processing equipment.

Microfluidics technology enables some of the world’s top companies to create superior products, develop intellectual property, improve process efficiency and capitalize on new revenue streams. We set the standard for nanoemulsion and nanoparticle applications.

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Microfluidics International Corporation
90 Glacier Drive, Suite 1000
Westwood, MA 02090, USA

Tel: 617-969-5452 • 800-370-5452
Fax: 617-965-1213

Email: mixinginfo@idexcorp.com
Web: www.microfluidics-mpt.com

Industry-Leading Insights & News:
https://www.microfluidics-mpt.com/blog

Prager Elektronik
Traunstraße 21, A-2120 Wolkersdorf
T:+43 2245 6725 F:+43 2245 559633
office@prager-elektronik.at
www.prager-elektronik.at

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