

ULTRAGENIZER

Pilot-Scale High Pressure Homogenizer



35 L/hr
Max. flow rate

60,000 psi
Max. pressure

15 mL
Min. sample volume

About UltraGenizer

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The UltraGenizer series high-pressure microfluidics homogenizers are a new generation equipped with diamond interaction chambers. These highly flexible pilot-scale devices feature a simple and elegant design. With a single pump system, the pressure can be adjusted flexibly from 0 to 60,000 psi.

Using ultra-high pressure microfluidics technology, materials can be homogenized to a stable and uniform nanometer level, achieving particle size reduction, transparency, increased stability, active substance delivery, and improved texture and taste. They meet the high-end nano-homogenization needs of the pharmaceutical, biotechnology, cosmetics, food, and special nano-material industries.

Features

- Efficient** More uniform particle size distribution
- Flexible** Flow range: **12~35 L/hr**, suitable for medium-scale production Continuous
- Stable** Working pressure up to **60,000 psi** ensures stable homogenization
- Intelligent** PLC real-time monitoring of flow, temperature, and pressure
- Safe** Hygienic stainless steel and pharmaceutical-grade surface treatment
- Economical** Affordable price for genuine microfluidics technology
- Quiet** Operating noise below 60 dB does not affect personnel

Application

- Cosmetics** Active ingredient encapsulation and product homogenization
- Pharmaceuticals** Nanoemulsions, liposomes, nanoparticles, fat emulsions
- Medical aesthetics** Injectable collagen, dermal fillers
- Food** Modification of biomolecules, nutrient lipid encapsulation
- Biotechnology** Vaccine adjuvants, cell disruption
- Fine chemicals** CMP polishing slurries, nanoxide dispersion
- New energy** Hydrogen fuel cell catalysts, graphene

Effortlessly expand linear amplification

Use liposome extruders in conjunction for scaled-up production.

Users are allowed to combine matching extruders as needed, enabling integrated homogenization and extrusion molding operations in continuous production processes, thereby providing greater capacity and higher production efficiency.



Wide range of flow rates

Suitable for pilot-scale validation and large-scale production

20,000 psi	35 L/hr
25,000 psi	30 L/hr
30,000 psi	25 L/hr
40,000 psi	20 L/hr
45,000 psi	15 L/hr
60,000 psi	12 L/hr

Genizer

Core components of micro-jet technology

Diamond interaction chamber

The diamond interaction chamber is a new generation ultra-high-pressure homogenization chamber that uses intense shear and impact to emulsify materials, reducing particle size and ensuring uniform dispersion. It is made of diamond and pharmaceutical-grade stainless steel, suitable for applications such as emulsions, liposome, suspensions, dispersion, and cell disruption.



Pharmaceutical-grade standards

Hygienic-grade stainless steel material, pharmaceutical-grade surface treatment

The UltraGenizer uses 316L stainless steel material and pharmaceutical-grade surface treatment, meeting strict requirements of the pharmaceutical industry. This ensures product quality and safety, complying with drug manufacturing standards.



High shear rates

Significant homogenization effects

The application of diamond interaction chamber technology enables UltraGenizer to generate extremely high shear forces, resulting in significant particle size reduction and uniform distribution. The core component, the diamond interaction chamber, features fixed geometric micro-channels without moving parts. This design ensures that UltraGenizer delivers consistent high-shear processing, whether handling small samples or large volumes, thereby achieving uniform and consistent particle refinement effects.



Pressure display Touchscreen digital display (PSI/Bar/Mpa switchable)

Weight ~260 kg (573 lbs)

Feed temperature Max. 70°C

Feed viscosity Below 2000cp

Power 380V/430V

Boost pump Direct drive motor + cascading booster system



Configurable items

Core part

Inlet

Outlet

Inlet check valve

Outlet check valve

Standard Configurations

Chamber 1PC

Stainless steel reservoir 300ml

Luer hose

Non-powder inlet check valve

N/A

Advanced Configurations

Multiple models of chambers, cooling parts available

Multi-specification stainless steel reservoir and luer syringes

Multi-specification luer syringes, stainless steel elbows

Powder inlet check valve

Outlet check valve available



High shear force

Millions of shears per second, compared with other traditional homogenizing equipment has an unparalleled shear rate, so that the particle size refinement distribution is more uniform, homogenizing effect is outstanding!



Shears / Sec

