Ultra High Pressure Homogenizer



Description

Our High-Pressure Homogenizer is a miniaturized bench-top biological sample processing unit. The machine has a built-in cooling circulation system to directly cool the homogenizing head, and homogenizing valves for different applications can be purchased. It is characterized by high pressure, small volume, easy operation, high processing efficiency and large sample output. It is the standard equipment for R&D and production in bioengineering and biopharmaceutical industries

Principle

Material from the material cup through the one-way valve into the high-pressure warehouse, through the pump body telescopic pressurization so that the sample to reach the regulated control of high pressure, through a specific width of the limited flow gap instantaneous release of the formation of micro-jet impact on the impact of the valve or homogenizing valve, in turn, through the cavity, impact, shear to achieve the emulsification of materials dispersed and the cell crusher purpose.

Features

- High crushing efficiency: The material particle size can be uniformly refined to below 100nm, with a crushing rate of over 95%.
- Versatile options: Diamond crushing valve or Stellite emulsifying valve.
- High sanitary grade: Made of 316L stainless steel material that meets food and pharmaceutical requirements.
- Temperature controllable: The inlet and outlet of the cooling connector are connected with the constant temperature tank. which can effectively control the temperature rise of homogenized material.
- Adjustable flow rate: Frequency conversion flow control system that can adjust flow rate as needed.
- Adjustable pressure: Homogenization pressure adjustable from 0 to 150Mpa.
- Online exhaust: Simple operation and automatic restoration of regulated pressure after venting.
- Zero Residue: Built-in venting valve structure for material discharge.
- Invention Patent: Built-in cooler structure design.

Applications

Bioengineering

Handling of microbial samples and fragmentation of algal cells; Study of the effect on the functionality of plant proteins under different homogenization conditions.

Food industry

Research on the effects of different homogenization conditions on the physicochemical properties of food and beverages.The application of non-thermal sterilization technology in liquid food products.

Materials Engineering

Application in ultrafine powder processing and handling of pigments and dyes; Optimization of cosmetic (nanoparticle emulsion, liposome) processes

Biopharmaceuticals

Optimization of extraction and preparation of active pharmaceutical ingredients (fat emulsions, nanosuspensions, lipid nanoparticles, liposomes, flavonoids).

Sample Examples

Plant proteins: soy protein, peanut protein, sweet potato protein, etc;

Plant tissues: psyllium sprouts, hawthom leaves, loquatleaves, ginger plantrhizomes, etc;

Algal cells: Spirulina cells, hairy Candida cells, Chlorella cells, etc;

Microorganisms: yeast, E. coli, fission kettle bacteria, etc;

Liquid food: food and beverages, dairy products, fruit juices, etc;

Paint screed: carbon black paint screed, phthalocyanine green paint screed,phthalocyanine blue paint screed, violet 23 paint screed, etc;

Technical Parameters

Model	FHP-207A
Maximum design pressure	2070bar/207Mpa/30015psi
Maximum working pressure	1800bar/180Mpa/26100psi
Maximum sample throughput	15L/H
Minimum sample throughput	15ml
Motor power	3.0kW/220V/50Hz
Maximum feed particles	<500microns
Flow control	Free flow adjustment
Sensors	Imported high-precision sensors
Built-in cooler	Equipped with a cooler to control homogenization temperature without consuming material
Accessories	Standard chiller
Exhaust method	In-line exhaust
Electrical Controls	Industrial PLC Controller
Screen and Display	7inch industrial touch screen+pressure and temperature integrated digital display+ pressure real-time curve
Net weight	95kg
Exterior Dimensions	(L*W*H)1100*310*460mm