



Probe Sonicator (Ultrasonic Processor)



Athena Ultrasonic Processor (Probe Sonicator) Model : ATP-120, ATP-150, ATP-250& 500 Ultrasonic Homogenizer



Major Function:

- Standard probe TITANIUM Alloy material
- Piezoelectric frequency energy converter
- Auto-tuning and power control convenience for user.
- Timer control the total working time from 1min to 99min;
- Set TEMP (100°C) as per required
- Display the remaining time on countdown state.
- Digital Display with Microprocessor Control
- Programmable in 10 USER Settings
- ON/OFF impulse timer: make sure to deal with temperature sensitive sample. On and off can be choose to continue setting from 1s, 4s or 8s
- Variable amplitude control: 0 - 100%
- Digital operation, easy, direct type.



Specifications:

Model	Capacity	Probe Size	Ultrasonic Power	Frequency (KHz)	Timer
ATP-750	25 - 900ml	6mm / 12mm / 20 mm	750 W	20	Cyclic ON / OFF
ATP-500	5 - 500ml	3mm / 6mm / 12mm	500 W	20	Cyclic ON / OFF
ATP-250	1 - 300ml	3mm / 6mm	250 W	20	Cyclic ON / OFF
ATP-150	0.1ml - 200ml	3mm / 6mm	150 W	20	Cyclic ON / OFF

High Wattage capacity model also available like 900W, 1200W, 1500W, 1800W

Ultrasonic Homogenizers are recommended for homogenization and analysis of laboratory samples that do not require traditional grinding or rotor-stator cutting techniques for processing.

The ATHENA Ultrasonic Homogenizers offer precision engineering with all the necessary features to create a total system for ultrasonic disruption. In biological applications, Probe Sonicator is often used to disrupt cell membranes and release cellular contents. Probe Sonicator is also used to fragment molecules of DNA. Probe Sonicator is commonly used in nano technology for evenly dispersing nano particles in liquids and for breaking down particles to nano size.

Technical parameters :

- Timer: digital 1 min -90 min adjustable Power adjustable: 20%- 100%, Impulse: digital closed loop, open loop: 1s, 4s, 8s
- Piezoelectric frequency energy converter: Lead zirconate TITANIUM(PZT) pyro electric ceramics .
- Standard probe: titanium alloy material Diameter (probe): 3mm/6mm/9-10mm/12mm.
- Power Supply: AC 230, 50 Hz/60 Hz

Advantages:

- Homogenization, Micro fined Emulsion
- More stable compares to processes.
- Very flexible it can easily be transferred from one batch to other without intermediary operations like emptying, cleaning and refilling. Ultrasonic Processor can be transported to various locations of sample operations.

Applications:

- Prepare Tissue, Prepare Emulsions, Immiscible Liquids
- Accelerate Enzymatic Reactions, Accelerate Chemical Reactions, Stimulate Bacterial Activity
- Disperse Solids, Degassing of Liquids, De-agglomerate Powders
- Dissolve Powders, Dissolve Tablets, Emulsify Cosmetics
- Extract DNA / RNA, Extract Proteins, Emulsify Liposomes.
- The amplitude of these mechanical vibrations are magnified by this velocity Horn.

Sound Enclosure:

- Sonication produces high pitch noise that can cause discomfort to the user and anyone in the laboratory. The Sound Enclosure significantly reduces this noise to safe levels. The internal support collar is made to safely hold the converter and probe assembly within the box. The inside of the box is water resistant and the door is made from clear acrylic so you can view your probe and sample.

FULL AMPLITUDE CONTROL:

Amplitude is controlled from 1-100% giving a greater degree of resolution and the ability to pinpoint the amplitude needed to effectively process your sample.

PROGRAMMABILITY:

Parameters including processing times, pulse ON/OFF and amplitude can be saved to memory and run by the touch of a button.

PULSE MODE:

Adjustable pulse On and Off times to reduce the heat gain in temperature sensitive samples.

TEMPERATURE MONITORING:

An optional temperature probe is available for those customers who wish to monitor the temperature of their sample. If the temperature limit is reached, sonication shuts down to prevent overheating Temp RT-99C.

MULTIPLE PROGRAMS IN SEQUENCE

Multiple programs can be run in sequence. the unit can be programmed to sonicate at 70% amplitude for 5 minutes, shut off for 2 minutes Up to 10 programs can be run in succession.

TOTAL ENERGY

Ultrasonic through TITANIUM probe

AUTO TUNING

The Sonicator digitally tracks frequency changes in the converter caused by load and temperature changes and maintains electrical efficiency at all times. Manual tuning is unnecessary.

OVERLOAD PROTECTION

The unit is equipped with fault detection circuitry to shut down sonication in the event that a fault occurs

Ultrasonic Probe Sonicator are multi-function and multipurpose instruments that utilize strong supersonic produce empty effect of taking among liquid, the instruments of multi-function, multi use of dealing with the super sound to the material, can be used in the brokenness of many kinds of animal and plant cells, virus cell, at the same time, can use emulsification, separates, melts, draws, subdues steeping, washes and accelerates the chemical reaction etc. evenly. Widely used in such fields as biochemistry, microbiology, medicine chemistry, surface chemistry, physics, zoology, etc. The three types of machines are with temperature control functions..

Probe tips will pit or erode over time and require replacement. Replaceable tip probes are used with aqueous samples only. In addition to aqueous samples, Solid probes can be used with organic solvents, alcohol sand low surface tension liquids.

The Athena Probe Sonicator is a powerful ultrasonic processor featuring programmable operation and a digital display of operating parameters. Popular applications include nano particle dispersion, creating emulsions, cell lysis and homogenization.



INDUSTRIAL ULTRASONIC SONO - PROCESSOR

FLOW CELL REACTORS FOR LARGER VOLUME PROCESSING

Ultrasonic Flow Cells:

Ultrasonic flow-through reactor chambers are available for lab ultrasonicators as well as for industrial ultrasonic devices. An ultrasonic reactor enables to sonicate the medium in a closed system -either in flow-through mode (single pass or recirculation) or for enclosed sonication in a chamber.

Using an ultrasonic flow-through system, is required when higher volume streams and/or higher viscous

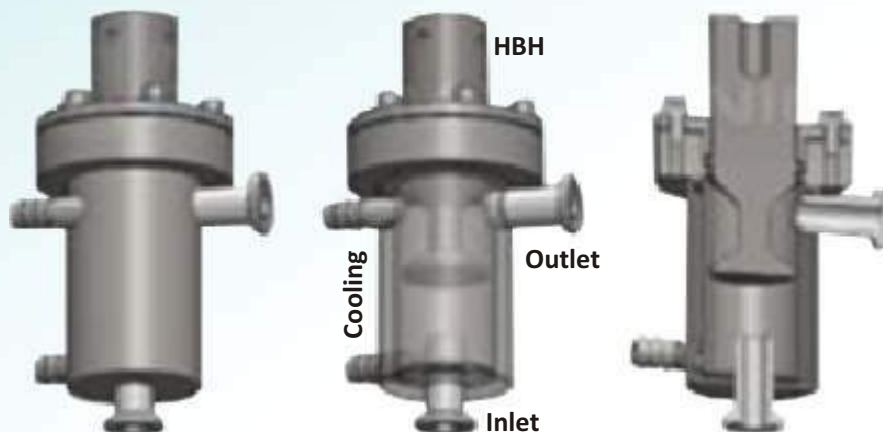
material is sonicated. A continuous flow through system has several advantages over the batch-type processing:

1. By ultrasonic inline processing, the processing quality and capacity becomes significantly higher as all materials fed through the chamber into the cavitation zone. This results in a homogeneous liquid processing with highest quality output.
2. The continuous ultrasonication results in a very high processing uniformity as all the material passes the cavitation zone in the reactor chamber.

Ultrasonic-high-power-sonoprocessor

(Continuous And Batch Processes)

With our micro-processor controlled ultrasonic "Sono-Processor/ Sonicator", a wide range of conventional chemical & physical processes can be performed efficiently such as particle size reduction, preparation of emulsions and dispersion, homogenizing of liquids, atomizing, acceleration of various chemical reactions, disruption of cells, crystallization etc.



Special Features

- Pre-selection of the required Amplitude (30 to 100%).
- This flow cell allows for 100 L per hour sonication under max. Pressure of 50 psi. reactor chamber capacity 250ml / 500ml / 1L etc..
- Fully Automatic Frequency Servo-Control.
- High specific Ultrasonic Power, direct interaction between processing medium & Ultrasonic Probe.
- Can be installed for Online Continuous & Batch Processes.

Application Fields:

- Particle size reduction
- Homogenization
- Polymerization / De-polymerization
- Dispersion / Suspension
- Crystallization
- Emulsification / Mixing
- Degassing
- Atomization
- Disruption of Cells
- Agglomeration / De-agglomeration
- Acceleration of various chemical reactions, etc.
- Viscosity Reduction

Specifications:

- Model: ATS/1000 F or ATS/1500 F
- Converter / Horn: PZT Lead Zirconate, Titanium probe
- Frequency: 20 kHz
- Cooling jacket: Water jacketed enable the sample to be Cooled / Heated
- Standard Probe: Tip diameter: 1" (25 mm). Solid Autoclavable
- Chamber housing : S.S. 316, Volume of liquid 500ml
- Temperature Probe: Allows sample temperature to be monitored up to 100 °C



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