

PROBE SONICATOR



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ISO 9001:2000

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Ultrasonic Processor (Probe Sonicator is a tool specially designed for Pharmaceutical, Chemical Labs and various Research Institutes, Colleges, Universities.

Some of its Applications are:

- Tissue Processing (Plant & Animal Tissues)
- Emulsification of Immiscible Liquids.
- De-gassing & De-aerating of Liquids.
- Formulations.
- Particle Dispersion.

In small volume batches of about 500ml.

Advantages:

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

Ultrasonic Processor consists of:

(A) Ultrasonic Generator to produce High Electrical Energy operating at a frequency of 20Khz and an Ultrasonic Power 120watts.

(B) S.S. Velocity Horn fitted with PZT Crystals (Transducer Elements). This Velocity Horn assembly converts the electrical frequency energy fed from the Ultrasonic generator to mechanical vibrations at the rate of applied electrical frequency. The amplitude of these mechanical vibrations are magnified by this velocity Horn. This Velocity Horn is used for.....

THE PROCESSING APPLICATIONS

Principle of Ultrasonic Processor:

High frequency vibrations are produced by the S.S. Velocity Horn which is immersed into the liquid to be processed. The vibrations give raise to millions to Intense Microscopic Vacuum Bubbles which form & implode at a very high rate (twent thousand times per second). This phenomenon is known as 'CAVITATION'. Cavitation gives raise to intense Local Pressure Waves & Micro Streaming of liquid round the points of collapse. This in turn produces High Shear gradients which are responsible for the above stated applications.

Probe sizes available are 20mm, 12mm & 6mm

Watts: 120 watts

ATL Probe Sonicator

programmable sonicator for reproducible chromatin shearing

The ATL Probe Sonicator is a microprocessor-based, ultrasonic processor that offers both programmable and manual operation. It is ideal for shearing chromatin or DNA from small or large sample sizes for use in chromatin immunoprecipitation (ChIP), DNA methylation studies and Next-Gen sequencing. It can also be used for standard cell disruption, RNA shearing and other homogenization applications. ATL is backed by a two-year warranty and is supplied with an ultrasonic electric generator, a piezoelectric converter, a 1/8" microtip probe, converter & power cables, wrench set, and a comprehensive manual.

The ATL Probe Sonicator is a compact unit that includes an electric generator, a piezoelectric converter and a 1/8" microtip probe. The Support Stand / Converter Clamp pictured is sold separately. Please see Sonicator Accessories.

To improve sample-to-sample reproducibility when using any probe sonicator, use of the ATL Cooled Sonication Platform is highly recommended, as it positions the sonicator probe at the exact same depth in your sample each and every sonication.

Figure 1: The ATL Probe Sonicator.

Model	ATL-NCE-65
Sample Size(probe dependent)	200 µl - 50 ml(500 µl - 15 ml with the included 1/8" probe)
Adjustable Amplitude	27.5
Neck diameter	27.5
Outer diameter	676
Height	710
Static evaporation loss mass	0.79
Static holding time (days)	82
Numbers of racks	5
Box per rack	5
Measurement of rack	142x144
Measurement of box	134x134
Box needed for system	25
Number of vials	2025

Cooling and the freezing of biological products is a complex process during which many chemical and physiological changes can occur. Biological products can be preserved in many ways, but the storage at very low temperatures is the only method of conservation that minimizes these changes.

Living cells have a critical temperature of -130° , beyond this threshold temperature the stability of the sample can't be guaranteed.

In order to guarantee stability of the sample living cells must be stored under temperatures provided by using liquid nitrogen (-196°C) and we then have a safety margin of $+60^{\circ}\text{C}$ from the critical point.

ATL-NCE-Series, Liquid Nitrogen Container With Racks

The Series products are designed for storing biological samples in vials, especially suitable for the fields of medical treatment and biological science and research. They feature in storing large capacity of biological samples and low liquid nitrogen consumption, which are the most economical choice.



Main Features:

- Unique hanging rack and guided box design, allows for easy tracking and retrieval of samples.
- Advanced vacuum insulation minimizes liquid nitrogen evaporation and reduces operating costs.
- Durable aluminium construction provides years of trouble free service.
- Compact size allows system to easily fit into any lab.
- An optional sturdy 4 wheels cart provides easy movement within the laboratory.
- Super vacuum insulation offers unbeatable liquid nitrogen efficiency.
- Level measuring scale (optional), for measuring the current level of liquid nitrogen.
- Lockable cover (optional), prevent unauthorized entry.
- Plastic box, for storing in vials.
- Narrow neck design.

Model	Unit	ATL-NCE-47	ATL-NCE-65	ATL-NCE-120	ATL-NCE-175
Capacity	L	47.0	65.0	121.0	175.0
Empty Weight	kg	19.0	27.5	43.0	54.5
Neck diameter	mm	127	216	216	216
Outer diameter	mm	500	573	573	676
Height	mm	675	710	1000	1020
Static evaporation loss mass	L/d	0.33	0.79	0.87	0.87
Static holding time (days)	d	142	82	139	202
Numbers of racks	n	7	5	5	7
Box per rack	n	5	5	10	10
Measurement of rack	mm	82x84	142x144	142x144	142x144
Measurement of box	mm	76x76	134x134	134x134	134x134
Box needed for system	n	35	25	50	70
Number of vials	n	875	2025	4050	5670

Q700 / Q500 Accessories **Direct Horn Options**

Replacement Tips for Standard Probes

Standard 1/2", 3/4" and 1" horns have replaceable tips. During normal use, tips erode and become less effective over time. These worn tips can be easily removed and replaced.



Part #	Tip Diameter	For Use With
4406	1/2" (13 mm)	#4220
4407	3/4" (19 mm)	#4207
4408	1" (25 mm)	#4210



New Tip



Worn Tip

Microtip Probes

Microtips are thin, high intensity probes which are designed for processing small sample volumes. Microtips screw into the threaded end of the standard 1/2" probe (#4220).



Part #	Processing Volume*	Tip Diameter	Amplitude (microns)
4417	0.2-5 ml	1/16" (2 mm)	320 µm
4418	1-15 ml	1/8" (3 mm)	380 µm
4420	5-50 ml	1/4" (6 mm)	200 µm

* The recommended processing volume range is application specific. For example, samples containing surfactants foam easily and may require larger volumes for effective sonication. Contact Qsonica for application assistance.



Coupler with Stepped Microtip

The stepped microtip and coupler assembly is a low intensity option which can be used to process small volumes that do not require high power. The probe tip remains 1/8" in diameter for 48mm. This 2-piece assembly attaches directly to the converter.



Part #	Processing Volume	Tip Diameter	Amplitude (microns)
4422*	0.5-15 ml	1/8" (3 mm)	200 µm
4421	Coupler - *required for use of a Stepped Microtip		

▶▶▶ Regulatory compliances



▶▶▶ Corporate Social Responsibility

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