Ultrasonic Homogenizer / ultrasonicator/ultrasonic processor

It is also called Ultrasonic homogenizer,processor or diperser.

A Sonicator system is comprised of 3 major components: Generator, Converter and Horn (also known as a probe).

The ultrasonic electronic Generator transforms AC line power to high frequency electrical energy.

The generator features a keypad or buttons which allow the user to control the sonication parameters.The generato provides high voltage pulses of energy at a frequency of 20 kHz that drives a piezoelectric Converter. The converter is cylindrical device which is connected to the generator by a high voltage cable. The converter transforms electrical energ to mechanical vibration due to the characteristics of the internal piezoelectric crystals.

The vibration is amplified and transmitted down the length of the Probe/Horn.

Probes have threaded ends and attach to the converter. During operation, the probe's tip longitudinally expands an contracts.

Amplitude is the distance the tip travels and is dependent on the amplitude setting selected by the user.

The new model of the SKL-IIDN series is integrated with Temperature Monitor optional.

LCD display screen clearly displays all operating parameters and options: Temperature,time,output power etc.

Temperature monitor to protect sample from overheating.

Features:

FULL AMPLITUDE CONTROL

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

PROGRAMMABILITY

Parameters including processing times, pulse on/off and power output ,it can be saved to memory and run by the touch o a button.This new system can restore more than 50 custom program.

PULSE MODE

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

AUTO TUNING

The Sonicator digitally tracks frequency changes in the converter/ tip assembly caused by load and temperature changes and maintainelectrical efficiency at al times.

Manual tuning is unnecessary.

TEMPERATURE MONITORING

An optional temperature probe is available for those customers who wish to monitor the temperature of their sample. If the temperature limitis reached, sonication shuts down toprevent overheating

Application:

Biological / Biotech
Sonication is an ideal tool for lysing bacteria, yeast and tissue cells for the extraction of protein,DNA, RNA, and cellula components. DNA shearing (ChIP Assay) is a very common application

Pharmaceutical
Cell disruption is common in analytical, quality control, and R & D labs to perform numerous functions from mixing an degassing of analytical samples, to cracking open tablets for dissolution tests. Liposomes and emulsions are easil formed by Sonication for microencapsulation purposes in the production of creams and lotions.

Chemical
Sonication accelerates both physical and chemical reactions, creating new fields of research.Major advances i sonochemistry include chemical synthesis of catalysts and new alloys, catalyzing organo-metallic reactions micro-encapsulation of protein and hydrolyzing esters. The use of sonication provides greater yields, increases overal efficiency, and saves energy.

Industrial
Industrial uses include forming emulsions, catalyzing reactions, extracting compounds, and reducing particle size Continuous, in-line Flocells and special ultrasonic horns are available for processing larger volumes. Sonication is bein used in the Paint and Pigment industry to disperse dyes and inks and in the Ceramic industry to degas slips and creat denser castings.

Enviromental
Sonication is used by environmental testing labs to process soil and sediment samples.Sonication takes just 8-1 minutes per sample versus 4-18 hours by soxhlet extraction, it uses half the solvent and improves contaminant yields Both single and dual horn systems are available. If the sample load is high, then a Dual Horn system is recommende because it allows you to process two samples simultaneously.

Parameters

Power Rating	250 – 1800 w
Operating Frequency	20 KHZ
Input power	100 – 240V, 50 - 60Hz
Programmable Timer	999 minutes
Crusher capacity	0.5-1200 ml
Warranty	15 months

Ordering Information
Part # SKL Ultrasonicator includes:
Generator/transducer
Convertor with cable
One replaceable probe
Power cable
Wrench set
Operation manual
Please specify desired voltage

Model	Ultrasonic Frequency	Maximum Power	Optional probe	Crusher Capacity	Temperature monitor
SKL150-IIDN	20-25	0-150 W	3 mm	0.2-100ml	yes
Skl250- IIDN	20-25	0-250 W	3 mm	0.2-200ml	yes
SKL500-IIDN	20-25	0-500W	2,3,6,8,10,12mm	0.2-500ml	yes
SKL650- IIDN	20-25	0-650 W	2,3,8,10,12,15mm	0.5-500ml	yes
SKL950-IIDN	20-25	0-950 W	2,3,8,10,12,15mm	0.5-600ml	yes
SKL1200-IIDN	19.5-20.5	0-1200 W	Φ6,10,12,15,20,25	50-1000ml	yes
SKL1500-IIDN	19.5-20.5	0-1500 W	Φ6,10,12,15,20,	50-1200ml	yes
SKL1800-IIDN	19.5-20.5	0-1800 W	Φ6,10,12, 15,20,25，28	50-1500ml	yes
SKL2000-IIDN	19.5-20.5	0-2000 W	Φ6,10,12, 15,20,25，28	50-1800ml	yes

Standard Probes

Probes are made from titanium and machined to specific sizes and shapes. When driven at their resonant frequency, they expand and contract longitudinally. This mechanical vibration is amplified and transmitted down the length of the probe. In liquid, the probe causes cavitation which constitutes the main mechanism for sample processing.

Choosing the appropriate horn is extremely important. The sample volume to be processed is directly related to the tip diameter.

Break capacity of probes

Amplitude pole	Φ2	Φ3	Φ6	Φ8	Φ10	Φ12
Breaking capability（ml）	0.2-2	2-5	5-200	10-300	10-350	15-350
Amplitude pole	Φ10	Φ15	Φ20	Φ22	Φ25	
Breaking capability （ml）	100-200	200-500	500-1000	500-1100	500-1200	

The Cup Horn and Microplate Horn deliver indirect sonication and are ideal for many high throughput applications.

Microtube holder up to 2-8 samples (0.1-2ml) can be treated simultaneously. Pressure plate holds tubes in place. Avoid th contamination of the toxic samples.

Industrial type ultrasonic processor for production:

rate of 99% broken; can
be custom-made ultra-fine
powder grinder ; handling
capacity of up to 10KG /
hour,
Optional low-temperature
circulation water bath; Frequency
Quad-band: 15KHz, 20KHz,
28KHz, 40KHz
Time set :1-99 points or continuous,
digital display, set the timer task
ultrasound method: continuous (dual-
head 50% of all work) sampling
methods: a special leaching pump
pumping
work environment :0-30 ℃
Main technical parameters:

Model: JY99-IIIBN Frequency: 2-band optional Power: 3500W
Random amplified pole: Φ38 × 2
Crushing Capacity: 5-20L / H Power Supply: 220V 60Hz

Portable ultrasonic processor:
The portable transducer and horn design make you work in single hand ,it also can be held in the stand.

Model	Ultrasonic Frequency	Maximum Power	Optional probe	Crusher Capacity (ml)
SKL-P02-150w	20-25	0-150 W	3 mm	10-100
SKL-P02-250w	20-25	0-250 W	3 mm	10-200
SKL-P02-400w	20-25	0-400 W	2,3,8,10	0.5-400

SYCLON series of ultrasonic emulsifying material is mainly used in petroleum, chemical process in the oil-water emulsion, or other materials, micro emulsion, can also be used for light industry, nano-materials food and pharmaceutical sectors such as liquid handling.

Main features:
● shaped ultrasonic emulsifying
device material is high-power ultrasonic transducer horn immersed directly in the reaction liquid, so that the sound directly into the reaction system, without having to clean the tank through the wall of the reactor is passed. The advantage is the ability to be a lot of energy directly to the reaction medium, effectively converted into electrical energy to mechanical energy, and can be transported to change the magnitude of the transducer to control the size of ultrasonic energy.

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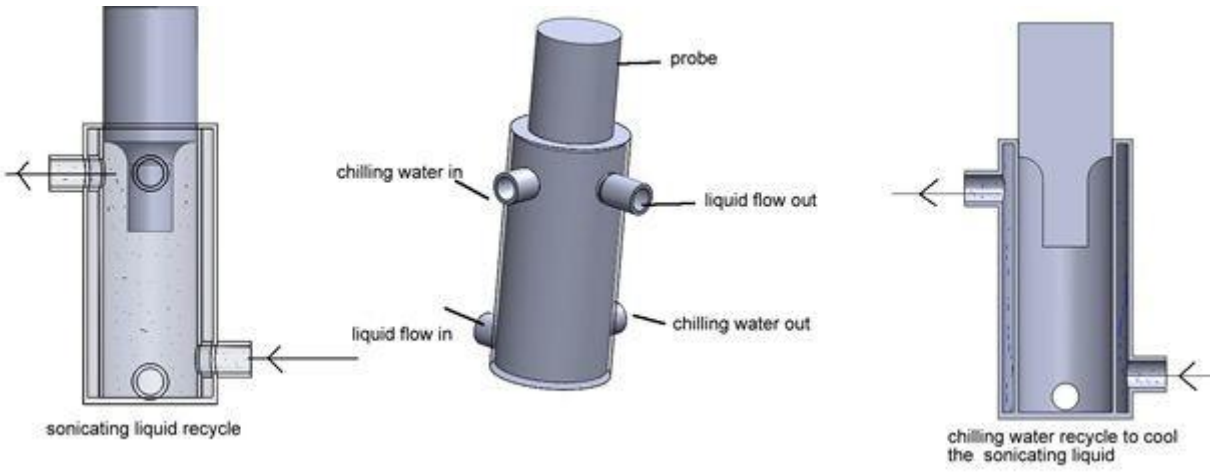
● shaped ultrasonic emulsifying device material is high-power ultrasonic transducer horn immersed directly in the reaction liquid, so that the sound directly into the reaction system, without having to clean the tank through the wall of the reactor is passed. The advantage is the ability to be a lot of energy directly to the reaction medium, effectively converted into electrical energy to mechanical energy, and can be transported to change the magnitude of the transducer to control the size of ultrasonic energy.

● The product is scalable (1) optional cooling water, cooling water circulation devices and constitute a special double glass reactor cooling water system, to achieve -5-100 ℃ temperature range of any point of precise temperature control,
avoid overheating the sample caused by tissue damage, compared with traditional ice bath cooling more convenient and accurate. (2) optional magnetic stirrer. Be processed can be increased by mixing the emulsion sample rate, the treatment effect better.

Technical Parameters:

Modle	frequency(KHz)	Power (W)	Accompany probeΦ	Crusher capacoty(ml)	Optional probe Φ	Temperature (optinal)
Syclon-500	22±1	10-500	Φ6	0.2-200	Φ2、Φ3、Φ10	-120-300℃
Syclon-1000	22±1	50-1000	Φ10	50-600	Φ6、Φ15	
Syclon-1500	20±1	300-1500	Φ20	250-1500	Φ25	

Continuous cell flow



316 stainless steel with double walls through which cooling water can circulate,

This flow cell allows for 10 L per hour sonication under max.It work with 10-20mm(1/2‘‘ to 1’’)

probes;it works with 950w to 2000w syclon ultrasonic processors.