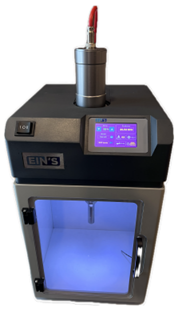
HYDRA HYD-800 Integrated Type Ultrasonic Homogenizer

Integrated Ultrasonic Homogenizer/Sonicator

EIN'S HYD-800 specializes in ultrasonic technology and ultrasonic homogenizers, which are used for homogenizing, deagglomerating, emulsifying, suspending, accelerating chemical reactions and the disruption of cells, bacteria, fungi or spores.
In ultrasonic homogenisation, several components (liquid-liquid, liquid-solid) are finely mixed together. This method has established itself in the laboratory for decades in addition to the well-known and proven ultrasonic bath.
Hydra sonicator HYD-800 model is a well-established emulsification technique that breaks down the oils into nanoparticles resulting in a stable emulsion with increased bioavailability.
A state-of-the-art touch screen interface offers intuitive control and provides a user-friendly experience.
The Integrated Ultrasonic Homogenizer/Sonicator system comes with high intensity (100µm amplitude) probes that are used to form water-soluble nanoemulsions in R&D/Lab Scale volumes from 0.5 mL – 3.0 Litre.



EIN'S HYD-800 Model Sonicator

Examples of use:

–Disruption of cells, bacteria, viruses, spores, fungi or tissues (cell disruption)
–Extraction of ingredients (lysis)
–Homogenization of different substances
–Production of finest emulsions with minimum droplet size
–Dissolution of poorly and poorly soluble substances in liquids
–Production of dispersions (emulsions and suspensions)
–Catalysis and acceleration of chemical reactions

LCD Touch Screen

Integrated Ultrasonic Homogenizer/Sonicator Key Features:

- **Easy-to-use:** 3.2" Colored Touch Screen, programmable operation with 3 working modes.
  (Easy-to-use interface allows in-process monitoring of key variables, including time, power, energy, temperature and experiment progress)
- **True temperature control:** Temperature sensor integrated, monitor temperature during working, auto shutdown when reach given temperature.
- **Low Noise:** Working Noise Soundproof Box integrated
- **Realtime Observation:** Monitor working status through glass window
- **Wide Application Range:** Sample preparation, cell disruption, nanoparticle dispersion, mixing, homogenization, DNA, cell lysis, protein extraction.
- **3 working mode:** Continuous, Pulse(intermittent), Countdown Timer.

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.
RUN MULTIPLE PROGRAMS IN SEQUENCE:
Multiple programs can be run in sequence. For example, the unit can be programmed to sonicate at 50% amplitude for 5 minutes, shut off for 2 minutes and re-start at 25% amplitude for 10 minutes. Up to 5 programs can be run in succession.
TOTAL ENERGY OUTPUT DISPLAY:
Energy delivered to the probe is displayed in both Watts and Joules.
AUTO TUNING:
The Sonicator digitally tracks frequency changes in the converter / tip assembly caused by load and temperature changes and maintains electrical efficiency at all times. Manual tuning is unnecessary.
TOUCH SCREEN CONTROL:
A large, color LCD screen clearly displays all operating parameters and options. Intuitively and quickly access any of the Sonicator's functions with a simple touch.
OVERLOAD PROTECTION:
The unit is equipped with fault detection circuitry to shut down sonication in the event that a fault occurs.

Advantages of HYDRA® Ultrasonic Homogenizer/Sonicator

- Easy and flexible handling
- Time saving
- Powerful
- Precisely controllable
- Reproducible results
- Eco-friendly and energy efficient
- Extremely durable and long lasting
- Wide product range
- Wide range of accessories for a variety of applications
- Production, service and repair in germany
- Specialist for ultrasonic technology

Back Side

Front Side

Technical Specifications:

Power in	100 ~240 Voltage, 50 ~ 60 Hz, auto adapt.
Power out	800 Watt Maximum (1% ~ 100% cont. control)
Frequency	**25kHz (standard)** optional: 19 ~ 26kHz auto tracking frequency.
Whole Size	30 x 27 x 45 cm 5.5 Kgs Net weight (without probe)
Door Size	26 x 19 cm
	Energy and temperature set-point control Digital Type, 3.2" Touch Screen, Programmable
Probe Materials	Titanium Alloy
Probe Size	**Φ16mm diameter tip (standard)** optional: Φ3mm, Φ6mm, Φ9mm, Φ20mm, Φ30mm
Maximum Volume	Standard: 20ml ~ 600ml for 16mm probe 3 Liter maximum (depends on different probe)

Probe Selection:

Probe Tip Diameter	Process Volume Range	Amplitude Microns	Probe Length	Materials final size
1/16" (1.6 mm)	0.2 ml ~ 15 ml	320 µm	9 cm	2 ~3 nanometer
1/8" (3.2 mm)	0.5 ml ~ 25 ml	180 µm	14 cm	3 nanometer
1/4" (6.4 mm)	10 ml ~ 100 ml	120 µm	11 cm	3 nanometer
8.0 mm	10 ml ~ 200 ml	100 µm	11 cm	3 nanometer
9.0 mm	10 ml ~ 250 ml	90 µm	10 cm	4 nanometer
10.0 mm	20 ml ~ 300 ml	80 µm	10 cm	4 nanometer
1/2" (12.7mm)	20 ml ~ 300 ml	60~120 µm	13 cm	3 ~5 nanometer
16.0 mm	20 ml ~ 600 ml	70	13 cm	5 nanometer
3/4" (19.1mm)	50 ml ~ 800 ml	60 µm	28 cm	5 nanometer
20.0 mm	50 ml ~ 900 ml	55~80 µm	28 cm	7 nanometer
1" (25.4mm)	100 ml ~ 1 L	35 µm	28 cm	7 nanometer
30.0 mm	100 ml ~ 3 L	35 µm	30 cm	8 nanometer
40.0 mm	1 L ~ 25 L	25 µm	30 cm	10 nanometer
50.0 mm	1 L ~ 30 L	30 µm	50 cm	10 nanometer

Range of probes

Applications for Sonicator

Nanoparticle Dispersion

Sonication is extremely effective for processing nanomaterials such as graphene, carbon nanotubes, inks and many other materials

Dispersing
Deagglomerating
Particle Size Reduction
Particle Sysnthesis & Precipitation
Surface Functionalization

Chromation /DNA Shearing

HYD-800 offer sample preparation equipment to fragment DNA for next-gen sequencing and chromation shearing.

Chromatin Shearing for ChIP
DNA Shearing for NGS
ChIP-Seq
Cell Lysis
RNA And Protein Extraction

Cell Disruption /Homogenization

A sonicator is an essential tool for cell lysis and found in virtually all biological laboratories

Cell Lysis
Homogenization
Protein Purification
Liposome Formation
Disruption

Cannabis Application

Improve the quality of a beverage, edible or tincture by nano-emulsification.

Nano-Emulsions
Oil/Water Emulsions
Liposomal Encapsulation

Other Application

Ultrasonication is used for a wide variety of industries and application.

Extractions
Emulsification
SonoChemistry
Degassing
Solubilizing Compounds