

What is ultrasonic mixer?

Ultrasonic mixer is a device that uses ultrasonic cavitation effect to emulsify and mix materials. It also is called ultrasonic homogenizer.

Ultrasound is a sound wave with a vibration frequency of more than 20,000 Hz. It is a type of sound wave that can be fully utilized to serve human beings. As a physical means and tool, it can produce a series of conditions close to extremes in the medium of chemical reactions. The energy it

produces can not only stimulate or promote the reaction between many substances, speed up the reaction speed, but even change the direction of some reactions, producing some unexpected effects and results.

As a professional mixer manufacturer, SeFluid has many years of industry experience in the field of ultrasonic mixing. Our ultrasonic mixers are widely used in various fields by users from all over the world.



Benefits of Ultrasonic Mixer

- The emulsion formed by emulsification with an ultrasonic mixer has a small average droplet size of 0.2-2um.
- Ultrasonic mixers emulsify high-concentration emulsions. The concentration of the pure emulsion can exceed 30%, and the emulsifier can be as high as 70%.
- The emulsion formed by ultrasonic mixing is more stable. An important feature of ultrasonic emulsification is that it can produce extremely stable emulsion without or with less emulsifier.
- The type of emulsion can be controllable. Using ultrasonic emulsification, under certain sound field conditions, both O/W (oil in water) and W/O (water in oil) emulsions can be producible, while mechanical emulsification is difficult to achieve.
- When emulsify toluene in water using an ultrasonic mixer, one type of emulsion can be formed under low sound intensity conditions, while another type of emulsion can be formed under high sound intensity conditions.

Features of SeFluid's Ultrasonic Mixer

- Strong ultrasonic power density, better than low power density for liquid.
- Multiple frequencies to fit various industries
- Can accelerated reaction to achieve shorter processing time.
- Can increase the extraction rate and the utilization rate of raw materials.
- Can greatly reduce the energy consumption required for various mixing
- Can break macromolecular chains
- Easy to install and low maintenance cost is required
- Suitable for high pressure, high temperature, toxic and explosive environments

How ultrasonic mixer works?

When a liquid is sonicated at high intensity, the sound waves propagating into the liquid medium create alternating cycles of high pressure (compression) and low pressure (rarefaction) at a rate dependent on frequency. During low-pressure cycling, high-intensity ultrasonic waves create small vacuum bubbles or voids in the liquid. When the bubbles reach a volume where they can no longer absorb energy, they collapse violently and explode in a high-pressure cycle, a phenomenon known as cavitation.

During the explosion, a localized portion of the liquid will reach very high temperature (about 5,000K) and pressure (about 2,000atm). At the same time, the collapse of cavitation bubbles also leads to a liquid jet with a velocity of up to 280m/s, and the generated shear force mechanically stirs the liquid and fully mixes the reactants.

Technical Specification

ITEM \ MODEL	SEUM500	SEUM1000	SEUM1500	SEUM2000	SEUM3000
RESONANT FREQUENCY	20±1 KHz				
MAX. POWER	500W	1000W	1500W	2000W	3000W
POWER SETTING	Continuous & Adjustable				
WORK MODE	Continuous / Pulse Wave	Continuous / Interstitial Wave			
MATERIAL	Titanium Alloy				
PROCESSING CAPACITY	2 L/Minute	4 L/Minute	6 L/Minute	8 L/Minute	12 L/Minute
MAX. WORK PRESSURE	5 Mpa				
OUTPUT AMPLITUDE	15-50 μm				