

# Ultrasonic Homogeneous Reactor System

Rotary Evaporator

Scraped Film Evaporator / Short Path (Molecular) Distillation System

Chemical Glass Reactor

High Shear Homogeneous Emulsification Reactor

Pilot Ultrasonic Emulsification Reactor

Vacuum Filter / Glass Liquid Separator

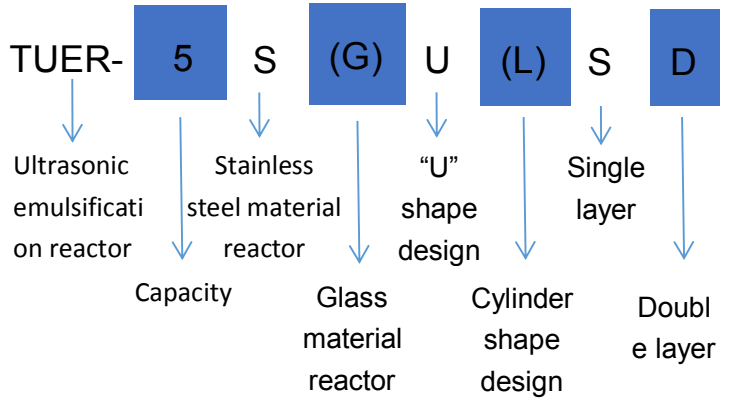
Photochemical Glass Reactor

Hydrothermal Synthesis Reactor

High Pressure Reactor



**SS304L Cylinder Reactor**



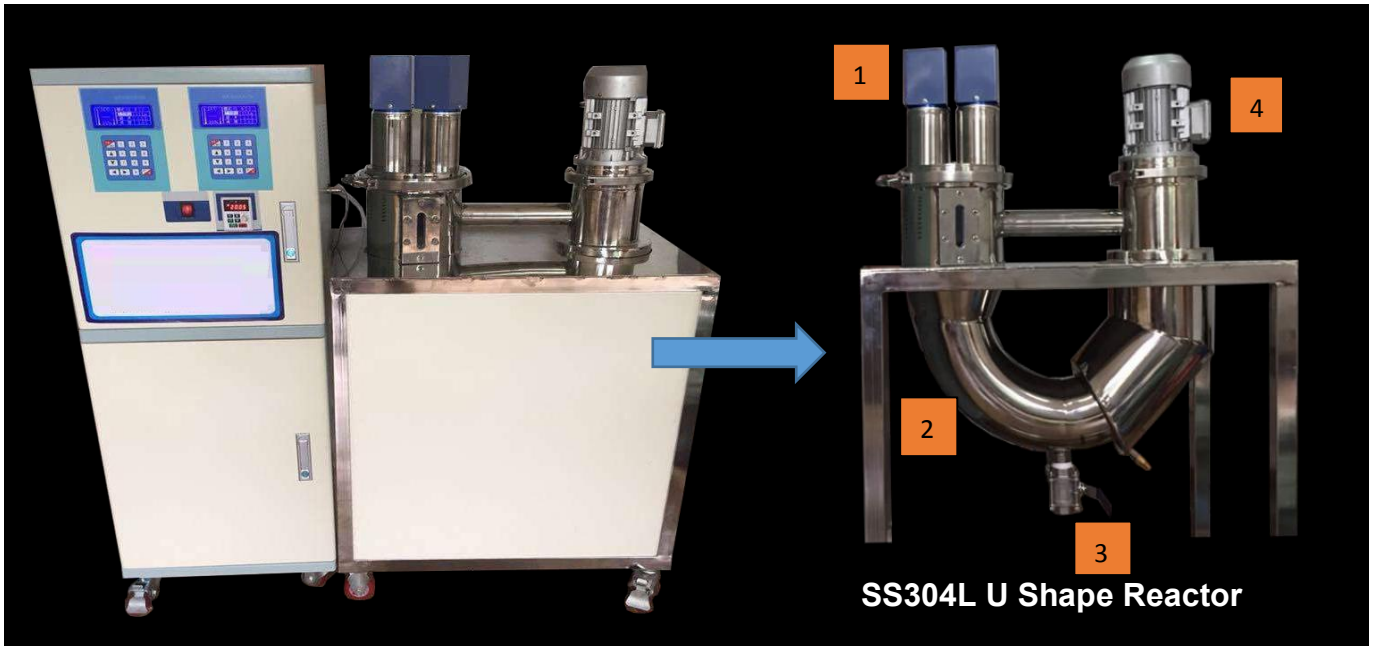
1. Mechanical drive stirring motor, makes material mixing more uniform.



2. Multi ultrasonic working head combined together, large power, much better emulsification result.

## Glass material ultrasonic reactor

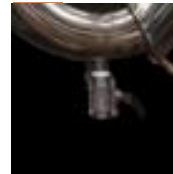




1. Multi ultrasonic working head combined together for much better sample emulsification result.



2. In-built circulating system makes sample get more uniform mixing, no dead angle.



3. Downward discharging valve, more convenient for material discharging.



4. Vertical electric stirring makes material mixing more uniform.

### Description of Pilot ultrasonic emulsification reactor:

The core content of ultrasonic nanotechnology is how to solve the problem agglomeration of nanoparticles, as nano particles themselves is easy to reunite, so want to get single dispersive nano particles is very difficult. How to make the nano particles evenly dispersed in the matrix is the key technology of nanotechnology.

TOPTION ultrasonic series instruments use the cavitation of ultrasonic to disperse the coacervate particle. It put the required processing of particulate suspension (liquid phase) in the super sound field, use appropriate ultrasonic amplitude and duration to process. Due to the inherent characteristics of powder particles coacervate, so for some powder which could not be dispersed well in medium, you could add the right amount of dispersant to keep the dispersed steady state, general could reach dozens of nanometers, even more small. This type ultrasonic emulsification reactor is most suitable to disperse nano materials (graphene, silicon dioxide, etc).

Ultrasonic Emulsification Reactor through its "cavitation effect" to realize the emulsification of oil blended with water, emulsification of water mixed with oil, the mixture and homogenization of dispersed phase and continuous phase, it's modern chemical technology to instead of propeller, colloid mill and other traditional emulsification technology.

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**Pilot ultrasonic emulsification reactor technical specification:**

Model	TUER-5SUS / TUER-5SUD TUER-5SLS / TUER-5SLD TUER-5GLS / TUER-5GLD	TUER-10SUS / TUER-10SUD TUER-10SLS / TUER-10SLD TUER-10GLS / TUER-10GLD	TUER-20SUS / TUER-20SUD TUER-20SLS / TUER-20SLD TUER-20GLS / TUER-20GLD
Ultrasound Method	Energy-gathered circulation multiple-step type		
Capacity (L)	5	10	20
Stir Motor Power (W)	100	150	200
Ultrasonic Frequency	20KHz	20KHz	20KHz
Standard Ultrasonic Probe	∅ 20*1	∅ 20*2	∅ 20*3
Ultrasonic Power(w)	50~1200 Adjustable	100~2400 Adjustable	200~3600 Adjustable
Circulation Stirring Rate (rpm)	0~1000 Integrated Digital Display, Stepless Timing	0~1000 Integrated Digital Display, Stepless Timing	0~1000 Integrated Digital Display, Stepless Timing
Controlled Temperature °C (Optional)	0--100	0--100	0--100
Reactor Material	SS304/Glass	SS304/Glass	SS304/Glass
Applicable Medium	Volatility / Fixed Hydrocarbon	Volatility / Fixed Hydrocarbon	Volatility / Fixed Hydrocarbon
Application	Laboratory & Pilot	Laboratory & Pilot	Pilot
Note: 1. Professional Customization is provided, high temp. device, low temp. device, constant temp. device are available (-5°C ~ 100°C). 2. The max volume can be 500L.			

An important characteristics of ultrasonic emulsification is that, there's no need or less need emulsifier to get very stable emulsion. The obvious advantages of ultrasonic emulsification has prompted it in food, chemical, pharmaceutical, textile, paper making, paint, fuel thermal power, fuel central air conditioning, petroleum, metallurgy and many other industrial process has been applied more and more, including down fuel combustion is an important project to rise.