Hydrothermal synthesis reactor

PTFE Lined

PPL Lined

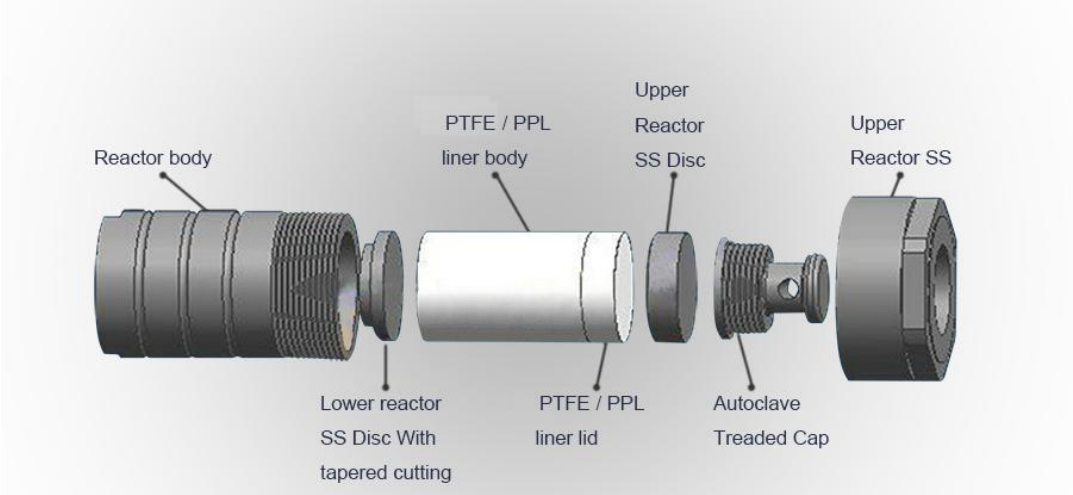
PTFE Liner (200℃)

Model	Material	Capacity	Remark
TOPT-HT10	1. Shell made of quality stainless steel.304L 2. Liner materials is special PTFE.	10ml	1. Safe temperature is 200°C. 2. Working pressure ≤3 Mpa (surface pressure). 3. Tempe heating and cooling speed: ≤ 5℃/ min. 4.Break down the refractory material quickly.
TOPT-HT25		25ml	
TOPT-HT30		30ml	
TOPT-HT50		50ml	
TOPT-HT100		100ml	
TOPT-HT150		150ml	
TOPT-HT200		200ml	
TOPT-HT250		250ml	
TOPT-HT300		300ml	
TOPT-HT400		400ml	
TOPT-HT500		500ml	
TOPT-HT1000		1000ml	
TOPT-HT1500		1500ml	
TOPT-HT2000		2000ml	

PPL Liner (260℃)

Model	Material	Capacity	Remark
TOPT-HP10	1. Shell made of quality stainless steel.304L 2. Liner materials is special PPL.	10ml	1. Safe temperature is 260°C. 2. Working pressure ≤3 Mpa (surface pressure). 3. Tempe heating and cooling speed: ≤ 5℃/ min. 4.Break down the refractory material quickly.
TOPT-HP25		25ml	
TOPT-HP30		30ml	
TOPT-HP50		50ml	
TOPT-HP100		100ml	
TOPT-HP150		150ml	
TOPT-HP200		200ml	
TOPT-HP250		250ml	
TOPT-HP300		300ml	
TOPT-HP400		400ml	
TOPT-HP500		500ml	

Please note：Shell can be made of SS316L or copper



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Customization of hydrothermal synthesis autoclave reactor

1.Copper material hydrothermal synthesis reactor.

2. Pressure released vent type hydrothermal synthesis autoclave reactor.

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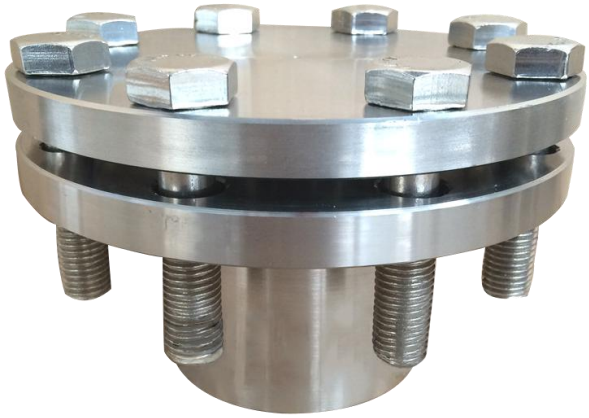
3. High pressure vessel - with pressure gauge and gas needle valve

- Temperature ≤220℃. - Pressure ≤3MPa. - Lined material: PTFE.
- Basic configuration: pressure gage, vent valve, gas outlet valve (support customize special request).
- Capacity range: 5ml, 10ml, 15ml, 25ml, 50ml, 100ml, 150ml, 200ml, 250ml, 300ml, 500ml, 1000ml.



4. Flange type hydrothermal synthesis autoclave reactor:



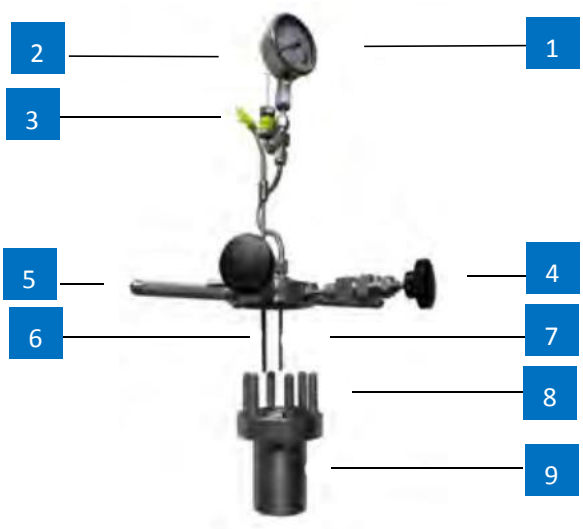

THR type high pressure reactor with magnetic stirrer

1.Application: Chemistry, Pharmaceutical, Macromolecule, Metallurgy, Environmental Protection,etc, chemical process areas. For instance: high pressure reaction, hydrogenation reaction, catalytic reaction, synthetic process, pharmaceutical synthesis, high pressure polymerization, nano synthesis, conditions screening, crystallization screening, combinatorial chemistry, biomass conversion, supercritical reaction, hydrothermal reaction, polymer synthesis, electrochemical corrosion testing, infrared detection,etc.

2.The maximum operating temperature of THR High Pressure Reactor is 250℃, use corrosive medium to do reaction, PTFE inner is optional, but its high temperature resistance is 180℃， so if the corrosive medium temperature is over 180℃, please choose other material reactors.

3.THR Series High Pressure Reactor adopt module heating method, which is quick heating and precise temperature control. THR series all are internal magnetic stirring, when magnetism arrive 250℃, degaussing phenomenon will happen, so if operating in over 250℃ condition, please choose TOPTION MHR Series High Pressure Reactor.

Detail description



1.Pressure Gage - monitor working pressure in reactor.
2.Explosion Valve - Protect reator overpressure working.
3.Temperature Sensor Plug - monitor the temperature in reactor, connect with thermocouple.

4.Needle valve - air inflow, exhaust or sampling.
5.Handlebar - to teardown reactor lid.
6.Temperature measure jacket tube - used to insert temperature sensor.

7.Accused of bottom tube - used to sample during reaction.
8.Reactor lid lock screw - uniform distribution 6pcs in total, clockwise is tight, anticlockwise is loose.
9.Reactor body - coefficient of material charging is 80% of reactor whole volume, not suitable for all kinds of medium.

THR type high pressure reactor with magnetic stirrer

1.Temperature display - display real time temp. when working.
2.Rotating speed display - display real time rotating speed during working.
3.Indicator lamp display - function indicator when working.
4.Temp & time set key [T-Set] - used to set temperature, timing, and parameters which is related with temperature & time.
5.UpKey - add key.
6.Down key and self set key - reduce key and self set key.
7.Lift key and check key - shift key and check working time & timing.
8.Speed set key - used to set speed and related parameters.
9.Working and stop key - start or stop working.

Technical specification

The stirring reactor laboratory miniature high-pressure reaction kettle				
Model	THR50	THR100	THR250	THR500
Material capacity(L)	50ml	100ml	250ml	500ml
The working interface	LCD Display	LCD Display	LCD Display	LCD Display
The maximum operating temperature	250℃	250℃	250℃	250℃
The maximum operating temperature with PTFE Liner	180℃	180℃	180℃	180℃
Heating mode	Module heating	Module heating	Module heating	Module heating
The heating power	1.2KW	1.2KW	1.5KW	2.0KW
Stirring speed	0-1200rpm	0-1200rpm	0-1300rpm	0-1300rpm
Stirring method	The internal magnetic stirring	The internal magnetic stirring	The internal magnetic stirring	The internal magnetic stirring
The stirring power	40W	40W	40W	80W
The maximum working pressure	10Mpa	10Mpa	10Mpa	10Mpa
Materials of construction	SS304 (standard); (SS316L Alloy TA2, ALLOY C-276, Nickel ALlloy, Zirconium materials are optional)			
PTFE liner	Optional			
Note: 1. Max volume 2000ml could be customized. 2.Suitable for the material which temp ＜250℃ and is nonmagnetic. 3.Temperature timing set, temp. set when working, this function is optional.				

MHR type high pressure reactor with magnetic coupling mechanical agitation

Configuration and description

1. Rotating speed and temperature control panel (LCD display and Nixie tube display are optional).
2. Internal heat collection heater.
3.4. Stainless steel reactor.
5. Air inlet valve (sampling valve).
6. Air exhaust valve.
7. Principal axis cooling jacket.
8. The coupling magnetic steel.
9. Sensor insert mouth.
10. Pressure meter.
11. Transmission flexible shaft.
12. Flexible shaft support frame.
13. Dynamical system.
14. MHR high pressure reactor is suitable for small capacity sample reaction, high temp, big viscosity or magnetism medium.
15. Safety explosion protection valve is 12.5MPa, digital display pressure meter is optional.
16. Max working temp:300℃, module electric heating, heating quickly and control temp precise.

Model	MHR50	MHR100	MHR250	MHR500
Material capacity(L)	50ml	100ml	250ml	500ml
The working interface	LCD Display			
The maximum operating temperature	300℃	300℃	300℃	300℃
The maximum operating temperature with PTFE Liner	180℃	180℃	180℃	180℃
PPL liner	250℃	250℃	250℃	250℃
Heating mode	Module heating	Module heating	Module heating	Module heating
The heating power	1.2KW	1.2KW	1.5KW	2.0KW
Stirring speed	0-1200rpm	0-1200rpm	0-1300rpm	0-1300rpm
Stirring method	Rare earth permanent magnetic coupling drive			
The stirring power	40W	40W	40W	80W
The maximum working pressure	10Mpa	10Mpa	10Mpa	10Mpa
Materials of construction	SS316L (standard); (Alloy TA2, ALLOY C-276, are optional)			
PTFE liner/PPL liner	Optional			

Note: 1. Max volume 2000ml could be customized.
2.Suitable for the material which temp ＞250℃ and has magnetism, viscosity is a little big.
3.Temperature timing set, temp. set when working, this function is optional.

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THR (N) series high pressure reactor with magnetic stirrer

Parallel micro high pressure reactor do research with more than one THR series high pressure reactor at the same time, each THR high pressure reactor is equipped with independent heating, stirring and pressure component, to ensure every high pressure reactor could do research independent under different temperature, pressure and stirring speed conditions, so as to screen experimental conditions more quickly and optimize it.

The reaction kettle bit and volume could be flexible combination, for ordinary, has 2, 4, 6, 8 parallel high pressure reactor, you could customize based on your actual experimental requirements.

Standard configuration of Parallel micro high pressure reactor

1. Pressure meter.
2. Safety valve.
3. Temperature sensor.
4. Inlet valve.
5. Sampling valve.
6. Vent valve.
7. Heating switch.
8. Stirring switch.
9. Rotating speed display meter.
10. Temperature display meter.
11. Rotating speed control button.
12. Temperature control button.
13. The first via inlet valve.
14. The second via inlet valve.

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THR (N) series high pressure reactor with magnetic stirrer

Technical specification

Model	THR50（N）	THR100（N）	THR250（N）	THR500（N）
The reaction kettle bit	N=2, 4, 6, 8			
Material capacity(L)	50ml	100ml	250ml	500ml
The working interface	Touch control liquid crystal display			
The maximum operating temperature	250℃	250℃	250℃	250℃
The maximum operating temperature with PTFE Liner	180℃	180℃	180℃	180℃
Heating mode	Module heating			
The heating power	1.2KW	1.2KW	1.5KW	2.0KW
Stirring speed	0-1200rpm	0-1200rpm	0-1300rpm	0-1300rpm
Stirring method	The internal magnetic stirring			
The stirring power	40W	40W	40W	80W
The maximum working pressure	10Mpa	10Mpa	10Mpa	10Mpa
Materials of construction	SS316L (standard); (Alloy TA2, ALLOY C-276, are optional)			
PTFE liner	Optional			

KCFD type mini high pressure reactor

Description

1. Make cumbersome experimental simple, it can be realized in one operation with different environments or with different environment temperature/ pressure diversified series of different experiments.

2. Through the RS232 communication interface a computer connected to print and show the historical value and the actual curve according to user's needs, the whole system can be monitored real time by software.

3. Catalysis, high temperature and pressure synthesis, dynamics testing, Fischer- tropsch, and hydrogenation reaction. Mainly used in the fields of biochemical, chemical material, environmental protection new material reaction, etc.

Small- high-pressure reactor **(the Lid can rise ,the reactor can turn,without bottom discharge)**	TOPT-KCFD025-10	1. Volume:0.25L 2. Design pressure: <10MPa 3. Temp:RT--300°C 4. Materials:SS304 5. Agitation type:with Mechanical agitation
	TOPT-KCFD03-10	1. Volume:0.3L 2. Design pressure: <10MPa 3.Temp: RT--300°C 4.Materials:SS304 5.Agitation type:with Mechanical agitation
	TOPT-KCFD05-10	1. Volume:0.5L 2. Design pressure: <10MPa 3. Temp:RT--300°C 4. Materials:SS304 5. Agitation type:with Mechanical agitation
	TOPT-KCFD1-10	1. Volume: 1L 2. Design pressure: <10MPa 3. Temp:RT--300°C 4. Materials:SS304 5. Agitation type:with Mechanical agitation
	TOPT-KCFD2-10	1. Volume: 2L 2. Design pressure: <10MPa 3. Temp:RT--300°C 4. Materials:SS304; 5. Agitation type:with Mechanical agitation
	TOPT-KCFD5-10	1. Volume: 5L 2. Design pressure: <10MPa 3. Temp:RT--300°C 4. Materials:SS304; 5. Agitation type:with Mechanical agitation

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TFCF type hand-lifted high pressure reactor

Customization support

Technical specification

High-pressure reactor **(the Lid can rise ,the reactor can not turn,with bottom discharge)**	TOPT-TFCF1-10	1. Volume: 1L 2. Design pressure: <10MPa 3. RT--300°C; 4. Material: SS304; 5. Type agitation:with Mechanical agitation
	TOPT-TFCF2-10	1.Volume: 2L 2.Design pressure: <10MPa 3.RT--300°C; 4.Material: SS304; 5.Type agitation:with Mechanical agitation
	TOPT-TFCF5-10	1.Volume: 5L 2.Design pressure: <10MPa 3.RT--300°C; 4.Material: SS304; 5.Type agitation:with Mechanical agitation
	TOPT-TFCF10-10	1.Volume: 10L 2.Design pressure: <10MPa 3.RT--300°C; 4.Material: SS304; 5.Type agitation:with Mechanical agitation
	TOPT-TFCF20-10	1.Volume: 20L 2.Design pressure: <10MPa 3.RT--300°C; 4.Material: SS304; 5.Type agitation:with Mechanical agitation

High pressure reactor customization

2L type

2L-4 parallel type

3L type

5L type

5L hand-lifting type

Reactor stirring part

10L type

50L type

More high pressure reactor, welcome contact with our specialist:
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