

glass reactor with variable speed for distillation

The glass reactor is equipped with jacketed temperature control system, stirring system, vacuum interface and discharge structure, which is suitable for the occasions with precise control of reaction conditions.

Glass Reactor

The glass reactor is crafted from high borosilicate glass for exceptional transparency, heat resistance, and chemical corrosion resistance. Widely used in university laboratories, scientific research units, chemical, pharmaceutical, and biological engineering fields, it provides reliable and precise control for a variety of reaction environments.

Main Features

1. **Superior Temperature & Pressure Resistance:** 3.3 borosilicate glass maintains stability from -80°C to 200°C and withstands vacuum up to -0.1MPa for low temperature and depressurized reactions.
2. **Insulated Stainless Steel Hose:** Jacket inlet/outlet use stainless steel insulated hoses to reduce thermal stress and prevent glass rupture.
3. **Non-accumulating Liquid Discharge Valve:** Designed to minimize residual liquid and simplify cleaning.



4. **Sturdy Bracket Design:** Stainless steel, carbon steel spraying, and aluminum alloy composite bracket for beauty, corrosion resistance, and ease of cleaning.
5. **Bottom Receiving Tray:** Stainless steel tray to prevent environmental pollution from leaks.
6. **Integrated Vacuum Gauge & Control Panel:** Real-time monitoring of system pressure and operating parameters.
7. **Imported Stirring Bearings:** Stable operation with no falling chips to keep reaction environment pure.
8. **PTFE-coated Stirring Blades & Shaft:** Excellent corrosion resistance for strong acid and alkali systems.
9. **Real-time Display:** Temperature and rotational speed shown on display for manual or fixed-speed control.

Working Principle

1. Temperature of reaction medium regulated via jacket structure; coolant or heat-conducting oil provides stable heat/cold source controlled externally.
2. PTFE-coated stainless steel shaft and paddles form fluid circulation, enhancing heat transfer and mixing.
3. Vacuum pump connection enables depressurized reactions for improved efficiency and concentration.
4. Up-top inclined discharging structure allows for smooth, low-residue material discharge, simplifying operation and cleaning.

Application Areas

1. **Organic Synthesis:** Multi-step synthesis, condensation, esterification, reduction reactions.
2. **Pharmaceutical R&D:** Pilot scale-up, drug intermediates, impurity studies.
3. **Natural Product Extraction:** Plant extraction, decolorization, purification.
4. **New Material Development:** Polymerization, nanoparticle dispersion and reaction.
5. **Teaching & Scientific Research:** Standardized reaction platform for universities and institutes.
6. **Chemical Process Optimization:** Pilot stage reaction parameter and process determination for enterprises.

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Model	TR-1	TR-2	TR-3	TR-5	TR-5Ex
Vessel volume	1.0L	2.0L	3.0L	5.0L	5.0L
Jacket volume	1.2L	1.7L	2.0L	3.0L	1.5L
Funnel volume	0.2L			0.5L	
Pressure in the vessel	-0.1mpa to 0.0mpa				
Pressure in the jacket	≤ 0.03 mpa				

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Model	TR-1	TR-2	TR-3	TR-5	TR-5Ex		
Working temperature	-80°C to 200°C						
Stirring speed	40rpm to 500rpm			20rpm 500rpm	to	50rpm 500rpm	to
Power supply	220-240Vac, 50Hz, 60HZ or 110Vac, 60Hz			100-240V, 50/60Hz		220-240V, 50/60Hz	
Dimensions(WxDxH)	480x420x1110mm	480x420x1020mm	480x420x1200mm	640x520x1600mm			