

HiClave™ : High pressure reaction autoclaves

JUCHHEIM is a TÜV Rheinland certified producer of pressure devices. Engineering is according to European **PED, AD2000**. Where applicable a CE certificate is provided. Metal parts come with an according 3.1 or 3.2 **material certificate**.

HiClave™ high-pressure reactor systems are available in a **volume range of 10 to 500 ml** (for larger volume pressure reactors, please refer to our reaction vessel catalogue). The maximum pressure can currently be chosen **up to 400 bar**. A maximum **temperature of 400 °C** is possible.

Heating and Cooling

You can choose from the following options for temperature control of the reactor inner temperature:

- Heating via **electrical heating** jacket (optionally cooling-coil inside) (Fig. 1)
- Heating / Cooling with double jacket **via thermostat**



Figure 1: Left: HiClave with electrical heating jacket, Right: Example configuration

Temperature is measured inside by PT100 high **precision sensor** (choice of thermocouple is possible).

Choice of chemically resistive materials

You can chose from the following engineering materials:

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- Stainless steel 316Ti (1.4571) or 316L (1.4404)
- Hastelloy C, 2.4610
- Inner surface roughness is <math><0,8\mu\text{m Ra}</math>, electropolished
- Coatings available (PTFE/PFA, Tantalum (cocoon™), enamel)

Sealing and Connectors

A significant advantage of the HiClave reactor systems is the available **purely metallic sealing** (Fig. 2). This is enabled by a special double-conical shape of the reactor and lid inside. Sealing by O-Ring is also available. Another advantage are the **individually configurable connector ports** in the lid: They can be fitted in radial orientation around the lid and with an angle of 30° on top. This allows to fit e.g. **up to 10 connectors to a 200ml HiClave**.



Figure 2: Opened HiClave reactor: purely metallic sealing

Accessories

HiClave Systems come with certified **safety valve** (optionally bursting disk) and analogue **manometer**. Bottom outlet and further accessories are available:

An overhead stirrer with individually chosen geometry (e.g. propeller, anchor, impeller, ...). Fig. 3 shows three examples:



Figure 3: Left: Magnetic stirrer head. Right: Excerpt from stirrer geometry choices

Optional measure and control

HiClave™ systems may be operated as single and parallel reactor systems. In addition to the standard configurations, customized systems with graphical user interface via Windows-Computer is also available, just contact us with your requirements.

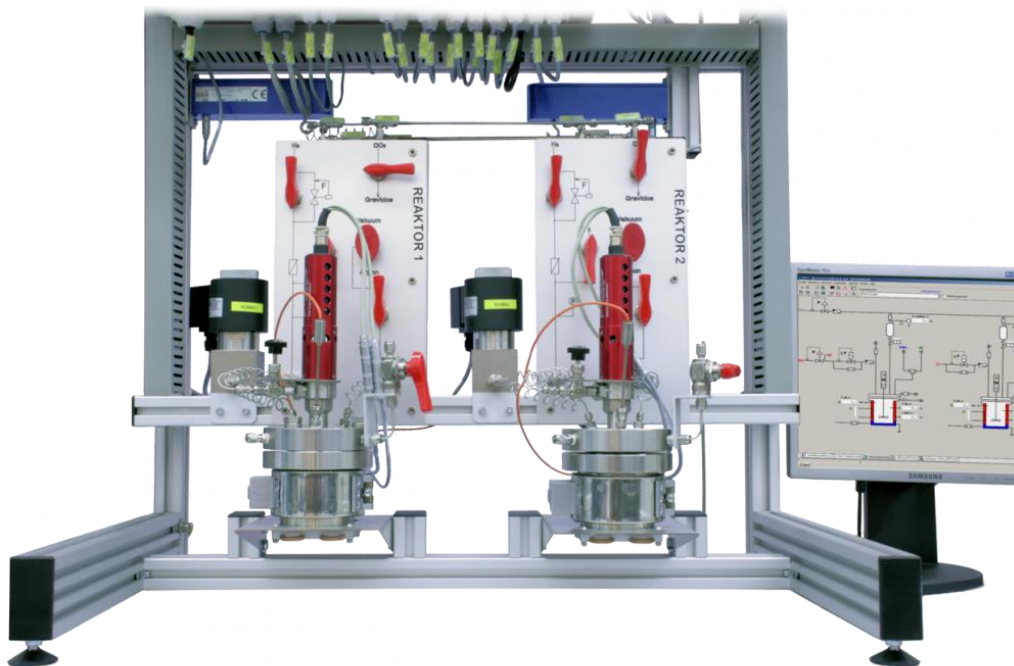


Figure 4: Automated parallel hydrogenation system with MFC and gravimetric dosing

Please let us know your requirements:

北京海菲尔格科技有限公司
 联系人：孙经理
 地址：北京市朝阳区南磨房路37号1008室
 电话：010-53779530、13716489005
 网址：www.hiferg.com
 邮箱：13716489005@163.com

