



300ml 碳化硅微通道反应器

产品简介

碳化硅微通道反应器专为化工极端工况研发，解决了高温、强腐蚀与大温差下的高效传质换热技术难题，实现了强腐蚀介质与高温工艺流体之间的安全能量转换。产品凭借高纯度碳化硅材料的优异导热性，在轻量化、紧凑化与耐腐蚀性上表现突出，同时搭载我司专利流道设计，为化工过程的高效、安全与绿色生产提供核心装备支撑。

技术亮点

- **高耐腐无压烧结碳化硅基材**: 采用高纯度无压烧结碳化硅材料，对绝大多数强酸、强碱、熔融盐介质具备极强化学惰性。**一体化扩散焊成型工艺**: 芯体采用先进扩散焊工艺制作，实现无间隙一体化连接，微通道结构致密性与机械强度大幅提升，抗热震性能优异。**一次烧结成型工艺**: 无需二次粘接与焊接，整体致密度高、结构完整性好。
- **专利流道结构设计**: 反应器通道结构为我司发明专利，通过精准的流场优化，实现低流阻、高混合效率、流动死区极少的特性，既降低了系统能耗，又保障了反应过程的均一性与稳定性，有效提升反应转化率与选择性。
- **产品密封性能**: 芯体采用一次烧结或扩散焊两种工艺都是整体无拼接界面，通道之间无内漏、无介质串流。接头采用O型圈密封，耐温达-15°C~240°C，200次冷热循环密封性能良好。

关键性能参数

耐压试验压力	物料侧4MPaG, 换热侧1MPaG
内容积	300ml
换热面积	0.456m ²
流阻(水:5L/min)	1.15bar
混合效果(萃取率)	96.1%
芯体(长×宽×高)	360×480×53.8mm
产品(长×宽×高)	580×240×475mm
产品总重	84.45kg
产品寿命	8~9年



300ml Silicon Carbide Microchannel Reactor

Product Introduction

The silicon carbide microchannel reactor is specially developed for extreme industrial conditions in the chemical industry. It has solved the technical problems of efficient mass transfer and heat exchange under high temperatures, strong corrosiveness and large temperature differences, achieving safe energy conversion between corrosive media and high-temperature process fluids. The product demonstrates outstanding performance in lightweight, compactness and corrosion resistance thanks to the excellent thermal conductivity of the high-purity silicon carbide material. Additionally, it is equipped with our patented flow channel design, providing core equipment support for efficient, safe and green production in chemical processes.

Technical Highlights

- **High corrosion-resistant non-pressure sintered silicon carbide substrate:** Made of high-purity non-pressure sintered silicon carbide material, it has extremely strong chemical inertness against most strong acids, strong bases, and molten salt media. **Integrated diffusion welding forming process:** The core body is made using advanced diffusion welding technology, achieving seamless integration connection without gaps. The micro-channel structure significantly improves the tightness and mechanical strength, and has excellent thermal shock resistance. **One-time sintering forming process:** No need for secondary bonding or welding, resulting in high overall density and good structural integrity.
- **Patented flow channel structure design:** The reactor channel structure is our company's patented invention. Through precise flow field optimization, it achieves low flow resistance, high mixing efficiency, and very few flow dead zones. This not only reduces system energy consumption but also ensures the uniformity and stability of the reaction process, effectively improving the reaction conversion rate and selectivity.
- **Product sealing performance:** The core body is sealed using either one-time sintering or diffusion welding processes, with no spliced interfaces between channels and no internal leakage or medium leakage. The joints use O-ring seals, with a temperature resistance of -15°C to 240°C, and good sealing performance after 200 cold-hot cycles.

Key Performance Parameters

Pressure resistance test pressure	Material side: 4 MPaG, Heat exchange side: 1 MPaG
Content volume	300ml
Heat exchange area	0.456m ²
Resistance (water: 5L/min)	1.15bar
Mixing effect (extract rate)	96.1%
Core body (length × width × height)	360 × 480 × 53.8mm
Product (length × width × height)	580 × 240 × 475mm
Total product weight	84.45kg
Product lifespan	8 to 9 years