Corning® Advanced-Flow™ G1 SiC Reactor

Continuous flow reactor with high chemical resistance

The Corning G1 SiC reactor is compatible with a wide variety of chemicals – including hydrofluoric acids – and high pH at elevated temperatures. It also offers the enhanced heat and mass transfer capabilities of an Advanced-Flow™ reactor. Reactors can be customized by integrating G1 glass fluidic modules in the G1 SiC reactor.

Benefits

- Compatible with a wide variety of chemicals from low pH (including hydrofluoric acid) to high pH even at elevated temperatures (up to 200°C)
- G1 glass fluidic modules can be integrated in the G1 SiC reactor to combine the transparency of glass (photo chemistry, visual check of a chemical reaction), and the corrosion resistance of SiC (for caustic quenching)

Features

- Flow range: 30 to 200 ml/min
- Modular internal volume (10 ml per fluidic module)
- Metal-free reaction paths
- High flexibility
- Scalability with Advanced-Flow™ G4 SiC production reactor
- Improved heat transfer option is available

Reactor Elements

The G1 SiC reactor comprises sintered ceramic fluidic modules, aluminum heat exchanger, PFA piping and perfluoro-elastomer gaskets.
Boundary Conditions

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>Process Path</th>
<th>Heat Exchange Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>-60 to 200</td>
<td>-60 to 200</td>
</tr>
<tr>
<td>Pressure (barg)</td>
<td>0 to 18</td>
<td>0 to 6</td>
</tr>
</tbody>
</table>

Fluidic Module Design Options

Fluidic modules have various functionalities and can be used as building blocks for your reactor, allowing customized reactors to be assembled.

<table>
<thead>
<tr>
<th>Mixing Designs</th>
<th>Residence Time Designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>One injection zone to contact two reactants and residence time</td>
<td>Residence time or pre-heating/cooling</td>
</tr>
</tbody>
</table>

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