The future flows through Corning® Advanced-Flow™ Reactors
Seamless scale-up
from laboratory to production
with impressive corrosion resistance

Boundary Conditions

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Pressure (barg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 60 to 200</td>
<td>0 to 18</td>
</tr>
</tbody>
</table>

Make industrial production real

Our reactors enable the continuous processing of chemicals with a smaller footprint than conventional batch reactors and are specially designed for the seamless transition from lab feasibility to process development to industrial-scale producing of chemicals for the pharmaceutical, fine and specialty chemical industries.
Higher yields, lower costs

Corning® Advanced-Flow™ reactors offer significant performance benefits to the chemical processing industry through Corning® Advanced-Flow™ reactors – a full range of reactor products suited to meet the needs of a particular reaction or a wide portfolio of reactions.

Continuous-flow chemical production utilizing Corning® Advanced-Flow™ reactors can provide:

- Seamless scale-up
- Increased production yields
- Lower overall production costs
- Enhanced plant safety
- Higher product quality
- Decreased waste generation and energy consumption
- Faster product time to market

Corning® Advanced-Flow™ reactors can be effectively run on reactions with miscible and immiscible liquids, and gases and liquid-containing suspensions of particles up to 200 microns.

Many different types of reactions are suited for Corning's reactors, including:

- Nitrations
- Oxidations
- Brominations
- Chlorinations
- Grignards
- Alkylations
- Organo-metallics
- Hydrogenations
- Polymerizations
- and others.

Corning® Advanced-Flow™ reactors can be integrated into existing chemical processing infrastructures and engineered to meet ATEX and GMP standards. Corning’s reactors can be easily incorporated into sub-systems or integrated in series, helping customers migrate to Corning’s technology with minimal risk.

Corning® Advanced-Flow™ Reactors:

- **G1 Reactor**
  - Process development and small production glass reactor
  - Flow Rate: 30 to 200 ml/min

- **G2 Reactor**
  - Process development and small production photo reactor
  - Flow Rate: 10 to 200 ml/min

- **G3 Reactor**
  - Pilot and production glass reactor
  - Flow Rate: 400 to 2000 ml/min

- **G4 SiC Reactor**
  - Production silicon carbide reactor
  - Flow Rate: 1000 to 8000 ml/min

- **G1 SiC Reactor**
  - Process development and small production silicon carbide reactor
  - Flow Rate: 30 to 200 ml/min

Product Portfolio

Corning® Advanced-Flow™ offer includes a range of services to enhance customers’ projects from development, through to implementation and operation including:

- Workshops and trainings
- Quick feasibility test (QFT)
- Basic and detailed auxiliary systems engineering
- Customized turnkey solutions
- Technical support
- FAT/SAT and industrial start-up
- Assistance for FDA qualifications
- Pre-and post-purchase technical support
- Compliance with international standards (ATEX, PED, SELO...)

Corning® Advanced-Flow™ technology reduces energy consumption to enhance achieving projects from development, through to implementation and operation including.
Corning incorporated is the world leader in specialty glass and ceramics. Corning’s Advanced-Flow™ reactors are specially designed for the seamless transition from lab feasibility to process development to industrial-scale to multi-ton production of chemicals. Corning® reactors are designed to meet the needs of pharmaceutical, fine and specialty chemicals companies who are seeking process optimization of a particular reaction or a wide portfolio of reactions. Corning reactors comprise highly engineered fluidic modules that integrate heat-transfer and mass-transfer in a single piece of equipment. These reactors are easily scalable and enable seamless, cost-effective solutions for fast scale-up and time to market. Corning® reactors increase the efficiency, scalability, yields and quality of chemical processing while reducing environmental impact, performance variability and cost.

Corning® Advanced-Flow™ Reactors a worldwide presence. Thinking global and acting local

---

**EMEA and NSA**
Corning S.A.S.  
Reactor Technologies  
7 bis Avenue de Valvins  
CS 70156 Samois sur Seine  
77215 Avon Cedex, FRANCE  
ph. +33 1 64 69 71 07  
fax +33 1 64 69 70 59  
reactors@corning.com

**CHINA**
Corning China (Shanghai) RHQ  
No. 358 Lu Qiao Road  
Jinqiao Export Processing Zone, Pudong  
Shanghai 201206, CHINA  
ph. +86 21 22152888 *1408  
fax +86 21 62152298  
reactor.asia@corning.com

**INDIA**
Corning Technologies India Pvt. Ltd.  
2nd floor, DLF Building 9B  
DLF Cyber City Phase III  
Gurgaon, Haryana 122002, INDIA  
ph. +91 124 4604000  
fax +91 124 4604099  
reactor.asia@corning.com

---

www.corning.com/reactors © 2016 Corning Incorporated. All rights reserved