



# Case Study

## highpreactor BR-40, BR-200 and BR-300 | PharmaFluidics

### User

PharmaFluidics'  $\mu$ PAC™ technology (micro Pillar Array Column) takes a unique and novel approach on how to create a chromatographic support structure that builds upon advanced silicon micromachining capabilities to create chromatographic separation beds into silicon microfluidic channels with exceptional properties that result in excellent chromatographic performance with high-resolution and high sensitivity. The inherent high permeability and low 'on-column' dispersion obtained by the perfect order of the separation bed makes  $\mu$ PAC™ based chromatography unique in its kind offering several advantages compared to conventional column technologies (packed beds and monoliths).



[www.pharmafluidics.com](http://www.pharmafluidics.com)

### Product

The Berghof pressure vessels **highpreactor BR-40, BR-200 and BR-300** are used.

### Application

The basic  $\mu$ PAC™ silicon backbone structures are micro machined in specialized clean room foundries. In order to turn these bare structures into a chromatography column, the surface needs to be coated with the so-called bonded phase. It is this bonded phase that defines the chromatographic selectivity of the column and its application field. PharmaFluidics currently focuses on reversed phase chromatography, which requires a hydrophobic layer to be coupled to the silicon surface. For this purpose, the Berghof reactor is used due to its high pressure rating up to 200 bar and its flexible volume content. PharmaFluidics currently uses a range of reactors from 40 ml up to 300 ml, with a whole range of higher volumes available for potential future setups or applications. Hence, no change in technology is needed for any production setup upgrades that are to come.

### Customer Testimonial

„When upgrading our  $\mu$ PAC™ column production process from a R&D level to a well-controlled industrial process, Berghof reactors were an essential piece of the puzzle. Ease of operation, robustness, pressure rating up to 200 bar, solvent compatibility together with the possibility to customize the complete setup for the PharmaFluidics process, are key benefits of the Berghof reactors.“

Kurt van Mol (Research Engineer, PharmaFluidics)