



micro  
innova

efficient processing

## More Process Efficiency

An API producer had problems with an extremely difficult step in a batch process, which reduced the overall yield to a level below being economic.

### 7 months only from the laboratory to production

Since the upstream and downstream processes were efficient enough (with yields of about 80%) the problem could be solved with a partial renewal of the process.

The mixing sensitive process step, almost unmanageable in batch mode, was replaced by continuously operating mixing and reaction module of Microinnova.



Yield



Selectivity

- **Efficiency more than doubled**
- **Process safety increased**
- **Lossless scale-up**



The promising laboratory tests were implemented after 6 months only and with a deviation of only 0.1% in the production scale. The yield of the critical step in the process was increased to 30%, thus enhancing the overall efficiency of the process by far !

With a throughput of 200 l / h, the Microinnova module is one of the world's largest continuously operated cGMP compliant plants in the pharmaceutical sector.