

PROCESS ANALYSER TECHNOLOGY



INNOVATION

ENGINEERING

OPTIMIZATION

BaychromAT® bioplatfrom – innovative online analytics

BaychromAT® – online analytics for fermentations in process development, pilot plants and production

BaychromAT® is a platform that automates typical benchtop analyzers. Reliable approved automation components enable high operational availability. Online HPLC with BaychromAT® has been established in chemicals and polymers for many years. An innovation project within Bayer Technology Services was started in 2005 to expand the BaychromAT® platform to biotech industries, with the main focuses of development on:

- Development of a sterile sampling valve (online port)
- Adaptation of BaychromAT® to GMP requirements
- Online cell counting with a Cedex analyzer (Innovatis AG)
- Online titer and aminoacids via HPLC (Agilent, Shimadzu)
- Online glucose and lactate determination (YSI)
- Online medium determination (CuBiAn by Innovatis AG)



Overview of the BaychromAT® bioplatfrom

Sterility is the key to successful online cell counting

Sterility requirements for fermentation processes are extremely stringent. This is particularly true for sample extraction, as there is a risk of contamination each time a sample is taken. Nevertheless, it is nearly impossible to characterize the course of fermentation completely without sampling. The near-time, continuous monitoring of all critical parameters can only be ensured by means of a fully automated analysis system. This system has to include a steam-sterilizable sampling valve.



BaychromAT® SamplingValve integrated into the INGOLD port of a steel fermenter



Bayer Technology Services
Powering Your Performance

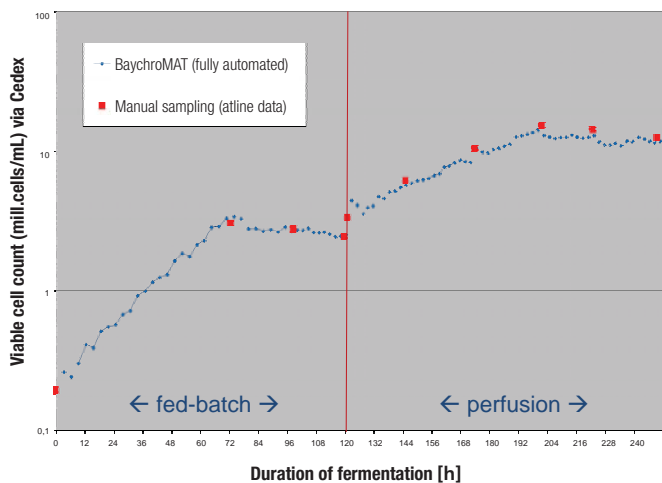


BaychroMAT® Sampling Valve – a steam-sterilizable Online Port

More data – greater safety

BaychroMAT® enables reliable sterile sampling and therefore data acquisition around the clock. Data formerly only available once a day by inprocess control can now be used for real-time monitoring, modelling and titer prediction, and to establish the optimal time to stop your fermentation. The following data are now available online

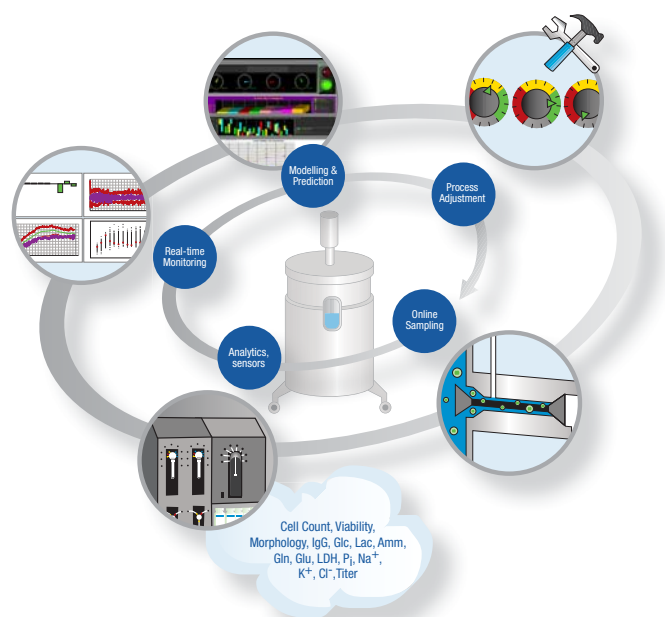
- Cedex data: Viable cell count, viability, cell diameter...
- HPLC data: Titer, amino acids, IgG, peptides, proteins
- Online information about your C-source: glucose, glutamine, glycerol, acetate...
- Online medium information: lactate, phosphate, ammonia, glutamate, LDH...



Cedex data (viable cell count) of fed-batch fermentation and perfusion fermentation (comparison of online data versus lab data)

Quality by Design – BaychroMAT® is the solution

Since 2002, the FDA has encouraged manufacturers in the pharma/ biotech industries to implement process analytical technologies. Up to now, only a few examples are known due to the lack of robust technologies. BaychroMAT® changes this situation and Quality by Design becomes reality. More data – greater safety, reduced human error, fewer incident reports and an overall PAT data concept – this will be the future if you work with the BaychroMAT® bioplatfrom.



Continuous improvement with BaychroMAT®: Online sampling enables real-time monitoring, modelling and titer prediction as well as optimal process adjustment.

Our Serviceline will support you

Give us a call on 00 800 300 99906 or +49 214 30 99906 to talk directly to our experts.