

Specifications FAST 500L fermenter



WHY USE FAST?

Continuous removal of inhibiting compounds from the fermentation broth can improve the viability and duration of fermentation processes, increasing productivity and titers, and concentrating product streams. DAB.bio's advanced bi-phasic fermenter, named **Fermentation Accelerated by Separation Technology (FAST)**, intensifies processes by combining production and product separation in a single vessel.

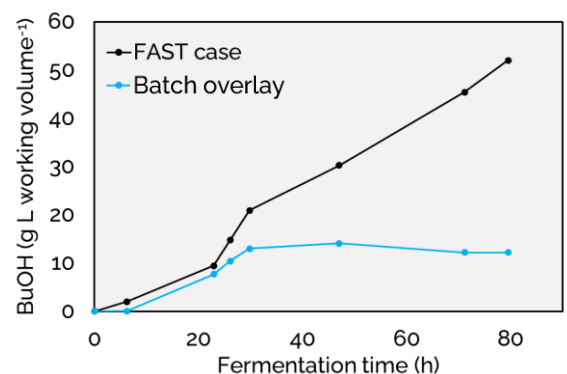
APPLICATIONS

Processes in which inhibitory and hydrophobic compounds are excreted from the microbe benefit from FAST as well as products that side react or are unstable.

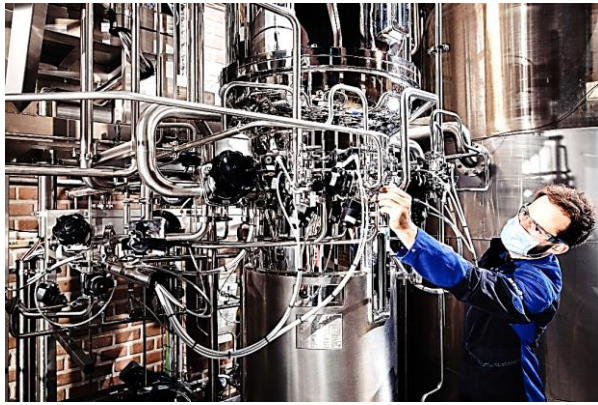
- Terpenes and Lactones
- Single and polycyclic Aromatics
- Alcohols and Esters
- Ketones and Aldehydes

SHOWCASE

Compared to a conventional overlay fermentation, FAST increased butanol productivity 2.3-fold, yielding a total of 3.5-fold more butanol over an 80h duration (right graph). Using this data, a case study showed that less than half the number of 100 000L FAST fermenters would be needed to produce 100 ktonnes of butanol per year (220 FAST fermenters versus 500 conventional fermenters). By decreasing the number of installed fermenters necessary to produce 100 ktonnes of butanol, FAST would save an estimated 2.2 bln (USD) in CAPEX and lower overall production costs by 60%.



- 24/7 operational support @ Bio Base Europe Pilot Plant
- Remote operator control and data acquisition
- Fully automated *Cleaning in Place* and *Sterilization in Place*
- Compatible with lipophilic, non-toxic, and biocompatible solvents
- Food grade processes possible



Specifications	FAST 500
Volume	500 L*
Agitation	0-550 RPM
Gas flow rates	0 - 2 VVM
Separation capacity	~ 1m ³ per day
Pressure	1 - 2.5 bara
pH control	Acid, NaOH, NH ₃
Food grade	Yes
ATEX compatible	No
Gasses	Air, N ₂
GMO compliance	Biosafety level 1
Host organisms	(an)aerobic, bacteria, yeast

EXPERTISE

DAB.bio's bioprocess engineers can help you optimize your bi-phasic process for either (fed)batch or continuous production. Optimized solvent dosage improves your bioprocesses, increases the product quality and lowers your operational expenditures.

KEY VALUE

- Increases overall productivity by maintaining high production rates for longer durations at increased working volumes.
- Simplifies downstream processing by concentrating product streams and enabling continuous manufacturing.

FAST CAPACITY

- ✓ The 500L unit is located and operated at BBEPP
- ✓ It supports biphasic fermentations up to 12 000L with add-on capacity.
- ✓ It is fully integrated into BBEPP's main fermentation hall and has access to their upstream and downstream processing infrastructure.



Available for demonstration, process development, commercial sample or small-scale production - up to 12,000 L

Contact info@dab.bio to find out how FAST can lower your production costs.