



Labfors 5 BioEtOH

Simultaneous Saccharification and Fermentation (SSF)



- ▶ Simultaneous hydrolysis and fermentation
- ▶ Ideal mixing
- ▶ Easy addition of solids
- ▶ SSF-optimised temperature control
- ▶ Perfect process control

«Having tested the Labfors 5 BioEtOH with various pretreated materials (e.g., wheat straw, bagasse, spruce, etc.), we are impressed by its mixing efficiency.»

Dr. Mats Galbe, Dept. Chemical Engineering, Lund University, Sweden



Next-generation biofuel

▶ Simultaneous hydrolysis and fermentation

Enzymatic hydrolysis and fermentation can now be combined in one system (SSF) – by marrying the proven technology of a microbial bioreactor with innovative developments in the drive and stirrer system. This means ideal mixing is guaranteed even when the dry substance content is very high. During anaerobic fermentation, the bioreactor provides the optimum conditions for the culture and comprehensive control of the bioprocess.

▶ Ideal mixing

Viscous liquid? Solid? The mixing characteristics of liquids and solids vary. That's why we supply a selection of stirrers. It means you have the right stirrer system for every substrate. The newly developed, powerful high-torque motor guarantees rapid and uniform mixing even at very high viscosity or if the feed material has a high dry content.

▶ Easy addition of solids

A 4 cm port in the top plate allows solids to be easily added and removed.

▶ SSF-optimised temperature control

With the temperature of both the substrate and the vessel jacket being monitored, optimum temperature control throughout the bioprocess is guaranteed. This prevents overheating on the inside wall of the vessel and keeps enzyme activity high.

▶ Perfect process control

Bioprocess control begins with the quality and flexibility of the local controller. The Labfors 5 splash-proof touch screen controller allows precise, reliable measurement and control for up to 6 vessels. External devices such as the INFORS HT Gas Analyser can be easily connected.



Applications

- Research and development in the lignocellulosic ethanol production sector
- SSF process development (enzymatic hydrolysis and fermentation)
- Enzyme screening and activity studies

Key technical data

- Dimensions:** 465 x 465 x 900 mm (W x D x H)
- Vessels:** 3.6 L jacketed flat-bottom vessel
- Maximum expansion:** Up to 6 base units per touch screen controller
- Speed range:** 0–200 rpm
- Temperature range:** 5°C above coolant to 60°C
- Standard parameters:** Stirrer speed, temperature (vessel content + jacket), pH, feed
- Optional parameters:** CO₂ exit gas analysis

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