

SmartBev™ Lager

TUM 34/70



Yeast fermentation is at the heart of great beer

- Yeast management is a crucial element of brewing good beer of consistent quality
- Yeast propagation is a complex and time-consuming process and can lead to inconsistent starting points across brews

SmartBev™ Lager helps the brewing industry optimize yeast propagation

- Reduce complexity and planning time for propagations, streamlining the workflow for saved time and increased flexibility in production
- Increase consistency in the propagation as well as in the first brew to improve the beer and ease planning in production

Specifications for SmartBev™ Lager - TUM 34/70

STRAIN	GENUS	YEAST CLASSIFICATION	DOSAGE	TOTAL CELL COUNT
TUM 34/70	<i>Saccharomyces pastorianus</i> <i>ssp. carlsbergensis</i>	Bottom-fermenting yeast	1 pouch per 10hL Wort	$> 1 \cdot 10^9$ CFU/g

SmartBev™ Lager - TUM 34/70 is the original strain from TUM research center Weihenstephan, delivered in an optimized frozen liquid (FLY) format

SmartBev™ Lager - TUM 34/70 is delivered in a **pouch format of $> 1 \cdot 10^{12}$ CFU (active cells)** of high-quality, well-established *S. pastorianus* yeast for brewing lager beers. The frozen liquid yeast has a long **shelf life of 18 months** at $< -45^{\circ}\text{C}$ and keeps the yeast cells in a dormant state, which means they are ready to use as soon as they are thawed (1-1½ hours at 30°C). Brewers can expect a > 10 -fold increase in cell count in the first 24 hours of propagation.

Our quality standards ensure high CFU, high activity and purity, securing a good and clean start to fermentation that results in clean and crisp lager beers.



Chr. Hansen will manage the logistics of ensuring a hassle-free yeast supply, freeing you up to focus on brewing flavorful lager.

CHR HANSEN

improving food & health



Weihenstephan and Chr. Hansen ensure a high-quality product for every brew

Every pouch goes through an extensive quality control analysis at Chr. Hansen and Weihenstephan, ensuring a high-quality product with a **total cell count of $\geq 1.0 \cdot 10^9$ CFU/g**.

METHOD	SMARTBEV™ LAGER
Beer spoiling bacteria - <i>Initial examination and enrichment culture</i>	Absence in 1mL
Top-fermenting yeasts in bottom-fermenting yeasts - <i>37°C-method¹</i>	Negative in 0.1mL
Wild yeasts - <i>Enrichment in YM-broth + CuSO₄</i>	Negative in 0.1mL
Bacteria in culture yeast - <i>Enrichment of yeast broth</i>	Negative in 1 mL
PCR Identification <i>S. cerevisiae</i> var. <i>diastaticus</i>	Negative in 0.1mL
Aerobic bacteria - <i>Enrichment wort + actidione</i>	Negative in 1.00mL
Aerobic bacteria - <i>Enrichment culture WLD-agar</i>	0 CFU in 0.1mL

The products also go through a vitality test before released - acidification method (pH drop).



Propagation with SmartBev™ Lager TUM 34/70 started quickly. The dead cells were reduced fast and in three days we had enough cells to start the fermentation process. We actually saved 50% of our time by using the novel SmartBev™ Lager TUM 34/70 technology in comparison to our standard inoculation scheme.

After pitching our tank with the propagated SmartBev™ Lager TUM 34/70, fermentation and pH drop started quickly. The fermentation ran stable and fast throughout the whole process.

Head Brewmaster Bernhard Löw , Privatbrauerei M. C. Wieninger, Germany

¹ The term "bottom- and top fermenting yeasts" do not describe well the behavior of modern yeast. However, this is the name of the method according to accreditation, so we continue to reference them for this reason.