



## Technical Data Sheet

# VOSS

## KVEIK ALE YEAST

Kveik is a Norwegian word meaning yeast. In the Norwegian farmhouse tradition, kveik was preserved by drying and passed from generation to generation. Kveik is the original, traditional dried yeast! The LalBrew® Voss strain was obtained from Sigmund Gjernes (Voss, Norway), who has maintained this culture using traditional methods since the 1980's and generously shared it with the wider brewing community. LalBrew® Voss supports a wide range of fermentation temperatures between 25-40°C (77-104°F) with a very high optimal range of 35-40°C (95-104°F). Very fast fermentations are achieved within the optimal temperature range with full attenuation typically achieved within 2-3 days. The flavor profile is consistent across the entire temperature range: neutral with subtle fruity notes of orange and citrus. Flocculation is very high producing clear beers without filtration or use of process aids.



### MICROBIOLOGICAL PROPERTIES

Classified as *Saccharomyces cerevisiae*, a top fermenting yeast.

Typical Analysis of LalBrew® Voss yeast:

<b>Percent solids</b>	93% - 96%
<b>Viability</b>	≥ 5 x 10 <sup>9</sup> CFU per gram of dry yeast
<b>Wild Yeast</b>	< 1 per 10 <sup>6</sup> yeast cells
<b>Diastaticus</b>	Undetectible
<b>Bacteria</b>	< 1 per 10 <sup>6</sup> yeast cells

Finished product is released to the market only after passing a rigorous series of tests

\*See specifications sheet for details



### BREWING PROPERTIES

In Lallemand's Standard Conditions Wort, LalBrew® Voss yeast exhibits:

Fermentation that is completed in:	2 days at 40°C (104°F)
	3-4 days at 30°C (86°F)
	5-7 days at 25°C (77°F)

Medium to high attenuation and very high flocculation.

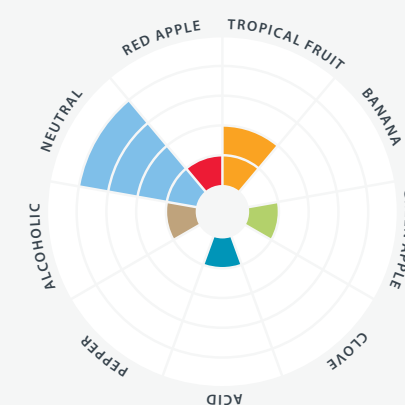
Neutral flavor profile across the temperature range with notes of orange and citrus.

The optimal temperature range for LalBrew® Voss yeast when producing traditional styles is 35-40°C (95-104°F)

Lag phase, total fermentation time, attenuation and flavor are dependent on pitch rate, yeast handling, fermentation temperature and nutritional quality of the wort. Our research suggests that pitching LalBrew® Voss directly into wort without prior rehydration will often result in better performance including shorter lag-phase and greater attenuation. *If you have questions please do not hesitate to contact us at [brewing@lallemand.com](mailto:brewing@lallemand.com)*



### FLAVOR & AROMA



### QUICK FACTS

#### BEER STYLES

Norwegian farmhouse ales, fast-fermented neutral ales

#### AROMA

Relatively neutral at high temperatures, slight orange and citrus notes

#### ATTENUATION

medium to high

#### FERMENTATION RANGE

25 - 40°C (77 - 104°F)

Optimal: 35 - 40°C (95 - 104°F)

#### FLOCCULATION

very high

#### ALCOHOL TOLERANCE

12% ABV

#### PITCHING RATE

50-100g/hL to achieve a minimum of 2.5-5 million viable cells/mL



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## USAGE

The pitch rate will affect the fermentation performance and flavor of the beer. For LalBrew® Voss yeast, a pitch rate of 50-100g per hL of wort is sufficient to achieve a minimum of 2.5-5 million viable cells/mL. More stressful fermentations such as high gravity, high adjunct or high acidity may require higher pitch rates and additional nutrients to ensure a healthy fermentation.

*Find your exact recommended pitching rate with our Pitch Rate Calculator in our Brewers Corner at [www.lallemandbrewing.com](http://www.lallemandbrewing.com)*

LalBrew® Voss may be re-pitched just as you would any other type of yeast according to your brewery's SOP for yeast handling. Wort aeration is required when re-pitching dry yeast.



## STORAGE

LalBrew® Voss yeast should be stored in a vacuum sealed package in dry conditions below 4°C (39°F). LalBrew® Voss will rapidly lose activity after exposure to air.

Do not use 500g or 11g packs that have lost vacuum. Opened packs must be re-sealed, stored in dry conditions below 4°C (39°F), and used within 3 days. If the opened package is re-sealed under vacuum immediately after opening, yeast can be stored below 4°C (39°F) until the indicated expiry date. Do not use yeast after expiry date printed on the pack.

Performance is guaranteed when stored correctly and before the expiry date. However, Lallemand dry brewing yeast is very robust and some strains can tolerate brief periods under sub-optimal conditions.

*If you have questions, do not hesitate to contact us. We have a team of technical representatives happy to help and guide you in your fermentation journey.*



## REHYDRATION

Rehydration of dry brewing yeast in sterile water is generally recommended prior to pitching into wort in order to reduce stress on the cell as it transitions from dry to liquid form. However, our research suggests that pitching LalBrew® Voss directly into wort without prior rehydration will often result in better performance including shorter lag-phase and greater attenuation. Use of a rehydration nutrient such as Go-Ferm Protect Evolution has been shown to improve fermentation performance for difficult fermentations.

Rehydration guidelines are quite simple and present a much lower risk of contamination than a starter, which is unnecessary when using the recommended pitch rate of dried active yeast.

Sprinkle the yeast on the surface of 10 times its weight in clean, sterilized water at 30-35°C (86-95°F). Do not use wort, or distilled or reverse osmosis water, as loss in viability may result. **Stir gently**, leave undisturbed for 15 minutes, then stir to suspend yeast completely. Leave it to rest for 5 more minutes at 30-35°C.

Without delay, adjust the temperature to that of the wort by mixing aliquots of wort with the rehydrated yeast. Wort should be added in 5 minute intervals and taking care not to lower the temperature by more than 10°C at a time. Temperature shock of >10°C will cause formation of petite mutants leading to extended or incomplete fermentation and possible formation of undesirable flavors. Do not allow attemperation to be carried out by natural heat loss. This will take too long and could result in loss of viability or vitality.

Inoculate without delay into cooled wort in the fermenter. LalBrew® Voss yeast has been conditioned to survive rehydration. The yeast contains an adequate reserve of carbohydrates and unsaturated fatty acids to achieve active growth. It is unnecessary to aerate wort upon first use.

### CONTACT US

For more information, please visit us online at [www.lallemandbrewing.com](http://www.lallemandbrewing.com)

For any questions, you can also reach us via email at [brewing@lallemand.com](mailto:brewing@lallemand.com)