

***Torulaspora delbrueckii* yeast, for sequential inoculation with a suitable *Saccharomyces cerevisiae* yeast. For Premium white, rosé and red wines, intense and with a great complexity.**



The wide variety of natural yeasts selected reflects the biodiversity of microflora present during alcoholic fermentation of wines. Nevertheless, considering the large number of species and sub-species (other than *Saccharomyces*) present in most grape musts, this world is still underexploited. During spontaneous fermentation, microbial activity generates a succession of enzyme actions that make either a positive or negative contribution to the aromatic complexity and diversity of wines. With Level² Solutions, Lallemand is innovating by introducing new species and new controlled, safe methods for managing alcoholic fermentation (sequential inoculation), which are opening up new horizons for winemakers.

APPLICATIONS



LEVULINE® SYMBIOSE yeast has been specially selected from nature for the production of Premium white, rosé and red wines with great complexity. The inoculation of this *Torulaspora delbrueckii* yeast must be followed by an inoculation of a suitable of *Saccharomyces cerevisiae* yeast. **LEVULINE® SYMBIOSE** contributes to the aromatic complexity and fullness in the mouth of various grapes varieties (Chardonnay, Chenin Blanc, Semillon, Ugni Blanc, Melon de Bourgogne, Maccabeu) and red (Syrah, Sangiovese, Montepulciano, Tempranillo).

MICROBIOLOGICAL AND OENOLOGICAL PROPERTIES

- *Torulaspora delbrueckii*
- **Lag phase:** moderate
- **SO₂ sensitivity:** high
- **Volatile acidity production:** very low
- **Optimum fermentation temperature:** > 16°C
- **Tolerance to high osmotic pressures:** high
- **Nitrogen requirement:** high (cf. "Instruction for use")
- **Alcohol tolerance:** average; hence the importance of sequential inoculation after a 10 - 15 point drop in density

ORGANOLEPTIC IMPACT

Tasting notes, in comparison with the reference yeast (*Saccharomyces cerevisiae*):

	LEVULINE® SYMBIOSE	Reference Yeast
Chardonnay	Round, smooth, complex, rich. Hints of white-fleshed fruits, pears in syrup, brioche, peach turnover. Long aromatic persistence.	Livelier, fresher, more acidic sensation. Fresh fruits, exotic fruits (litchis). Slightly shorter on the palate.
Melon de Bourgogne	Floral, elegant nose. Slightly spicy, iodine flavor. Hints of citrus fruits. More maturity. Long and well-balanced in the mouth.	More acidic sensation. Lively attack. Several hints of green apples and lime. Slightly thin. Overall, fresh and intense.

INSTRUCTIONS FOR USE

Warning: when inoculating with **LEVULINE® SYMBIOSE**, sure that the free SO₂ content in the must is not higher than 15 mg/L.

1°) Inoculation of LEVULINE® SYMBIOSE

Rehydrate **LEVULINE® SYMBIOSE** in 10 times their weight in water at a rate of 25 g/hL. The rehydration temperature is not the same as for *Saccharomyces cerevisiae* yeasts: the optimum temperature is 20 - 30°C.

Leave to settle for 15 minutes before mixing gently. Then acclimatize the yeast to the temperature by gradually adding an equivalent volume of must. The difference in temperature between the rehydration solution and the must should not be more than 10°C. Rehydration should not last longer than 45 minutes.

2°) Inoculation the *Saccharomyces cerevisiae* yeast

After a 10 - 15 point drop in must density compared to its starting density, inoculate with the recommended *Saccharomyces cerevisiae* yeast at a rate of 25 g/hL (ask for advice for the choice of the *Saccharomyces cerevisiae* yeast). Follow the classical protocol for the rehydration of the yeast (temperature of rehydration: 37°C).

3°) Important considerations

A- Temperature

- The rehydration temperature for **LEVULINE® SYMBIOSE** is from 20 to 30°C (in comparison with 37°C for a *Saccharomyces cerevisiae* yeast).
- The optimum fermentation temperature for **LEVULINE® SYMBIOSE** is above 16°C. Below 16°C, the metabolism of **LEVULINE® SYMBIOSE** slows down.

B- Nutrition

YAN < 80 mg/L	80 mg/L < YAN < 150 mg/L	YAN > 150 mg/L
1. Add a complex nutrient* just after the inoculation of LEVULINE® SYMBIOSE		
2. Add a complex nutrient* just after the inoculation of <i>Saccharomyces cerevisiae</i>	1. Add a complex nutrient* just after the inoculation of <i>Saccharomyces cerevisiae</i>	Add a complex nutrient* just after the inoculation of <i>Saccharomyces cerevisiae</i>
3. Add a complex nutrient* and eventually some DAP after a 45 point drop in must density compared to its starting density	2. Add a complex nutrient* after a 45 point drop in must density compared to its starting density	

* For the dosage, follow good practice of nutrition

PACKAGING AND STORAGE



One 500 g pack (to inoculate 25 hL).

Store in the original packaging for **4 years** in a cool and dry place.

Use vacuum-sealed sachets only.

Once opened, use quickly.

Recommended temperature range: can withstand temperatures up to **25°C** for up to 3 days.

A Danstar product
Distributed by:

	OENOFRANCE 79 avenue A.A. Thévenet, CS11031 51530 MAGENTA Tél. : 33 (0)3 26 51 29 30 / Fax : 33 (0)3 26 51 87 60 www.oenofrance.com
---	--

The information herein is true and accurate to the best of our knowledge; however, it is for reference purposes only, without warranty of any kind, either expressed or implied. Danstar cannot be held liable for any special, incidental, or consequential damages resulting from the purchase or use of this information.