



ELIOS® 1

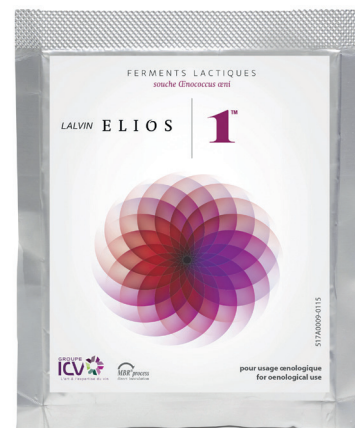


APPLICATION

Elios® 1 was isolated, selected and tested by ICV (Institut Cooperatif du Vin), in Languedoc-Roussillon, in France, for its quick and reliable degradation of malic acid in most mediterranean and Rhône red wines. **Elios® 1** has the capacity to enhance the sensory profiles of red wines. It contributes to increase the sensation of reds fruits and spicy notes, with an higher complexity and tannin intensity ; the mouthfeel of wines is also improved.

Due to its good implantation, **Elios® 1** has the capacity to limit the development of spoilage micro-organisms (e.g., *Lactobacillus*, *Pediococcus*, *Pichia* and *Brettanomyces*) in Mediterranean style red wines.

Elios® 1 is a naturally selected *Oenococcus oeni* bacteria, produced, freeze dried and packaged by Lallemand.



MICROBIAL AND OENOLOGICAL PROPERTIES

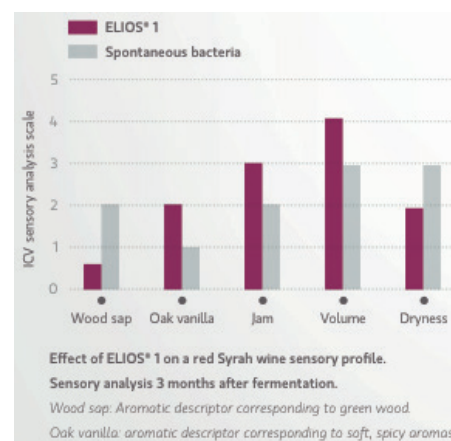
- pH tolerance > 3.4
- SO₂ tolerance: up to 50 mg/L total SO₂ and up to 10 mg/L free SO₂
- Pay attention to molecular SO₂ at low pH
- Alcohol tolerance: up to 14 % vol. If alcohol content is from 14% to 15.5% vol. the pH should be greater than 3.5 and the total SO₂ less than 35 mg/L
- T° tolerance > 17°C
- Low nutrient demand
- Good implantation – short lag phase
- MLF kinetic: Fast
- Co-inoculation possible
- Low volatile acidity production
- No biogenic amines production
- Low production of sulphur compounds and other off-flavours
- High capacity to degrade acetaldehyde during MLF or few days after, allowing the reduction of SO₂ addition in wines post MLF.

The MBR® form of lactic acid bacteria represents a Lallemand specific process that subjects the lactic acid bacteria cells to various biophysical stresses, making them better able to withstand the rigors of direct addition to wine. The conditioned MBR® lactic acid bacteria that survive are robust and possess the ability to conduct reliable malolactic fermentation (MLF).

SENSORY PROPERTIES

Elios® 1 can contribute to the sensory complexity and quality of wine, especially when used in combination with an appropriately selected wine yeast.

- In premium red wines to develop fresh, varietal aromas and good mid-palate intensity. Excellent sensorial complement to wines fermented with ICV-GRE™ and ICV-D21™.
- In ultra-premium red wines made from very balanced, mature grapes to develop fresh fruit aromas, licorice and tannic intensity in the mid-palate. Sensorial synergy with wines fermented with ICV-D80™ and ICV-D21™. Reorientation of the style of ICV D254™ fermented wine towards fresher fruit aromas and more perceptible tannins in the mid-palate.
- In Californian wines to develop the fresh, intense varietal aromas of Pinot Noir. Reorientation of the aromatic style of Zinfandel to avoid ethereal aromas and the classic drying tannins of this variety.



INSTRUCTIONS FOR USE

SEQUENTIAL INOCULATION (Post-alcoholic fermentation)

Bacteria inoculation: two options:

- 1) Direct inoculation without rehydration : open the sachet and add the bacteria directly into the wine after the end of alcoholic fermentation at the top of the tank or while racking the tank and ensure good mixing.
 - 2) Direct inoculation with rehydration step: for best distribution, you can rehydrate the packet of freeze-dried selected wine bacteria in 20 times its weight of clean chlorine free water at 20°C for a maximum 15 minutes. Add this suspension directly to the wine towards the end of or after the alcoholic fermentation.
- Stir gently to evenly distribute the selected wine bacteria and minimize the oxygen pickup.
 - Check malolactic fermentation activity (malic acid degradation) every 2 to 4 days.
 - Stabilize wine once malolactic fermentation (MLF) is finished.

Recommended temperature range:

- White wine / rosé wine: from 16 to 20°C.
- Red wine: from 17 to 25°C.

If limiting conditions (high alcohol > 14.5 vol, or low pH < 3.1, or high SO₂ > 45 ppm), from 18 to 22°C, check malolactic fermentation activity (malic acid degradation) every 2 to 4 days.

CO-INOCULATION

(Simultaneous alcoholic fermentation)

1) Yeast addition

Rehydrate the selected dry yeast according to the instructions. Preferably in presence of a rehydration nutrient and inoculate the must.

2) Bacteria addition

Depending on the SO₂ addition at crush:

- < 5 g/hL (50 ppm SO₂ added): wait for 24 hours
- 5-8 g/hL (50-80 ppm SO₂ added): wait for 48 hours
 - Direct inoculation of bacteria without rehydration : open the sachet and add the bacteria directly to the must/ wine to be fermented from the top of the tank (white must) or during a pumping-over (red must).
 - Direct inoculation with rehydration step: for best distribution, you can rehydrate the packet of freeze-dried lactic acid bacteria in 20 times its weight of clean chlorine free water at 20°C for a maximum of 15 minutes and add the suspension to the must/ wine to be fermented.
- Assure a good distribution.
- Carefully monitor must temperature, which must be below 30°C at lactic acid bacteria inoculation (alcohol < 5% vol) and below 27°C when the level of 10% of alcohol is reached.
- Complex nutrients addition at 1/3rd of alcoholic fermentation is recommended.
- Monitor malic acid and volatile acidity.
- If MLF takes place during AF and an unusual increase in volatile acidity is observed add **Bactiless™** (20-50 g/hL).
- Top the wine to ensure minimum ullage after alcoholic fermentation (AF) if MLF is not completed.
- Otherwise rack and stabilize after MLF

PACKAGING AND STORAGE

- Product in powder form obtained by lyophilisation.
- Available for 2,5 hL, 25 hL and 250 hL.
- This product can be stored for 18 months at 4°C and 36 months at - 18°C in original sealed packaging. Once opened, the sachet must be used immediately.
- During delivery, sealed packets can be held at ambient temperature for 3 weeks (< 25°C) without significant loss of viability.

The information herein is true and accurate to the best of our knowledge; however, this data sheet is not to be considered as a guarantee, expressed or implied, or as a condition of sale of this product.