

# LEVEL<sup>2</sup> GUARDIA™

*Metschnikowia pulcherrima*

## Active bioprotection yeast for red wines

### DESCRIPTION

Managing microbial dynamics by encouraging beneficial microorganisms and repressing the growth of detrimental ones is the fundamental principle of biocontrol. LEVEL<sup>2</sup> GUARDIA™ is a new non-*Saccharomyces* (*Metschnikowia pulcherrima*) selected from nature by IFV (Institut Français de la Vigne et du Vin), highly adapted for bioprotection in wines. When applied early in the process, implantation and growth performance of LEVEL<sup>2</sup> GUARDIA™ allows early and efficient colonization of red musts. LEVEL<sup>2</sup> GUARDIA™ has been screened and chosen for its capacity to secrete high concentrations of pulcherrimic acid, a strong iron chelating agent. This iron depletion makes the environment unsuitable for the growth of contaminant microbes. These unique characteristics make, LEVEL<sup>2</sup> GUARDIA™ highly efficient against a wide range of undesirable microorganisms (oxidative yeast, *Brettanomyces* spp., acetic bacteria). LEVEL<sup>2</sup> GUARDIA™ is suitable for organic wine production in EU.

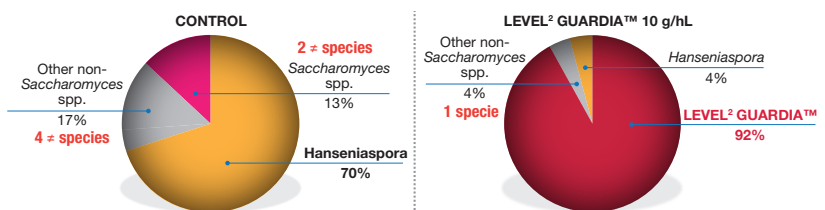


### BENEFITS & RESULTS

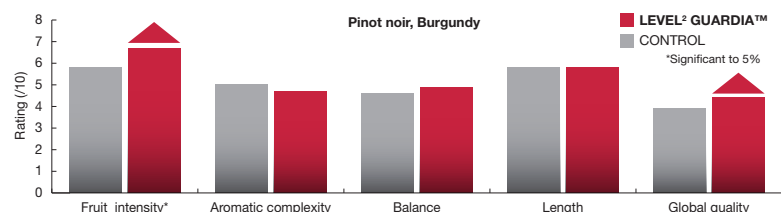
Due to its non-fermentative property and ability to grow at low temperatures, LEVEL<sup>2</sup> GUARDIA™ is a useful natural tool during red winemaking pre-fermentation steps. It helps with the reduction of sulfites use and to prevent from spoilage contamination from harvest to vatting. LEVEL<sup>2</sup> GUARDIA™ is also perfectly suitable for cold soak (figure 1). It also facilitates the implantation and the growth of the selected *Saccharomyces cerevisiae* inoculated sequentially to perform the alcoholic fermentation.

LEVEL<sup>2</sup> GUARDIA™ has a positive impact on wine quality by avoiding organoleptic deviations from microbiological origin and bringing positive sensorial impact (figure 2).

**Figure 1:** Implantation control in a Grenache (INCAVI, Spain). Trial comparing LEVEL<sup>2</sup> GUARDIA™ added at 10 g/hL before a cold soak (5 days at 10°C) to a control without bioprotection. Zero sulfites addition.



**Figure 2:** Sensorial analysis led by an expert panel of 15 tasters in a Pinot noir (IFV Beaune, France) comparing a control and LEVEL<sup>2</sup> GUARDIA™ at 10 g/hL. Zero sulfites addition.



**LEVEL<sup>2</sup>**  
RANGE

One of the objectives of our Lallemand Oenology R&D program is to explore the non-*Saccharomyces* biodiversity found in nature. Our R&D team continues to select interesting and original non-*Saccharomyces* yeast and offer them within our LEVEL<sup>2</sup> range. These non-*Saccharomyces* LEVEL<sup>2</sup> yeast provide winemakers with exciting new aromatic complexities and possibilities.



## PROPERTIES

- Pure culture of *Metschnikowia pulcherrima*.
- SO<sub>2</sub> tolerance: < 40 mg/L of total SO<sub>2</sub>.
- Alcohol tolerance: very low.
- Fermentative capacity: very weak to none.
- Implantation and growth capacities: high.
- Optimal temperature range: 8 to 26°C.
- No production of undesirable compounds (such as volatile acidity, SO<sub>2</sub>, H<sub>2</sub>S, etc.).
- Requires inoculation of selected *Saccharomyces cerevisiae* yeast for alcoholic fermentation. Facilitates its implantation and growth.
- Nutrition management: systematic nutrient addition after *Saccharomyces cerevisiae* inoculation is recommended.
- High capacity to produce a strong iron-binding compound (pulcherrimic acid), enhancing its capacity to limit the growth of spoilage microflora.

## INSTRUCTIONS FOR OENOLOGICAL USE

Recommended dosage: 5 to 20 g for 100L of must or 100 kg of grapes to be adapted depending on the process (temperature, degree of risk for microbial contamination, duration of the prefermentative steps, timing of the inoculation, etc.).

- Add as early as possible.
- Rehydrate LEVEL<sup>2</sup> GUARDIA™ in 10 times its weight of clean water (temperature between 20 °C/68 °F and 30 °C/86 °F).
- Stir gently to suspend and wait for 20 minutes.
- Inoculate the grapes or must. The difference in temperature between the grapes must to be inoculated and the rehydration culture suspension should not be higher than 10°C (if necessary, acclimatize the temperature of the culture by slowly adding must).
- Always rehydrate the yeast in a clean container.
- In some cases (mechanical harvest when juice is present) addition without rehydration can be considered (please refer to your supplier or Lallemand). In this case the highest dosage should be considered.
- The suspension can be kept in water alone for 9 hours. If used later, add must to the suspension after 45 minutes of rehydration.

## PACKAGING AND STORAGE

- Available in 500 g
- Store in a dry place at 4-11°C
- To be used once opened

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The information in this document is correct to the best of our knowledge. However, this data sheet should not be considered to be an express guarantee, nor does it have implications as to the sales condition of this product. December 2024.



WINE  
YEASTS



WINE  
BACTERIA



NUTRIENTS  
/PROTECTORS



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ENZYMES



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Original by culture

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