

SILKA™

1-STEP™

MALOLACTIC FERMENTATION UNDER CONTROL

Oenococcus oeni

For silky red wines and malolactic fermentation with oak



As a producer of wine lactic acid bacteria, Lallemand developed a specific 1-STEP™ production process to induce malolactic fermentation (MLF) of most red and white wines, in a wide range of oenological conditions. Highly efficient, the 1-STEP™ starter kit consists of a malolactic active freeze-dried *Oenococcus oeni* strain and specific activator. Excellent activity and high vitality of the 1-STEP™ starter culture are achieved during a short acclimatization step for a fast onset of malolactic fermentation.

DESCRIPTION

SILKA™ was isolated from nature in La Rioja in Spain. It was selected by Instituto de Ciencias de la Vid y del Vino (ICVV), from a 2006 research project. Over 1000 natural isolates from different wineries were studied and SILKA 1-STEP™ was selected for its unique sensory properties especially for regions with warm climate challenges.

Produced with our specific 1-STEP™ process and with its fast acclimatization protocol, SILKA 1-STEP™ has a regular MLF kinetic on red wines and a good resistance to high alcohol content.



BENEFITS & RESULTS

Beyond bio-deacidification, SILKA 1-STEP™ is best suited to produce silky red wines. SILKA 1-STEP™ brings a positive impact on the roundness, softening the astringency and bitterness of wines, which results in complex very well-balanced red wines, with a nice aromatic persistency.

SILKA 1-STEP™ softens tannins and is thus well suited for MLF in contact with oak. The resulting wines have better integrated oak sensation, with an elegant structure and a highest aromatic freshness. After several months, the wines are still fruity and fresh.

MLF with oak:
complexity and soft tannins structure

Buttery impact (Diacetyl) production):
• Moderate in Sequential inoculation
• Low in Co-inoculation

Reduction of green and vegetative flavors

Velvet, roundness and fresh fruits

SILKA 1-STEP™ is a bio-protection tool to protect wines against *Brettanomyces* when inoculated as soon as possible to prevent the excessive development of the spoilage yeast.

PROPERTIES

- pH tolerance: ≥ 3.3
- Alcohol tolerance: up to 16 % vol.
- SO₂ tolerance: up to 60 mg/L total SO₂ (pay attention to molecular SO₂ in the lower pH range)
- T° tolerance: > 15 °C
- MLF kinetic: regular
- Low volatile acidity production
- Bacteria cinnamoyl esterase negative: cannot produce precursors for volatile phenol production by *Brettanomyces*
- No production of biogenic amines
- Suited for co-inoculation and sequential inoculation
- Nutritional demand: moderate. It's recommended to add ML REDBOOST™ in post alcoholic fermentation inoculation



INSTRUCTIONS FOR OENOLOGICAL USE

Use one sachet for right quantity of hL indicated on label. Lowering the dosage or doing cross seeding or pitching methods will reduce the bacteria performance.

Co-inoculation (simultaneous alcoholic fermentation)

The 1-STEP™ activator and lactic acid bacteria can be used in co-inoculation without any acclimatization step.

- 1A. Mix and dissolve content of the activator sachet in drinking water (temperature between 18 and 25 °C) according to the table below.

1-Step™ Kit	Volume of drinking water (L)
For 100 hL	10

- 1B. Add content of the lactic acid bacteria sachet and dissolve carefully by gently stirring.
2. Transfer immediately the rehydrated mix (activator and lactic acid bacteria) into the fermenting must/wine 24 hours after the yeast is added.
3. Monitor malolactic fermentation activity (malic acid degradation) every 2 to 4 days, as well as volatile acidity.

In cases of must with sulphite addition >8 g/hL, it is recommended to use the 1-STEP™ activator and lactic acid bacteria after alcoholic fermentation.

Recommended temperatures:

Carefully monitor must temperature, which must be below 30 °C at lactic acid bacteria inoculation (alcohol < 5% vol.) and below 27 °C when 10% of alcohol is reached.

Sequential inoculation (post-alcoholic fermentation)

- 1A. Mix and dissolve content of the activator sachet in drinking water (temperature between 18 and 25 °C) according to the table below.

	1A	2
1-Step™ Kit	Volume of drinking water (L)	Volume of wine (L)
For 100 hL	10	10

- 1B. Add content of the lactic acid bacteria sachet and dissolve carefully by gently stirring. Wait for 20 minutes.
2. Add to this suspension the appropriate volume of wine (see table above) pH > 3.5, total SO₂ < 45 ppm, no free SO₂ (temperature between 18 and 25 °C). Wait for 18 to 24 hours. If malic acid content is < 1.2 g/L, wait only for 6 to 10 hours.
3. Transfer the activated malolactic bacteria starter culture into the wine according to the volume indicated on the kit. Monitor malolactic fermentation activity (malic acid degradation) every 2 to 4 days. Under more difficult conditions, add a specific bacteria nutrient.

Recommended temperatures ranges:

- Red wine:
 - > If alcohol < 14.5% vol.: from 17 to 25 °C, with an optimal range: 18-22 °C
 - > If alcohol > 14.5% vol.: from 18 to 20 °C

PACKAGING & STORAGE

- Product in powder form obtained by lyophilization.
- Available in sachet for inoculation for 100 hL (2,640 US gal.).
- Once opened, activator and lactic acid bacteria sachet must be used immediately
- Activator and lactic acid bacteria sachet must not be used separately.
- This product can be stored for 18 months at 4 °C/40 °F or 36 months at -18 °C/0 °F in original sealed packaging.
- Sealed packets can be delivered and stored for 3 weeks at ambient temperature (<25 °C/77 °F) without significant loss of viability.

Distributed by:

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. January 2022.



WINE
YEASTS



WINE
BACTERIA



NUTRIENTS
/PROTECTORS



SPECIFIC
YEAST DERIVATIVES



ENZYMES



CHITOSAN



VINEYARD
SOLUTIONS



LALLEMAND
OENOLOGY
Original by culture