

## Biological Acidity Reduction VINIFLORA® LS OENOS “Frozen Cultures”

### *Oenococcus Oeni* DSM 7008

**VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are a deep-frozen, concentrated lactic acid bacteria starter culture for biological deacidification during wine production. The innovative technological standard enables faster and more reliable triggering of acid decomposition through direct inoculation with deep-frozen pellets. VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria comply with IFS standards and all large-scale wine production quality standards.**

The specific advantages of VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria:

- Maximum vitality and activity development in wine
- High cell activity due to the fact that no freeze-drying is used; shorter lag phase
- Rapid distribution of frozen pellets in large containers
- Reliably prevents spontaneous acid reduction
- Produces harmonious wines with maximum biological stability

#### Application and Dosage

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are available in packs for inoculating 6,600 gal (250 hl) of wine. Do not dose less than the recommended quantity. A lower dosage promotes spontaneous bacterial growth and jeopardizes degradation of malic acid.

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are added directly to the wine immediately after completion of alcoholic fermentation. The pellets dissolve once they have been added to the wine.

The drum should be kept sealed as far as possible during BAR.

#### Product Characteristics

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are a high-purity concentrate made of deep-frozen *oenococcus oeni* cells (DSM 7008 strain).

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria were selected from over 850 lactic acid bacteria strains in accordance with all relevant oenological criteria (organoleptic purity of wine, high tolerance towards alcohol and SO<sub>2</sub> and low pH values; no development of undesired metabolism products). The main difference compared with VINIFLORA LS OENOS malolactic bacteria is in the production. VINIFLORA LS OENOS malolactic bacteria freeze-dried direct inoculation cultures are additionally lyophilized. Production of VINIFLORA LS OENOS malolactic bacteria frozen direct inoculation culture does not involve freeze drying (lyophilization), resulting in significantly higher cell activity and shorter lag phase. VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria cells are supplied in the form of small pellets that must be stored at -58 °F (-50 °C) and are sprinkled directly into the wine.

#### Important Notes

Open VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria packaging immediately before use. Once opened the cells start to deteriorate within minutes. When applied to smaller containers (< 6,600 gal (250 hl)) the contents of the package should be stirred into 2.6 gal (10 l) of wine and then distributed into the smaller containers. Please ensure homogeneous distribution. Never distribute the contents of the package directly, because prolonged delay time in air could lead to unnecessary deterioration of the bacteria cells.

The ideal inoculation temperature is 63 – 77 °F (17 – 25 °C). Young wines should not be sulfurized or contain more than 1.37 gr/100 fl oz (30 mg/l) of free SO<sub>2</sub> or 3.19 gr/100 fl oz (70 mg/l) of total SO<sub>2</sub>. The alcohol content must not exceed 14% by volume, and the pH value must not be less than 3.3.

One particularly important aspect is that the factors indicated above work in synergy. If the wine nearly reaches the limits for two or more factors, biological acid reduction can be delayed or even rendered impossible. On the other hand, the culture can tolerate extreme values of an inhibitor if the wine is otherwise suitable for biological acid reduction.

Biological acidity reduction normally begins after 2 – 3 days; the lag phase after inoculation with VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria is significantly shorter. Acid reduction is complete after approx. 1 – 4 weeks, depending upon peripheral conditions.



Because VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria use diacetyl to break down citrate to imperceptible end products, the product can also be used to specifically contribute to harmonization. Live yeasts are also involved in this breakdown process. If a diacetyl note is not desired, add VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria before the initial tapping and do not sulfurize the young wine before the required diacetyl level is reached.

## Safety

There are no known detrimental effects if VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are used as directed and processed properly. Since VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria mix in easily; using this product poses no hazard to health.

Further safety information can be found in the relevant Material Safety Data Sheet, which can be downloaded from our website.

## Storage

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are supplied in white plastic bags. Deep freeze at -58 °F (-50 °C) during shipping and when storing for extended periods. Under these conditions, the product can be stored for 12 months without loss of activity. Store VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria under the conditions indicated above until immediately before use. It is not necessary to adapt the temperature of the wine.

Product storage requires special freezers that are capable of storing at -58 °F (-50 °C).

## Delivery Information

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria are sold under article no. 93.451.910 and is available in the following package size:

For 6,600 gal  
(250 hl) of wine: Pack (white PE bags)

HS Customs Tariff: 3002 90 50

## Certified Quality

VINIFLORA LS OENOS “Frozen Cultures” malolactic bacteria comply with all applicable legal directives governing the production of wine and is inspected regularly during the production process to ensure consistently high product quality. These inspections include wide-ranging technical functional criteria as well as safeness in accordance with relevant laws governing production of foods. Strict controls are carried out immediately before and during final packaging.

*VINIFLORA® is a registered trademark of Chr. Hansen A/S.*

### North America

44 Apple Street  
Tinton Falls, NJ 07724  
Toll Free: 800 656-3344  
(North America only)  
Tel: +1 732 212-4700

### Europe/Africa/Middle East

Auf der Heide 2  
53947 Nettersheim, Germany  
Tel: +49 2486 809-0

Friedensstraße 41  
68804 Altlufheim, Germany  
Tel: +49 6205 2094-0

An den Nahewiesen 24  
55450 Langenlonsheim, Germany  
Tel: +49 6704 204-0

### China

No. 3, Lane 280,  
Linhong Road  
Changning District, 200335  
Shanghai, P.R. China  
Tel: +86 21 5200-0099

### Singapore

4 Loyang Lane #04-01/02  
Singapore 508914  
Tel: +65 6825-1668

### Brazil

Av. Julia Gaioli, 474 – Bonsucesso  
07251-500 – Guarulhos, Brazil  
Tel: +55 11 2465-8822

For more information, please  
email us at [filtration@eaton.com](mailto:filtration@eaton.com)  
or visit [www.eaton.com/filtration](http://www.eaton.com/filtration)

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09-2015

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