



# Premium Liquid Cultures *for* Professional Malolactic Fermentation

Wyeast Laboratories, Inc. Technical Data Sheet

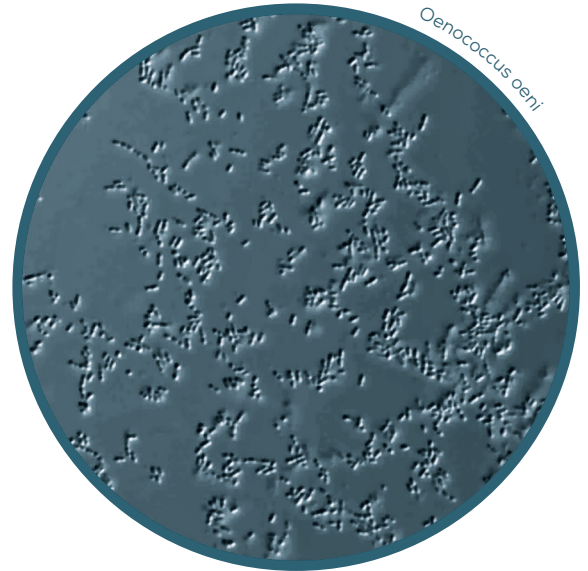
## PRODUCTS

Premium Liquid Malolactic Bacteria Strains & Blend

> *Oenococcus oeni*

Wyeast malolactic cultures will provide rapid and complete malic acid reduction in high acid wines. Malic acid reduction will balance and soften wine while enhancing flavor and aroma characteristics including vanilla and buttery notes. Malolactic conversion is generally completed within 1-3 months.

4114 Er1A is an excellent choice for red wines, having been isolated for its tolerance to low pH conditions. 4221 Ey2d is suggested for white wines, which was selected for its tolerance to low cellar temperatures. 4007 Malolactic Blend will cover a broad range of temperatures and pH conditions.



## DESCRIPTION

A liquid suspension of *Oenococcus oeni* grown in a sterile organic juice based nutrient-enriched medium.

## PACKAGING

Available from 1.0 liter and up per strain, in 0.5 and 1.0 liter increments to suit your winery and fermentation needs. Contact our Customer Service Representatives for a custom pitch recommendation.

## INOCULATION RATE

Suggested volume: Directly inoculate must at 0.5% (1 liter of culture per 55 gallons [2.08 hL] of must)

Malolactic Fermentation Temperature		
Strain	Range	
4114 Er1A	70-90 °F	21-32 °C
4221 Ey2d	55-75 °F	13-24 °C
4007 Malolactic Blend	55-90 °F	13-32 °C

## STABILITY

Store at 34-40 °F (1-4 °C) immediately upon arrival. Best when used fresh. Use within 14 days.

## INSTRUCTIONS FOR USE

Allow to come to ambient temperature just prior to use. Sanitize package before opening. Pour the contents into must that has completed or nearly completed alcoholic fermentation, or add to must once primary yeast fermentation has begun. Free SO<sub>2</sub> levels should be less than 15 ppm.



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## STRAIN AVAILABILITY

Fresh inventory is immediately available for many core strains and can ship to you in just a few days. Our full range of strains and banked proprietary cultures are grown to-order and ship only once they have met all QA/QC specifications.

## PRODUCTION

All *Oenococcus oeni* strains are produced in Wyeast's licensed food manufacturing facility from an archival -80 °F (-62 °C) ultra-low temperature bank in order to maintain genomic stability and assure that cultures have consistent fermentation kinetics, flavor profiles, and characteristics.

Minimal processing is required once propagation is complete, and therefore has no detectable effect on the integrity of the culture and significantly limits the possibility of contamination.

## INTEGRITY

- All cultures meet or exceed strict quality standards and specifications prior to shipment. Product purity is evaluated at every phase of propagation to the finished product.
- Quality assurance samples are archived and routinely tested for ongoing confirmation of product integrity.
- Cultures are guaranteed by our Product Warranty when used under typical MLF conditions.

## PROFESSIONAL SPECIFICATIONS

<i>Oenococcus oeni</i>	
Analysis	Specification
Bacteria concentration	$\geq 1.0 \times 10^9$ cells/mL
Culture Density	1.00 g/mL
Bacteria Cell morphology	Single morphology
Total Yeast	< 1 cfu/ 1.0 mL malolactic cells
Non Malolactic Bacteria	< 1 cfu/ 1.0 mL malolactic cells



Let's get fermenting.

[www.wyeastlab.com](http://www.wyeastlab.com)